



The effect of the Attachment and Biobehavioural Catch-up parenting intervention for children with intellectual disabilities in South Africa

Ahmed Riaz Mohamed

 **orcid.org/0000-0002-2524-9254**

Thesis accepted in fulfilment of the requirements for the
degree Doctor of Philosophy in Psychology at the
North-West University

Promoter:	Prof E van Rensburg
Co-promoter:	Prof P Sterkenburg
Co-promoter:	Prof C Schuengel

Graduation:	June 2025

ACKNOWLEDGEMENTS

The people acknowledged here have contributed towards this work, directly and indirectly, and to varying degrees. More than any other, the experience of doing this work has brought to life for me the meaning of the Zulu proverb, *umntu ngumntu ngabantu*—a person is a person through other people. It encompasses the philosophy of *ubuntu*—togetherness or oneness—that recognises the crucial role of the collective in the life—and existence—of the individual. Without every person listed below, this piece of work would not have materialised.

To my promoter at NWU, **Prof Esmé van Rensburg**, your kindness, humility, warmth and sense of humour are unparalleled. Thank you for being a grounding presence and a support on the home front throughout this mammoth task. It has been a journey and I am grateful to have had your guidance in traversing it, both personally and professionally.

To my co-promoter at the VU, **Prof dr Paula Sterkenburg**, words cannot fully express my gratitude for everything you have done for (and with!) me along this road. You have walked with me—literally and figuratively, across countries and continents—from the very beginning and have showed boundless compassion and empathy along the way. Not only has your support, guidance, knowledge, experience, and expertise enhanced this work so fundamentally, but your inherent kindness and warmth has held and contained me in ways I cannot fully articulate. Thank you for seeing something in me and providing me with an opportunity, challenging as it has been, that has seen me grow in so many ways, personally and professionally. I will always remember and cherish those ‘in between’ moments shared over meals with both you and Harry. You have made Amsterdam feel like a second home. Dankjewel dat je mijn veilige basis en veilige haven bent op deze reis.

To my co-promoter at the VU, **Prof dr Carlo Schuengel**, thank you for the always insightful, thought-provoking and critical inputs you have made to this work, which has resulted in a product I am proud of. Thank you for challenging me and asking the difficult questions, which has helped me to grow and develop in my skills, and confidence, as a researcher.

I owe a debt of gratitude to the **UCT Child Guidance Clinic**, the crucible of my professional life as a clinical psychologist and where I really found my purpose and meaning. It was here that attachment came to life for me, catalysing a process that led me to this point and will continue to guide me going forward. While this laid the foundation, it was my experience at the **Intellectual Disability Services (IDS)** unit at Lentegeur Psychiatric Hospital in Cape Town that served to plant the seed that ultimately sprouted into this work. To all the deeply dedicated staff at IDS and to all my former patients there, you have remained with

me and continue to inspire me to work towards supporting people with ID and their caregivers, and promoting their mental health and wellbeing.

To **my family**. If I were to detail everything I need to express here, I'd produce another thesis. A significant part of the reason I have aspired to be here and have reached this point is the confluence of all your respective and collective contributions to who I am. In this respect, and many others, I stand on the shoulders of giants. Taking on this PhD was in some ways an inevitability spurred on by having been raised in a family that had already produced three doctorates across disciplines ranging from public health to medicine to chemical engineering! A particular debt of gratitude is, however, owed specifically to my parents, Ebrahim and Suraya; to my siblings, Zaheera and Adil; their spouses, Zain and Erica; and to my niece, Layyah, and nephews, Amaan and Ethan. Thank you for the limitless support, patience, and encouragement throughout this process.

To **Amanda, Cat, Gavin, Jill, Khairounisa, Sharon, Stacey and Yolan**, you have all carried me and held me in so many ways, buoying me up at times when this task felt insurmountable and I struggled to see the horizon through the fog. You allowed me the space to not be okay when I was not okay, but you also provided the encouragement, support, levity and—where necessary—the distraction! You never allowed me to get away with pretending to be “fine”, always seeing through the pretence and having none of it! Reaching the end of this journey would have been infinitely more difficult without the holding space you provided for me despite a global pandemic and being cities, countries and continents apart.

Thank you to **Prof Tharina Guse** and my other **colleagues** in the Department of Psychology at the University of Pretoria for your patience in allowing me the time and space to embark on, and complete, this work.

To the **research assistants** who assisted with questionnaire administration, thank you for your eagerness and willingness to assist.

To **Lucia Willems, Nicki Dawson, Irini Agathagelou and Lizé van Graan** for your assistance with coding many hours of video material. This was a big task and you were so gracious in volunteering your time to seeing it through. Thank you.

To **Prof dr Marian Bakermans-Kranenburg**, thank you for providing training and reliability certification in the Ainsworth Maternal Sensitivity Scales, and **Lucia Willems** for doing so with regards to the Attachment Q-sort.

To **Lilly Scharmer, Vernandi Dyzel, and Chloe Moodley**. Thank you for your assistance as independent coders in the qualitative analyses of the interview transcripts.

To **Anesu Kuhudzai** and **Jill Mosdell, PhD** for consulting on aspects of the SPSS data analyses.

To **Owen Crawford, Lucia Willems, Bea Sturovics, Chloe Moodley** and **Cameron Johnson** for your assistance with various tasks related to Article 1, including setting up of the data spreadsheet, data extraction, data capturing and methodological quality assessments. Much of this was an arduous and lengthy task. Thank you for your willingness and motivation to assist.

To **PracticeWise** for allowing the use of their coding system to extract data for the purposes of Article 1.

To **Prof dr Mary Dozier** who shared the Attachment and Biobehavioral Catch-up intervention for the purposes of this project, permitting us to use and test the intervention among infants and young children with intellectual disabilities and developmental delays in South Africa. Also, for generously subsidising the cost of supervision for the benefit of this study, the parent coaches and, most importantly, the families involved.

To **Dr Stevie Schein** and **Dr Bo-Ram Kim** from the Attachment and Biobehavioral Catch-up Laboratory at the University of Delaware for making the long journey to South Africa to conduct training with our parent coaches as well as supervision for the duration of the study.

To **Frances Kaplan** and **Dr Amanda Edge**. You gave very generously of your time to volunteer as parent coaches to implement the ABC intervention. I am grateful for your commitment to this study, to the families you served, for your time (you donated so much of it!) and—most importantly—for providing such a positive experience to families who often feel left behind and unseen.

To the **National Research Foundation (NRF)** and the **South Africa-Vrije Universiteit Strategic Alliance (SAVUSA)** who jointly awarded the VU-NRF Desmond Tutu Doctoral Training Programme scholarship allowing me to pursue this PhD. Additional research funding was obtained through the **University Capacity Development Programme (UCDP)** via the University of Pretoria, which assisted with some of the research-related costs.

Last, but certainly not least, my unwavering gratitude is extended to the participants. From completing questionnaires, to taking part in interviews, to giving up many hours of your week for the purposes of observations and intervention sessions; each one of you has made an invaluable contribution to this work. I will always be indebted to you for allowing me the time to engage with you, to hear your stories and for inviting me into your homes with such generosity and openness. Thank you.

DEDICATION

For Adri. We should be celebrating the completion of this work together, but you were taken much too soon. It still doesn't feel quite real that you are no longer with us. Thank you for the many, many conversations about anything and everything; thesis and non-thesis; big or small; funny and serious; but always meaningful. Thank you for all the cappuccinos that you simply refused to let me pay for, and for always making me feel heard and seen even when I didn't know I needed it. Thank you for your unwavering compassion, your kindness, that sharp wit, insight and fierce authenticity. Thank you for the laughter and for your unbridled and deeply, profoundly, genuine care. But, most of all, thank you for your friendship. You weren't able to finish your own PhD so this is dedicated to you. You are missed.

STATEMENT

This PhD was supported by the South African National Research Foundation (NRF) and South Africa Vrije Universiteit Strategic Alliance (SAVUSA) via the VU-NRF Desmond Tutu Doctoral Training Programme. The PhD was supervised by North-West University (South Africa) in cooperation with the Vrije Universiteit Amsterdam (Netherlands).

This PhD thesis is presented according to the article format. Four article manuscripts are incorporated into Section II. The PhD candidate is the first author for each article and Prof dr Sterkenburg (VU co-promoter) is the second. Prof van Rensburg (NWU promoter) and Prof dr Schuengel (VU co-promoter) are the second-to-last and last authors, respectively. Additionally, Article 3 was co-authored by Joshua Gregory Yeatman who is listed as the third author for his contribution to this manuscript.

The articles have been submitted to the following journals:

Article	Journal	Manuscript Status
Article 1	<i>Attachment & Human Development</i>	Submitted/Under Review
Article 2	<i>Intellectual and Developmental Disabilities</i>	Submitted/Under Review
Article 3	<i>Journal of Intellectual Disabilities</i>	Published
Article 4	<i>Infant Mental Health Journal</i>	Published

The article manuscripts presented in Section II are either the final published versions as accepted by the journal following peer review (Articles 3 and 4), or are the versions submitted for peer review (Articles 1 and 2). Each article manuscript is formatted according to the requirements of the respective journals to which they have been submitted. A copy of the guidelines for authors for the relevant journals has been included with each article manuscript in Section II. The co-authors have granted their permission that the PhD candidate may submit the articles for purposes of graduation.

ABSTRACT

The research presented in this thesis spans the fields of attachment-based interventions and intellectual disabilities (ID), and encompasses four studies. The first study aimed to distil the practice elements across attachment-based interventions and match patterns of practice elements to child characteristics. This was approached using a literature-based, systematic review methodology. Guided by the Distillation and Matching Model, the practice elements common across 45 effective attachment-based interventions, as reported in 60 published studies, were distilled and subsequently matched to key child variables—child age, ethnicity, location and risk status—to examine how profiles of practice elements associated with each variable may be distinct, or similar. The findings suggest that while there was notable similarity across practice element profiles in terms of the use of relationship-building, video-feedback, psychoeducation and home-based approaches, some distinctions were observed. Interventions for younger infants frequently involved direct demonstration and modelling, while those for older infants and young children consisted of feedback-based approaches. Interventions for vulnerable, at-risk parents consisted of intensive guidance, while those for groups indigenous to North America benefitted from a comprehensive and multifaceted package of practice elements. Finally, interventions for adolescent-aged children were frequently implemented in parent-group format, involving role-plays and discussions between parents, with limited direct involvement of the child. These distinctions may inform differential clinical applications of attachment-based interventions informed by the needs of specific populations.

In the second study, the aims were two-fold: i) to explore the parenting-related challenges, perceptions of current care and needs of caregivers of children with ID in South Africa; and ii) to obtain expert/professional opinion and input on the challenges and needs/wishes of caregivers of children with ID. Forty South African primary caregivers of children with ID and five health professionals working in the field of ID took part in this mixed-methods study. All caregivers completed measures of parenting stress, parenting self-efficacy, support networks and perceptions of current healthcare services. A subset of 10 caregivers and the five health professionals also participated in semi-structured interviews. Data were analysed through descriptive statistics and thematic analysis. The findings suggest that parents of children with ID in South Africa experienced noteworthy parenting-related stress and lowered parenting-related self-efficacy. Explanations for this by caregivers and professionals focused on experiences of criticism from significant others, lack of assistance from individuals and institutions, difficulties with understanding their child's needs, and difficulties in coming to terms with their child's diagnosis. Caregivers received support from multiple sources, expressing satisfaction with healthcare services for their child with ID. However, they also highlighted gaps relating to caregiver-focused support for building their relationships with their children and fostering their development and wellbeing. This underscores the need for relationally-oriented interventions for parents and their children with ID in South Africa.

The third study sought to evaluate the effects of an established attachment-based intervention—Attachment and Biobehavioral Catch-up (ABC)—on maternal sensitivity, attachment security, and child affect/cortisol regulation in dyads in which the child had significant developmental delays/ID. A single-case, mixed-methods, concurrent multiple-baseline study was conducted across three parent-child dyads. Weekly repeated measures of the primary outcome variables were conducted to measure change over time, and semi-structured interviews were conducted with the parents and intervenors following the completion of the intervention. Quantitative data were analysed using visual analysis as well as statistically, using randomisation testing. Results showed improvements in maternal sensitivity and attachment security over time and across dyads, but results on cortisol regulation were inconclusive. However, the intervention effects observed through visual analysis and inspection were not confirmed by the statistical analyses. The qualitative data were analysed using thematic analysis and showed that the intervention was positively received, was found to be relevant and helpful, and that both the parents and intervenors observed positive changes in the nature of the parent-child interactions over the course of the intervention, highlighting the social validity of the ABC. Therefore, the findings on the effects of the ABC for this cohort of children are tentative but promising.

In the fourth and final study, the aim was to obtain expert/professional opinion, and caregiver impressions, on the ABC intervention to inform potential adaptations for the population of children with ID and the local South African context. To do this, an exploratory qualitative study, with an embedded adapted qualitative Delphi component, was conducted. The three parents and two intervenors involved with the ABC, an additional group of eight parents of children with ID not involved with the ABC, and a panel of five experts participated in semi-structured interviews and were asked to provide comment and opinion on the ABC. Subsequently, as part of the adapted Delphi component, the five experts were requested to provide written feedback on a preliminary analysis of their initial interviews, to facilitate consensus. The data were analysed using thematic analysis. Overall, there was notable support for the ABC. The strengths-based and supportive coaching approach combined with reinforcing feedback was considered to foster a safe environment for caregivers of children with ID/DD. This facilitated significant learnings for those who received the ABC. Coaches were similarly supported through quality supervision and encouraged by caregiver commitment to the process. Some key recommendations included, amongst others, training coaches in identifying the anomalous communication styles of children with ID and in activating referral networks, identifying and training local and community-based coaches and partnering with NGOs to address logistical as well as context- and culture-related factors involved in implementing the ABC in a novel setting.

Keywords: Attachment-based Interventions; Distillation and Matching Model; Practice Elements; Intellectual Disability; Developmental Delays; Attachment and Biobehavioral Catchup; Multiple-baseline

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	i
DEDICATION	iv
STATEMENT	v
ABSTRACT	vi
LIST OF TABLES	xx
LIST OF FIGURES	xxii

SECTION I: LITERATURE REVIEW AND CONTEXTUALISATION OF THE PROBLEM.1

1.1	Introduction	1
1.2	Literature Review	1
1.2.1	Defining Intellectual Disabilities	1
1.2.2	Epidemiology of Intellectual Disabilities	2
1.2.3	Intellectual Disabilities and Mental Health	3
1.2.4	Attachment: An Overview	4
1.2.4.1	Attachment Theory	4
1.2.4.2	Individual Differences in Attachment	6
1.2.4.3	The Role of Maternal Sensitivity in Attachment Security	8
1.2.4.4	The Developmental Significance and Outcomes of Attachment	10
1.2.4.5	The Cross-cultural Applicability of Attachment Theory: A Focus on Africa	13
1.2.5	Attachment in the Context of Children with Intellectual Disabilities	16

1.2.5.1	Attachment Patterns in Children with Intellectual Disabilities	16
1.2.5.2	Factors Influencing Attachment in Children with Intellectual Disabilities	18
1.2.5.2.1	Child's Level of Cognitive Functioning	19
1.2.5.2.2	Interferences with Effective Parenting	20
1.2.5.2.3	Parental Mental Health	21
1.2.5.2.4	Difficulties with Resolution of the Diagnosis	22
1.2.6	Parenting a Child with Intellectual Disability	24
1.2.6.1	Lack of Support	25
1.2.6.2	Stigma	27
1.2.7	Attachment-based Parenting Interventions	29
1.2.7.1	Attachment-based Interventions for Children with Intellectual Disabilities	33
1.2.8	The Attachment and Biobehavioral Catchup Intervention	34
1.2.8.1	The ABC Intervention Process	34
1.2.8.2	Evidence for the Effectiveness of the ABC	37
1.2.8.2.1	The Effects of ABC on Parent Outcomes	38
1.2.8.2.2	The Effects of ABC on Child Outcomes	39
1.3	Overall and Specific Aims	42
1.4	Research Paradigm and Methodology	43
1.4.1	Overarching Research Paradigm: Pragmatism	43
1.4.2	Methodology: Aim 1	44
1.4.2.1	Research Approach and Design	44

1.4.2.2	Literature Search and Screening	45
1.4.2.3	Data Extraction Methods and Procedures	46
1.4.2.4	Methodological Quality Assessment	47
1.4.2.5	Data Analysis	47
1.4.3	Methodology: Aims 2 and 3	49
1.4.3.1	Research Approach and Design	49
1.4.3.2	Study Populations, Sampling and Recruitment	50
1.4.3.2.1	Recruitment for the Quantitative Strand	52
1.4.3.2.2	Recruitment for the Qualitative Strand	52
1.4.3.3	Data Collection Procedures and Methods	53
1.4.3.3.1	Parenting Stress Index	54
1.4.3.3.2	Self-efficacy in the Nurturing Role Questionnaire	54
1.4.3.3.3	Support Interview Guide	55
1.4.3.3.4	Social Validity Scale	55
1.4.3.3.5	Qualitative Interviews	55
1.4.3.4	Data Analysis	56
1.4.3.4.1	Quantitative Data Analysis	56
1.4.3.4.2	Qualitative Data Analysis	56
1.4.4	Methodology: Aim 4	58
1.4.4.1	Research Approach and Design	58
1.4.4.2	Study Population, Sampling and Recruitment	60

1.4.4.2.1	Profiles of Participating Dyads	62
1.4.4.3	Data Collection Methods and Procedures	64
1.4.4.3.1	ABC Intervention	65
1.4.4.3.2	Screening Instrument: Vineland Adaptive Behaviour Scales	65
1.4.4.3.3	Caregiver Sensitivity: Ainsworth Maternal Sensitivity Scale	66
1.4.4.3.4	Attachment Security: Attachment Q-Sort	66
1.4.4.3.5	Child Affect Regulation: Salivary Cortisol	67
1.4.4.3.6	Social Validation: Social Validity Scale and Qualitative Interviews	68
1.4.4.3.7	Additional Procedures: Clinical Interviews and Demographic Information	69
1.4.4.4	Data Analysis	70
1.4.4.4.1	Visual Analysis/Inspection	70
1.4.4.4.2	Overlap	70
1.4.4.4.3	Statistical Analyses	71
1.4.4.4.4	Thematic Analysis	72
1.4.5	Methodology: Aim 5	72
1.4.5.1	Research Approach and Design	72
1.4.5.2	Study Populations, Sampling and Recruitment	73
1.4.5.3	Data Collection Methods and Procedures	74
1.4.5.3.1	Qualitative Interviews	74
1.4.5.3.2	Written Feedback and Commentary	74
1.4.5.4	Data Analysis	75

1.5	Validity, Reliability and Trustworthiness	75
1.6	Ethical Considerations	76
1.6.1	Ethics Approval	76
1.6.2	Ethical Risks	76
1.6.3	Modulation of Risks	77
1.6.4	Benefits of the Study	79
1.6.5	Risk-Benefit Ratio	80
1.7	Outline of the Thesis	81
1.8	References	83
SECTION II: MANUSCRIPTS		140
2.1	Article 1	140
2.1.1	Author Submission Guidelines: <i>Attachment & Human Development</i>	141
2.1.1.1	About the Journal	141
2.1.1.2	Open Access	141
2.1.1.3	Peer Review and Ethics	142
2.1.1.4	Preparing your Manuscript	142
2.1.1.4.1	Article Types	142
2.1.1.4.2	Style Guidelines	143
2.1.1.4.3	Formatting and Templates	143
2.1.1.4.4	References	143

2.1.1.4.5	Taylor & Francis Editing Services	143
2.1.1.4.6	Checklist: What to Include	143
2.1.1.5	Using Third-Party Material	145
2.1.1.6	Submitting Your Paper	145
2.1.1.7	Data Sharing Policy	145
2.1.1.8	Publication Charges	146
2.1.1.9	Copyright Options	146
2.1.1.10	My Authored Works	146
2.1.2	Article 1 Manuscript	147
2.2	Article 2	218
2.2.1	Author Submission Guidelines: <i>Intellectual and Developmental Disabilities</i>	219
2.2.1.1	General Information	219
2.2.1.2	Materials Needed for Initial Manuscript Submission	220
2.2.1.3	Acknowledgements	221
2.2.1.4	Style	222
2.2.1.5	Manuscript Resubmissions	223
2.2.1.6	Abbreviations and Terminology	224
2.2.1.7	Numerical and Illustrative Presentations	224
2.2.1.8	Footnotes	224
2.2.1.9	Ethical Standards	225
2.2.1.10	Accepted Manuscripts	225

2.2.1.11	Data-Sharing	225
2.2.1.12	Copyright Assignment	225
2.2.1.13	Copyright Clearance Center	226
2.2.1.14	Reprints	226
2.2.1.15	Editor	226
2.2.1.15.1	Assistant Editor	226
2.2.1.15.2	Associate Editors	226
2.2.1.15.3	Statistical Consultant	226
2.2.1.15.4	Editorial Office Address	227
2.2.2	Article 2 Manuscript	228
2.3	Article 3	263
2.3.1	Author Submission Guidelines: <i>Journal of Intellectual Disabilities</i>	264
2.3.1.1	What do we Publish?	264
2.3.1.1.1	Aims & Scope	264
2.3.1.1.2	Article Types	264
2.3.1.1.3	Writing your Paper	264
2.3.1.2	Editorial Policies	264
2.3.1.2.1	Peer Review Policy	264
2.3.1.2.2	Authorship	264
2.3.1.2.3	Acknowledgements	265
2.3.1.2.4	Funding	265

2.3.1.2.5	Declaration of Competing Interests	265
2.3.1.2.6	Research Ethics and Patient Consent	266
2.3.1.2.7	Data	266
2.3.1.3	Publication Policies	267
2.3.1.3.1	Publication Ethics	267
2.3.1.3.2	Contributor's Publishing Agreement	267
2.3.1.3.3	Open Access and Author Archiving	268
2.3.1.4	Preparing your Manuscript for Submission	268
2.3.1.4.1	Formatting	268
2.3.1.4.2	Artwork, Figures and Other Graphics	268
2.3.1.4.3	Supplementary Material	268
2.3.1.4.4	Reference Style and Language Conventions	268
2.3.1.4.5	English Language & Editing Services	269
2.3.1.5	Submitting Your Manuscript	269
2.3.1.5.1	ORCID	269
2.3.1.5.2	Information Required for Completing your Submission	270
2.3.1.5.3	Permissions	270
2.3.1.6	On Acceptance and Publication	270
2.3.1.6.1	Sage Production	270
2.3.1.6.2	Online First Publication	270
2.3.1.6.3	Access to your Published Article	270

2.3.1.6.4	Promoting your Article	271
2.3.1.7	Further Information	271
2.3.2	Article 3 Manuscript	272
2.4	Article 4	319
2.4.1	Author Submission Guidelines: <i>Infant Mental Health Journal</i>	320
2.4.1.1	Aims and Scope	320
2.4.1.2	Article Types	321
2.4.1.3	Submission and Peer Review Process	321
2.4.1.3.1	Free-format Submission	322
2.4.1.3.2	Title Page	323
2.4.1.3.3	Abstract	323
2.4.1.3.4	Main Text File	323
2.4.1.3.5	Reference Style	325
2.4.1.3.6	Figures and Supporting Information	325
2.4.1.3.7	Data Sharing and Availability	325
2.4.1.3.8	Data Citation	325
2.4.1.3.9	Funding	326
2.4.1.3.10	Conflict of Interest Statement	326
2.4.1.3.11	Reproduction of Copyright Material	326
2.4.1.3.12	Authorship/Co-authorship Details	326
2.4.1.3.13	ORCID	326

2.4.1.3.14	Preprint Policy	326
2.4.1.4	After Acceptance	327
2.4.1.4.1	Accepted Articles	327
2.4.1.4.2	First Look	327
2.4.1.4.3	Proofs	327
2.4.1.4.4	Wiley Author Services	327
2.4.1.4.5	Author Licensing	327
2.4.1.4.6	Author Name Change Policy	328
2.4.1.5	Referral of Declined Manuscripts via the Developmental Science Network.....	328
2.4.1.5.1	Developmental Science Publishing Network	328
2.4.2	Article 4 Manuscript	329

SECTION III: CRITICAL REFLECTIONS, LIMITATIONS AND RECOMMENDATIONS..390

3.1	Introduction	390
3.2	Reflections on the Practice Elements of Attachment-based Interventions	390
3.3	Reflections on the Challenges, Perceptions of Current Care, Support and Needs of Primary Caregivers of Children with ID in South Africa	392
3.4	Reflections on the Effects of the Attachment and Biobehavioral Catch-up Intervention for Children with ID and Developmental Delays in South Africa	394
3.5	Reflections on the Adaptations to the Attachment and Biobehavioral Catch-up Intervention for Children with ID in South Africa	396
3.6	Personal Reflections of the Researcher on the Execution of the Research	399
3.7	Strengths of the Research	401

3.8	Limitations of the Research and Recommendations for Future Research	402
3.8.1	Article 1	403
3.8.2	Article 2	403
3.8.3	Article 3	404
3.8.4	Article 4	405
3.9	Implications for Clinical Practice	405
3.10	Conclusion	407
3.11	References	409
COMBINED REFERENCE LIST		415
ADDENDA		487
Addendum A: Research Proposal Committee Approval		488
Addendum B: Health Research Ethics Committee Approval		489
Addendum C: Information Letter for Caregivers (Aims 2 & 5)		491
Addendum D: Information Letter for Experts (Aims 3 & 5)		495
Addendum E: Information Letter for Caregivers (Aim 4)		499
Addendum F: Consent Form for Caregivers (Aims 2 & 4) and Experts (Aims 3 & 4)		504
Addendum G: Parental Permission for Child Participation (Aim 4)		507
Addendum H: Confidentiality Agreement for Research Assistants, Coders and Intervenors		511
Addendum I: Goodwill Agreement with Counselling Psychologist for Debriefing		513

Addendum J: Interview Schedules (Aims 2 & 3)	514
Addendum K: Interview Schedules (Aim 4)	515
Addendum L: Interview Schedules (Aim 5)	518
Addendum M: <i>TurnItIn</i> Report Summaries	520
Addendum N: Solemn Declaration and Permission to Submit.....	521

LIST OF TABLES

Section I

Table 1:	Aim 1: Inclusion and Exclusion Criteria.....	46
Table 2:	Aims 2 and 3: Inclusion and Exclusion Criteria.....	51
Table 3:	Aim 4: Inclusion and Exclusion Criteria.....	60
Table 4:	Article Manuscript Titles and Journals.....	81

Section II

Article 1

Table 1:	Criteria for Inclusion of Studies.....	196
Table S1:	Practice Elements and Definitions.....	203
Table S2:	Overview of Included Studies and Interventions.....	207

Article 2

Table 1:	Profile of PSI, SENR and SIG Results.....	258
Table S1:	Social Validity Scale: Adapted Item Content.....	260
Table S2:	Preliminary Interview Schedule: Caregivers.....	262
Table S3:	Preliminary Interview Schedule: Experts.....	262

Article 3

Table 1:	Nonoverlap of All Pairs (NAP) Across Study Phases for Maternal Sensitivity, Attachment Security and Cortisol Indicators.....	288
Table 2:	Results of Randomisation Testing for Maternal Sensitivity, Attachment Security and Cortisol Indicators.....	289
Table S1:	Indicators of Treatment Fidelity for All Cases.....	317
Table S2:	Mean Level and Level Change for Maternal Sensitivity, Attachment Security and Cortisol Indicators.....	317
Table S3:	Exploratory Theil-Sen Trend Estimations for Sensitivity, Security and Cortisol Indicators.....	318

Article 4

Table 1:	Profile of Participants.....	336
Table 2:	Overview of Themes and Subthemes.....	341

LIST OF FIGURES

Section I

Figure 1:	Attachment and Biobehavioral Catchup—Model of Change.....	35
Figure 2:	ABC-I Session Outline.....	36
Figure 3:	Overview of Research Design, Methods and Outputs.....	44
Figure 4:	Overview of Mixed-methods Research Design (Aims 2 and 3).....	50
Figure 5:	Six-step Thematic Analysis Process.....	57
Figure 6:	Overview of Data Collection Procedures: Aim 4.....	64

Section II

Article 1

Figure 1:	PRISMA Flow Diagram of the Literature Search and Screening Process.....	197
Figure 2:	Dendrogram.....	198
Figure 3:	Practice Element Profile: ≤ 6 months.....	199
Figure 4:	Practice Element Profile: 7-35 months + 3-11 years.....	200
Figure 5:	Practice Element Profile: 12-18 years.....	201
Figure S1:	Overall Methodological Quality Assessment Ratings ($n = 60$).....	213
Figure S2:	Methodological Quality Assessments: Domain-level Ratings per Study.....	214
Figure S3:	Overall Practice Element Profile ($n = 60$).....	217

Article 2

Figure 1: Outline of Themes and Subthemes.....	259
Figure S1: Social Validity Scale: Item-level Responses.....	261

Article 3

Figure 1: Weekly Measures of Maternal Sensitivity Across Phases Indicating Level and Trend Estimates.....	312
Figure 2: Weekly Measures of Attachment Security Across Phases Indicating Level and Trend Estimates.....	313
Figure 3: Weekly Measures of the Overall Magnitude of Cortisol Production Over the Day Across Phases Indicating Level and Trend Estimates.....	314
Figure 4: Weekly Measures of the Change in Cortisol Production Over the Day Across Phases Indicating Level and Trend Estimates.....	315
Figure S1: Morning, Afternoon and Evening Raw Score Cortisol Concentrations for Baseline and Intervention.....	316

Article 4

Figure 1: Practice and Training Recommendations.....	389

SECTION I: LITERATURE REVIEW AND CONTEXTUALISATION OF THE PROBLEM

1.1 Introduction

This section presents a review of pertinent literature related to the central foci of the present study—intellectual disability (ID) and attachment. First, literature pertaining to the definition and epidemiology of ID, as well as its mental health implications, will be reviewed. Thereafter, an overview of attachment will be provided by outlining attachment theory as well as reviewing the empirical literature in the field related to attachment patterns, the role of maternal sensitivity as well as the developmental significance of attachment. The cross-cultural applicability of attachment will also be briefly considered, specifically in relation to the African context. Following this, the intersection of attachment and ID will be elucidated by reviewing the literature on attachment patterns in children with ID as well as the factors that contribute towards attachment in this cohort. Given the role of parenting in attachment, the literature on parenting a child with ID, internationally and in South Africa will also be considered. Attachment-based interventions will then be discussed, in general, but also specifically for children with ID, before turning to a particular focus on the Attachment and Biobehavioral Catch-up intervention which will be outlined along with a review of the research investigating its effectiveness. Following the literature review, the aims of the current study will be outlined before providing a detailed overview of the research designs and methodologies used.

1.2 Literature Review

1.2.1 Defining Intellectual Disabilities

Intellectual Disability (ID) is defined by both the American Psychiatric Association (APA) as well as the American Association on Intellectual and Developmental Disabilities (AAIDD) as a neurodevelopmental disorder characterised by impairments in intellectual functioning as well as adaptive behaviour with an onset during the developmental period, or prior to age 22 (APA, 2022; Schalock et al., 2021). Intellectual functioning refers to a range of mental functions and cognitive capacities such as reasoning, problem-solving, planning, abstract thinking, memory and comprehension and is most commonly operationalised as ‘intelligence’ in the form of an intelligence quotient (IQ). Those with ID present with subaverage intellectual functioning usually represented by an IQ score approximately two standard deviations below the mean of 100 (i.e. <70). However, the historical emphasis on IQ and the assessment thereof has been critiqued. In response to these critiques, adaptive functioning has moved increasingly to the fore of clinical and research decision-making in relation to ID (Mattie et al., 2023). Indeed, Tassé et al. (2016) emphasise that adaptive functioning is equally as

relevant, diagnostically, as intellectual functioning, dubbing its historical status as secondary to intellectual functioning an ‘error in thinking’.

Adaptive functioning, the second defining diagnostic feature of ID, refers to a collection of age-appropriate skills within three domains, namely *conceptual* (e.g., reading and writing), *social* (e.g., interpersonal skills and gullibility), and *practical* (e.g., personal hygiene and use of transport) that are learned over time to facilitate effective and independent functioning in daily life (Schalock et al., 2021; Tassé & Kim, 2023). People with ID may be classified according to the Diagnostic and Statistical Manual of Mental Disorders (DSM) as either having a mild, moderate, severe or profound form of ID. Historically, up until 2013, this level of severity was determined exclusively by an IQ range (APA, 2000). However, increasing recognition of the arbitrariness of this practice has seen a change in diagnostic practice with the publication of the DSM-5 in 2013 which foregrounded adaptive functioning—as opposed to IQ level—in determining the severity of ID (APA, 2013). As such, current clinical practice is informed by the application of specifiers outlined in the DSM-5-TR (APA, 2022), and guidelines provided in the 11th revision of the International Classification of Diseases (World Health Organisation [WHO], 2022), that designate the severity of ID based on the degree of impairment in adaptive functioning in addition to intellectual impairment (APA, 2022; WHO, 2022).

1.2.2 Epidemiology of Intellectual Disabilities

Estimates from the WHO and the World Bank suggest that approximately 200 million people live with ID, globally, making it the world’s most prevalent form of disability (Capri et al., 2018; WHO & World Bank, 2011). Although Asia accounts for the largest proportion of ID, globally, this is followed by Africa that is reported to account for between 2 279 and 3 853 cases per 100 000 in the population, which exceeds rates in North America and Western Europe (Olusanya et al., 2020). Prevalence rates of ID, globally and in South Africa, are estimated to range between 0.27% and 3.6% for children and adults (Christianson et al., 2002; Kleintjies et al., 2006; Kromberg et al., 1997; Kromberg et al., 2008; Maulik et al., 2011). However, it has been suggested that poor access to neurodevelopmental screenings and disability-related services, particularly in rural as well as peri-urban township areas (Knox et al., 2018) results in the underdiagnosis and underreporting of intellectual and developmental disabilities in South Africa leading to underestimations of the true local prevalence (Adnams, 2010). This is especially pertinent given that risk factors associated with ID are prominent in South Africa (Fieggen et al., 2019) including malnutrition (Mkhize & Sibanda, 2020; Sambu, 2019), HIV infection and exposure (Knox et al., 2018; le Roux et al., 2018; Wedderburn et al., 2019; Wilmshurst et al., 2006) as well as foetal alcohol exposure (Olivier et al., 2016). Much of the existing epidemiological data on the prevalence of ID in South Africa is also notably outdated. Nonetheless, the existing prevalence estimates are supported by evidence from the 2022 South African Census which reported that 2% of the South African population aged five years and older have so-called ‘communication and self-care disabilities’ (Statistics South

Africa, 2023). However, the classification of ‘communication and self-care disabilities’ has not been adequately defined and, thus, its degree of alignment with the more established APA and AAIDD definition of ID is not clear. Hence, outdated epidemiological data and definitional inconsistencies between sources preclude definitive determinations on the rates of ID in South Africa.

Despite suggestions of potentially elevated rates of ID in South Africa and other parts of the developing world, ID has often been exiled to the periphery of the mental health sector (Scior et al, 2015). Mental health services, including those dedicated to the assessment and treatment of people with ID, in these settings are limited (Sorsdahl et al., 2023), and the training of health professionals in the unique needs of people with ID is oftentimes inadequate (McKenzie et al., 2013; Mkabile et al., 2021). Limited available specialised services for children with disabilities is endemic in low- and middle- income countries and remains a significant challenge (Magnusson et al, 2019; Mkabile et al., 2021; Morris et al., 2021). Two examples in South Africa are the Intellectual Disability Services Unit housed within the Lentegeur Psychiatric Hospital complex in Cape Town, and Witrand Psychiatric Hospital in Potchefstroom who offer mental health services to children and/or adolescents, as well as adults, with ID. Similar specialised state-subsidised services for children with ID in other provinces of South Africa are less well known. As a result, since most of the South African population is reliant on these state-subsidised services, their already limited availability remains consistently overwhelmed because the demand far outweighs its supply (Adnams, 2010; Department of Social Development, 2009). It is therefore not uncommon for South Africans with ID, and their families, to experience extended waiting periods before being accommodated in specialised health and mental health services, special needs schooling systems, protected work placements or supervised residential care (Docrat et al., 2019; Janse van Rensburg et al., 2018). As such, there is a need for accessible, economically viable, effective, efficient and sustainable interventions targeted at the mental health and wellbeing of children with ID so as to not further burden already stretched public resources (Tomlinson et al, 2014). In response to the status quo, Stein et al. (2018, p. 147) call for leadership in South Africa in the field of ID that “will introduce innovative services, conduct relevant research, provide policy guidance to government and advocate for the rights of some of the most neglected and vulnerable members of our society.” The present research responds to this call.

1.2.3 Intellectual Disabilities and Mental Health

The extent of mental ill-health in adults and children with intellectual and developmental disabilities is not fully known with early prevalence rates ranging drastically (Cooper et al., 2007). Overall, however, there appears to be a trend towards an increased risk for psychopathologies in people with ID compared to the general population. Kaptein et al. (2008) found elevated rates of emotional problems, conduct problems and attention-deficit/hyperactivity in children with ID compared to those without ID. Similarly, Platt et al. (2019) found that 65% of adolescents with ID met the lifetime criteria for a

psychological disorder, which is significantly higher than those without ID. The findings of these, and other, individual studies have been confirmed in a series of systematic and meta-analytic reviews. For example, Einfeld et al (2011) found rates of psychological disorders in children and adolescents with ID ranging between 30% and 50%, compared with 8% to 18% in those without ID. They concluded that children with ID are 2.8 to 4.5 times more likely than those without ID to develop psychopathologies. More recent reviews and meta-analyses have made analogous findings (e.g., Buckley et al., 2020; Mazza et al., 2020; Totsika et al., 2022). In South Africa, specifically, the few studies reporting on psychopathology in people with ID are dated and report contradictory findings. For example, Molteno et al. (2001) found a 31% prevalence rate of psychopathology in South African children with ID while Slone et al. (1999) observed remarkably low dual diagnosis rates (4%). As such, it is not possible to draw firm conclusions on the true prevalence of psychopathology in children with ID in South Africa, which requires further investigation. Globally, however, there is a trend of significantly elevated risk for comorbid psychopathology in people with ID. Disturbances in attachment have been proposed as one possible reason for this (Janssen et al., 2002; Schuengel & Janssen, 2006). The discussion that follows, therefore, turns to attachment, in general, before addressing attachment in the context of children with ID, in particular.

1.2.4 Attachment: An Overview

1.2.4.1 Attachment Theory

Attachment theory emerged in the aftermath of World War II out of John Bowlby's concern with young children's separation from their parents through hospitalisation or institutionalisation (Bretherton, 1992). Bowlby contended early on that the development of optimal mental health is rooted in relational experiences with a parent—or similar permanent caregiver—that are characterised by warmth, intimacy and continuity, and that are mutually satisfying and enjoyable (Bowlby, 1952). According to attachment theory, infants develop an enduring affectional tie with a specific caregiver which persists for most of the child's lifespan (Ainsworth, 1977). Bowlby sought to explain why young children exhibited protesting behaviours when separated from their mothers and why such protest persisted even when the child's needs were being met by other caregivers. In Bowlby's view, the bond the child experiences is specific to a particular individual and that such a bond continues even in the physical absence of this individual despite others' caregiving interventions. Ainsworth (1977, p. 52) noted a range of so-called "patterns of attachment behaviours" that children may display that could signify their attachment to a caregiver. These behaviours extended beyond distress (e.g., crying) upon separation and included active contact-seeking behaviours (e.g., approaching, following, clinging) as well as signalling behaviours (e.g., smiling, laughing, calling out) (Ainsworth & Bell, 1970). If these behaviours, in Ainsworth's (1977) contention, are persistently directed towards a particular person over an extended period—as

opposed to other people in the environment—the child can be said to have become attached to that person.

For Bowlby (1969), attachment is an evolutionary adaptation that is biologically encoded in human infants as the basis for building an attachment behavioural system. Hence, one primary function of the attachment behavioural system is protection, brought about through establishing and maintaining proximity to the primary caregiver who serves as a ‘safe haven’ in times of distress or danger. In turn, the complementary caregiving system is primed to respond to the infant’s signals for proximity-seeking to meet their attachment needs and, again, ensure protection and survival. The attachment behavioural system may be activated both by environmental circumstances (e.g., unresponsive/absent caregiver) or by conditions internal to the child (e.g., illness/injury). While the child is believed to have a biologically-driven propensity to engage in behaviours that seek and maintain proximity to a caregiver, it is also noted that learning plays a role in the development of attachment (Ainsworth et al., 1991). This is reflected in the gradual focus of attachment behaviours on a particular caregiver, indicating the infant’s capacity to discriminate, over time, their primary caregiver from others in the environment, during the second half of the first year of life.

Bowlby and Ainsworth conceptualised attachment as developing across a series of phases occurring over the infant’s first three to four years of life (Ainsworth et al., 1978; Bowlby, 1969). This starts off as the infant using signalling behaviours (e.g., crying) to promote proximity and contact by drawing others closer to them, although this is not initially directed at a specific caregiver. Gradually, the infant progresses to orienting and directing their signalling towards a differentiated figure marking their ability to discriminate familiar from unfamiliar figures, while also using more active behaviours such as reaching out to a preferred caregiver. This evolves further into the infant’s use of active initiative by seeking proximity through locomotion (i.e., crawling, walking) and, hence, can do so at will. This capacity for locomotion also allows for the infant’s more advanced exploration of their surroundings, made possible when the attachment figure provides a ‘secure base’ from which the infant can venture outwards. As such, the attachment figure is perceived by the child to exist even when out of sight and, therefore, as persisting in space and time. This makes it possible for the infant to move safely away from the caregiver, secure in the belief that their attachment figure remains constant. Optimal caregiving, therefore, involves the caregiver as both a source of comfort and safety in response to proximity-seeking in times of stress (safe haven), as well as an anchor in times of no stress, allowing for exploration, safe in the knowledge of the caregiver’s ongoing availability, when needed (secure base).

Notably, Bowlby (1969) proposed that at this stage an infant is capable of organising and adjusting their attachment behaviours according to their expectations of how the attachment figure is likely to respond. Repeated experiences of their attachment figure’s behavioural responses in real-time lays the

foundations for an internal working model (IWM) of attachment that refers to mental representations of the attachment figure, of the self, and of the environment (Bowlby, 1969). These IWMs reflect the child's confidence in their attachment figure's accessibility and responsiveness to their attachment needs (Bowlby, 1973). Infants who have experienced their attachment figure as generally accessible and responsive develop representational models of the caregiver as available, affording them a sense of security that allows for a fuller engagement of the exploratory behavioural system and sustaining their relationship even during longer separations. Additionally, the child develops an IWM of the self as worthy, valued and self-reliant (Bretherton, 1992). If the child has experienced the caregiver as minimally or inconsistently accessible and responsive, their confidence in the caregiver's availability is diminished resulting in an under-activation of the exploratory behavioural system. The child, therefore, prefers to remain close to the caregiver and is less tolerant of separations. Furthermore, the child develops an IWM of self as unworthy, undervalued or incompetent (Bretherton, 1992).

1.2.4.2 Individual Differences in Attachment

While Bowlby (1969) addressed common behavioural trends, Mary Ainsworth is credited with identifying and explicating individual differences in the balance between attachment behaviours and exploratory behaviours which become evident in the last quarter of the infant's first year (Ainsworth et al., 1991). This was made possible through the development and application of the Strange Situation Procedure (SSP) which allowed observations of infant and parent behaviour under conditions of mild stress (Ainsworth & Wittig, 1969). Doing so permitted an assessment of the extent to which the child was able to use their caregiver as a secure base for exploration, while also observing the degree to which attachment behaviours may be prioritised over exploratory behaviours in times of stress represented by the presence of a strange person as well as during separations from, and reunions with, the caregiver interspersed over a series of eight three-minute episodes (Ainsworth & Bell, 1970).

Ainsworth et al. (1971) found that, most commonly, infants followed a normative pattern in line with the theoretical propositions of attachment theory. This group of infants was described as engaging in a balance between attachment (proximity-seeking) behaviours and exploration. They showed protesting behaviours when the caregiver left the room, they actively approached and sought comfort from the caregiver upon reunion, were easily soothed, and were able to use their caregiver as a secure base to re-engage their exploration of the playroom. This group of infants is what Ainsworth et al. (1978) later referred as representing 'secure attachment' (Type B). However, a noteworthy proportion of the infants showed behaviours indicative of a disturbance in the attachment-exploration balance, departing from the normative pattern. Two main subgroups were evident within this group. The first included infants showing ambivalent attachment behaviours and heightened separation anxiety which limited their exploration. This subgroup of infants was generally distressed even prior to separation but also upon reunion, showing difficulty with being soothed by the caregiver. While they approached the caregiver,

they also displayed passivity or anger upon reunion and demonstrated a limited likelihood of exploring the playroom even when the caregiver was present. Ainsworth et al. (1978) coined this ‘insecure-ambivalent’ or ‘insecure-resistant attachment’ (Type C). Finally, the second subgroup was characterised by infants who engaged in proximity-avoiding behaviours that counteracted the activation of attachment behaviour and resulted in an unusual activation of exploratory behaviour—in the presence or absence of the caregiver, even after reunion—which manifested as inappropriate independence. This was later termed ‘insecure-avoidant attachment’ (Type A) (Ainsworth et al., 1978). For Ainsworth, although insecure, Types A and C nonetheless showed clear behavioural patterns which indicated that the children had become attached to their caregivers. It was, however, the quality of the relationship between, and interactions with, the primary caregiver that differed between the groups, and this had an impact on both attachment behaviours and exploration (Ainsworth et al., 1991).

Ainsworth et al.’s (1978) original three-way (ABC) classification was later augmented by Mary Main who identified some infants who could not easily be classified according to the original system. Their behaviours during the SSP exhibited conflict or extreme stress particularly upon reunion episodes, which ultimately resulted in the identification of a fourth attachment classification—disorganised attachment (Type D) (Main & Solomon, 1986, 1990). Behaviours coded as disorganised were suggestive of a conflict for the child between seeking proximity to the caregiver and simultaneously wanting to flee from them, and included, amongst others, overt fear of the caregiver, simultaneously- or sequentially-occurring contradictory behaviours, freezing, and dissociation (Duschinsky, 2015). These behaviours, however, only occurred briefly before the child reverted to behaviours characteristic of one of the three original attachment classifications, reflecting temporary ‘breakdowns’, or disorganisation, of attachment strategies. Hence, Types A, B and C are regarded as organised strategies because they represent clear and consistent patterns of proximity-seeking while Type D is disorganised due to the significant fragmentation of the attachment behavioural system.

Each of the patterns of attachment outlined here have been conceptualised as strategies which are conditional upon parenting behaviours given that the child adapts their attachment behaviour in ways that are most likely to optimise proximity to their particular caregiver. As such, in contrast to the direct proximity-seeking in response to threat that children with a secure classification may display, those with an ambivalent/resistant classification have come to learn that the most effective way of establishing and maintaining proximity to an unreliably responsive caregiver is to maximise distress and show anger. On the other hand, those with an avoidant classification have adapted to their caregiving environment through downplaying attachment behaviours because this has, in their experience, facilitated proximity to a caregiver who is rebuffing or rejecting. Lastly, parenting behaviours that are characterised as frightened or frightening, withdrawing, helpless, intrusive, or dissociative are predominantly implicated in the development of disorganised attachment because the caregiver is experienced by the infant as the

source of safety and danger, simultaneously (Duschinsky, 2015). The quality of parental care, focusing specifically on caregiver sensitivity, as a precursor to attachment security is discussed further below.

1.2.4.3 The Role of Maternal Sensitivity in Attachment Security

Although Bowlby (1973) purported that the caregiver's accessibility to the infant was critical in the development of IWMs, it was Ainsworth et al. (1971) who hypothesised that caregiving which was prompt, accurate and appropriate in response to the full range of infant signals was a significant precursor to attachment security. This was termed 'maternal sensitivity'. For Ainsworth, a caregiver who is sensitive understands their infant's attributes, accepts their behavioural idiosyncrasies, and—based on this—attenuates their caregiving behaviour to promote harmonious infant-caregiver interactions (Fearon & Belsky, 2016). Repeated instances of sensitive caregiving interactions are thought to facilitate for infants an organising system that results in the development of a secure base and, hence, attachment security (Ainsworth et al., 1971; Pederson & Moran, 1995). In Ainsworth's conceptualisation, maternal sensitivity is a universal construct that is not characterised by a preset list of parenting behaviours but is, instead, context- and infant-specific and arises from the caregiver's psychological awareness of their infant (Mesman & Emmen, 2013). As such, rather than defining specific behavioural manifestations, Ainsworth outlined a framework of maternal sensitivity comprising four components that could be applied to a diversity of caregiving behaviours: i) awareness of infant signals; ii) accurate interpretation of infant signals; iii) appropriate responsiveness to infant signals; and iv) prompt responsiveness to infant signals (Ainsworth et al., 1971). These components are reflected in Ainsworth's (1969) seminal Maternal Sensitivity Scale and have informed subsequent measures of sensitivity such as the Maternal Behaviour Q-Sort (Pederson & Moran, 1995) and Emotional Availability Scales (Biringen et al., 2000a; 2000b), amongst others (see Mesman & Emmen, 2013).

Ainsworth found that infants with mothers high in sensitivity displayed normative behaviours (i.e., behaviours consistent with secure attachment), while those with mothers low in sensitivity displayed behaviours reflecting imbalances in attachment and exploration, or insecure attachment (Ainsworth et al., 1991). For Ainsworth et al. (1971), when a caregiver is sensitively responsive to an infant's cues, the infant can use the caregiver as a secure base for exploration as well as a safe haven to return to in times of distress, which are the hallmarks of attachment security. This relationship between sensitivity and attachment security has been demonstrated across studies (e.g., Aviezer et al., 1999; Bailey et al., 2007; Behrens et al., 2011; Meins et al., 2001; Pederson et al., 1990; Pederson et al., 1998; Pederson et al., 2014; Van den Boom, 1994) and confirmed in a series of meta-analyses and systematic reviews (Atkinson et al., 2000; De Wolff & Van IJzendoorn, 1997; Goldsmith & Alansky, 1987; Madigan et al., 2024; Montealegre-Ramón et al., 2024; Van IJzendoorn & De Wolff, 1997). Further confirming this link, the causal nature of this relationship has also been elucidated through experimental evidence

demonstrating that interventions aimed at enhancing maternal sensitivity also result in concomitant improvements in attachment security (Bakermans-Kranenburg et al., 2003). Sensitivity has, therefore, consistently been found to be a significant determinant of attachment security, alongside other developmentally significant skills such as language acquisition, social competence and emotion regulation (Deans, 2020; Forrer et al., 2024). By extension, maternal insensitive and disrupted caregiving, respectively, are associated with insecure and disorganised attachment (Van IJzendoorn et al., 1999), as well as child behavioural problems (Cooke et al., 2022; Licata-Dandel et al., 2021) and depressive symptoms (Easterbrooks et al., 2012). Sensitivity is, therefore, of developmental significance.

Research has pointed towards the importance of the social context (e.g., socioeconomic status) and its impact on parenting behaviours, including maternal sensitivity (Booth et al., 2018). For instance, socioeconomic stress has been associated with decreases in maternal sensitivity, especially when personal-familial stress is high (Neuhauser, 2018). Contextual stressors such as poverty have also been linked to a range of behaviours inconsistent with sensitivity, including decreases in warmth and increases in harshness (Pinderhughes et al., 2001), as well as maternal hypervigilance, control, intrusiveness and dismissiveness in parent-child interactions (Dawson, 2022). Caregivers in such contexts may, therefore, be at greater risk for displaying insensitive caregiving behaviour. The role of stress in maternal sensitivity is also consistent with evidence demonstrating that caregivers' psychological distress negatively impacts sensitivity. Maternal depression, for example, has consistently been associated with lower sensitivity (Bernard et al., 2018; Campbell et al., 2007) as well as other negative parenting behaviours inconsistent with sensitivity such as coercion, hostility and irritability (Lovejoy et al., 2000). Furthermore, as a component of the social context, social support is also associated with maternal sensitivity. In this respect, research has highlighted that support from others predicts maternal sensitivity in the postpartum period (H. Shin et al., 2006) and that limited social support is associated with lower maternal sensitivity (Neuhauser, 2018).

Hence, a range of factors related to the mental and social health of caregivers have been found to play a role in predicting sensitivity, which may have notable indirect implications for child attachment and, overall development. Gerlach et al. (2022) found that maternal sensitivity mediated the relationship between family risk (e.g., poverty, low income, marital discord) and child attachment, and served as a buffer against the adverse consequences of family risk. Therefore parent-, and parenting-related factors remain among the most widely investigated and are often the foci of interventions. More broadly, responsive caregiving has been recognised—at a policy level—as a crucial component of nurturing care such that it has been integrated into the Nurturing Care Framework for Early Childhood Development, developed by the WHO in the context of the Sustainable Development Goals (WHO et al., 2018).

Promoting sensitive and responsive caregiving is, therefore, noted as a key priority to ensure that children not only survive, but also thrive so as to achieve their full potential.

1.2.4.4 The Developmental Significance and Outcomes of Attachment

Research has consistently demonstrated the mental health and developmental benefits of attachment security as well as the negative implications of attachment insecurity and disorganisation (Mikulincer & Shaver, 2012). Social functioning has been particularly well-researched and has been found to be facilitated through attachment security. For example, significant associations have been found between secure attachment and children's peer relationships (Pallini et al., 2014; Schneider et al., 2001) as well as social competence with their peers (Groh et al., 2014). More recently, Deneault et al. (2023) found that child prosociality was positively linked to mother-child, as well as father-child, attachment security, and was negatively associated with attachment insecurity. In line with these findings, positive associations have also been found between secure attachment and empathy—an important component of social and relational functioning (Fink & de Rosnay, 2023)—in children and adolescence (Li et al., 2021; Xu et al., 2022).

Research has also examined the relationship between attachment and emotional development in children. Tabachnik et al. (2022) found that secure attachment relationships during infancy predicted context-dependent emotional expression at age 9. Also, compared to insecure attachment, those with secure attachments have greater emotional flexibility and recovery and, therefore, a superior capacity for adaptation to changing contextual demands (Tabachnik et al., 2022). Meta-analytic findings are in line with this, linking secure attachment with experiences of more global positive affect and less global negative affect, as well as with enhanced emotion regulation abilities, and emotional understanding, compared to children with insecure attachments (Cooke et al., 2016; Cooke et al., 2019). Inversely, positive associations have been found between insecure attachment and alexithymia, referring to deficiencies in the ability to process and describe one's own emotions (Zhang et al., 2024). Taken together, these findings support the contention that attachment security provides the context for the development of emotional competencies in children (Cooke et al., 2016).

Furthermore, numerous studies have demonstrated the link between insecure/disorganised attachment and suboptimal outcomes related to child development and mental health. In an early longitudinal study, Lyons-Ruth et al. (1997) found that disorganised attachment at 18 months predicted externalising problems in children at age 7. Later, Edwards et al. (2006) found higher rates of internalising and externalising behaviour in children of alcoholic fathers who had an insecure attachment to their mothers, compared to those who had a secure mother-child relationship. Similarly, Oosterman and Schuengel (2008) found that attachment security was negatively associated with externalising behaviour such that those with lower security scores on the Attachment Q-Sort (AQS) presented with higher levels of

externalisation and vice versa. A series of meta-analyses, combining results from a large body of literature on the topic, have confirmed this trend in findings. Their findings show, across studies, that children with insecure attachments show higher rates of externalisation compared to securely attached children with the largest effects size carried by disorganised attachment (Fearon et al., 2010; Madigan et al., 2016). Similar findings have been made in relation to internalising behaviours in children, showing that insecurely attached children are twice as likely than securely attached children to develop internalising behaviour problems (Groh et al., 2012; Madigan et al., 2013; Madigan et al., 2016).

However, these meta-analyses aggregate behavioural problems, differentiating only between internalising or externalising problems rather than specific types of problems within the broad categories. Other meta-analyses have, however, found similar associations between attachment and specific problems such as child anxiety (Colonesi et al., 2011), depression (Spruit et al., 2020), and conduct problems (Craig et al., 2024; Theule et al., 2016). Hence, research points to common trends in the associations between attachment and children's psychological and behavioural functioning whether this is considered broadly (e.g., internalisation and externalisation), or more specifically (e.g., depression, anxiety, or conduct).

In addition, attachment has been investigated in the context of children's cognitive functioning such as language development and executive functioning. Van IJzendoorn et al. (1995) found a small but significant effect of attachment on intelligence, and a substantial effect of attachment on language competence. Other meta-analytic studies have examined similar associations between attachment and executive functioning skills, linking secure attachment with better effortful self-control (Pallini et al., 2018), and fewer attentional problems (Pallini et al., 2019), compared to those with avoidant and resistant attachments, respectively. Similarly, those with organised attachments performed better than those with disorganised attachments (Pallini et al., 2018; Pallini et al., 2019). Overall, therefore, a significant body of evidence has emerged on the significance of attachment for the development as well as the mental health and wellbeing of children (Groh et al., 2017).

Although attachment theory recognises that the mother may not necessarily be the primary caregiver and, therefore, may not be the child's primary attachment figure, research in the field has historically focused heavily on mother-child attachment, paying only limited attention to father-child attachment, or alternative caregiving constellations. Fathers have, however, in recent decades become increasingly involved in the care of their children (Bakermans-Kranenburg et al., 2019). As such, there has been a gradual shift towards an increased focus on father-child relationships in attachment research. This is reflected in the recent establishment of the Special Interest Research Group on Father-Child Attachment and Relationships (SIRG-FCAR) affiliated to the Society for Emotion and Attachment Studies (SEAS), the publication, in 2020, of a special issue of the journal, *Attachment & Human Development*, on 'Fathers from an Attachment Perspective' (Ahnert & Schoppe-Sullivan, 2020), and the 2021 SEAS-

organised mini-conference on Father-Child Attachment. This renewed interest within attachment research on the role of fathers has yielded evidence that sensitive fathering is significantly associated with better cognitive skills, language skills, executive functioning abilities, and emotion regulation, as well as a reduced likelihood of externalising behaviours in children (Rodrigues et al., 2021). Furthermore, higher levels of paternal sensitivity are associated with more infant-father attachment security (Lucassen et al., 2011), paralleling what is known in relation to mother-child attachment (e.g., Madigan et al., 2024). Other key findings show that although security of attachment is, on average, lower with fathers than mothers, the size of this difference is negligible with only 0.1% to 2.5% of the variance in attachment security explained by parent gender (Pinquart, 2022, 2023). This dovetails with findings that mothers show higher levels of sensitivity than do fathers, but that this difference is too small to be meaningful in practical terms (Deneault et al., 2022). Indeed, Madigan et al. (2024) found that the nature of the association between sensitivity and mother-child attachment was not significantly different from that between sensitivity and father-child attachment. Maternal versus paternal parenting behaviours may, therefore, not be differentially influential on attachment and related development outcomes when considered separately. For instance, Deneault et al. (2021) found that attachment insecurity to mothers and fathers appears to contribute equally to the development of internalising and externalising problems in early childhood.

Additionally, there has been increasing interest in the role of early attachment networks and the possible combined influence of attachment to maternal and paternal figures on child development (Dagan & Sagi-Schwartz, 2021). This line of research has elucidated both the cumulative effects of multiple insecure or disorganised attachments (e.g., to both parents) in increasing risk for behavioural difficulties as well as the buffering effect of having at least one secure, or organised, attachment relationship (Dagan et al., 2021). More recently, Dagan et al. (2024) found that insecure attachment with both parents was associated with significantly lower language competence scores in children compared to those with either only one insecure, or two secure, attachments. Furthermore, children with organised attachments to both parents had higher language competence scores than those with only one, or no, organised attachment relationships (Dagan et al., 2024). Thus, the evidence suggests that the gender of the attachment figure may be less important than the quality of the relationship the child has with each caregiver and how these may combine to either increase, or buffer against, negative developmental outcomes. This approach marks an important progression in the field because understanding how multiple attachments either promote or undermine child development could influence intervention strategies to ensure that secure attachments are maximised not just in individual relationships, but within attachment networks. Nonetheless, it also serves to underscore the importance of children having at least one secure, or organised, attachment to buffer against adverse outcomes.

1.2.4.5 The Cross-cultural Applicability of Attachment Theory: A Focus on Africa

Although Mary Ainsworth's formulations of attachment originated in her study of Ugandan mother-infant dyads, attachment research has, since then, typically been conducted in North American and European contexts. This has raised questions regarding the cross-cultural applicability of attachment theory and research, and the relevance of claims about the universality of attachment and sensitive caregiving (Mesman et al., 2016). Critics have highlighted, across cultures, the wide range and variety of caregiving arrangements which depart from the exclusively infant-mother dyadic focus prominent in Western societies, particularly that related to so-called 'alloparenting' (Kenkel et al., 2017)—multiple caregivers among which the mother may not be the most significant figure, or whose role may shift and change over time (Keller, 2013, 2016, 2018). Keller has also questioned the universality of the underlying assumptions of attachment theory which position the child as an individual being, unique, and seeking autonomy and self-enhancement. She proposes that in societies that deviate from caregiving models centred on the exclusivity of the dyadic infant-mother relationship, focus is less on individuality and much more on ways of being that facilitate fitting into the social surroundings such as, for example, fulfilling one's roles and responsibilities to position oneself within the family hierarchy (Keller, 2016). Hence, social roles and responsibilities are foregrounded, or prioritised, over the individual child's intentions or wishes, making it less likely that caregivers will engage in so-called 'mind-minded' interactions, which are regarded as a component of sensitive caregiving (Keller, 2016).

These critical views of attachment theory offer an important counter-perspective and maintain, within scholarly discourse, the role and influence of culture and context on variations in the nature and organisation of caregiving arrangements and, hence, attachment. However, cross-cultural studies of attachment in non-Western settings remain in the minority, which is a reality fuelled by the time-, resource-, and cost-intensity, as well as training requirements, of using standardised measures such as the SSP or AQS, reducing their accessibility in lower-income, and remote, contexts (Mesman et al., 2016). Nonetheless, the cross-cultural studies of attachment that have been conducted across societies in the Global South have pointed towards the utility of attachment in these contexts. Such studies, conducted in East Asia, Latin America as well as Africa have shown evidence that supports four core hypotheses proposed by Van IJzendoorn and Sagi (1999): i) all children will establish an attachment with a parental or nonparental caregiver (the universality hypothesis); ii) attachment security is the normative pattern (the normativity hypothesis); iii) the caregiver's sensitive responsiveness to infant signals will result in secure attachment (the sensitivity hypothesis); and iv) the quality of attachment is associated with positive child outcomes in the case of secure attachment, and less favourable outcomes in the case of insecure attachment (the competence hypothesis) (Tomlinson et al., 2010).

The research in African contexts, in particular, involves both ethnographic studies as well as studies using standardised observations of attachment (i.e., SSP and AQS). Ethnographic studies conducted in

Botswana (Konner, 2005), Zambia (Morelli & Tronick, 1991), Tanzania (Marlowe, 2005), the Central African Republic (Fouts & Lamb, 2005), and Nigeria (Marvin et al., 1977) have all made congruous findings indicating that infants in these cultural contexts showed a distinct preference for their own mothers to whom they directed their attachment behaviours most regularly, even in the context of having multiple other caregivers. Furthermore, sensitive responsiveness was observed as an integral part of infant care in some studies (e.g., Konner, 2005). Although these studies did not measure attachment per se, they do demonstrate the presence of attachment behaviours towards specific caregivers even in cultures in which alloparenting is normative, indicating universality (Mesman et al., 2016). This is further evidenced by studies using standardised observations of attachment which have shown that the distribution of attachment classifications in settings such as Kenya (Kermorian & Leiderman, 1986), Mali (True et al., 2001), and Zambia (Mooya et al., 2016) are comparable to Western populations as measured using the SSP. In a similar vein, average AQS security scores among infants in Uganda (Peterson et al., 2001) have been found to be comparable to those reported by Van IJzendoorn et al. (2004). These studies offer support to the normativity hypothesis. Lastly, True et al.'s (2001) study in Mali found that the rate of attachment security in their study was related to sensitive caregiving and the lack of frightened/frightening parenting behaviours, which points towards the relevance of the sensitivity hypothesis.

Findings from South African studies on attachment have conformed to this trend. For example, Tomlinson and colleagues have found rates of secure attachment in South African samples comparable to, or higher than, the international norm (Cooper et al., 2009; Tomlinson, 2001; Tomlinson et al., 2005). Tomlinson et al. (2005) also found that maternal sensitivity predicted attachment security. Most recently, Spies et al. (2016) found that more children with HIV were securely attached compared to any of the other individual attachment categories and this did not differ significantly from the normative population. Lastly, using the AQS, Minde et al. (2006) reported that the majority of children in their study were 'insecurely attached', which is a departure from the norm. However, use of the AQS to categorise attachment patterns falls outside of its intended purpose, which calls into question these conclusions. Nonetheless, the successful application of the AQS in Minde et al.'s (2006) study and, hence, the identification of secure base behaviours is indicative of universality. Therefore, taken together, studies conducted across different African countries have offered consistent evidence that, in these settings outside of the dominant Euro-American culture, attachment behaviours are identifiable (the universality hypothesis), that secure attachment is most highly represented compared to other categories (the normativity hypothesis), and that sensitive responsiveness is linked to attachment security (the sensitivity hypothesis). Significantly fewer cross-cultural studies have examined how the quality of attachment is associated with either positive or negative child outcomes (the competence hypothesis), leading Mesman et al. (2016) to conclude that the support for this particular hypothesis remains insufficient. Overall, however, the evidence from African studies examined with evidence from

other non-Western settings, including East Asia (Mesman et al., 2016) and Latin America (Fourment et al., 2022), offers support, broadly, for the claim of the cross-cultural and universal applicability, and relevance, of attachment theory.

As part of the broader critique of attachment theory, the construct of maternal sensitivity as conceptualised by Mary Ainsworth, as well as its measurement, have also received critique centred largely on its claims to universality and, hence, its applicability to non-Western caregiving constellations and practices. These, it has been argued, may depart notably from approaches to parenting that are predominant among Eurocentric populations and, as such, may be misinterpreted as insensitive when assessed with measures of sensitivity developed based on Western parenting practices (Keller et al., 2018). Although these critiques would suggest that Ainsworth's conceptualisation of sensitivity may be culturally irrelevant in non-Western caregiving contexts, scholars of sensitive caregiving have called for a more moderate approach that acknowledges culture-specific manifestations of sensitivity, while remaining rooted in Ainsworth's original ideas (Mesman, 2018; Mesman et al., 2018). In a special issue of the journal, *Attachment & Human Development*, dedicated to video-based observational assessment of sensitive caregiving in non-Western cultural contexts, Mesman (2021) reflected on the feasibility of the sensitivity construct and its measurement. She noted that sensitive responsiveness could indeed be observed and assessed using tools grounded in Ainsworth's conceptualisation of sensitivity across the seven featured studies conducted in Kenya (Mesman et al., 2021), Peru (Fourment et al., 2021), South Africa (Dawson et al., 2021), Iran (Asanjarani et al., 2021), Yemen (Alsahri et al., 2021a), Brazil (Ribeiro et al., 2021), and Indonesia (Alsahri et al., 2021b).

Despite the fact that the majority of the world's children are parented in non-Western societies, studies on parenting practices have emanated largely from so-called Western Educated Industrialised Rich Democratic (WEIRD) countries (Broesch et al., 2016; Keller, 2007). Although studies on maternal sensitivity in Africa remain sparse and often involve small sample sizes, the effects reported on in these studies are largely comparable to that found in WEIRD contexts (Prag et al., 2023). For example, support has been associated with higher levels of maternal verbal responsiveness (Perez et al., 2005), sensitivity has been associated with attachment (Tomlinson et al., 2005), maternal education has been linked to sensitivity (Dawson et al., 2018), postpartum depression has been associated with insensitive engagement with infants (Cooper et al., 1999), and sensitivity-focused interventions have had positive effects (Murray et al., 2016) in African contexts.

Prag et al. (2023) found that half of the studies in their review made adaptations to measures of sensitivity to account for cultural nuances, indicating that there is a need for culturally-sensitive measures of sensitivity. In this respect, Dawson et al. (2018, 2021) found that the Maternal Behaviour Q-sort (MBQS), a composite measure of sensitivity, may be less appropriate for South African dyads because it prominently features items that reflect maternal behaviours that are less common in the local

context and, hence, may misevaluate sensitivity. Unlike the MBQS, the Ainsworth Maternal Sensitivity Scale does not specify particular—potentially culture-bound—behavioural manifestations of sensitivity, which allows for greater flexibility and consideration of subtler forms of maternal responsiveness which could provide a more accurate reflection of maternal sensitivity in non-WEIRD societies (Mesman et al., 2018). Therefore, in the absence of locally-developed modifications to measures such as the MBQS, which are congruent with caregiving practices in the local culture, measures such as the Ainsworth Maternal Sensitivity Scale may be more appropriate. Hence, how sensitivity is measured outside of WEIRD contexts is a critical methodological consideration to avoid the misevaluation, and pathologisation, of non-WEIRD infant-caregiver dyads.

1.2.5 Attachment in the Context of Children with Intellectual Disabilities

1.2.5.1 Attachment Patterns in Children with Intellectual Disabilities

Section 1.2.3 outlined the increased risk of co-occurring psychological problems in persons with ID. This risk is estimated to be three to five times more likely than in the general population (Maulik et al., 2014; Munir, 2016). Furthermore, attachment insecurity and disorganisation have been associated with internalising and externalising behaviours, generally, as well as specific forms of psychopathology (see Section 1.2.4.4). This may suggest, therefore, that the quality of attachment relationships amongst people with ID may be an important consideration in determining their psychological health and wellbeing (Janssen et al., 2002; Schuengel & Janssen, 2006) alongside factors such as child age, level of ID and adaptive deficits, language impairment, poor socialisation as well as family socioeconomic status (Einfeld et al., 2011; Koskentausta et al., 2007). Historically, however, attachment in people with ID has not been a significant focus of research (Hare et al., 2016).

Feniger-Schaal et al. (2012) note that much of the early research on attachment and ID focused on children with Down Syndrome (DS). While capable of establishing secure relationships with their primary caregivers, studies have found an underrepresentation of secure attachment among children with DS compared to the norm (Atkinson et al., 1999; Vaughn et al., 1994). Furthermore, Vaughn et al. (1994) found an overrepresentation of ‘unclassifiable’ children in the DS group, which they tentatively suggested may speak to the level of attachment disorganisation in the sample. Clarifying this, Ganiban et al. (2000) indeed found elevated rates of disorganised attachment, and lower rates of secure attachment, in their sample of children with DS as compared to the normative distribution (Van IJzendoorn et al., 1999). Additionally, more recently, Vanwallegghem et al. (2021) found that school-age children with DS and nonspecific ID were significantly more disorganised in their attachments compared to typically developing controls. Children with DS are, therefore, capable of developing specific attachment patterns but building secure attachments may be a greater challenge (Vanwallegghem & Miljkovitch, 2023).

Studies of attachment in children with ID unrelated to DS align with these findings. Vandesande et al. (2019a) found that children with significant developmental delays do indeed show differentiated attachment behaviours by displaying more intense contact-seeking and contact-maintaining behaviours towards their parents compared to strangers. Children with severe to profound ID were also found to clearly differentiate their parents from strangers both under conditions of stress and comfort (Vandesande et al., 2020). Furthermore, studies show that, as with DS, children with nonspecific/non-syndromic ID may also be at risk for significantly lower rates of attachment security and increased rates of disorganised attachment compared to the norm (Feniger-Schaal & Joels, 2018).

Additionally, meta-analyses have demonstrated that children with developmental delays and comorbid autism spectrum disorder (ASD) are at greater risk of avoidant and disorganised attachments as compared to neurotypical children (Van IJzendoorn et al., 1992; Van IJzendoorn et al., 1999). A study by Naber et al. (2006) clarified, however, that disorganised attachment was significantly predicted by developmental level (i.e., ID) regardless of ASD symptoms in toddlers with comorbid developmental disorders and ASD. This suggests that it may be ID that impacts on attachment organisation rather than ASD symptomatology. This conclusion is supported by the findings of a study by Willemsen-Swinkels et al. (2000) which found that it was the combination of pervasive developmental disorder (PDD) with ID that was significantly associated with increased rates of disorganised attachment, whereas PDD on its own was not. Therefore, on the whole, children with ID are capable of establishing secure attachments with their primary caregivers but, in comparison to typically developing children, may have a greater likelihood of attachment insecurity and disorganisation (Feniger-Schaal et al., 2012).

Although the individual studies reviewed above have demonstrated an increased risk for insecure and disorganised attachment in children with ID, findings from recent research syntheses suggest that the evidence for an unequivocal risk is inconclusive in the context of neurodevelopmental disorders, in general (Potter-Dickey et al., 2020). Alexander et al. (2024) found, for example, that while rates of secure attachment were lower in samples of children with neurodevelopment conditions, the rates of insecure and disorganised attachment were similar to that identified in the global distribution (e.g., Madigan et al., 2023). This is consistent with a meta-analysis by Madigan et al. (2023) which found that there were no significant differences in the rates of attachment classifications between children with and without neurodevelopmental conditions. However, a limited subset of only 0.05% of the 285 studies included in this meta-analysis involved children with neurodevelopmental conditions, which may limit this conclusion. Furthermore, the review by Potter-Dickey et al. (2020) and the meta-analyses by Madigan et al. (2023) and Alexander et al. (2024) did not distinguish between various neurodevelopmental conditions, combining ASD, ID, cerebral palsy, hearing impairment and others into a single category. This aggregation may not allow for conclusions to be drawn about ID, specifically—as distinct from other neurodevelopmental conditions—which may present a potentially

unique constellation of challenges that could impact attachment differentially. This is noteworthy in light of the fact that ID is associated with attachment insecurity and disorganisation over and above that linked to pervasive developmental disorders (Rutgers et al., 2004; Willemsen-Swinkels et al., 2000), indicating the importance of considering ID independently.

A review by Hamadi and Fletcher (2021) concluded that people with ID, specifically, were indeed at greater risk for insecure, disorganised as well as disordered attachment. However, they did not include a meta-analytic synthesis of the quantitative results of the studies they reviewed precluding determinations of the statistical significance and size of the pooled effect regarding the relationship between ID and attachment security, insecurity and disorganisation. Hence, the evidence for an increased risk of attachment difficulties in children with ID remains tentative although, as Hamadi and Fletcher (2021) note, the evidence in support of this link yields, generally, from studies of high quality. This augments confidence in these findings but also does not negate the need for additional high-quality studies and, ultimately, meta-analytic syntheses to confirm the link between attachment difficulties and ID, specifically, as independent from other neurodevelopmental conditions.

Nonetheless, notwithstanding the possible risk of attachment challenges in children with ID, delayed development in children is associated with parental functioning (Herring et al., 2006). Furthermore, both parenting behaviour as well as the parent-child relationship are implicated in the emotional and behavioural challenges among children with ID (Fenning et al., 2014; Schuiringa et al., 2015; Totsika et al., 2014). For example, Schuiringa et al. (2015) found that parents of children with ID and externalising behaviours showed less involvement, less positive parenting, less monitoring, more physical punishment, as well as lower perceived competence, less acceptance of the child and less closeness with the child compared to parents of children with ID but no externalisation. Their findings added that the variance in externalising behaviour was primarily explained by the parent-child relationship (Schuiringa et al., 2015). This study demonstrates, therefore, that the parent-child relationship, and parent-child interactions, may play a role in the behaviour of children with ID. As such, while the overall evidence for at-risk attachments in children with ID may remain as yet unclear, the nature of parenting behaviours and the parent-child relationship may nonetheless be contributing factors in the psychological health of this cohort, underscoring a potentially valuable focus for intervention (see Ramsden et al., 2024; Westlake et al., 2024).

1.2.5.2 Factors Influencing Attachment in Children with Intellectual Disabilities

There are various factors that may contribute towards the potentially increased risk of attachment insecurity in children with ID, specifically. These may include factors that are endogenous to the child, such as their level of cognitive functioning, as well as factors in their caregiving environment such as interferences with effective parenting, parental mental health, and resolution of the diagnosis of ID by

parents. However, it is likely the interaction of multiple factors that plays a role in contributing towards the risk of attachment insecurity in children with ID.

1.2.5.2.1 Child's Level of Cognitive Functioning

To develop an attachment, children must have achieved competencies in a number of cognitive skills. These include object permanence, selective attention, and memory, all of which are generally achieved by the end of the child's first year of life in typically developing populations (Bowlby, 1969). However, children with ID tend to present with notable delays in the development of these skills compared to typically developing children (Janssen et al., 2002). Indeed, Atkinson et al. (1999) found that the degree of severity of these deficits and, hence, the child's level of functioning was related to attachment security. Fewer children with DS who were lower functioning were securely attached compared to higher functioning children with DS (Atkinson et al., 1999), although this was not replicated in a later study by Feniger-Schaal and Joels (2018) among children with nonspecific ID. Thus, there is tentative evidence that the delay in the attainment of competencies and the severity of the child's functional impairment may pose an increased risk for attachment insecurity, although this requires further clarification through replication.

Furthermore, according to the stress-attachment model, the reason people with ID may present more commonly with psychopathology and externalising behaviour is due to an increased vulnerability to stress and poorer coping strategies, which may become more acute in those with more significant cognitive deficits (Janssen et al., 2002; Schuengel & Janssen, 2006). This is based in the idea that attachment relationships play a key, and causal, role in stress regulation and reactivity (Berlin et al., 2019; Diamond, 2015). The attachment (proximity-seeking) system is activated in times of stress, due to danger in the environment, and the child seeks closeness with their attachment figure to down-regulate their arousal. Hence, the attachment system, and the caregiver's role as a secure base and safe haven, is geared towards stress regulation and the establishment of homeostasis and feelings of safety. The stress-attachment model suggests that children with ID may, firstly, be less able to process and appraise stress appropriately due to their cognitive deficits, resulting in misappraisals and increased vulnerability to stress reactions. Secondly, they may also be less competent in their use of effective coping strategies. They may, therefore, not be able to use their caregivers as a safe haven effectively, thus precipitating disturbances in the establishment of secure attachments. This may then also explain why children with ID are at greater risk for psychopathology—due to disturbances in attachment that precipitate disturbances in affect regulation (Janssen et al., 2002; Schuengel & Janssen, 2006). Hence, the child's degree of cognitive functioning may impact on their ability to appraise stress which results in increased vulnerability to stress. They are, in turn, unable to effectively regulate this stress due to less effective strategies in using their caregivers as a secure base and safe haven, impacting attachment security and precipitating psychopathology.

1.2.5.2.2 Interferences with Effective Parenting

Caregivers may contribute to the risk of less secure relationships with their children with ID through interferences with effective parenting behaviours, such as parental sensitivity, which has consistently been shown to be a precursor for attachment security (De Wolff & Van IJzendoorn, 1997; Madigan et al., 2024). This is because the needs and signals of children with ID may be more difficult for parents to notice, interpret and respond to compared to those of children without ID (Schuengel & Janssen, 2006). Additionally, building the child's expectations of secure base provision by the parent may be significantly delayed and may be more fragile and less stable in children with ID. As such, Schuengel and Janssen (2006) speculated that parents of children with ID may need to show extraordinary levels of sensitive responsiveness to foster the development of secure attachment relationships. For Ainsworth, optimal caregiving arrangements involve an infant who is effective in their pre-adapted function—to signal for proximity—as well as a caregiver who is, in turn, effective in their reciprocation which, over time, builds the infant's expectations of a secure base and safe haven (Ainsworth & Bell, 1974; Grossmann & Grossmann, 2021). Sensitive responsiveness from the parent and attachment behaviours from the child are, therefore, interdependent. However, the parent contributes a more robust and sophisticated set of emotional regulation skills to scaffold the development of the child's capacities for self-regulation. In the context of ID, this process may require additional time and effort but, notably, does ultimately result in organised attachment in a majority of cases (Alexander et al., 2024; Madigan et al., 2023).

Two of the major components of caregiver sensitivity are the caregiver's ability to accurately perceive, and interpret, infant signals. However, affective signalling and physical movements in children with ID are often more muted, making cues more difficult for caregivers to perceive and interpret (Bridges & Cicchetti, 1983; Schuengel & Janssen, 2006). Blacher (1984), for example, found that discrete attachment behaviours are observable in children with severe disabilities but that these behaviours are less complex and less provocative than those of typically developing children. Children with more severe forms of ID may also not have the physical motility to enact behaviours that actively engage the caregiver or may express these behaviours in anomalous or idiosyncratic ways that are challenging for caregivers to understand and, hence, respond to in ways consistent with sensitivity (Tessier et al., 2002; Vandesande et al., 2019b). In line with this, parents of children with ID have reported that the lack of, or fleeting, expressive communication of their children was perceived as a factor inhibiting the development of attachment (Vandesande et al., 2023). Hence, harmonious interactions between parent and child may be more difficult to achieve for children with ID which may, over time, lead to higher rates of insecure attachment.

Furthermore, the parental responses that are characteristic of sensitivity are underpinned by what Oppenheim and Koren-Karie (2002) refer to as parental insightfulness, or the ability to adopt the child's

viewpoint (Ainsworth et al., 1978). Feniger-Schaal et al. (2012) suggest that insightfulness underscores attachment security and emotion regulation in typically developing children and may, therefore, be similarly relevant for children with ID. Indeed, they found that mothers of children with ID who had positive insightfulness scored higher on maternal sensitivity than mothers who were non-insightful (Feniger-Schaal et al., 2019), and that there was a positive association between parental insightfulness and attachment security in children with ID (Feniger-Schaal et al., 2011). As such, attachment difficulties in children with ID may be related to greater challenges with parental insightfulness via its relationship with sensitivity. The lower levels of initiation and responsiveness, as well as deficits in communication and social skills (Green et al., 2015; Guralnick, 2017) in children with ID may impede caregiver insightfulness and, hence, sensitivity because they may interfere with the caregiver's ability to understand their child's inner world. This may, by extension, translate into a higher risk for insecure attachment.

Children's developmental delays are also a significant predictor of negative parenting behaviours, including intrusiveness (Brown et al., 2011). Parent-child interactions in the context of developmental delays, as opposed to typical development, are often characterised by greater intrusiveness (Floyd et al., 2004; McIntyre, 2008). Furthermore, mothers of children with ID, who are often—although not exclusively—the primary attachment figure have been found to display higher levels of negative parenting compared to fathers (Rodas et al., 2016). Furthermore, Callus et al. (2019, p. 363) refer to this pattern of intrusive interactions between caregivers and children with ID as a “disabling barrier” for the latter because it impedes, rather than promotes, development (Clincy & Mills-Koonce, 2013; Sameroff & Fiese, 2000). Instead, development, including attachment, is promoted through sensitive and reciprocal, child-led so-called ‘serve-and-return’ interactions (Golinkoff et al., 2015; Shonkoff, 2015; Spiker et al., 2002). Through these kinds of interactions, caregivers allow for their child to explore and to lead interactions, and engage with sensitive responsiveness to their child's cues, which supports the child's physiological, emotional and behavioural regulation (Komanchuk et al., 2023). Since caregivers of children with ID experience a variety of challenges that may promote intrusive interactions—as opposed to serve-and-return interactions—this may also influence the development of less secure parent-child relationships for children with ID (Wang et al., 2015).

1.2.5.2.3 Parental Mental Health

Possibly the most well-established factor known to impact caregivers of children with ID is parenting stress. Studies have consistently found that caregivers of children with ID and other developmental disorders experience significantly higher levels of parenting stress compared to caregivers of typically developing children (e.g., Baker et al., 2002; Baker et al., 2003; De Gaetano et al., 2022), often reaching the level of clinical significance when measured on the Parenting Stress Index (De Gaetano et al., 2022; Gupta et al., 2012; John, 2012; Oelofsen & Richardson, 2006; Wong et al., 2021). John (2012) also

noted that parenting stress in Indian mothers of children with ID was significantly higher than in developed countries, specifically Canada (Zaidman-Zait et al., 2010), the United Kingdom (Hassall et al., 2005) and the United States of America (Richman et al., 2009), suggesting that parents of children with ID in developing countries may be at even higher risk of elevated parenting stress.

Numerous studies have found that rates of parenting stress are also higher in parents of children with ID compared to those with other conditions such as attention-deficit/hyperactivity disorder and chronic medical conditions (e.g., asthma and HIV) (Ahmad & Khanam, 2015; Barak-Levy & Atzaba-Portia, 2020; Craig et al., 2016; Fidler et al., 2000; Gerstein et al., 2009; Gupta, 2007; Patton et al., 2018). This has further been confirmed in reviews and meta-analyses on the topic (Lee, 2013; Masfield et al., 2020; Peer & Hillman, 2014; Rydzewska et al., 2021). Relatedly, studies have found that parenting stress in caregivers of children with ID is negatively associated with self-esteem (Trute et al., 2008) as well as self-efficacy (Hassall et al., 2005). This suggests that parenting stress in caregivers of children with ID may be related to a depletion of psychological resources, more widely, which may further exacerbate stress through ineffective coping strategies (Biswas et al., 2015). Hence mothers of children with ID have been found to report lower wellbeing than other parents (Norlin & Broberg, 2013).

In line with the above, the literature indicates that parents and caregivers of children with intellectual and developmental disabilities are also more at risk for specific mental health concerns. Masulani-Mwale et al. (2018) found substantive rates of psychological distress among parents of children with ID, while other studies have reported that depression, emotional and physical fatigue, as well as poor sleep quality are common in parents of children with developmental disabilities (Heiman, 2002; Lee, 2013). Indeed, meta-analytic evidence has confirmed higher rates of depression, anxiety, emotional burden as well as common mental disorders in mothers of children with ID compared to those of typically developing children (Rydzewska et al., 2021; Scherer et al., 2019; Singer, 2006). These findings are noteworthy given that higher levels of parenting stress (Booth et al., 2018) and parental mental ill-health (Bernard et al., 2018) are significantly associated with lower maternal sensitivity. Maternal mental health conditions such as depression are also associated with infant attachment insecurity (Barnes & Theule, 2019; Risi et al., 2021). The effects of compromised maternal mental health on the quality of caregiving (i.e., sensitivity) may explain these findings on attachment and, hence, why children with ID—whose parents are at greater risk for poorer general wellbeing, increased parents stress, and mental health conditions—may also be at higher risk for attachment insecurity.

1.2.5.2.4 Difficulties with Resolution of the Diagnosis

Another aspect that may contribute to potentially higher rates of attachment insecurity in children with ID relates to the degree to which caregivers have come to terms with the diagnosis or, put differently, their degree of resolution of the child's diagnosis (Marvin & Pianta, 1996). Rather than being a finite

end-point, resolution is conceptualised as an ongoing process for the caregiver as they engage in continual adaptations to the diagnosis. This occurs whenever caregivers are confronted, on various occasions, with how their child's developmental pathway diverges from that of typically developing children, precipitating waves of incompatible emotions (Sher-Censor & Shahar-Lahav, 2022). This requires reorganisation of caregivers' expectations of their child and of the painful emotions that such moments elicit (Marvin & Pianta, 1996). Resolution, therefore, lies on a continuum and is characterised by the caregiver's capacity to flexibly revise their mental representations of their child (Barak-Levy & Paryente, 2023; Sher-Censor & Shahar-Lahav, 2022). As such, the diagnosis, and its implications, become incorporated into the caregiver's mental representations of the child, allowing the caregiver to 'see' the child as a whole, beyond just their diagnosis (Marvin & Pianta, 1996).

From an attachment perspective, unresolved loss or trauma creates a disruption in the caregiving and attachment systems. This occurs because the child's attachment behaviours trigger memories that are dissociated from the caregiver's cognition which is frightening to the caregiver (Pianta et al., 1996). This causes a disruption in the caregiving system through misinterpretations of the child's signals, discomfort with close and intimate physical contact, unrealistic expectations of the child, angry or depressed affect during activation of the caregiving system, or avoidance of caregiving (Marvin & Pianta, 1996). Receiving a diagnosis such as ID for one's child has been conceptualised as a symbolic loss that precipitates emotional responses in parents that parallel grief and mourning (i.e., parents must grieve the loss of the 'normal' child). Hence, the diagnosis of ID could be regarded as a trauma to the caregiving system that, if unresolved, impacts on the caregiver's ability to be sensitively responsive to their child (Feniger-Schaal & Oppenheim, 2013).

Caregivers who are resolved with respect to their child's diagnosis are able to acknowledge the painful emotions associated with the diagnosis and, gradually, experience a decrease in the intensity of these negative emotions along with concomitant and increasingly positive feelings about their child. A resolved caregiver is able to revise their mental representations of their child to incorporate new information about the diagnosis as well as information related to their child's strengths separate from the diagnosis, reflecting a balanced view of the negative effects and benefits of the diagnosis. It is believed that these adaptations foster sensitive caregiving and, hence, attachment security in children with diagnoses such as intellectual and developmental disabilities because the caregiver's mental representations resemble the present reality (Sher-Censor & Shahar-Lahav, 2022).

On the other hand, unresolved caregivers have notable challenges with adapting to the reality of their child's diagnosis and have difficulties revising their mental representations of their child in alignment with this diagnosis (Oppenheim et al., 2007). Caregivers low in resolution with respect to the diagnosis have difficulty accepting their child for who they are and hold unrealistic views of their child. Additionally, they may be either unable to express the painful emotions related to the diagnosis, or are

overwhelmed by these emotions, reflecting unbalanced feelings towards the diagnosis (Oppenheim et al., 2007). These challenges make it difficult for the caregiver to adapt to the diagnosis and to reorient themselves to the present reality, which may interfere with their ability to focus on the emotional needs of their child (Sher-Censor & Shahar-Lahav, 2022). This may result in impairments in sensitive responsiveness via the caregiver ignoring, minimising or amplifying their child's signals, or may manifest as disengagement, harshness, overprotectiveness, or intrusiveness, precipitating attachment insecurity in the child (Sher-Censor & Shahar-Lahav, 2022).

Consistent with Marvin and Pianta's (1996) theoretical assertions, mothers of children with intellectual and developmental disabilities who are less resolved are also less sensitive (Di Renzo et al., 2020; Dolev, 2006; Feniger-Schaal & Oppenheim, 2013; Oppenheim et al., 2024). Furthermore, and in line with this, studies have also found significant associations between caregivers' resolved status and child attachment such that larger proportions of mothers of securely attached children with congenital conditions, including ID, were classified as resolved compared to those of insecurely attached children (Barnett et al., 2006; Marvin & Pianta, 1996). As such, caregivers of children with intellectual and developmental disabilities who are struggling with persistent diagnosis-related grief (Fletcher, 2016) may, therefore, be unresolved with respect to the diagnosis, impacting sensitivity and ultimately influencing insecurity in their relationships with their children (Oppenheim et al., 2012).

1.2.6 Parenting a Child with Intellectual Disability

Parents of children with intellectual and developmental disabilities experience significant challenges in their caregiving role. However, parenting a child with ID can also be a positive experience (Beighton & Wills, 2017; Blacher & Baker, 2007; Durà-Vilà et al., 2010; Niedbalski, 2023). Glidden (2012) suggests that positive and negative reactions to caring for a child with ID are not polar opposites, but often coexist. The impact of children with ID on their families is, therefore, neither exclusively negative, nor exclusively positive (Hastings, 2016). The notable challenges associated with parenting a child with special needs are nonetheless a salient focus given the potential impact of this on factors such as parenting quality and parent-child relationships.

As noted above, parenting a child with ID has been associated with increased parenting stress and poorer parental mental health (see Section 1.2.5.2.3). This may be related to a range of factors including those related to the child such as their level of disability (J. Shin et al., 2006) or the degree of behavioural problems the child presents with (Baker et al., 2002; Biswas et al., 2015). However, factors in the parent's environment are also implicated in their experiences of the challenges associated with caring for a child with intellectual and developmental disabilities. Two broad, related themes in this respect address caregivers' experiences of support along various dimensions, and stigma.

1.2.6.1 Lack of Support

The lack of, limited, or inconsistent support from others—formally and informally—is a noteworthy challenge in the parenting experiences of parents of children with intellectual and developmental disabilities (Cuzzocrea et al., 2015). Parents of children with ASD have reported that the lack of understanding of the condition among extended family and their failure to provide practical support led to feelings of disconnection and isolation (Woodgate et al., 2008). However, even when support is available, it may be difficult to access for parents due to the time, and intensity, involved in the care of a child with ID which leaves little time for activities such as socialising, thus limiting access to support (Johnson et al., 2006). This is important because limited access to familial support has been repeatedly associated with increased parenting stress (Biswas et al., 2015; Jenaro et al., 2020; Trute et al., 2008). Support may be further limited via couple or marital conflict which may be more frequent and severe in couples who have a child with a developmental disability compared to those who do not (Hartley et al., 2017). These disturbances in support from others in the caregiver's network, due to its relationship with parenting stress, may well impact caregiver resilience and wellbeing (Savari et al., 2023; Staunton et al., 2023; White & Hastings, 2004; Zhao et al., 2021).

The parenting stress and child psychosocial problems experienced by caregivers of children with ID also predict the need for formal support (Kleefman et al., 2015). However, formal support systems such as professional healthcare may be experienced as unsupportive due to a lack of training and insufficient knowledge around developmental disabilities, even in better-resourced countries (Willingham-Storr, 2014; Woodgate et al., 2008). Negative experiences with professional services are commonplace for caregivers of children with ID (Todd & Jones, 2003) and these services are often inadequate, constraining their accessibility which brings to the fore the felt disparity between the degree and intensity of caregivers' service and support needs, and what is available to them in actuality (Johnson et al., 2006). This may be in the form of no available services, or the exhaustion of the few services that are available (Whittle et al., 2019). This lack of access to professional support services may be even more acute for caregivers of persons with ID from lower-income backgrounds who may have more unmet service needs (Burke & Heller, 2017). Indeed, studies conducted in low-income settings such as Ethiopia, Ghana, and Malawi consistently report limited formal supports both for the development of children with ID, and for the psychological wellbeing of their parents (Badu, 2016; Masulani-Mwale et al., 2016; Tilahun et al., 2016).

This lack of support as well as feelings of isolation suggest that parents single-handedly take on all tasks associated with caregiving for their child with ID (Badu et al., 2016; Masulani-Mwale et al., 2016), which can be taxing and burdensome because these tasks go beyond what is usually the case for typically developing children. Indeed, caregivers of children with ID experience a high degree of burden in relation to caregiving, particularly in low-income settings (Gebeyehu et al., 2019). High caregiver

burden has, in turn, been associated with lower quality of life (Çolak & Kahrman, 2023) which predicts burnout in caregivers of children with disabilities (Aktan et al., 2020), which is more prevalent in this group of parents than those who have children without any complex care needs (Patty et al., 2024).

In South Africa, specifically, studies across rural and urban communities have consistently found that caregivers of children with ID experience challenges in line with that experienced elsewhere. This includes unreliable or absent practical support from family, poor access to formal support, as well as isolation and alienation from others (Buthelezi & Mawila, 2024; Modula & Chipu, 2024; Van der Mark et al., 2019). Furthermore, South African studies have added that caregivers experience noteworthy barriers to accessing services which include the high cost of public transportation and the limited monetary value of the existing social welfare apparatus (e.g., Child Support Grant and Care Dependency Grant) (Khan et al., 2020; Mmangaliso & Lupuwana, 2021; Van der Mark et al., 2019). These social welfare mechanisms are themselves limited in their reach with many eligible caregivers not able to access them, promoting exclusion and further limited support (Trafford, 2023; Trafford & Swartz, 2023). Further intensifying the status quo is the under-resourcing of community-based and non-governmental organisations, limiting their capacity to provide optimal care and support to caregivers and their children with ID (Khan et al., 2020). This reality intensifies the perceived burden of caregiving in South Africa, contributing to emotional strain for caregivers (Chauke et al., 2021; Malatji & Ndebele, 2018; Mkabile & Swartz, 2020a).

It is not surprising, therefore, that various aspects and domains of support are consistently identified as significant needs by caregivers of children with disabilities in both better-resourced settings (Douglas et al., 2016) and lower-resourced African settings (Mkabile & Swartz, 2022). Modula (2022; Modula & Chipu, 2024) found that the challenges identified by caregivers mapped onto a range of unmet needs in South Africa. This contributed to feelings of powerlessness, helpless and resignation in response to their needs remaining unmet (Mkabile & Swartz, 2020a; Modula, 2022; Sadiki, 2022). These needs included informational support and greater collaboration between caregivers and health professionals (Modula, 2022), as well as community support in the form of support groups to counteract helplessness and promote empowerment and enhance self-efficacy (Modula & Chipu, 2024; Sadiki, 2022). Other needs included psychological support for caregivers to enhance coping (Modula & Chipu, 2024), as well as financial support to facilitate access to healthcare and special education services (Sadiki & Mashegoane, 2019).

Despite the intensive and often unmet healthcare needs (Haller et al., 2022; Redmond & Richardson, 2003) of persons with ID, in South Africa this is a condition retained at the periphery of the mental health sector (Stein et al., 2018). This is reflected in limited specialised services dedicated to the assessment and treatment of people with ID and limited training for health professionals (McKenzie et al., 2013). As a result, the few available state-run ID services are overwhelmed by the demand (Adnams,

2010; Department of Social Development, 2009) leading to a service vacuum, or delays, particularly—although not exclusively—for those unable to access such services privately (Saloojee et al., 2007). Lack of access to, and poor experiences with, these services is a noteworthy experience for caregivers of children with ID in South Africa.

Although, in South Africa, there has been important disability-focused policy reform, the day-to-day impact of this on the lives of children with disabilities remains limited (De Sas Kropiwnicki et al., 2014; Trafford, 2023). For example, despite the publication of *Education White Paper 6* (Department of Education, 2001), which sought to realise inclusive education in South Africa, its implementation has been slow (Nel & Grosser, 2016) due, in part, to limited resourcing (Department of Basic Education, 2015). Although some strides were made in the training and rollout of the National Curriculum Statement for children with intellectual disabilities between 2017 and 2020 (Department of Woman, Youth and Persons with Disabilities, 2022), estimates suggest that still only 7.6% of children with disabilities in South Africa are in school (Kiru & Cooc, 2018), and it has been found that vocational training programmes are not inclusive of people with disabilities (Morwane, 2023). Similarly, caregivers of children with ID in South Africa face numerous barriers to accessing healthcare services in townships (see Mkabile & Swartz, 2020b) and, more so, in rural communities (Sadiki, 2022; Vergunst et al., 2017). This, despite South Africa's ratification of the United Nations Convention on the Rights of People with Disabilities which outlines standards and provisions for access to basic healthcare for persons with disabilities (Makwela et al., 2021). Congruously, access to social assistance for people with disabilities in South Africa is also limited. This is due to a shortage of social service professionals, the marginalisation of early intervention services and poor funding of non-governmental and community-based initiatives, constraining their capacity to offer much-needed—and otherwise inaccessible—services to meet the developmental needs of children with disabilities (Khan et al., 2020). Given the challenges with educational, health and social service delivery and availability, the burden of care for primary caregivers of a child with intellectual and developmental disabilities in South Africa is high (Van der Mescht et al., 2023), as are rates of clinically elevated parenting stress (Mbatha & Mokwena, 2023), lower quality of life (Alhazmi et al., 2018) and reports of mental and physical ill-health as well as family dysfunction (Mkabile & Swartz, 2020a; Modula & Chipu, 2024).

1.2.6.2 Stigma

Facilitating experiences of isolation and alienation from within families and communities, exacerbating the lack of support, is the stigma encountered by caregivers of children with ID. Negative attitudes about people with ID, and stigma, persist in society despite broad support for inclusive practices (Scior et al., 2020). Stigma is common in relation to children with intellectual and developmental disabilities who are subject to more intense stigma than those with physical disabilities (Rohwerder, 2018). Woodhouse et al. (2008) found that stigma was fuelled by ignorance around disabilities which led to

caregivers' feelings of disconnection from broader society. Furthermore, caregivers of children with ID regularly experience courtesy stigma both from within families and communities, reflected in experiences of marginalisation (Mitter et al., 2019) and being the target of negative and hurtful comments and insults from others about their child (Johnson et al., 2006) leading to feelings of shame and self-blame (Scavarda, 2024; Zuurmond et al., 2020).

Similarly, caregivers of children with ID across African context have reported salient experiences of negative attitudes from within families and communities, active rejection, blame and discrimination, often rooted in superstitions around disability and its origins which are commonly associated with witchcraft (Badu, 2016; Masulani-Mwale et al., 2016; Oti-Boadi, 2017; Tilahun et al., 2016; Zuurmond et al., 2022). Tekola et al. (2020) found that caregivers in Ethiopia experienced public stigma directed at the child (i.e., overarching negative societal attitudes related to ID), courtesy stigma directed at the parent (i.e., negative attitudes directed at the parent by virtue of their association with ID), and affiliate stigma in the form of parental self-blame and self-isolation (i.e., internalised negative feelings experienced by parents rooted in the negative attitudes directed at them from others). This resulted in negative and painful emotions, concerns about the impact of stigma on the child, worry about who would care for the child in their absence given the existing stigma, and social isolation (Tekola et al., 2020).

This aligns with caregivers' experiences in South Africa (Duma et al., 2021; Mkabile & Swartz, 2020a; Mkabile & Swartz, 2020b; Mmangaliso & Lupuwana, 2021), where stigma is noted as a salient barrier for caregivers of children with ID in terms of accessing both formal and informal support. Studies report stigma-induced family disinterest in providing support and spousal abandonment due to the child's ID (Chauke et al., 2021; Khan et al., 2020; Mbanjwa & Harvey, 2023; Van der Mark et al., 2019), limiting informal support. Caregivers may also fear stigma-fuelled violence in already unsafe South African communities, or may fear that being seen by others to be using ID support services would lead to further stigmatisation (Mkabile & Swartz, 2020b; Modula & Chipu, 2024), preventing their use of these services and thus limiting access to formal supports.

Overall, the literature offers important, and useful, insights into the experiences of caregivers of children with ID in challenging conditions. However, what studies have yet to elucidate are the experiences of caregivers as they relate to the parent-child relationship, and parent-child interactions, between themselves and their child with ID. The notable challenges experienced are associated with parenting stress in South African caregivers of children with ID (Mbatha & Mokwena, 2023). Parenting stress is also known to have a negative impact on caregiver sensitivity (Booth et al., 2018) which is likely to influence parent-child interactions and, as a result, the quality of the parent-child relationship. As noted previously, even if the evidence of a greater risk of attachment insecurity in children with ID remains somewhat equivocal, the quality of parent-child interactions continues to play a role in the behaviour

of children with ID (Schuiringa et al., 2015). This may be particularly acute in settings such as South Africa where caregivers' limited understanding of ID may fuel misunderstandings of their child's behaviours (Modula & Chipu, 2024), leading to misattuned and suboptimal caregiver-child interactions. Hence, exploring parents' experiences and understandings of their interactions and relationships with their children with ID becomes an important task that could inform intervention strategies to support caregivers and, ultimately, children with ID in this domain. This aspect of the parenting experiences of caregivers of children with ID remains a largely unexplored area within the literature.

1.2.7 Attachment-based Parenting Interventions

Given the promotive role of attachment security for child development and wellbeing, as well as the associations between insecure and disorganised attachment and social-emotional problems, a range of interventions, grounded in attachment theory and research, have been developed (see Steele & Steele, 2018). The goal of these interventions is to promote attachment security in children either through remediating insecure/disorganised attachments or preventing the occurrence of these in the first place, ultimately to encourage optimal development. Although not the only factor, parenting and parenting-related variables shape attachment security and, hence, feature as important targets for these interventions.

Attachment-based interventions target attachment in two broad ways—behaviourally, at the level of sensitive caregiving behaviours; or representationally, at the level of the caregivers' mental representations of attachment (Egeland et al., 2000). Examples of the former include *Attachment and Biobehavioral Catch-up* (ABC; Dozier & Bernard, 2019; for a comprehensive discussion of this intervention, see Section 1.2.8) as well as *Video-feedback Intervention to Promote Positive Parenting and Sensitive Discipline* (VIPP-SD; Juffer et al., 2008) and its suite of adaptations for specific populations. On the other hand, examples of representation-focused attachment-based interventions include the *Circle of Security* (COS; Powell et al., 2014), *Mothering from the Inside Out* (MIO; Suchman, 2016), and *Minding the Baby* (MTB; Slade et al., 2018). These interventions use a range of approaches and techniques to achieve their intended aims of enhancing caregiver sensitivity and/or child attachment.

For example, some interventions such as the ABC and VIPP-SD take place in the homes of the participants to promote the ecological validity and relevance of the intervention foci because the intervention is fully immersed in the real-world context of the parent-child relationship. Interestingly, several of the interventions do not involve the infant's presence in intervention sessions. The VIPP-SD, for instance, involves the infant only during video-recordings of weekly parent-infant interactions, but not during the video-feedback intervention sessions in which those recordings are reviewed with the parent. A similar approach is adopted in the COS and MIO which are interventions conducted in the

absence of the infants although these focus more intensely on maternal mental representations of the child and, for MIO, reflective functioning and the parent's ability to mentalise themselves and their infant. Hence, these interventions make use of prominent reflective approaches to assist parents in thinking differently about themselves, their infant, and their relationship.

Like the VIPP-SD, the ABC also makes use of video-feedback, which allows parents to observe themselves and to receive positive feedback and encouragement on specific behaviours relevant to the intervention. The ABC though, unlike the VIPP-SD, focuses much more heavily on in-vivo, in-the-moment commenting by intervenors on real-time parent-infant interactions as they happen during sessions in an attempt to shift parenting behaviours towards enhanced sensitivity. Hence, while video-feedback is regarded as the 'active ingredient' for the VIPP-SD, in-the-moment commenting is considered the 'active ingredient' of the ABC (Caron et al., 2018). Ultimately, all these interventions, whether they are home-based or centre-based, involve the infant or work only with the parents, or focus on video-feedback versus in-the-moment feedback, their common focus centres on enhancing parenting behaviours—either directly, or via mental representations—to better resemble caregiver sensitivity and, hence, to positively impact on child attachment.

In general, attachment-based interventions targeting either attachment or sensitivity have been found to be effective (Dozier & Bernard, 2023; Tereno et al., 2019). This conclusion yields from an expansive evidence base of studies testing these interventions which have been synthesised in a series of meta-analyses conducted over the past two decades. The positive intervention effects on a range of child and parenting outcomes have been demonstrated in meta-analyses and systematic reviews of specific interventions including the VIPP-SD (Van IJzendoorn et al., 2023), COS (Yaholkoski et al., 2016), and ABC (Grube & Liming, 2018; O'Byrne et al., 2023). However, wider-ranging syntheses have been undertaken spanning the results from studies across the full body of attachment-based interventions offering an assessment of their global effectiveness, in general. Bakermans-Kranenburg et al. (2003) conducted one of the earliest and most comprehensive meta-analyses to examine the effects of attachment-based interventions on maternal sensitivity and attachment security and found a significant moderate overall effect of attachment-based interventions on sensitivity.

Moderator analyses revealed that interventions with an exclusive focus on sensitive behaviour (as opposed to mental representations or support, or a combination) were most effective. Furthermore, interventions using video-feedback, that had fewer than 16 sessions, and that started after six months postpartum were also most effective at improving sensitivity. Although with a smaller overall effect size, analogous significant findings were made in relation to the effectiveness of attachment-based interventions on attachment security. Studies that were most effective in improving sensitivity were also most effective at facilitating attachment security, all but confirming the theorised causal pathway

between maternal sensitivity and attachment security (Bakermans-Kranenburg et al., 2003). More recent meta-analyses have confirmed these findings (Letourneau et al., 2015; Mountain et al., 2017).

With a focus on the effectiveness of attachment-based interventions on disorganised attachment specifically, an early meta-analysis suggested that these interventions did not significantly prevent or change attachment disorganisation (Bakermans-Kranenburg et al., 2005). However, more recently, Facompré et al. (2018) found a significant moderate effect, indicating that attachment-based interventions did indeed reduce or prevent disorganised attachment. Further analyses revealed that studies published later showed larger effects than earlier studies, which may explain the null findings by Bakermans-Kranenburg et al. (2005) which would have included only those earlier studies. Facompré et al.'s (2018) findings have been supported by two further meta-analyses linking attachment-based interventions to significantly decreased rates of disorganised attachment as well as increased rates of secure behaviours (Wright & Edginton, 2016; Wright et al., 2017). In sum, attachment-based interventions have proliferated in recent years which is a trend further catalysed by its growing evidence-base. This is reflected in the findings of the systematic reviews and meta-analyses reviewed above.

However, while existing meta-analyses have offered valuable insights into the overall effectiveness of attachment-based interventions, and have elucidated broad features of interventions that contribute to this effectiveness, little is known about the more specific techniques used within, and across, effective attachment-based interventions and how these may cluster differently depending on various population characteristics. Therefore, conducting an analysis of attachment-based interventions at the level of practice elements (i.e., techniques used within sessions), as opposed to broader intervention features, provides a unique opportunity to potentially reconceptualise how these interventions are used in practice. Disentangling interventions into their component elements can inform the redesign of interventions and alternative delivery of interventions that may be less demanding to implement and sustain. This could involve, for example, the use of single practice elements, or more streamlined combinations of practice elements in practice, compared to complex multi-element manualised approaches (Engell et al., 2020). This kind of 'common elements' analysis can facilitate a modular approach to intervention which has been found to outperform standard care models in the treatment for childhood problems (Weisz et al., 2012).

The Distillation-and-Matching Model (DMM), developed by Chorpita and colleagues (Chorpita & Daleiden, 2009; Chorpita et al., 2005), is an approach that allows for the distillation of practice elements across successful interventions and matching profiles of these practice elements to particular population characteristics. This makes it possible to identify which practice elements, or combinations thereof, best align with which population characteristic, facilitating the possibility of tailoring interventions for specific groups of clients. To date, the DMM approach has been applied to interventions for children's

disruptive behaviour problems (Garland et al., 2008), social work practice (Barth et al., 2014; Lee et al., 2014), psychosocial interventions for children and youth affected by armed conflicts (Brown et al., 2017), interventions for families with multiple problems (Visscher et al., 2018), and early childhood interventions supporting cognitive development in low- and middle-income countries (Mamedova et al., 2024). This approach could also be useful for describing attachment-based interventions and their expanding evidence base by enhancing the understanding of the components of effective attachment-based interventions and their linkages with contextual and population variables. This approach, however, remains unexplored in the context of attachment-based interventions despite their expansion in recent decades, which is a noted gap in the research.

Although attachment-based interventions are an increasingly prominent feature in the intervention landscape internationally, they have not featured prominently in approaches to early intervention in South Africa even though the importance of early relationships is recognised locally (Richter, 2022). One reason for this may be the limited access to empirically validated attachment-based interventions in South Africa since most are developed abroad and to utilise them locally requires training and certification, usually by their developers. This is often not available locally, or incurs substantial costs associated with international travel, training and clinical supervision which are proscriptive under increasingly challenging fiscal circumstances. A handful of attachment-based approaches have, however, been reported in the South African literature. Attachment-based psychotherapeutic approaches such as parent-infant psychotherapy (Dugmore, 2011; 2012) and Theraplay (du Toit & Mohamed, 2023) have been part of the treatment landscape in South Africa for some time but their effectiveness in local populations lacks empirical investigation. Other, manualised attachment-based interventions such as Thula Sana (Cooper et al., 2002; Cooper et al., 2009; Tomlinson et al., 2020), New Beginnings (Bain, 2014) and MIO (Suchman et al., 2019) have, however, been empirically tested in South African studies. Cooper et al. (2009), in the largest South African trial of an attachment-based intervention to date, found significant positive effects of the Thula Sana intervention on both maternal sensitivity and infant attachment. In a smaller, pilot study of the MIO adapted to the South African context, Suchman et al. (2019), similarly, found positive effects on maternal reflective functioning and the quality of parent-child interactions. Bain (2014), however, found no significant effects in the piloting of the New Beginnings intervention. She proposes that the small sample size, therapist inexperience in the application of the intervention, and a range of context-specific factors (e.g., maternal traumatic histories resulting in defensive processes that may require a longer-term intervention) may explain these null effects. Therefore, while the results of these investigations are promising, they are somewhat mixed, leaving room for further investigation of attachment-based interventions in South Africa.

1.2.7.1 Attachment-based Interventions for Children with Intellectual Disabilities

No large-scale studies of attachment-based interventions for children with ID have been conducted in South Africa. Although Suchman et al. (2019) noted that parents of children with ID were amongst those included in their study on the MIO, they did not report results for this subgroup, precluding conclusions on the effectiveness of this intervention in this specific group. However, in a clinical case study, Mohamed and Mkabile (2015) report on the use of a psychotherapeutic intervention based on Theraplay (Booth & Jernberg, 2010) to treat escalating externalising behaviour in an adolescent girl diagnosed with moderate ID in South Africa. Noteworthy qualitative improvements were observed in the nature of the interactions within the dyad from pre- to post-intervention, with concurrent mother-reported reductions in externalising behaviours (Mohamed & Mkabile, 2015). These observations are supported by Hofstra et al.'s (2023) findings—using a standardised measure of parent-child interactions—that Theraplay significantly improved the quality of mother-child interactions from pre- to post-intervention in dyads in which the child had ID. However, notably, no controlled studies of Theraplay have been conducted in this population to date. Hence, while a promising approach, the evidence remains tentative.

To explore the effects of an integrative attachment-based behaviour therapy for children with severe ID and visual impairment Sterkenburg et al. (2008a, 2008b) conducted a series of single-case experiments. The findings of these studies highlighted the key role of attachment interventions even in the context of techniques focused on behaviour modification. They found that not only did the attachment-based intervention lead to a reduction in challenging behaviour independently from behaviour modification, but that the effects of behaviour modification were further enhanced when paired with an attachment-based intervention. The stimulation of attachment behaviours supported the development of affect regulation mechanisms which, in turn, resulted in improvements in challenging behaviour (Schuengel et al., 2009). Furthermore, a study testing the Contact Programme in professional caregivers of children and adults with ID demonstrated improvements in the quality of interactions which was associated with caregivers' improvements in their explicit recognition of, and response to, signals from their clients (Damen et al., 2011), which is suggestive of improved sensitivity. These findings are, however, based on single-case designs which may not necessarily offer more broadly generalisable conclusions. However, their experimental designs—albeit at the level of single-subjects—enhance the causal conclusions that can be drawn.

To date, there has been only one larger-scale randomised controlled trial of an attachment-based intervention for children with ID, specifically. Platje et al. (2018) examined the effectiveness of the VIPP-V intervention, an adaptation of the VIPP-SD for children with visual, or visual-and-intellectual, disabilities (Van den Broek et al., 2017). They found that although sensitivity and parent-child interactions did not increase significantly in the intervention group, parents did show significantly

improved self-efficacy and an improving trend for parenting stress. Furthermore, improvements in self-efficacy and parenting stress both predicted improvements in parent-child interactions. Similar findings were made by Poslawsky et al. (2015) in their trial of the VIPP-SD adapted for children on the autism spectrum (VIPP-AUTI). They found that parental sensitivity did not change significantly, but that parental self-efficacy did improve significantly from pre- to post-intervention in the intervention group. Thus, even though parental sensitivity may not improve, these findings suggest that attachment-based interventions could potentially facilitate improvements in parenting stress and self-efficacy which may, in turn, enhance parent-child interactions in dyads where the child has an ID, or other developmental disabilities. Given that parenting stress is known to be a significant experience and there is some evidence that the same is true for self-efficacy in parents of children with ID (Hassall et al., 2005), these findings are instructive. While there are indications that attachment-based interventions do positively impact elements of parent-child interactions in the context of ID (see a systematic review by Ramsden et al., 2024), none of the studies of these interventions for children with ID assessed effects on attachment security directly. Hence, the extent to which attachment-based interventions impact on attachment security, specifically, for children with ID remains an open question.

1.2.8 The Attachment and Biobehavioral Catchup Intervention

Attachment and Biobehavioral Catch-up (ABC) is an attachment-based intervention targeted at the parents, or primary caregivers, of infants and young children at risk of developing problematic attachments stemming from exposure to early adversity. Originally developed for infants in the six- to 24-month age range (ABC-I), the intervention has since been adapted for an older, toddler/early childhood cohort aged 24- to 48-months (ABC-T/EC; Dozier & Bernard, 2017; Lind et al., 2017; Raby et al., 2019) and for infants whose mothers are opioid-addicted (mABC; Labella et al., 2021, 2024). The ABC is a home-visiting programme that has accrued a now well-established evidence-base supporting its efficacy and effectiveness along various dimensions. By 2022, the ABC had been implemented across 28 states in the USA and almost a dozen other countries. According to the National Home Visiting Resource Centre (NHVRC), between 2017 and 2022, close to 57 000 ABC home visits had been conducted (including almost 14 000 virtual visits due to the COVID-19 pandemic), serving just over 5 500 families and nearly 7 200 children (NHVRC, 2018, 2019, 2020, 2021, 2022, 2023).

1.2.8.1 The ABC Intervention Process

The ABC is predicated on four key issues: 1) children who have experienced early adversity push parents away either through avoidance or resistance; 2) parents' own issues—the ways in which they process attachment-related thoughts, memories and feelings—can get in the way of providing nurturance; 3) parents need to parent in non-frightening ways; and 4) children who have experienced early adversity are both physiologically and behaviourally dysregulated (Dozier et al., 2011). The ABC

is a manualised intervention that comprises 10 sessions targeting these key issues. Although manualised, the manual serves as a framework rather than a strict stepwise ‘recipe’ of how sessions are to be conducted. The sessions, as emphasised by Dozier et al. (2011), are intended to be conversational and tailored to the individual parent-child dyad and their unique circumstances. As reflected in Figure 1, the ultimate aim of the intervention is to effect changes in the quality of the child’s attachment to their parent and to improve their early self-regulatory capacities. This, however, is brought about through enhancing parental sensitivity by targeting key parenting behaviours—nurturance in response to child distress, following the child’s lead, and the avoidance of intrusive and frightening parenting behaviours (Dozier & Bernard, 2019).

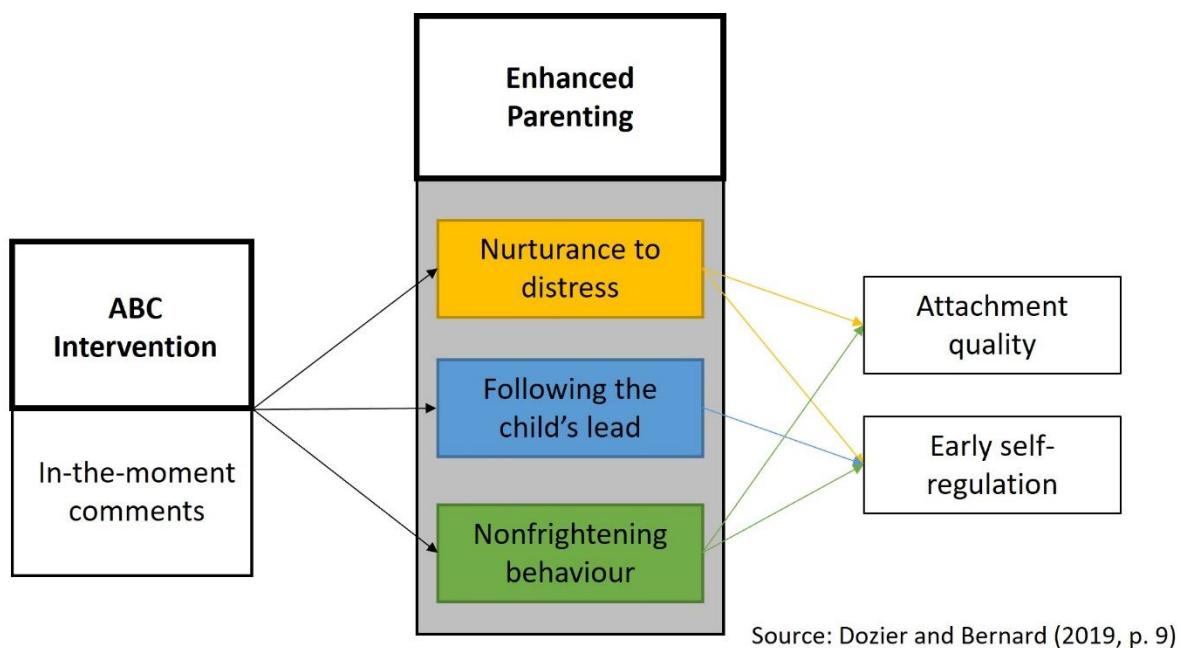
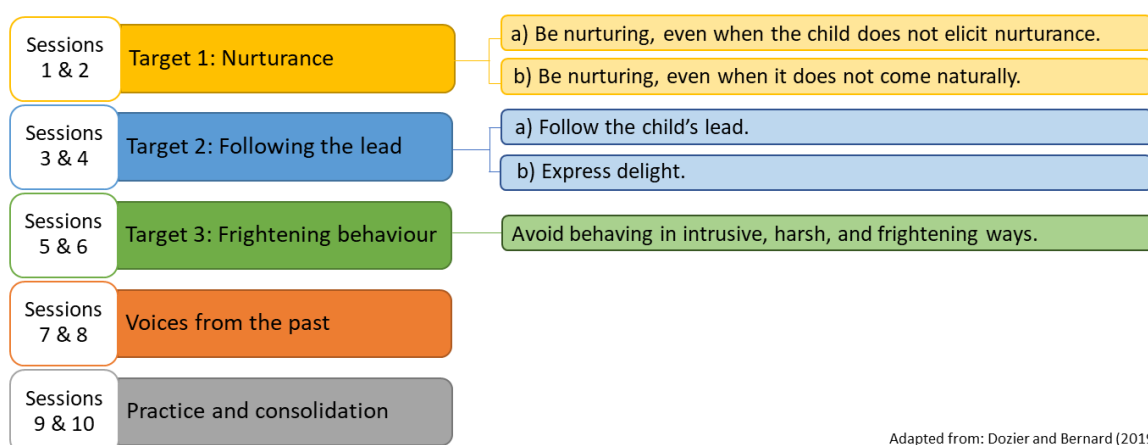


Figure 1: Attachment and Biobehavioral Catch-up—Model of Change

Parents are assisted, through the intervention, to see how difficult it can be to provide nurturance when a child engages in avoidance or resistance, compared to a child who actively seeks out their parent and is easily soothed. Sessions are used to show how a child’s behaviours can, and often do, elicit parenting behaviours that are complementary—avoidant children may elicit indifference in parents, and resistant children may elicit anger or annoyance in parents. The learnings during the intervention are reinforced through homework exercises initiated after the first session involving parents reflecting on their own child’s behaviour when distressed and their own reactions to these behaviours (Dozier et al., 2011). From the second session onwards, the focus falls more directly on the relationship between the parent and the child involved in the intervention and uses in-the-moment (ITM) commenting as the vehicle through which feedback is provided to the parent on how the focal issues are being played out in real-time interactions with their child.

The content contained within the intervention manual offers parents an introduction to the core components of the intervention (i.e., providing nurturance, following the lead, and avoiding frightening/intrusive behaviours). This content is anchored in research-based evidence which is presented to parents, augmenting the importance of each of the core components. The content presented by the intervenor, known as the parent coach, is supported and illustrated with video material of other parents who represent both high and low levels of the focus parenting behaviour for the respective session, allowing those participating in the intervention to develop a clear understanding of what the target behaviours are and how they look in practice. This use of video material is engaged with in a collaborative manner with parent coaches actively reviewing the behaviours being observed, pointing out in what ways the parent in the video is either performing or not performing the target behaviour. This process is then followed with intervention dyads engaging in tasks or activities that may challenge their ability to perform the behaviours targeted by the ABC, which is further supported and scaffolded through the use of ITM comments as the primary mechanism through which continual feedback is provided. The parent-child interactions during the activities are also video-recorded and used in subsequent sessions where specific clips are selected by the parent coach for the purposes of video-feedback, allowing the parent to observe themselves in relation to the intervention targets. The intervention, therefore, utilises a variety of practice elements including, among others, psychoeducation, in-vivo feedback and video-feedback. Furthermore, although the child is required to be present during all 10 sessions (to allow for parent-child interactions to take place), the parent coach avoids direct interaction with the child, which is an intentional approach adopted by the ABC to further reinforce and encourage interactions between the parent and child, rather than the intervenor and child. This general structure is followed throughout the intervention's 10 sessions which are organised according to the three main targets as reflected in Figure 2.



Adapted from: Dozier and Bernard (2019)

Figure 2: ABC-I Session Outline

Although video-feedback is used throughout the intervention, ITM commenting on parent-child interactions as they happen, in-vivo, is foregrounded and regarded as the ABC's 'active ingredient',

and is considered a priority over and above the delivery of intervention content (Caron et al., 2018; Dozier & Bernard, 2019). Parent coaches are expected to provide constant and continual feedback on parent-child interactions during sessions as practical examples of what is being discussed in the session, and may interrupt the delivery of content whenever an opportunity arises for the delivery of an ITM comment (i.e., when the parent behaves in a nurturing way, or follows the child's lead). The ITM comments are centred on specific behaviours the parent is engaging in, are explicitly linked to an intervention target, and also speak to the effects of this behaviour on the child. This 'formula' is used to ensure that parents, respectively, understand exactly what behaviour is being focused on, how it relates to the intervention targets, and what its consequences are for their child.

ITM commenting also serves as the main mechanism through which the ABC monitors fidelity, which refers to the degree to which an intervention is implemented competently and as intended by its developers (Carroll et al., 2007). Monitoring fidelity is important because the relationship between the intervention and its intended outcomes is moderated by the degree of intervention fidelity when transferred into the community (Dusenberry et al., 2003). Thus, in the absence of intervention fidelity, the success of an intervention is likely to be constrained (Dozier & Bernard, 2019). The lynchpin of the ABC's fidelity monitoring system is the practice of using ITM commenting. Throughout the training phase for parent coaches, fidelity is closely monitored by supervisors with weekly supervision sessions dedicated specifically to fidelity. During this process, a randomly selected segment of the video-recording of the week's ABC session is coded by both the supervisor and the parent coach for on-target ITM comments to determine the rate of ITM comments and also the percentage of those ITM comments that are on-target. The practice of self-coding ITM commenting, and the use of video-feedback during supervision are regarded as particularly useful in securing fidelity (Dozier & Bernard, 2019; Meade et al., 2014). Furthermore, this monitoring during supervision has been found to increase the rate of ITM commenting among parent coaches implementing the ABC-I, facilitating fidelity when transferred to community contexts (Costello et al., 2019).

1.2.8.2 Evidence for the Effectiveness of the ABC

Change resulting from the ABC is enacted through intervening intensively in the parenting behaviours of primary caregivers, rather than intervening directly with the children. Starting in the early-2000s, studies—predominantly randomised controlled trials (RCT)—have assessed the efficacy and effectiveness of the ABC on a range of outcomes for both parents (O'Byrne et al., 2023) as well as children (Grube & Liming, 2018), showing positive effects not only at post-intervention, but also longitudinally into adolescence (Miller et al., 2024). These effects are reviewed below.

1.2.8.2.1 The Effects of ABC on Parent Outcomes

Due to its theorised link to attachment security and as a major target of the ABC, caregiver sensitivity has been assessed as a key parenting outcome of the intervention. The ABC has demonstrated significant, positive effects on sensitivity in both community samples (Roben et al., 2017) and RCTs. Amongst low-income families (Berlin et al., 2018), substance abusing mothers (Berlin et al., 2014), foster mothers (Bick & Dozier, 2013), biological mothers at risk of abusing their children (Yarger et al., 2016), and mothers undertaking international adoptions (Yarger et al., 2020a), those receiving the ABC have consistently been found to outperform those in control conditions on measures of caregiver sensitivity at post-intervention, and at later follow-up (Yarger et al., 2020a). These findings are further reflected in studies demonstrating the positive effects of the ABC on parental beliefs about infant crying which relates to the parent's ability to accurately interpret and respond to infant distress (i.e., sensitive responsiveness) (Thorpe et al., 2022). The observed effects on sensitivity are also supported by evidence of parental changes at the neurobiological level. In this respect, Bernard et al. (2015a) observed enhanced neurophysiological processing of emotional infant faces in mothers who received the ABC versus those who did not, suggesting a superior capacity to interpret and respond to infant signals. In sum, therefore, there is robust and well-established evidence of the effects of the ABC on caregiver sensitivity.

In addition to caregiver sensitivity, however, positive effects of the ABC have also been found on a range of other parent-related outcomes including parental mental representations of attachment (Raby et al., 2021), parental withdrawal (Yarger et al., 2020b), as well as parenting stress and child abuse potential (Sprang, 2009). Further augmenting these findings are studies demonstrating the effects of the ABC on sensitivity, intrusiveness, positive regard, parenting self-efficacy, parental depression and self-reported beliefs about infant crying from baseline to post-intervention when transferred into community settings, indicating that its translation from the laboratory to broader implementation is promising (see Carmody et al., 2023; Carrera et al., 2024; Perrone et al., 2021). Although intervention effectiveness may show a tendency to become diluted upon community implementation, generally (Flagg et al., 2022), the ABC appears to be comparably effective on a wide range of parent-related outcomes over and above parental sensitivity in both laboratory as well as community settings, which is promising.

Qualitative evaluations of the ABC align with the evidence of its effectiveness. Parents and intervenors have reported noteworthy learnings related to parent-child interactions (e.g., learning to follow the child's lead) and have noted subjectively perceived improvements in these interactions as a result of participating in the ABC. The intervention has, generally, also been experienced as positive, relevant and a good fit, which is facilitated by the strengths-based approach to feedback and the supportive presence of the intervenor. These experiences were similar across different communities in the USA (Aparicio et al., 2016; Bagwell-Gray et al., 2023; West et al., 2022) and among Norwegian parents

(Bergsund et al., 2024) which is suggestive of the potential cross-cultural relevance and applicability of the ABC. However, although research on the ABC has been conducted among minority communities in the USA (e.g., Latina mothers; Aparicio et al., 2016), no studies have been conducted in settings outside of the USA or Europe, highlighting a noteworthy gap in the literature.

1.2.8.2.2 The Effects of ABC on Child Outcomes

The ultimate goal of the ABC is to strengthen the attachment relationship between caregiver and child, and to enhance the child's regulatory capacities. As such, trials have also evaluated the effects of the ABC in relation to child-related outcomes including attachment security and organisation, cortisol regulation, self-regulation, executive functioning, as well as socio-emotional competence. Regarding attachment, Dozier et al. (2009) found that foster infants who received the ABC displayed significantly less attachment avoidance in comparison to the control condition. In line with this, Bernard et al. (2012) found lower rates of disorganised attachment, and higher rates of secure attachment, in maltreated infants who received the ABC compared to controls. This effect was maintained into middle childhood (Zajac et al., 2020). These studies together provide evidence for the effectiveness—and maintenance thereof over time—of the ABC on attachment security and organisation in at-risk infants.

The ABC has also been found to have a positive intervention effect on children's regulatory capacities at various levels. At the biological level, numerous studies have shown the effects of the ABC on children's cortisol regulation. Dozier et al. (2006, 2008) reported that the infants in foster care whose parents had received the ABC showed a more typical diurnal production of cortisol in comparison to those in the control group. These findings were replicated among infants at risk for neglect (Bernard et al., 2015b), which were maintained longitudinally at a four-year follow-up (Bernard et al., 2015c). In addition to diurnal cortisol regulation, the ABC has also been found to significantly improve stress-induced changes in cortisol production in infants receiving the ABC compared to those who did not (Berlin et al., 2019). The effectiveness of the ABC on both diurnal cortisol regulation and stress-induced cortisol changes has, however, been found to be indirect, via its direct effects on parental sensitivity (Berlin et al., 2019; Garnett et al., 2020).

These findings on cortisol regulation and reactivity are consistent with the effects of the ABC on psychophysiological measures of autonomic nervous system functioning during middle childhood. Tabachnik et al. (2019) found that children who received the intervention had, on average, significantly lower heart rates and higher respiratory sinus arrhythmia compared to controls, suggesting that the ABC may be associated both with reduced behavioural activation as well as improved physiological regulation. Thus, the ABC appears to also have a noteworthy intervention effect at a biological level with regards to autonomic functioning.

The ABC's effects on a range of additional biological outcomes have also been identified. The ABC has been associated with positive changes in DNA methylation, an epigenetic mechanism of gene regulation which may be the basis for phenotypic expressions such as affect and cortisol dysregulation (Hoye et al., 2020). This has, however, not been established experimentally. At a neurological level, the ABC has been causally linked to a more normative electroencephalogram pattern of neural functioning during middle childhood (Bick et al., 2019), as well as greater responsivity to maternal cues in a variety of brain regions (Valadez et al., 2020), changes in amygdala-prefrontal cortex connectivity, and greater responses in brain regions associated with emotion regulation (Valadez et al., 2024). This aligns with findings at a behavioural level on the effects of the ABC on emotional functioning. Infants exposed to the ABC show significantly lower levels of negative affect expression (Lind et al., 2014) which is maintained into middle childhood (Labella et al., 2020). Additionally, among infants higher in emotional reactivity, the ABC resulted in significant improvements in emotional dysregulation (Hepworth et al., 2020). In line with this, infants exposed to the ABC also show greater socioemotional skills. Maltreated infants whose foster parents received the ABC show significantly fewer parent-reported internalising and externalising problems, as well as a greater improvement over time compared to controls (Sprang, 2009). Parents of internationally adopted infants also report significantly higher levels of socioemotional competence following the intervention and at longer-term follow-up (Lind et al., 2021). The evidence suggests, therefore, that the ABC is effective in improving children's emotional functioning and that this effect may be maintained longitudinally for those who receive the intervention during infancy.

At a cognitive level, the ABC has shown effects on child executive functioning including attention, inhibitory control and cognitive flexibility, as well as language development. For foster children who received the ABC during infancy, large effects were observed on cognitive flexibility as well as theory of mind in comparison to those in the control condition when assessed during early childhood (Lewis-Morrarty et al., 2012). Furthermore, children whose parents received the ABC were also found to be significantly more compliant and to have better inhibitory control, longitudinally (Korom et al., 2021; Lind et al., 2020). Lastly, medium to large effects of the ABC have been observed on language development including better receptive language and vocabulary when measured longitudinally during a preschool-age follow-up (Bernard et al., 2017). Therefore, the ABC, in addition to biological and emotional outcomes, also appears to have a noteworthy effect on a range of cognitive outcomes which may be crucial to children's development in the domains of social competence and academic achievement.

Promisingly, a similar trend in effectiveness has been observed for children who only receive the intervention for the first time during early childhood (ABC-T/ABC-EC). This includes significantly fewer attention problems and better cognitive flexibility (Lind et al., 2017) as well as greater receptive

vocabulary skills (Raby et al., 2019) and higher quality conversations between parents and toddlers (Gaudreau et al., 2024). Furthermore, both Raby et al. (2019) and Gaudreau et al. (2024) found that the effect of the ABC on vocabulary skills and conversational quality were mediated by parental sensitivity, highlighting the crucial role of sensitivity in child development and augmenting this as a focus of the ABC.

Overall, the evidence suggests that the ABC is effective at improving a variety of key parent and child outcomes. Although this evidence-base for the ABC continues to grow and its implementation is increasingly scaled, its use among special populations remains largely unknown. For example, its utility and effectiveness among children with disabilities—ID, specifically—has not yet been investigated. Indeed, children with various disabilities or cognitive-intellectual impairments are often ineligible for participation in RCTs and only a handful of studies have focused exclusively on evaluating attachment-based interventions for this population (Ramsden et al., 2024). The ABC is among those interventions which have not been tested for use among families with a child with ID. Delays in a child’s development are thought to impact parental functioning significantly (Herring et al., 2006). Hence, the ABC’s three focal tenets—nurturing, following the lead and reducing intrusive behaviours—could be especially useful for parents of children with ID who may have difficulty understanding and interpreting their child’s signals, and may struggle to notice the child’s need for nurturing (Oppenheim et al., 2007). The use of ITM commenting could be particularly beneficial to point out specific moments to caregivers to assist them in identifying more subtle signals that may otherwise be missed. Furthermore, due to the child’s lag in development, parents may feel the need to compensate and stimulate learning through turning interactions into an opportunity for teaching, thus taking the lead rather than following the child’s lead (Dozier & Bernard, 2019). Following the lead and, hence, promoting regulation, may be particularly useful for children with ID who may be more susceptible to stress and have poorer coping skills, resulting in biobehavioural dysregulation (Janssen et al., 2009). Finally, interactions between parents and their children with ID are often characterised by parenting that is more intrusive (Brown et al., 2011; Floyd et al., 2004), suggesting the ABC’s focus on reducing intrusive and frightening behaviours could be of benefit. This underscores the potential value of the ABC for families with a child with ID to facilitate the child’s development and wellbeing.

Furthermore, the home-based nature of the ABC may be particularly valuable in enhancing access to disability services in difficult-to-reach populations in South Africa and is consistent with the National Integrated Plan for Early Childhood Development (Department of Social Development, 2015). Home visitation programmes by community health workers are a viable and effective approach to expanding the reach of early childhood development services, and promoting child outcomes, in rural and township communities in South Africa (Ilifa Labantwana, 2012; Stansert Katzen et al., 2020; Tomlinson et al., 2020). This may be particularly beneficial given the reported barriers to accessing services for children

with ID in these communities in the South African context (e.g., Mkabile & Swartz, 2022; Modula & Chipu, 2024). The supportive and strengths-focused approach of the ABC could also play a role in supporting and empowering caregivers of children with ID in South Africa who report the lack of support and disempowerment as salient experiences in relation to their parenting role (e.g., Sadiki, 2022). The ABC could, therefore, contribute towards the strides to realise the UN Sustainable Development Goals in South Africa by promoting nurturing and responsive caregiving via early childhood development initiatives for young children, generally, but also specifically in the particularly vulnerable population of children with ID (WHO et al., 2018). Therefore, the present study addresses a gap in the extant literature by investigating the effects of the ABC in this population, while also exploring parent and intervenor experiences and perceptions to inform possible adaptations that may be required to better align the ABC for implementation in families with a child with ID, and also for the South African context.

1.3 Overall and Specific Aims

The overall aim of the project was to explore the effects of the Attachment and Biobehavioral Catch-up (ABC) parenting intervention aimed at improving caregiving and caregiver-child relationships in dyads where the child has an ID.

More specifically, the study aimed:

1. To synthesise and determine the practice elements of effective attachment-based interventions, and their application for parenting programmes, using the Distillation and Matching Model. (Article 1)
2. To explore the caregiving needs, challenges/stressors, support structures, roles and perceptions of current care of parents of children with ID. (Article 2)
3. To obtain expert/professional opinion and input on the needs, challenges and wishes/needs of parents of children with ID. (Article 2)
4. To establish the effects of the ABC intervention on caregiver sensitivity, child attachment security, and child affect regulation in dyads where the child has an ID. (Article 3)
5. To obtain expert/professional opinion, and caregiver impressions, on the ABC intervention in order to inform potential adaptations for children with ID in the South African context. (Article 4)

1.4 Research Paradigm and Methodology

1.4.1 Overarching Research Paradigm: Pragmatism

The overarching research paradigm within which this study was situated is that of *pragmatism*. Developed in the late 19th and early 20th century, pragmatism emerged as a philosophical movement focusing on the practical consequences of social reality (Kelly & Cordeiro, 2020). Pragmatism as a philosophical movement emerged in response to a fundamental agreement over the rejection of traditional assumptions about the nature of reality, knowledge and inquiry. Scholars adhering to a pragmatist stance rejected the idea that inquiry within the social sciences could access reality exclusively through the use of a single scientific method (Kaushik & Walsh, 2019). As a research paradigm, pragmatism is extricated from contentious metaphysical concepts related to truth and reality, and accepts that there may be either a single or multiple realities that can be subject to empirical inquiry. Pragmatism, furthermore, is oriented towards solving practical problems in the real world. Its main purpose of inquiry is to create knowledge that brings about change and improvement (Elgeddawy & Abouraia, 2024). The overriding issue for pragmatists is whether the philosophical assumptions and methodologies are useful and instrumental in achieving the desired results. Hence, pragmatist researchers place at a premium the research questions and do so over and above philosophical considerations. For pragmatists, the process of creating knowledge falls on a continuum rather than on either of the two poles of objectivity and subjectivity. It embraces both extremes and makes space for a more flexible and reflexive approach to research design such that researchers may select the design and methodology that is most appropriate to answer the research questions being posed (Elgeddawy & Abouraia, 2024). Therefore, pragmatism adopts an assumption of independence of methods in which researchers have freedom and flexibility, without needing to commit to a particular research method. Thus, as is reflected in this study, studies grounded within pragmatism, often employ diverse methodological combinations to address research questions, including the intermixing of qualitative and quantitative approaches (Allemang et al., 2021). The method, here, is secondary to the research questions themselves. For pragmatists, the best method is that which most effectively produces the desired consequences of an inquiry whether it is a single method, multiple methods, or a mix of methods. Thus, in pragmatic research, the methodology is adopted based on the adequacy of particular methods to answer the research questions and not primarily on researchers' commitments to paradigms and the philosophical doctrines in which they are grounded. As such, it is the research questions that are prioritised, sidelining epistemological and ontological contentions, which charts a course for research that combines a variety of approaches. The foregrounding of the research question means that research bringing together qualitative as well as quantitative approaches is feasible, desirable and even required when addressing certain research questions, or combinations thereof (Kaushik & Walsh, 2019).

In line with a pragmatist paradigmatic orientation, the research methodology for this project was multifaceted, driven primarily by the specific aims as stated in Section 1.3 above. For the purposes of clarity, the discussion of the methodology that follows (summarised in Figure 3 below) will be clustered and organised according to these specific aims.

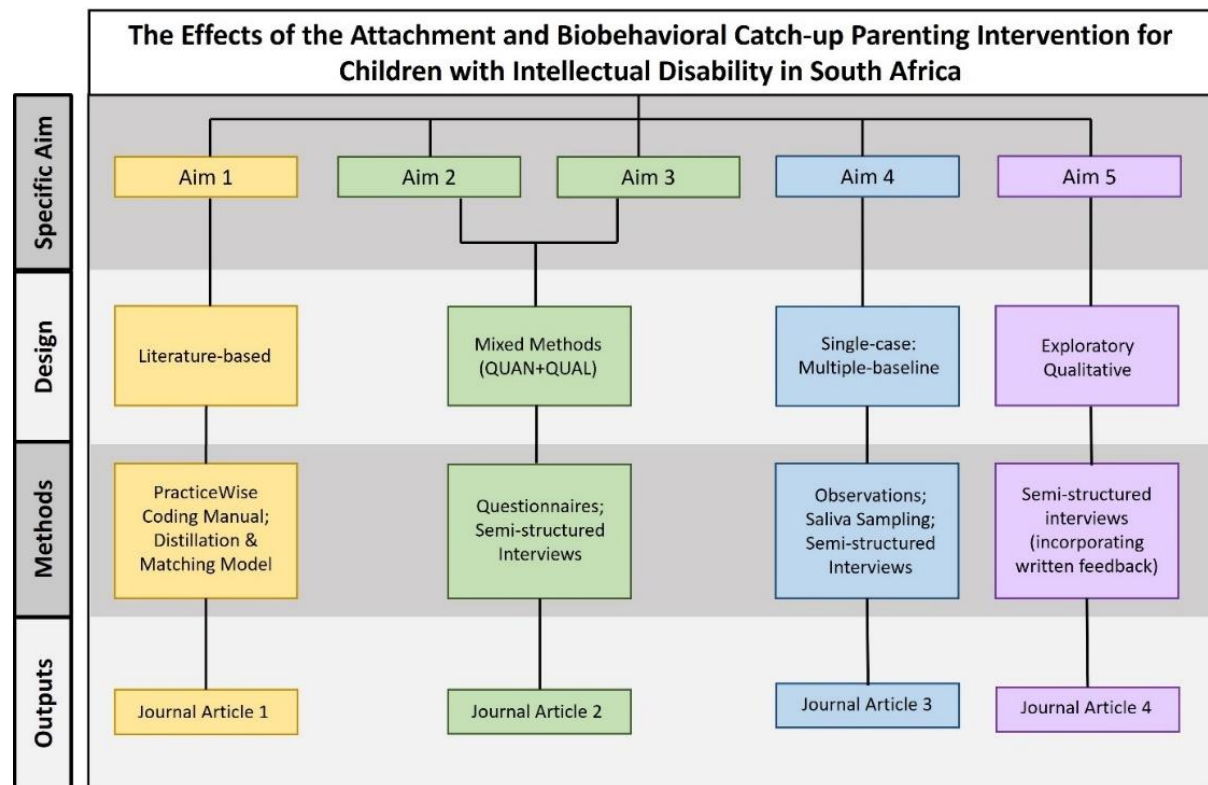


Figure 3: Overview of Research Design, Methods and Outputs

1.4.2 Methodology: Aim 1

To synthesise and determine the practice elements of effective attachment-based interventions, and their application for parenting programmes, using the Distillation and Matching Model, the methodology as explicated below was utilised.

1.4.2.1 Research Approach and Design

The overarching design for this phase of the study comprised a systematic review of the literature on the effectiveness of attachment-based interventions. Systematic reviews are the ‘gold standard’ of evidence syntheses as they keep to a set of scientific methods that seek to limit bias by attempting to identify, appraise, and synthesise the relevant literature to answer a particular question (Siddaway et al., 2019; Petticrew & Roberts, 2006). This method of appraising, summarising and reconciling the evidence is geared, often, towards informing policy and practice (Dickson et al., 2014; Mengist et al.,

2020; Petticrew & Roberts, 2006). Systematic reviews are useful when a wide range of research has been conducted on a subject but there are key questions that remain unanswered (Petticrew & Roberts, 2006). In the current study, while there is a substantive evidence base for attachment-based interventions, in general, little is known about the specific practice elements of those interventions and how those elements are differentially organised for different groups of children. Hence, a systematic review was deemed appropriate to answer this question.

The systematic review was guided by the Distillation and Matching Model (DMM; Chorpita & Daleiden, 2009; Chorpita et al., 2005). The DMM is an adapted data mining approach designed to provide detailed descriptions of the practice-related components of evidence-based psychological interventions. The model involves two core processes—1) distillation, and 2) matching. The *distillation* process conceptualises interventions not as single units of analysis but as composites of individual practice-related components that can be empirically grouped (Chorpita et al., 2005). The second core component of the model, *matching*, is a process of summarising client, setting, or other factors that may be relevant considerations when selecting interventions in clinical practice. The value in this matching component lies in its ability to gauge the association between the practice components identified during the distillation process and particular study characteristics (i.e., client, setting, age, gender etc.), which can be empirically determined. This allows for the determination of which interventions are most appropriate for clients who possess particular characteristics.

1.4.2.2 Literature Search and Screening

The study population included the entire body of published research on the effectiveness of attachment-based interventions. To apply the DMM, empirical studies on the effectiveness of attachment-based interventions were identified through a systematic literature search and review, which was conducted according to the PRISMA guidelines (Liberati et al., 2009). The literature search was performed using a combination of approaches. First, the reference lists of existing meta-analyses and systematic reviews of the attachment-based intervention literature (e.g., Bakermans-Kranenburg et al., 2003, 2005) were searched for potentially eligible studies. Second, computerised searches of electronic scholarly databases (PubMed, Ebsco, PsychArticles, Cochrane) were carried out to identify additional, and more recent, RCTs of parent-focused attachment-based interventions measuring attachment and parenting-related variables published between January 1998 and December 2022. After duplicates were removed and full-text articles were screened, 106 journal articles met the eligibility presented in Table 1, below. As per the DMM, the focus is on the practice elements of effective interventions. Hence, only those studies in which the intervention protocols being tested showed statistically significant intervention effects were included in the final analyses. The 106 journal articles reported on 100 studies. Of these, 60 tested effective interventions and, hence, were included in the analysis. See Article 1 for further information, including the PRISMA diagram, which details the literature search and screening process.

Table 1

Aim 1: Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Articles published January 1998-December 2022.	Articles published outside of the stated time period.
Studies including children of any age.	Individual child-focused interventions.
Caregiver-focused interventions aimed at addressing attachment security/organisation in the child, and/or caregiver sensitivity.	Studies that did not measure any attachment-related (child) or sensitivity-related (parenting) outcomes.
Outcomes: Attachment security or organisation using any method of assessment; Caregiver sensitivity using any method of assessment.	Study designs other than RCTs, and partially randomised studies were excluded i.e. a study that randomly assigned participants to an intervention group and a control group, but also included a non-randomised comparison group in the final analysis.
Any setting.	Articles published in languages other than English.
Study designs: Randomised controlled/clinical trials (RCT)—only studies which included a process of full randomisation of participants into an intervention group and at least one control condition.	
Only articles published in English.	

In addition, and in line with the DMM, the developers of the interventions tested in each of the RCTs included in the study were contacted to request the full intervention manuals that were used in each of the published trials. The full intervention manuals are the most complete descriptions of the interventions and their component sessions and, hence, are regarded as the most appropriate source to code for practice elements. In the event that an intervention manual was not available, the developers were not willing to share the manual, or no response was received, the description of the intervention provided in the published article was coded instead, as suggested by Chorpita et al (2005). For the present study, 33 full intervention manuals were obtained and coded for practice elements. Of the total of 33 full intervention manuals, 20 pertained to effective interventions.

1.4.2.3 Data Extraction Methods and Procedures

Following on from the literature search process outlined in 1.4.2.2 above, data were extracted from the final sample of included articles using the *Psychosocial and Combined Treatments Coding Manual* (PracticeWise, 2005) and its associated electronic coding sheets. The coding sheets allowed for extraction of data reflecting study characteristics (e.g., study outcomes; effects; child age; ethnicity; risk status; location) and practice elements (i.e., specific clinical techniques used within interventions

protocols). The coding manual provided detailed descriptions and explanations, guiding coders on how to code and extract data from articles and intervention manuals for each item on the coding sheet. According to this approach, practice elements, specifically, were coded only for the presence or absence within an intervention protocol, regardless of the number of instances that the element occurs within any given protocol. In this study, each article and intervention manual was coded separately and independently by two coders—the researcher and an additional coder. The coding was subsequently discussed in a series of meetings to resolve any discrepancies or disagreements between coders and to facilitate consensus. In this study, 100% of the included articles and intervention manuals were subject to consensus discussions and the analysis was conducted on the data upon which consensus was reached.

In the early stages of using the PracticeWise coding system, it became evident that the “Protocol Coding Sheet”, used to code for practice elements, was designed for more ‘generic’ psychological interventions for children. Hence, the majority of the original practice element codes embedded within the PracticeWise coding system were not applicable to attachment-based interventions and, hence, could not be used to comprehensively code this class of interventions. Therefore, to achieve the aim of the study, the researcher—in collaboration with his supervisors—adapted the existing PracticeWise coding system to allow for a comprehensive coding of the practice elements of attachment-based interventions, specifically. The adapted coding system was then applied to all articles and intervention manuals in the current study following the coding process described above.

1.4.2.4 Methodological Quality Assessment

The methodological quality of each of the studies included in the analysis was appraised using the Effective Public Health Practice Project (EPHPP) Quality Assessment Tool for Quantitative Studies (Armijo-Olivo et al., 2012). This tool provides a global quality rating of ‘strong’, ‘moderate’, or ‘weak’, as well as similar ratings within specific subdomains including selection bias, study design, confounders, blinding, data collection methods and withdrawals/dropouts. Each study was evaluated for quality by the researcher as well as an independent rater. Any disagreements in ratings were resolved through consensus discussions.

1.4.2.5 Data Analysis

Borrowing from the data analytic approach of Chorpita and Daleiden (2009), the data analysis was based on the subset of studies that contained so-called ‘winning’ interventions—these were studies in which the intervention group statistically significantly outperformed the control group on target study outcomes—in this study, attachment, sensitivity and/or parent-child interaction quality—and were, therefore, effective (Chorpita et al., 2005). After data were extracted from all 100 studies, 60 were found

to have contained winning intervention protocols and were, therefore, included in the final analysis. In line with Chorpita and colleagues (Chorpita & Daleiden, 2009; Chorpita et al., 2005) the data analytic approach used in this study was based in data mining—a data-led strategy—and sought to establish a dendrogram that would allow for the delineation of specific profiles of practice elements based on the following variables (population characteristics): child age, ethnicity, risk status and location. This was achieved first through data reduction in which the many features of the ‘winning’ interventions were reduced to a set of common practice elements. This allowed for the distillation of only relevant information from within intervention protocols, filtering out other additional information. This made it possible to subsequently group practice elements into profiles reflecting the relative frequencies of each practice element for categories within each of the population characteristics noted above. To do this, the categories within each of the variables were first defined. Child age, for example, was subdivided into four categories, namely children aged 6 months and younger, 7-35 months, 3-11 years, and 12-18 years (see Article 1 for further details related to the remaining variables). Subsequently, the frequency counts of each practice element for all ‘winning’ study groups were computed for each category within the four variables of interest.

To build these practice element profiles, it was necessary to establish the associations between the practice elements and the various categories of population characteristics. This allowed for an exploration of how interventions look—at the level of practice elements—for different subgroups such as, for example, children who are at socioeconomic risk versus abuse risk, or other risk. This process of matching involved determining which population characteristics matched the occurrence of particular patterns of practice elements in the literature, to inform practice (Chorpita et al., 2005). Thus, for instance, if the attachment-based intervention literature suggests that video-feedback is more commonly paired with psychoeducation among Black children who are at risk for abuse, the corresponding practice element profile (video-feedback and psychoeducation) would be recommended for a client that meets these demographic indicators. This matching process was approached using intraclass correlation coefficients (ICCs) as an index of pattern similarity to compare practice element frequency patterns within and across variables (Chorpita & Daleiden, 2009). A high ICC between different categories (e.g., abuse risk and SES risk from the Child Risk Status variable) suggested a similar pattern of average practice element frequency for these categories. Within each variable, ICCs were computed for all possible pairwise comparisons amongst its categories and the pair with the highest ICC was merged into a single category. ICCs were then repeated using the newly merged pair to determine if any further merging was warranted. This process was followed until no further merging was possible, and was done for each variable of interest. Following the merging process, all variables were then examined for producing optimal splits in the dendrogram. To do this, the average of ICCs computed within each variable was calculated and the variable with the lowest average ICC was chosen as the first branch in the dendrogram because this indicated the greatest degree of variability in its

practice element profiles across categories within the variable. Following this, for each category within the first branch of the dendrogram, the procedure was repeated using all remaining variables. First, the variables were examined for maximal merging and, then, for differentiation in order to identify the next branch in the dendrogram. This was repeated until all remaining variables merged into a single unit, no differentiation was possible, or no further variables were left to be examined, resulting in the final dendrogram (see Article 1).

1.4.3 Methodology: Aims 2 and 3

To i) explore the caregiving needs, challenges/stressors, support structures, roles and perceptions of current care of parents of children with ID (Aim 2); and ii) obtain expert/professional opinion and input on the needs, challenges and needs/wishes of parents of children with ID (Aim 3), the methodology as explicated below was utilised.

1.4.3.1 Research Approach and Design

A convergent parallel mixed-methods (QUAN+QUAL) design (Creswell & Plano Clark, 2018) was used in which complementary quantitative and qualitative data were collected to develop a comprehensive understanding of the problem under investigation (see Figure 4 for an overview). Also known as a concurrent triangulation design (Edmonds & Kennedy, 2017), data were collected in the same time frame with the aim of converging the quantitative and qualitative datasets at the point of interpretation for the purposes of corroboration, completeness, explanation and deeper exploration, or enhancement to arrive at robust conclusions (Bryman, 2006). The quantitative component was cross-sectional and descriptive in its approach to provide a ‘snapshot’ of the challenges/stressors, support structures, and perceptions of current care in the identified sample. This was complemented by the qualitative component which was exploratory in nature to enhance the quantitative results. This was achieved by elaborating on and deepening the understanding of the participants’ experiences of the phenomena under investigation (i.e., parenting a child with ID) from the perspectives of caregivers and, for further triangulation purposes, that of healthcare professionals who work closely with such caregivers during the course of providing interventions to their children with ID.

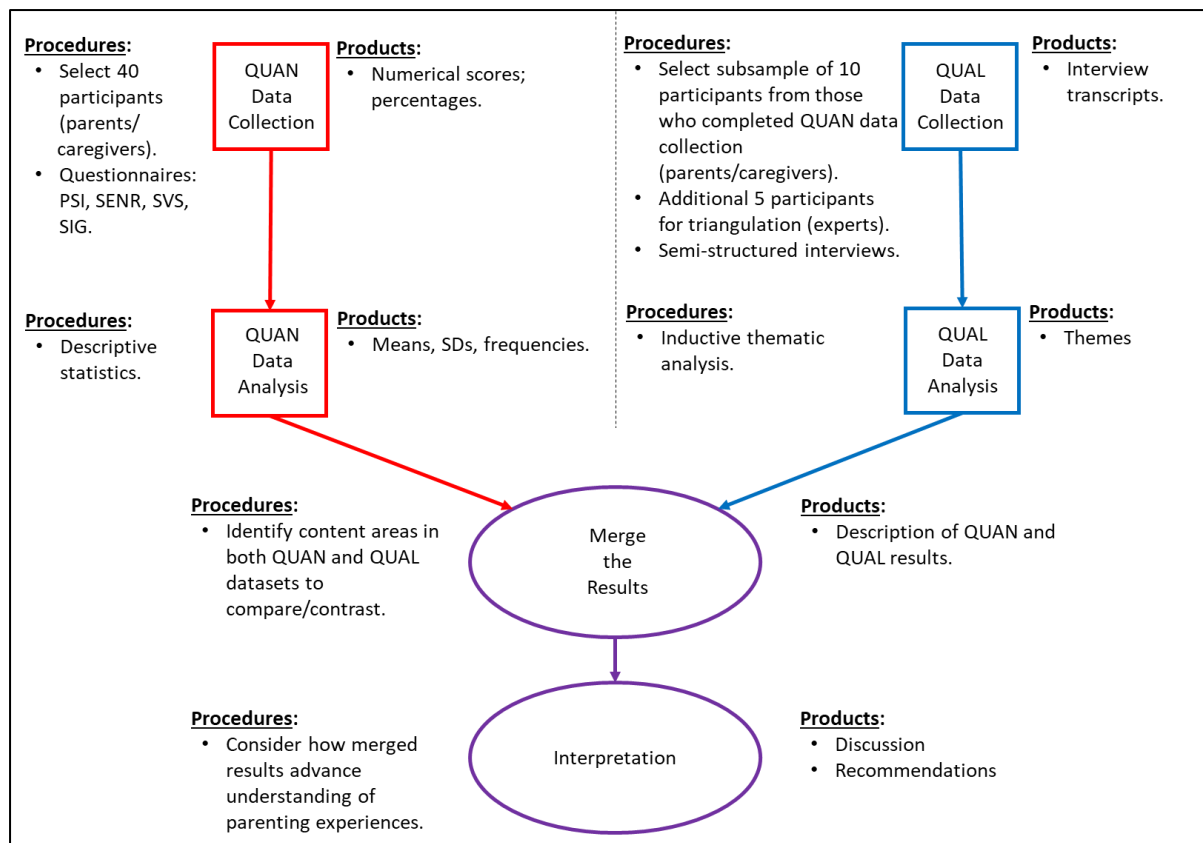


Figure 4: Overview of mixed-methods research design (Aims 2 & 3)

1.4.3.2 Study Populations, Sampling and Recruitment

For Aim 2, the study population included primary caregivers of children with ID in South Africa and, for Aim 3, the population included experts in the healthcare sector who had experience working with children with intellectual and developmental disabilities. Non-random purposive sampling (Daniel, 2012) was used to identify caregiver-participants for the quantitative and qualitative components of the study. Purposive sampling was used here as it aims to select participants into the study that possess the traits characteristic of the population under investigation (Fouche et al., 2021)—in this instance, caregivers of children with ID—according to the eligibility criteria outlined in Table 2 below. Caregiver-participants for both the qualitative and quantitative strands of the study were recruited primarily via primary-level (or equivalent) schools for children with special educational needs in Johannesburg and Pretoria. This was initiated following approval from the Health Research Ethics Committee at North-West University, the Gauteng provincial Department of Education, as well as permission from the respective school heads. This was supplemented by approaching organisations working with children with ID, such as Downs Syndrome South Africa (DSSA), to recruit additional participants once permission had been granted by the organisation.

Expert sampling (Daniel, 2012) was used to recruit expert-participants for the qualitative strand of the study. This was the most appropriate sampling method as the aim of the study was to access expertise within the field of ID to provide comment on the challenges and needs of caregivers of children with ID rooted in their clinical experience with working with this cohort of families. The experts were recruited primarily via a gatekeeper with access to a network of healthcare professionals working in the field of intellectual and developmental delays and disabilities.

Table 2

Aims 2 and 3: Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
<i>Aim 2</i> Primary caregivers of children with an ID—a primary caregiver for the purposes of this study was defined as an adult figure over the age of 18 who takes the primary responsibility for the care of the child; this may be a biological parent, but could also be an adoptive or foster parent, grandparent, aunt, uncle, or non-familial adult if this is who cares for the child on a primary basis. The participants must have had a child in the 1- to 18-year age range (developmental age) who must have received a formal diagnosis of mild or moderate ID from a trained health/mental health professional (including, but not limited to, a psychologist, paediatrician, or neurologist) or determined to have ID through a formal, documented assessment for admission to a school for learners with special educational needs. Caregivers should have a basic competence (but not necessarily fluency) in English. <i>Aim 3</i> General practitioners, nurses, psychologists, psychiatrists, occupational therapists, physiotherapists, social workers, speech and language therapists, as well as audiologists who have worked with children with ID (and their caregivers) for at least 1 year. Other health practitioners (e.g. music/art therapists) were also considered for inclusion provided they were registered with a regulatory authority such as the Health Professions Council of South African, worked extensively with children with ID and did so for at least 1 year. Participants should have a basic competence in English.	Professional caregivers (such as, for example, day mothers) were not considered for inclusion as they do not fit the definition of being primarily responsible for the care of the child. Caregivers of children with severe to profound levels of ID were also excluded. The experiences of caregivers with children with more severe forms of ID may be different to those with mild/moderate ID (e.g., parenting stress may be directly proportional to level of ID and cognitive disability significantly explains variations in parenting stress [De Gaetano et al., 2022]). Hence, severity of ID may influence parenting experiences. Practitioners with less than 1 year of experience working with children with ID.

1.4.3.2.1 Recruitment for the Quantitative Strand

Only caregivers were recruited for the quantitative strand of the study. Information leaflets were sent out to all caregivers via their child's teacher or an organisational representative who, in turn, received this information from the school/organisation head with whom the researcher had made contact. It was decided that caregivers would likely be more familiar and comfortable with receiving and reading a leaflet from a familiar person (e.g., teacher or organisational administrator) rather than a stranger. This approach was compliant with the Protection of Personal Information Act (POPIA; Republic of South Africa, 2013) as no contact or other personal information of potential participants was shared with the researcher by the schools or organisations. Schools and organisations served a mediating role between the researcher and potential participants, informing the latter about the study on the researcher's behalf (see Addendum C for the information leaflets distributed participants). The ethical considerations pertaining to the study are outlined in Section 1.6.

Fully informed about the study, caregivers were requested to indicate their interest in participating by completing the reply slip attached to the information leaflet and placing this in a box which was located at the school's or organisation's reception desk. Upon collecting the boxes from the respective sites, the researcher made contact with each potential participant, telephonically, using the contact details provided on the reply slips. Alternatively, interested parties were also able to contact the researcher directly, telephonically or by email. At this juncture, the purpose of the study was re-explained and participants were provided with a 'cooling off' period of one week to consider their participation and were afforded the opportunity to ask any questions for clarity before officially being invited to participate in the study, and having further consent and data collection procedures explained.

Initially, 60 caregivers expressed interest in participating in the study. After being contacted, 46 (76.7%) agreed to participate and 14 declined participation due to limited availability, difficulties scheduling an appointment for data collection, or disinterest after obtaining more information on the study. Of the 46 who agreed, three (6.5%) did not return questionnaires and a further three (6.5%) returned incomplete questionnaires which could not subsequently be completed, resulting in a final sample of 40 participants. The final sample consisted of 35 (87.5%) females and five males (12.5%). Seventeen (42.5%) were Black African, three (7.5%) were Coloured and 20 were White (50%). The mean age of the caregivers was 42.3 years ($SD = 8.1$) and the mean age of their children with ID was 13 years ($SD = 3.5$). Further demographic information can be found in Article 2.

1.4.3.2.2 Recruitment for the Qualitative Strand

Both caregivers and experts were recruited for the qualitative strand of the study. Ten of the 40 caregiver-participants who took part in the quantitative strand of the study expressed interest in

extending their participation by taking part in an individual interview. These participants were subsequently contacted by the researcher to verbally explain the procedures involved and all confirmed their continued participation. The subset of participants who took part in the individual interviews consisted of nine females of which eight were the biological mother and one was the maternal biological grandmother of a child with ID. The sole male participant was the biological father of a child with ID. Four of the participants were Black African, one was Coloured and five were White. The mean age of the caregivers was 45.2 years (SD = 9.3) and the mean age of their children with ID was 11.6 years (SD = 5.3) with an equal number of male and female children.

To recruit expert-participants the researcher approached health professionals via a gatekeeper. An information leaflet (Addendum D) was distributed to potential expert-participants, electronically, via email informing them of the research purpose and procedures. Professionals were asked to indicate their interest in participating by contacting the researcher either telephonically, or via email, within a week of having received the information. The researcher was available during this time to answer any questions or provide clarity for potential participants, where this was required. Five expert-participants expressed willingness to participate, and were included in the study. Four of the participants (two speech-language pathologists, an occupational therapist and a music therapist) were based in Pretoria and worked exclusively with children aged zero to three years with developmental delays and disabilities, and one—a clinical psychologist—was based in Cape Town and worked with both adults and children with ID. The clinical experience of the expert-participants ranged between six years and over a decade. One of the expert-participants was Black-African, one was Indian, and three were White.

1.4.3.3 Data Collection Procedures and Methods

In keeping with a mixed-methods approach, both quantitative and qualitative data collection procedures were undertaken to collectively achieve Aims 2 and 3. Caregivers participated in both the quantitative and qualitative strands of the study, while experts participated only in the qualitative strand. For the quantitative strand, a series of short questionnaires was administered to caregiver-participants: Parenting Stress Index (PSI), Self-efficacy in the Nurturing Role questionnaire (SENR), Social Validity Scale (SVS), and the Support Interview Guide (SIG). After participation was confirmed, participants were each contacted telephonically to schedule an appointment for the completion of the questionnaires at a time and place that was most convenient for participants. Although most of the questionnaires could have been completed independently, the SIG, as described below, is an interview-based data collection tool. It was decided, therefore, to have participants complete the questionnaires—including the SIG—in person so that the data collection could be completed in one session, thus limiting inconvenience to the participants. Questionnaires were administered either by trained research assistants or by the researcher. For those caregivers who had further consented to participating in an individual interview, the completion of the questionnaires and the individual interviews were combined into one session with

a comfort break in between. For experts, individual appointments were scheduled with each participant for the purpose of conducting an individual interview. The researcher conducted all the qualitative interviews in a private location of the participants' choosing. All participants had a basic competence in English hence all questionnaires and interviews were conducted in English.

1.4.3.3.1 Parenting Stress Index

The short form of the Parenting Stress Index (PSI-SF; Abidin, 2012) was used in this study. The PSI-SF is a 36-item self-report measure which identifies the sources and different types of stress associated with parenting. Items are scored on a five-point scale ranging from “*Strongly Agree*” to “*Strongly Disagree*”. The PSI-SF produces three subscales: Parental Distress (the extent to which parents feel competent, restricted, conflicted, supported, and/or depressed in the parenting role); Parent-Child Dysfunctional Interaction (the extent to which parents feel satisfied with their child and their interactions with them); and Difficult Child (how parents perceive their child to be, whether the child is easy or difficult to care for). A Total Stress score is also computed as an index of the overall level of stress experienced in the parenting role. The PSI-SF is aimed at parents of children between one month and 12 years of age, and takes approximately 10-15 minutes to complete. Scores on the PSI are interpreted using norms published in the PSI manual (Abidin, 2012) and can be categorised as normal, high or clinically significant. The PSI is a widely used instrument to measure stress related to parenting and served as the measure of parenting stress in the majority of studies of parents of children with ID reviewed in Section 1.2.5.2.3 above. The PSI-SF has been found to be reliable with internal consistency estimates ranging from .71 to .87 for the individual subscales, and up to .92 for the Total Stress scale. Additionally, test-retest estimates range between .60 and .84 for the subscales, and up to .78 for the Total Stress score (Barroso et al., 2016). Barosso et al. (2016) also concluded that the PSI-SF has good convergent validity, correlating well with measures of maternal depression, maternal parenting practices and infant behaviour. In this study, analysis was conducted at the level of Total Parenting Stress interpreted according to the norms published in the manual (Abidin, 2012).

1.4.3.3.2 Self-Efficacy in the Nurturing Role Questionnaire

The Self-Efficacy in the Nurturing Role Questionnaire (SENR; Pedersen et al., 1989) is a self-report tool used to measure parental self-efficacy in relation to the parenting role and consists of 16 items rated on a seven-point scale ranging from “*not at all applicable to me*” to “*totally applicable to me*”. Items capture parents' perceptions of their competence on basic skills required in parenting their child. Examples of items are: “I feel competent in my role as a parent” and “Touching, holding and being affectionate with my child is comfortable and pleasurable for me.” The individual items on the SENR are summed to produce a singular overall indicator of parenting-related self-efficacy. A lower total SENR score indicates lower parenting-related self-efficacy, and vice versa. The SENR takes

approximately 10 minutes to complete. The reliability of the SENR has been established with Cronbach's alpha estimates ranging from .86 to .89 (Verhage et al., 2013). Furthermore, Porter and Hsu (2003) report adequate convergent and discriminant validity. Norms have, however, not been established for the SENR. Therefore, in the current study, the SENR scores were interpreted in relation to previously published studies which made use of the SENR among caregivers of children with ID (e.g., Platje et al., 2018).

1.4.3.3.3 Support Interview Guide

The Support Interview Guide (SIG; Llewellyn & McConnell, 1999) was used to assess the extent and nature of the support networks of the caregivers in this study. The SIG is a short semi-structured interview that produces a list of up to 10 of the participants' support figures and categorises these interactively with the participant according to the source and type of support. The lists and categories are subsequently tabulated for the purposes of quantitative analyses resulting in a profile of the size and nature of caregiver's support networks. Given that the SIG is an interview guide for a short semi-structured interview, reliability and validity do not apply. The SIG has, however, previously been used with South African samples (Spies et al., 2017).

1.4.3.3.4 Social Validity Scale

The Social Validity Scale (SVS; Seys, 1987) is a self-report questionnaire that was administered to assess caregivers' perceptions of the healthcare services they currently receive for their child with ID. In the present study, the original SVS was adapted and used to survey the extent to which caregivers' service needs have been met by the current healthcare services received for their child with ID. Adaptations were made to align the wording of the items and response options with the aims of the study and to streamline items by removing those which were not relevant for the current study. The adapted SVS consisted of 12 items rated on a five-point scale ranging, for example, from "*very poor*" to "*very good*". In the present study, analysis of the SVS was conducted at the level of individual items rather than by computing total or subscale scores. The original SVS has demonstrated adequate internal consistency, ranging between .76 and .88, in previous studies (Damen et al., 2011; Platje et al., 2018).

1.4.3.3.5 Qualitative Interviews

Individual semi-structured interviews were conducted with each of the 10 caregivers who had consented to this, as well as with the five expert-participants. Semi-structured interviews were used to allow for the interviews to remain within the scope of the study, while simultaneously allowing for adequate flexibility to prompt and probe for additional material that may 'thicken' the data by tapping into participants' unique perspectives and experiences (DeJonckheere & Vaughn, 2019). Levitt et al. (2006) advocate for the use of qualitative methodologies such as interviews when aiming to understand

participants' experiences. Furthermore, qualitative methods are best suited when the phenomenon under investigation is not clearly understood (Hsieh & Shannon, 2005), such as in South Africa where the caregiving experiences of parents of children with ID has, historically, been poorly researched, particularly explorations related to the parent-child relationship. Semi-structured interviews were, therefore, appropriate for this study to explore the caregiving-related difficulties and challenges that this group of parents encounter with their children with ID, and what their needs are in relation to this. Semi-structured interviews are particularly useful by striking a balance between allowing participants the space to express themselves openly and freely in their narratives, while nonetheless being gently guided and focused by the interviewer. This guidance was facilitated by the use of an interview schedule to ensure that the interview remained within the scope and aims of the study while still allowing for flexibility in eliciting participants' experiences in what was essentially a 'professional conversation' (Braun & Clarke, 2013). The interview schedule was developed based on the aims of the study. Two initial sets of open-ended questions were drafted by the researcher for i) the caregivers and, ii) the experts. These initial question sets were then reviewed, refined and revised in collaboration with Prof. dr. Paula Sterkenburg to consolidate the preliminary interview schedules that were used in the interviews (Addendum J). All interviews were audio-recorded, with participant consent, to capture the full detail of the interactions. The audio-recordings were subsequently transcribed verbatim for the purposes of analysis.

1.4.3.4 Data Analysis

1.4.3.4.1 Quantitative Data Analysis

Data from the quantitative strand were used to present a cross-sectional description of the variables of interest (parenting stress, parenting-related self-efficacy, support, and perceptions of current care) as they pertained to the caregivers in the study. As such, basic descriptive statistics (means, standard deviations, frequencies etc.) were computed using the *Statistical Package for the Social Sciences (SPSS; version 27)*. This was used to describe the extent of each of the variables in the sample.

1.4.3.4.2 Qualitative Data Analysis

The quantitative data were supplemented and augmented by the data obtained in the qualitative strand and was interpreted together to provide a more in-depth account of the caregiving challenges and needs of caregivers of children with ID. Hence, in addition to the extent of the factors related to caregiving as described through the quantitative data, the qualitative data allowed for an exploration of the nature of these factors based in participant experiences. Using *Atlas.ti* software (version 8), interview transcripts from the semi-structured interviews with caregivers and experts were analysed inductively according to Braun and Clarke's (2006, 2013, 2022) thematic analysis. This elucidated themes that were

conceptualised from the data relating to the parenting challenges, needs, and perceptions of current care of primary of children with ID. The analysis involved six steps, carried out recursively, as outlined in Figure 5.

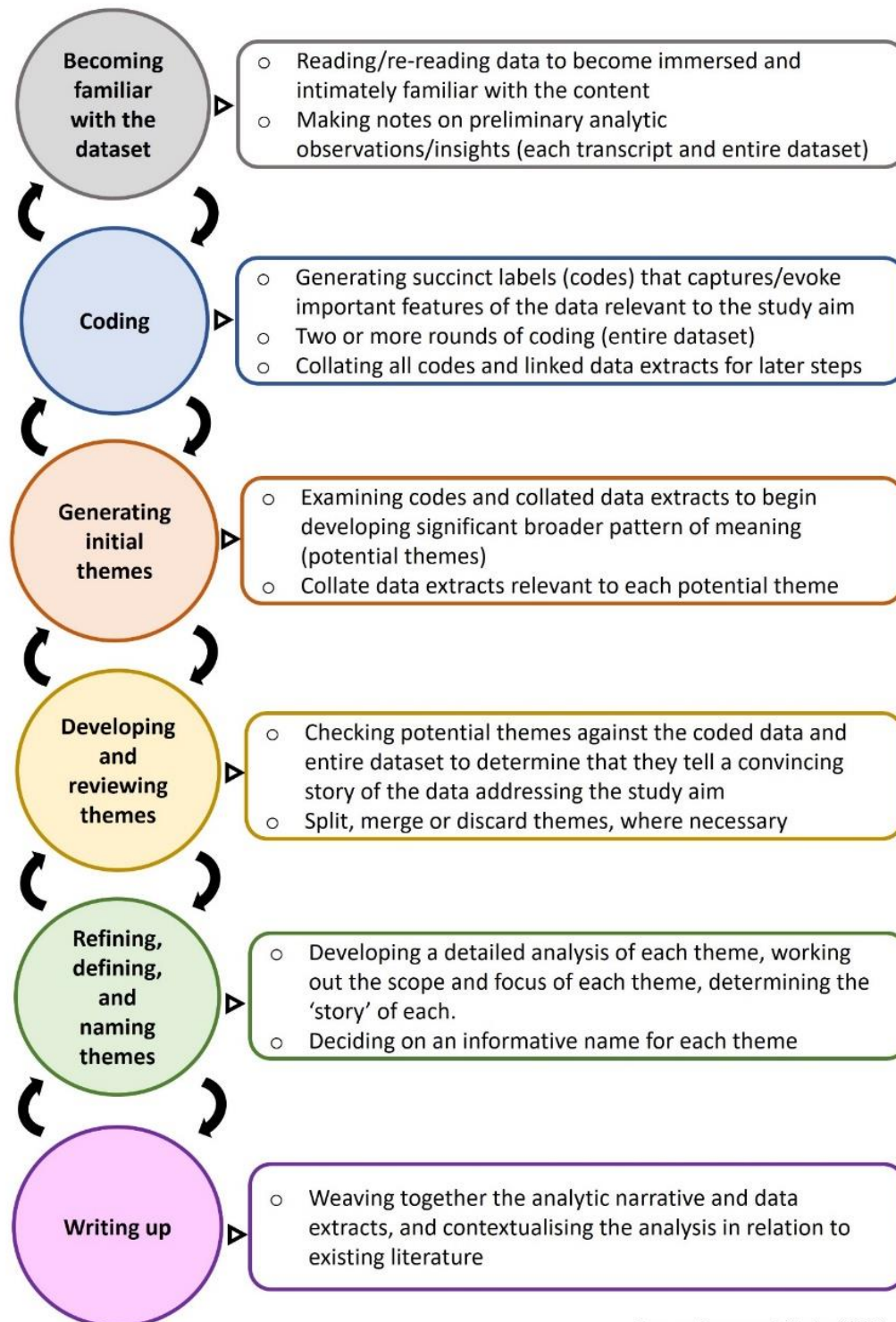


Figure 5: Six-step Thematic Analysis Process

For the purposes of rigour, this process was followed, independently, by two coders—the researcher and an additional master’s-level research assistant—experienced in conducting thematic analysis. After Steps 1 and 2, the two analysts conducted a consensus review to evaluate their concordance in coding. Where necessary, transcripts were revisited to facilitate agreement on coding. Following this, themes were developed independently by the two coders (Step 3) following which a second consensus review was conducted to compare themes and subthemes. At this stage, themes were reviewed and revised (split, merged, or discarded), where appropriate, prior to finalising the themes (Steps 4-5) for the purposes of writing up the analysis (Step 6). Prior to Step 6, however, member checks were conducted in the form of a summary of the themes which was presented back to the participants who took part in the interviews, in writing, to check the validity of the findings and how well these captured their experiences (Candela, 2019).

1.4.4 Methodology: Aim 4

To establish the effects of the ABC intervention on caregiver sensitivity, child attachment security, and child affect regulation in dyads where the child has an intellectual disability or developmental delays, the methodology as explicated below was utilised.

1.4.4.1 Research Approach and Design

A single-subject experimental design was used to address Aim 4. Although RCTs hold as the gold standard, methodologically, within intervention research, Purswell and Ray (2014) advocate for single-subject studies. This is in response to common challenges such as limited resources which limit the feasibility of RCTs. Furthermore, as Jarrett and Ollendick (2012) have argued, RCTs may be premature when testing a novel intervention. Although the ABC intervention is well-established, it had not been tested among a population of children with ID, making this a novel application. A single-subject design was, therefore, an appropriate entry point to initiating an evidence base for the use of the ABC in dyads in which the child has an ID. Jarrett and Ollendick (2012) also cite the recruitment of a specialised population—in this case, children with ID—as a reason single-subject designs are a viable alternative to RCTs. Given the specialised nature of certain populations (e.g., young children with ID), access to samples that are large enough to secure adequate statistical power may be a significant challenge. The ability of single-subject designs to demonstrate rigorous experimental effects makes this class of research design a feasible alternative to large RCTs in contributing to the evidence base for effective interventions. This is evidenced by the plausible and successful use of the range of single-subject designs to assess the effects of a variety of psychological interventions (e.g., Caballero & Connell, 2010; Jarrett & Ollendick, 2012; Jonker et al., 2015; Schuengel et al., 2009; Sterkenburg et al., 2008a, 2008b).

Specifically, the current study was conducted using a mixed-methods, single-subject, concurrent, multiple-baseline design (MBD) across subjects (Onghena et al, 2018). Quantitatively, inferences related to causality in MBD studies are predicated on observations of the target behaviours across several baselines—baselines, here, align with the number of subjects involved which, in this case, refers to the caregiver-child dyads who participated. Within this design, baseline data is collected for two or more subjects to describe the current level of the target behaviours, and to predict future performance (as if, for example, the intervention were not to be introduced) as a basis for comparison (Kazdin, 1982). The intervention is then introduced to the first subject, while baseline data continues to be collected for each of the remaining subjects. Thereafter, the second subject is introduced to the intervention while baseline data continues to be collected for the remaining subjects. This pattern is followed until all subjects receive the intervention. Therefore, the intervention is introduced to each respective subject at a different point in time. Furthermore, the present study incorporated randomisation—using regulated randomisation—into the design by randomly assigning each subject to a predetermined intervention starting point (Gallo et al., 2013; Kratochwill & Levin, 2010). Following the baseline (A1) and intervention (B) phases, a brief follow-up (A2) phase was implemented to assess the maintenance of effects, post-intervention.

The purpose of single-subject research is to document the functional (causal) relationship between the independent variable (ABC intervention) and dependent variables (caregiver sensitivity, child attachment security, and child affect regulation). MBD studies make use of both within- and between-subjects comparisons to control for threats to internal validity (Horner et al., 2005) while also demonstrating systematic replication (across baselines/subjects at staggered intervention starting points) to enhance external validity (Hayes, 1981). Experimental control in these cases is demonstrated through a covariation between the changes observed in the target behaviours and the introduction of the intervention within each case at the different points in time that the intervention is introduced (Horner et al., 2005). Thus, it is possible to determine whether a causal relationship exists between the intervention and changes in target behaviours by demonstrating changes in the target behaviour only when the intervention is introduced at different points in time to each case (Kazdin, 1982; Watson & Workman, 1981). Therefore, if the intervention is indeed effective, the target behaviour will not change until the intervention is introduced. If this is demonstrated repeatedly—through replication across baselines/subjects—the influence of extraneous factors becomes implausible, thus strengthening the conclusions related to causality and experimental effect (Kazdin, 1982). In addition, for the purposes of exploring experiences of the ABC as well as its feasibility and social validity, qualitative data were collected from the intervenors as well as caregivers in this study, highlighting the mixed-methods nature of the design.

1.4.4.2 Study Population, Sampling and Recruitment

For Aim 4, the study population included caregiver-child dyads in which the child has an ID or developmental delays. Case selection was undertaken using non-random, purposive strategies through typical case sampling (Daniel, 2012). Potential participants who met particular inclusion criteria as outlined in Table 3 were identified as cases that typify the population (Yin, 2018) at whom the intervention was targeted (i.e., caregiver-child dyads in which the child has an ID). Sampling took place primarily through a gatekeeper who facilitated access to a treatment centre providing therapeutic services to young children with established diagnoses of intellectual and developmental delays and disabilities. This was supplemented by referrals via a private Facebook group for mental health professionals in South Africa.

Table 3

Aim 4: Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Primary caregivers of children with an ID—a primary caregiver for the purposes of this study was defined as an adult figure over the age of 18 who takes the primary responsibility for the care of the child; this may be a biological parent, but could also be an adoptive or foster parent, grandparent, aunt, uncle, or non-familial adult if this is who cares for the child on a primary basis.	Caregivers of children with genetic syndromes such as William’s Syndrome, Fragile X Syndrome, or Foetal Alcohol Syndrome due to the behavioural phenotypes with which they present, which could potentially interfere with accurate assessments of attachment.
The participants must have had a child up to 36-months of age (developmental age—as determined through screening of participants) and must have received a formal diagnosis of ID from a trained health/mental health professional (including, but not limited to, a psychologist, paediatrician, or neurologist).	Caregivers of children whose ID lies in the severe to profound range.
Caregivers should have a basic competence (but not necessarily fluency) in English.	Children who are institutionalised (in orphanages, children’s homes, or places of safety)
	Caregivers of children with chronic illnesses due to regular and sometimes lengthy hospitalisations from a young age, which can distort and disrupt attachment relationships with caregivers therefore possibly confounding the findings of the study.
	Children of caregivers who are institutionalised (e.g. in psychiatric or other chronic care facilities).
	Children who are, developmentally, functioning either below 6 months, or above 36 months, as this falls significantly out of the age range for which the intervention was designed.

Note: Due to the age of the children involved in Aim 4, a diagnosis of intellectual disability may not yet have been made. Thus, a broad definition of ‘intellectual disabilities’ was utilised to include children identified as having global developmental delay or other significant developmental delays, a similar approach to that adopted by Vandesande et al. (2019a) and as recognised in the DSM-5-TR (APA, 2022). This is also consistent with studies which have found that a significant majority of children with developmental delays in the cognitive domain, including mild delays, will go on to receive a diagnosis of an

intellectual disability by the time they start school (Bernheimer & Keogh, 1988; Keogh et al., 1997; Vig et al., 1987; Yang et al., 2010).

A gatekeeper—with a network of caregivers of children with ID as well as professionals working with children with ID in Johannesburg and Pretoria—was approached to facilitate recruitment of potential participants for the study. For this particular study, the gatekeeper was able to provide contacts for consenting health professionals who were willing to refer clients to the study. The researcher provided these health professionals with an information sheet (Addendum K) containing details related to the study which they subsequently provided to potential participants for consideration. The health professionals also recommended a closed and moderated Facebook group of HPCSA-registered professionals aimed at referrals, which was subsequently also approached to supplement recruitment. An announcement was placed in the group and any health professionals who were able to refer interested dyads were asked to provide the researcher with their contact details after obtaining their consent to do so. Those interested were asked for their consent to have their contact information shared with the researcher who subsequently made contact with each potential case via telephone or email in order to confirm their interest in participating. If there was continued interest, an appointment was set up to conduct verbal and written informed consent procedures. All dyads who agreed to participate were required to undergo a screening process to determine the developmental level of the child, to confirm their eligibility for the study. During the consent process, participants were made aware of the possibility that the screening may indicate they were not eligible to participate in the study further. While the study originally sought to recruit four dyads, only three dyads presented themselves despite numerous calls for participation over a four-month period. As such, three caregiver-child dyads were included in the study after eligibility screening. All three of the children were female and had been identified as having notable developmental delays and were receiving supportive therapies in this regard from a range of health professionals which included occupational therapists, physiotherapists, speech and language therapists, educational psychologists and medical doctors/specialists. At the time of screening (approximately two months prior to the commencement of data collection), the mean chronological age of the children was 25.7 months ($SD = 11$), with an average developmental age of 14.9 months ($SD = 10.3$), and all were female. All three caregivers were the biological mothers of the children involved in the study and had an average age of 37 years ($SD = 1.7$). Two of the dyads were Black African and one was White.

It must be noted that in single-subject research, achieving homogeneity of the ‘sample’ is not the aim as it would be in group-level experimental designs. The purpose of single-subject research is not to generalise necessarily to a broader population, but to demonstrate the effects of an intervention in particular subjects described in rich detail for practitioners to identify the kinds of clients which could benefit most from the intervention under investigation (McLeod, 2010). Each case is regarded as an experiment in itself—rather than as a single participant—and is therefore a replication (Kratochwill &

Levin, 2010). For example, a single-subject study involving five cases, can be regarded as five separate experiments—five direct inter-subject experimental replications of the effects of an intervention (Gast, 2010). Although heterogeneity may enhance the study, the purposive recruitment of a variety of cases would only be necessary if research has demonstrated that factors such as race, culture and so forth have served as factors mediating the effectiveness of the intervention under investigation. Thus far, group-level studies of the ABC have not demonstrated race or culture to be mediating factors.

1.4.4.2.1 Profiles of Participating Dyads

Dyad 1: Thandi and Lindi

Thandi and Lindi were referred by a speech and language therapist located at a therapeutic centre for children with intellectual and developmental disabilities. Lindi was receiving occupational therapy, speech therapy and physiotherapy for treatment related to a diagnosis of mild cerebral palsy (CP) which was made at the age of five to six months. These treatments were recommended by Lindi's paediatric neurologist to mitigate the impact of significant developmental delays associated with CP. Lindi was born prematurely at a gestational age of six months and was delivered via caesarean section due to foetal distress. Following delivery, she was incubated for three months with poor heart and lung development, which necessitated her use of supplemental oxygen up to the age of 14 months. During Lindi's incubation she was fed with formula due to Thandi's development of hypogalactia (i.e., insufficient breast milk). However, Lindi rejected the formula which fostered a stressful environment for Thandi. Thandi describes her relationship with Lindi in the first months as "okay", reporting that her priority during this time was Lindi's physical health and growth. Although her closest family members were accepting, strangers and more distant family were experienced by Thandi as rejecting and judgmental of both her and Lindi to the point of her feeling blamed for Lindi's limitations. This led her to question her culpability in Lindi's condition. This sense of culpability has continued to emerge for Thandi, periodically. Thandi remains concerned for Lindi's future and how others might treat her. Thandi and Lindi were randomly assigned to a five-week baseline. The dyad completed all 10 intervention sessions over the course of a 16-week intervention phase.

Dyad 2: Khanyi and Lethi

Khanyi and Lethi were referred to the study from the therapeutic centre alongside Thandi and Lindi (via different therapists). Lethi was born at full-term via normal vertex delivery with no reported pre- or perinatal complications. However, within the first four to six months postpartum, Lethi developed repeated tonic-clonic seizures. Medical investigations revealed that Khanyi had contracted Cytomegalovirus during her pregnancy. Although she remained asymptomatic—and, therefore, undiagnosed—the virus was transmitted to Lethi, in-utero, which resulted in epileptiform seizures,

postpartum. During this time, Lethi showed significant regression in her development, losing her ability to sit, suck and swallow, among others, which resulted in a diagnosis, by the consulting paediatric neurologist, of Global Developmental Delay. Due to the loss of her sucking reflex and swallowing abilities, in order to feed, a percutaneous endoscopic gastrostomy (PEG) was performed through which formula and medication are administered. At the time of the study, Lethi was fed primarily via the PEG but was gradually transitioning to oral feeding. For medical management of the seizures, Lethi was placed on Levetiracetam (Keppra), Carbamazepine (Tegretol) and Phenobarbital (Luminal). In addition, to facilitate optimal developmental outcomes, Lethi was referred for speech therapy to address communication and feeding difficulties, occupational therapy for fine motor development, physiotherapy for gross motor development, as well as additional interventions such as music therapy, vision therapy (due to cortical impairment) as well as hyperbaric oxygen therapy. Khanyi and Lethi were randomly assigned to an eight-week baseline. The dyad completed all 10 intervention sessions over the course of a 17-week intervention phase.

Dyad 3: Kim and Terry

Kim and Terry were referred to the study via an educational psychologist who had been informed about the study. Terry was born at full-term via normal vertex delivery without any reported pre-, peri, or post-natal complications. Kim described the postnatal period as “very tough”. As a young infant, Terry cried continuously and was constantly in need of feeding as a result of Kim developing hypogalactia, which she experienced as highly stressful. Although placing Terry on formula resolved the persistent crying, Kim reported remaining anxious about cot death resulting in her holding Terry in her arms most of the time, even while sleeping. According to Kim, “Terry became my second skin...my world was renamed Terry”. Terry presented with speech and language delays accompanied by behavioural sequelae including temper tantrums, rough play, overactivity and fearlessness which became evident after starting crèche at 21 months. After an initial assessment by a speech and language therapist, she was referred for further assessment by an occupational therapist who diagnosed a sensory processing condition. Despite speech therapy and occupational therapy interventions, challenging behaviours persisted at crèche where there was also a lack of academic progress, according to school reports. Terry’s parents took the decision to change schools, believing that the change in environment and approach may be beneficial. Shortly after the transition, however, Terry’s challenging behaviours re-emerged at school, which recommended—in response—a course of play therapy as a condition for her remaining in the school. The play therapy did not successfully address the behavioural concerns which resulted in a referral to a child psychiatrist who suggested that Terry was seeking more “quality time” with Kim, and highlighted Kim’s anxiety as notable. In addition, Risperidone (Risperdal) was prescribed in an attempt to manage, medically, the aggressive element of Terry’s behaviours at school. Kim reported that Terry’s challenging behaviours caused her additional anxiety which resulted in her

going into “autopilot” in times of stress related to Terry’s behaviour during which “everything became a blur”. While she initially made use of physical forms of discipline, she had more recently moved into ‘acknowledgment of feelings’ as a response to Terry’s distress, which yielded more favourable results. Kim and Terry were randomly assigned to a nine-week baseline. The dyad completed all 10 intervention sessions over the course of a 16-week intervention phase.

1.4.4.3 Data Collection Methods and Procedures

For Aim 4, dyads were first screened for eligibility. Thereafter, to assess the effects of the ABC intervention, the study assessed for its three main outcome variables across the three study phases for each dyad. Hence, weekly measures of maternal sensitivity, attachment security, and child affect regulation were conducted over the course of a five-, eight-, or nine-week baseline (A1) phase (see Figure 6 for an overview). This was followed by the introduction of the ABC intervention and continued weekly assessments of the outcome variables for the duration of the intervention phase (B). Finally, following the termination of the intervention, the study was concluded by a follow-up phase (A2) involving two further measurements of the study outcomes. In addition, clinical interviews were conducted with the three mothers prior to the intervention to obtain historical and contextual information about the dyad. Additionally, social validation was carried out via administration of the SVS as well as semi-structured interviews during the follow-up phase to ascertain parent and intervenor experiences of the ABC intervention.

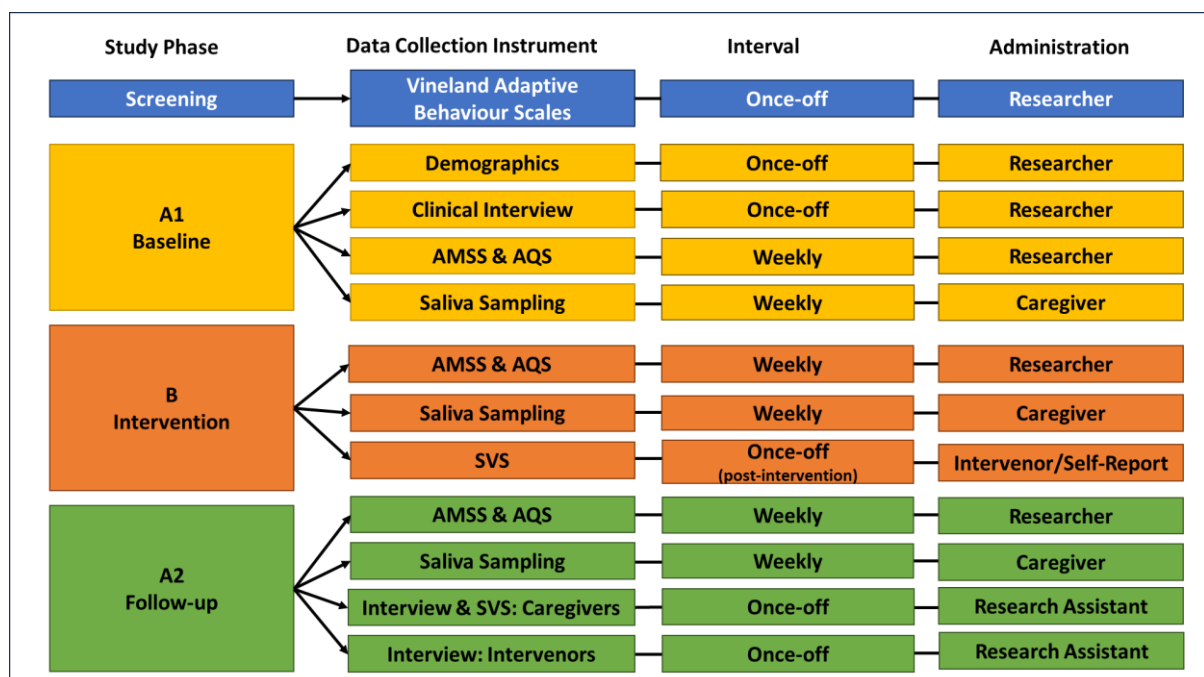


Figure 6: Overview of Data Collection Procedures: Aim 4

1.4.4.3.1 ABC Intervention

Conceptualised by Mary Dozier and the Infant Caregiver Project at the University of Delaware (USA), the ABC is a manualised intervention that was initially developed for infants who had experienced early adversity (e.g., foster care) and who were at risk of developing disorganised attachments as a result (Dozier & Bernard, 2019). The intervention is targeted at the parent and their parenting capacities, focusing particularly on enhancing sensitive parenting behaviours. The intervention helps caregivers learn to behave in nurturing ways when their child is distressed, helps them follow the lead of the child with delight when the child is not distressed, and facilitates the avoidance of behaviour that can be experienced by the child as frightening or intrusive (Dozier & Bernard, 2019). The ABC is a 10-session programme (see Section 1.2.8.1 and Figure 2 for a session outline) which takes place weekly, in the home, and last approximately 60 minutes per session. Although the intervention is targeted at the caregiver, sessions are scheduled at times when the child is home and able to be present and participate in the sessions. All sessions are video-recorded, both for playback to the families during the intervention (for feedback and reflection), and also for the purposes of supervision and ensuring treatment fidelity. In addition, in-the-moment feedback on parent-child interactions is used as the primary technique during intervention sessions to offer parents feedback in real-time on their parenting behaviours. For the purposes of this study, two South African intervenors (parent coaches)—a HPCSA-registered clinical and educational psychologist, respectively—were trained to implement the ABC by members of the ABC Laboratory at the University of Delaware who also provided weekly clinical and fidelity supervision for the full duration of the intervention phase of the study.

1.4.4.3.2 Screening Instrument: Vineland Adaptive Behaviour Scales

Potential cases who were referred for the study were screened using the Vineland Adaptive Behaviour Scales, 3rd edition (VABS-III), Comprehensive Parent Survey Form (Sparrow et al., 2016). This consists of 381 items which tap into three domains of adaptive functioning—communication, daily living skills, and socialisation. Items are placed in developmental order and are scored by caregivers on a three-point scale between “*never performed*” (0) and “*behaviour is usually or habitually performed*” (2). Screenings lasted approximately 60 minutes in duration and were conducted by the researcher, a trained and HPCSA-registered clinical psychologist with experience in administering the VABS-III, in the homes (or alternative preferred private location) of the potential participants. Pepperdine et al. (2018) reported excellent internal consistency ($\alpha = .94-.99$) and suitable test-retest reliability ($r = .64-.94$) for the Comprehensive Parent Survey Form of the VABS-III. They also reported moderate to high correlations with alternative measures of adaptive behaviour such as the Baley Scales of Infant and Toddler Development-3 and the Adaptive Behaviour Assessment System-3, indicating good concurrent validity (Pepperdine et al., 2018).

1.4.4.3.3 Caregiver Sensitivity: Ainsworth Maternal Sensitivity Scale

Caregiver sensitivity was assessed over time using the Ainsworth Maternal Sensitivity Scale (AMSS). The AMSS (Ainsworth, 1969) assesses for caregiver responsiveness to the child, which refers to the caregiver's ability to perceive the child's cues accurately, and to respond to those cues appropriately and timeously. This is done using a nine-point scale ranging from “*highly insensitive*” (1) to “*highly sensitive*” (9). This assessment is based on observations of caregiver-child interactions and can be scored live, or based on video-recordings of free play. The latter approach was adopted in the current study—each dyad was video-recorded, by the researcher, during sessions of free play in their respective homes on a weekly basis across all three phases of the study. The video-recordings were subsequently coded for caregiver sensitivity by trained and reliable AMSS raters who were not otherwise involved in the study and were blind to the phase of study. A total of 52 video-recordings were collected for the study and 100% of these were coded independently by two AMSS raters, which yielded moderate interrater reliability (intraclass correlation coefficient [ICC]: .63). The analysis of the AMSS data was performed using the average of the scores of the two raters for each measurement point. The internal consistency ($\alpha = .81$) of the AMSS has been previously established (Tryphonopoulos et al., 2016) and a high degree of interrater reliability has been reported in a previous study using the AMSS in a South African sample (ICC: .81; Dawson et al., 2018). The AMSS has also been demonstrated to have convergent validity with measures of attachment (SSP and AQS) as well as concurrent validity with an alternative measure of caregiver sensitivity, the Maternal Behaviour Q-Sort (National Collaborating Centre for Mental Health, 2015).

1.4.4.3.4 Attachment Security: Attachment Q-Sort

Attachment security was assessed over time using the Attachment Q-Sort, version 3 (AQS). The AQS (Waters, 1987) is an observation-based procedure that is made up of 90 items. Each item, appearing on a card, consists of a description of specific behavioural characteristics of children up to five years of age. The aim of the AQS is to describe secure base behaviour to determine the level of attachment security (secure versus insecure) evident in a particular caregiver-child dyad. The scoring of the AQS is based on observations of naturalistic interactions between caregiver and child lasting up to two hours. Following these observations, the cards are sorted by an independent rater into nine piles of 10 statements each based on the degree to which they describe the child, ranging from ‘*very much unlike*’ (pile one) to ‘*very much like*’ (pile nine). Items that cannot be sorted or are neither ‘like’ nor ‘unlike’ the observed child are placed in the centre piles. The card's position in the sorting determines its score—for example, all cards in pile one are allocated a score of 1 (least characteristic of the child), while all those in pile nine are allocated a score of 9 (most characteristic of the child). Once the piles have been sorted, in order to derive a score for attachment security, the observer's scores are compared with the behavioural profile of a prototypically secure child as determined by experts. This comparison takes the

form of a Pearson correlation coefficient between the observer scores and the expert criterion scores and thus ranges between -1.0 (perfect negative correlation with the ideal sort, indicating attachment insecurity) and +1.0 (perfect positive correlation with the ideal sort, indicating attachment security). Although no formal cut-off has been established for the AQS, research suggests that scores of .3 and above are indicative of attachment security, and while those below .3 are indicative of attachment insecurity (Solomon & George, 2016).

For the purposes of the current study observations were conducted weekly across all three phases of the study and coincided with observations for the AMSS. Each observation lasted approximately 60 minutes, took place in the participants' homes, and were video-recorded, by the researcher, for later scoring by two raters (trained and reliable in the AQS) blind to phase of study and not otherwise involved in the study. In the current study, 52 video-recordings were collected and 41% of these were double-coded to establish interrater reliability (ICC: .75) on the AQS. Solomon and George (2016) report on inter-observer reliability estimates for the AQS as ranging from .72 to .95 while extensive meta-analyses of AQS studies have concluded that the observer AQS shows sufficient validity and can be considered an adequate assessment of attachment in the same league as the SSP and the Adult Attachment Interview (Cadman et al., 2018; Van IJzendoorn et al., 2004).

1.4.4.3.5 Child Affect Regulation: Salivary Cortisol

According to Gunnar and Donzella (2002) caregivers play an important role in regulating the activity of the limbic hypothalamic-pituitary-adrenocortical (L-HPA) system during infancy and childhood. This is in keeping with the theoretical assertions and empirical support thereof showing that a key outcome of secure parent-child attachment is the development of affect regulation in children (Gunnar et al., 1996; Schuengel et al., 2009). As such, in this study child affect regulation was measured using a well-established psychobiological approach involving the sampling of cortisol. Specifically, the study sampled salivary cortisol from the participating children. Procedures for collecting and assaying salivary cortisol for this study followed established protocol (e.g., Gunnar & White, 2001) in line with previous studies in which salivary cortisol was sampled (Dozier et al., 2006; Sterkenburg, 2008). Salivary cortisol is a safe, non-intrusive and painless method for measuring cortisol. As such, there is negligible discomfort or risk, making it a viable approach for use with infants and children (Gunnar & Donzella, 2002). Furthermore, the researcher trained the caregivers in the study to collect saliva samples to reduce possible distress in their respective children during the collection process. Caregivers collected saliva samples from their children at three roughly equally spaced time points: morning (07:30), afternoon (13:30) and evening (19:30) (Gunnar & White, 2001). This occurred once per week throughout all three phases of the study. A total of 165 saliva samples were collected across the three dyads of which 155 were valid. Saliva was collected using *SalivaBio* Children's Swabs (Salimetrics, LCC). Parents were instructed to place the swab into their child's mouth for 60-90 seconds (Kirschbaum

& Hellhammer, 1994), until saturated with saliva, before depositing the swab in a pre-labelled storage tube and storing it in their home freezer. The researcher collected frozen samples weekly to bi-weekly and delivered these to a private commercial laboratory (Lancet Laboratories) where they were stored at -20°C before being thawed, centrifuged and analysed using Liquid Chromatography-tandem Mass Spectrometry (LC-MS), which has been shown to be comparable to the Immunoassay method in a study measuring cortisol concentration in children (Bae et al., 2016). Samples were assayed by the laboratory in smaller batches due to limited laboratory storage, and the resulting cortisol levels were sent to the researcher for capturing and analysis.

1.4.4.3.6 Social Validation: Social Validity Scale and Qualitative Interviews

Social validity was assessed via two avenues in this study—quantitatively, using the Social Validity Scale (SVS; Seys, 1987); and qualitatively, using semi-structured interviews conducted with the caregivers and the intervenors who participated in the ABC intervention. Subjective evaluation is a key aspect of social validation in single-subject research to determine how—in the experiences and perceptions of those who participated in the study—the intervention has impacted on the target problem, or has resulted in subjectively experienced change (Kazdin, 1982; Kratochwill & Levin, 2010; Wolf, 1978). Furthermore, Spear et al. (2013) argue that an intervention may show strong experimental effects but may have little social or practical value when factors such as cost, feasibility and acceptability are accounted for, ultimately negatively impacting the ability of the intervention to improve the outcomes of the target population. Evaluating social validity is therefore essential. It was for this reason that the SVS was used in conjunction with individual semi-structured interviews in this study.

The SVS is a self-report questionnaire that was administered to the caregivers following the conclusion of the ABC intervention to assess the extent to which the intervention had pragmatic relevance for them. The questionnaire, adapted for Aim 4, consisted of 21 items rated on a five-point scale and included items such as, “Having the parent coach make direct comments about how my child and I were interacting was...”, which was rated on a scale from “*very helpful*” to “*very unhelpful*”. Similarly to Aim 2, analysis of the SVS for Aim 4 was conducted at the level of individual items rather than by computing total or subscale scores. The SVS has been used in other studies among caregivers of children with ID (Platje et al., 2018), as well as previous single-subject studies (e.g., Damen et al., 2011). The internal consistency reported in these studies ranged between .76 and .88. In the current study, the SVS was administered to the participating caregivers after completion of the ABC sessions. To avoid the caregiver being unduly influenced by the intervenor, each intervenor was instructed to provide the questionnaire to the caregiver and to ask them to complete it only once they were alone after the intervenor had left. The completed questionnaires were subsequently collected from the caregivers by the researcher.

In addition to the SVS, semi-structured interviews were conducted with the three caregivers and two intervenors who participated in the ABC intervention. The interviews were guided by an interview schedule developed by the candidate, in collaboration with Prof dr Paula Sterkenburg, to explore the experiences of the caregivers and intervenors in relation to the intervention, its appropriateness, its usefulness, its perceived benefits and effects, its possible shortcomings, as well as any recommendations for changes (Addendum K). To guard against bias in favour of the intervention, the interviews were conducted by an independent research assistant with a master's qualification in Psychology who had no other ties to the study or to the intervention. Upon completion of the 10-session ABC intervention, the caregivers and intervenors were informed by the researcher that they would be contacted by a research assistant for the purposes of scheduling and conducting an interview. Thereafter, the research assistant met with each caregiver and intervenor at a time and private location convenient to the participants for the purposes of conducting the interview which was audio-recorded, with consent, for the purposes of transcription and analysis.

1.4.4.3.7 Additional Procedures: Clinical Interview and Demographic Information

In addition to the procedures outlined above, contextual information for each caregiver-child dyad was obtained through the use of a clinical interview to gather case history (Craig, 2005), as well as a short demographic questionnaire administered by the researcher following screening and prior to the initiation of the baseline phase of the study. The clinical interview was semi-structured (guided by an interview template used to conduct a standard clinical interview), lasted approximately 60 minutes and was conducted by the researcher who is a trained HPCSA-registered clinical psychologist with extensive experience at clinical interviewing. The information obtained for this study was, however, not used for the purposes of diagnosis or treatment planning. The interview was used to gather detailed information regarding the developmental and medical history of the child as well as family history and circumstances (Boland et al., 2021). This is regarded as important in single-subject research as the case-specific information gathered from these interviews can be used, firstly, to explain unusual or unexpected findings, but, secondly, it also serves to facilitate 'generalisability' of the findings as a detailed description of the nature of the cases included in the study could assist clinicians in identifying clients/patients to whom the intervention is best suited (McLeod, 2010). In addition, to allow for the sample to be comprehensively described for the purposes of clarity, transparency and replication, a short demographic questionnaire, designed by the researcher, was administered to gather basic demographic data such as age, gender, race, educational level, employment status, marital/relationship status and income level, among others.

1.4.4.4 Data Analysis

The data analysis for Aim 4 was four-fold involving: 1) *visual analysis/inspection*, 2) *overlap/effect size*, and 3) *statistical analyses* of the quantitative data using *R*, as well as 4) *thematic analysis* of the qualitative data using *Atlas.ti*.

1.4.4.4.1 Visual Analysis/Inspection

Visual analysis was conducted with the aid of graphical representations of the raw data, generated using the *SCVA* package (version 1.3.1) in *R* (version 4.0.2), with the measure of time plotted on the *x*-axis and measures of the dependent variables plotted on the *y*-axis (Bulté & Onghena, 2012). Visual analysis was conducted with regards to within- and between-phase level and trend change, as well as considerations of data variability, for each dyad on each outcome variable (Lane & Gast, 2014). Change in level was assessed by superimposing a horizontal reference line (representing the mean) on the raw time series for each phase and comparing the level of overall performance on the dependent variables between phases. Relative change between the baseline and intervention phase ($Mdn_{Intervention[1st\ half]} - Mdn_{Baseline[2nd\ half]}$) was assessed to determine the immediacy or latency of intervention effect. Trend—using the split-middle technique—was used to ascertain an accelerating (upward), decelerating (downward) or zero-celerating (horizontal) trend to evaluate the direction of change for each of the dependent variables within each phase over time. Change in trend was then determined by inspecting and comparing the change in plotted trend lines between adjacent phases. Manolov et al.'s (2016) Slope and Level Change (SLC) procedure was applied, using the *SLC* package (version 0.3) in *R*, in instances of notable pre-intervention improvement to control for the influence of baseline improvement on the detection of an intervention effect.

1.4.4.4.2 Overlap

To measure the magnitude of intervention effect, the Nonoverlap of All Pairs (NAP) was calculated using the web-based application of the *SingleCaseES* package (version 0.5; Pustejovsky & Swan, 2018; Swan & Pustejovsky, 2018) for *R*. This procedure provides an indicator of performance differences for each subject between phases and provides insight into the extent to which data in the baseline versus intervention phases do not overlap. Data overlap between each Phase A data value and each Phase B data value is summarised as the NAP. A greater degree of nonoverlap is an indicator of greater performance change and, hence, greater effect. The NAP is an accepted indicator of the amount of performance change in single-case experiments, offering an index of effect size (Parker & Vannest, 2009).

1.4.4.4.3 Statistical Analyses

Statistical analyses are particularly useful in single-subject research where there is unstable baseline data, where the investigation involves a relatively novel intervention, and where there is increased intrasubject variability (Kazdin, 1982). In these instances, nonparametric statistical procedures can mitigate against the difficulties of using visual inspection. In this study, randomisation tests for multiple-baseline designs were conducted to determine intervention effectiveness (Bulté & Onghena, 2009). The p -value of the randomisation test is equal to the proportion of test statistics that exceed or equal the observed test statistic. The null hypothesis is rejected when this value is less than or equal to the predetermined significance level ($p < .05$). Randomisation tests were applied to the three dependent variables to determine the intervention effect across the three dyads. This was performed directly on the raw data for both caregiver sensitivity and attachment security. However, for the cortisol variable, the data were reduced from three values per measurement occasion to a single value represented by the Area Under the Curve. This was done in two different ways; first, Area Under the Curve with respect to Ground (AUC_G) and, second, Area Under the Curve with respect to Increase (AUC_I). Data were entered into *Microsoft Excel* to apply the formulae (see below) to calculate the AUC_G as an indicator of the overall magnitude of cortisol production, and the AUC_I as an indicator of the change in cortisol production over the 12-hour period represented at each of the measurement occasions (Preussner et al., 2003). Fekedulegn et al. (2007) suggest that AUC indicators are advantageous because they summarise responses from multiple measurements and increase the power of testing without sacrificing the information within individual measurements. The AUC_I , in particular, is useful when examining diurnal cortisol rhythm hence its utility in the present study. The formulae used to calculate the two AUC indicators are as follows:

$$AUC_G = \sum_{i=1}^{n-1} \frac{(m_{(i+1)} + m_1)}{2}$$

$$AUC_I = \left(\sum_{i=1}^{n-1} \frac{(m_{(i+1)} + m_1)}{2} \right) - (n - 1) * m_1$$

The resulting AUC_G and AUC_I values were then subsequently transferred into a text file which was imported into *R* for the purposes of conducting the subsequent randomisation tests as described above. In instances where all three samples were not available due to insufficient volume of saliva, these were noted as missing values and imputed by linear interpolation using the `na_interpolation (x)`

function in the *imputeTS* package in R. This was done in eight of the 10 instances of insufficient saliva samples. The two remaining values that were excluded from imputation occurred for the same case on the same day resulting in two of three missing samples. Interpolation of two values based on only one existing value is not possible hence this measurement point was listed as missing (measurement point 4 for Case 3). All other missing data was due either to vacation or participants forgetting to take the sample resulting in all three daily samples missing, or due to the removal of extreme values. The presence of unusually extreme values and the potential influence of this on the analyses of a relatively small data series prompted the need to identify which of these extreme values were regarded as outliers. Outliers were determined using the criteria for Tukey's Fence Method (Interquartile Range; Jones, 2019) which was applied to both AUC_G and AUC_I values for all three cases. This resulted in the identification and removal of a total of 11 outliers from the data series—three AUC_G values (one for Case 1; two for Case 2) and eight AUC_I values (seven for Case 2; one for Case 3).

In addition to applying randomisation tests to assess replicability of mean level change across the three cases, the trend within each phase was statistically estimated using the non-parametric Theil-Sen estimator (Wang & Yu, 2005). This was done using an online Theil-Sen Calculator via the www.singlecaseresearch.com website (Vannest et al., 2016). Insensitive to outliers, the Theil-Sen estimator represents the median of all regression slopes for all pairs of data points with each phase, offering an estimation of the trend within the respective phases.

1.4.4.4 Thematic Analysis

Using *Atlas.ti* software (version 8), interview transcripts from the semi-structured interviews with ABC recipient caregivers as well as the intervenors were analysed according to Braun and Clarke's (2006, 2013, 2022) thematic analysis. This elucidated themes that were conceptualised from the data relating to the participants' experiences of having received and delivered the ABC intervention. The analysis involved the six steps of thematic analysis as described in 1.4.3.4.2 and Figure 5 (pp. 56-58), above.

1.4.5 Methodology: Aim 5

To obtain expert/professional opinion, and caregiver impressions, on the ABC intervention to inform potential adaptations for children with intellectual disabilities and developmental delays in the South African context, the methodology as explicated below was utilised.

1.4.5.1 Research Approach and Design

An exploratory qualitative design was adopted to achieve Aim 5. Exploratory qualitative research is best suited when seeking to charter new territory in areas that have been un-, or under-explored, and are as yet not fully understood (Hunter et al., 2019). Hence, this was a suitable approach to achieve Aim 5

given that the ABC has, prior to this study, been unexplored for children with ID and within the South African context. In addition, to obtain expert opinion on the ABC, a two-round Delphi technique was integrated into the broader exploratory qualitative design (Keeney et al., 2011). According to Brady (2016) the Delphi approach was developed as a mechanism to gather insights and perspectives from individuals who have specific expertise related to a topic with the purpose of informing practice or policy. The Delphi technique was therefore utilised to obtain expert/professional opinion, and achieve consensus, on the ABC intervention to inform how this intervention may need to be adapted to fit the South African context, and to further align with the needs of the families in which there is a child with ID. Although traditionally a quantitative, survey-based approach the Delphi technique was engaged in modified form in this study using qualitative methods in both rounds, an approach advocated for by Fletcher and Marchildon (2014). Separate from the expert opinion gathered via the Delphi technique, the impressions and perspectives of caregivers of children with ID—as the intended target population of the ABC and, therefore, important stakeholders—were also sought as part of the broader exploratory qualitative inquiry.

1.4.5.2 Study Populations, Sampling and Recruitment

For Aim 5, the study population included primary caregivers of children with ID in South Africa as well as experts in the healthcare sector who had experience working with children with intellectual and developmental disabilities. Non-random purposive sampling (Daniel, 2012) was used to identify caregiver-participants for the study. Purposive sampling was used here as it aims to select participants into the study that possess the traits characteristic of the population under investigation (Fouche et al., 2021)—in this instance, caregivers of children with ID—according to the eligibility criteria in Table 2 above (p. 51). Caregiver-participants were recruited primarily via primary-level (or equivalent) schools for children with special educational needs in Johannesburg and Pretoria. This was initiated following approval from the Health Research Ethics Committee at North-West University, the Gauteng provincial Department of Education, as well as permission from the respective school heads. This was supplemented by approaching organisations working with children with ID, such as Downs Syndrome South Africa (DSSA), to recruit additional participants once permission had been granted by the organisation. Expert sampling (Daniel, 2012) was used to recruit expert-participants for the study. This was the most appropriate sampling method as the aim of the study was to access expertise within the field of ID to offer professional opinion on the ABC intervention rooted in their clinical experience in with working with this cohort of families. The experts were recruited primarily via a gatekeeper with access to a network of healthcare professionals working in the field of intellectual and developmental delays and disabilities.

The caregiver-, and expert-participants who took part in the qualitative component for Aims 2 and 3 also participated in the data collection for Aim 5, which took place simultaneously. The participant

recruitment process for Aim 5 was, therefore, identical to that described in Section 1.4.3.2.2 (p. 52) above, and the eligibility criteria identical to that in Table 2, above (p. 51). Additionally, relevant data from the qualitative interviews conducted with the three ABC-recipient parents and two ABC intervenors for Aim 4 were also included.

1.4.5.3 Data Collection Methods and Procedures

Qualitative data were collected via individual semi-structured interviews with expert-, and caregiver-participants, as well as a round of written feedback from expert-participants.

1.4.5.3.1 Qualitative Interviews

Semi-structured individual interviews with expert-, and caregiver-participants were conducted. The participants took part in one interview that addressed Aims 2, 3 and 5 of the study. An interview schedule was used to guide the interviews (see Section 1.4.3.3.5). Separate interview schedules were developed, based on the respective aims, for expert-participants and caregiver-participants, and each interview schedule was organised into two broad sections—the first targeting Aim 2/3, and the second targeting Aim 5. In relation to Aim 5, the expert-, and caregiver-participants were requested to comment on the ABC intervention (Addendum L). A written overview of the ABC was presented to the participants who were asked if they would support such an intervention and, if not, what they felt would need to be adjusted, adapted or added to the intervention that may facilitate their support for it, and may advocate for it with fellow professionals and parents of children with ID. The interviews were conducted by the researcher at a time and private venue convenient to the participants. The duration of the interviews was approximately 30-60 minutes. The interviews were audio-recorded, with consent, for the purposes of transcription and data analysis.

1.4.5.3.2 Written Feedback and Commentary

In accordance with the Delphi technique, and to achieve consensus among experts, a second round of commentary was invited from the expert-participants. This was done in the form of requesting written feedback on the findings from the initial round of interviews. Hence, the preliminary findings from the first, interview round were collated and summarised, and presented back to the expert-participants, electronically, in written format. The expert-participants were requested to provide any additional commentary, in writing, based on these findings and also to comment on their agreement with the findings in a second round of feedback, via email (Addendum L). The final analysis included both the interview transcripts from the first round as well as the additional written commentary from the second, email round of the Delphi process with expert-participants.

1.4.5.4 Data Analysis

Using *Atlas.ti* software (version 8), interview transcripts from the semi-structured interviews and the written feedback were analysed according to Braun and Clarke's (2006, 2013, 2022) thematic analysis. This elucidated themes that were conceptualised from the data relating to the participants' perceptions and opinions of the ABC intervention. The analysis involved the six steps of thematic analysis as described in 1.4.3.4.2 and Figure 5 (pp. 56-58), above.

1.5 Validity, Reliability and Trustworthiness

All data collection tools used across the various data collection stages made use of quantitative instruments with demonstrated reliability and validity, as indicated above for each instrument (PSI, SENR, SVS, VABS, AMSS, and AQS). Methodological rigour was further practiced through the use of independent intervenors for the ABC, and an independent research assistant to conduct the post-intervention interviews with the caregivers and interviews in relation to Aim 4. This approach minimised the potential of bias that would have been introduced if the researcher had direct involvement in these procedures. Furthermore, coding of studies (Aim 1), qualitative interviews (Aims 2, 3, 4 and 5), as well as the AMSS and AQS (Aim 4) was always performed independently by two individuals to establish intercoder reliability and agreement. Moreover, the second coders for all the interviews and all coders for the AMSS and AQS, respectively, had no other ties to the research, further mitigating against bias.

Trustworthiness of the qualitative data was approached through ensuring credibility, transferability, dependability, and confirmability (Ahmed, 2024; Lincoln & Guba, 1985; Shenton, 2004). Qualitative data were collected using well-established data collection methods; in this case, semi-structured interviews. Furthermore, verbatim transcriptions of these interviews allowed for fuller-bodied and thick descriptions of the phenomenon under investigation to support the *credibility* of the study. Additionally, as noted above, the researcher and an independent coder conducted the process of thematic analysis independently. The two analysts then came together in a consensus review on two separate occasions—first, after the initial coding and then, secondly, after the initial themes/subthemes were conceptualised. Disagreements between the coders were discussed and changes to the coding and thematic framework were agreed upon by both analysts. Lastly, this process of review was discussed with the study's supervisors as an additional layer of credibility. A summary of the findings from the individual interviews was also posed back to the participants ('member checks') to ensure the accuracy of the analysis/interpretations. Overall, data triangulation was used in the study to further enhance the credibility of the research findings. This was inherent to the design of the mixed-methods study in which both qualitative and quantitative data were used to explore the research questions (Aims 2 and 3); the inclusion of expert perceptions was also used to triangulate the data obtained from caregivers (Aim 3).

Additionally, caregivers' perceptions were used to triangulate data from the Delphi study with experts (Aim 5)—itself involving both interviews and written feedback—to further highlight, expand upon, and support findings. *Transferability* was facilitated through the detailed description of the research context allowing the consumer of the research to assess the extent to which the findings and conclusions of the study are applicable/transferable to their context. This also included a detailed account of the inclusion and exclusion criteria, sample size, data collection methods, as well as the number and length of interviews. *Dependability* was approached through clear descriptions of the research design, and its strategic implementation. This also included detailed accounts of the minutiae of how the data was collected in the field via the use of an audit trail. Finally, *confirmability* was addressed through the researcher's continuous practice of reflexivity through making reflective notes during and after interviews to account for his own beliefs and assumptions, and how this may be influencing the research process and findings. Furthermore, the shortcomings and limitations of the study, and the potential effects thereof, have been acknowledged (see Section III).

1.6 Ethical Considerations

1.6.1 Ethics Approval

The Health Research Ethics Committee in the Faculty of Health Sciences at North-West University approved the study following due process related to ethics applications and submissions, and the completion of the required ethics training courses by the researcher. The approval for the study was granted on 23 October 2018 with the ethics approval number NWU-00012-18-A1 (Addendum B).

1.6.2 Ethical Risks

The risk associated with this study was deemed at a medium level for the adult participants, for the following reasons:

- i. Human participants were involved;
- ii. For caregivers, there was a potential of emotional discomfort and distress recounting the challenges they experienced as the caregiver to a child with ID;
- iii. For caregivers, there was potential for them to become aware of challenges in their relationship with their child that may have been previously overlooked, which could cause distress;
- iv. Previously unidentified medical or psychological issues, unrelated to the research, may have come to light during the course of the ABC intervention sessions;
- v. There was potential for physical harm in that caregivers may have become fatigued during lengthy, and repeated, data collection procedures;
- vi. Caregivers may have missed work due to intervention sessions or observations;

- vii. All data collection and intervention procedures required face-to-face contact with the researcher, research assistants or intervenors and, hence, was not anonymous—the participants' names and locations were known to the researcher, research assistants and intervenors;
- viii. The information gathered from caregivers was personal and/or captured on video;
- ix. The information provided by experts was not of a personal nature and based, instead, on professional opinion and experience and, therefore, deemed to be of lower risk.

The risk for the child participants associated with this study was deemed at a greater than minimal level but with the prospect of direct benefit, for the following reasons:

- i. To meet the target age of the ABC intervention, the children in the study were all under the age of three years, designating them as a vulnerable group;
- ii. In addition, all the children in the study were diagnosed with significant developmental delays, further contributing to their vulnerable status;
- iii. Children may have experienced some mild irritation during collection of saliva samples;
- iv. Children could potentially have missed preschool/crèche due to observations or intervention sessions.

1.6.3 Modulation of Risks

The researcher attempted to modulate harm or risk by introducing the following precautions:

- i. To mitigate against the potential risk of distress/discomfort to participants, the researcher entered into a goodwill agreement with a HPCSA-registered counselling psychologist to assess, contain, and debrief participants for one session free of charge, if this was necessary (Addendum I). However, no such referrals were required.
- ii. Both intervenors who implemented the ABC intervention sessions (Aim 4) were HPCSA-registered psychologists aware of appropriate referral procedures. This allowed for the facilitation of necessary recommendations and referrals, where necessary, in the event of medical or psychological concerns that emerged during the course of the study. However, no such concerns were reported and, therefore, no such referrals were required.
- iii. Research procedures were split into multiple briefer data collection points to mitigate against overly lengthy sessions that could precipitate fatigue and inconvenience for participants. Participants were either provided with comfort breaks in between qualitative and quantitative data collection phases (Aim 2) or various procedures were scheduled on different days (Aim 4). Procedures were also always flexibly scheduled to fit into the participants' regular routines (e.g., outside of working/school hours, or on weekends/public holidays) to avoid inconvenience

or interruptions to work/school/crèche. Although, for Aim 4, it was initially planned to conduct intervention and observation sessions back-to-back in one sitting, weekly, caregivers preferred separate sessions which reduced fatigue.

- iv. To mitigate against the risk of a breach of privacy, all research assistants, coders and intervenors signed a strict confidentiality agreement prohibiting the sharing of any information about the participants with parties other than the researcher (Addendum H). All research procedures were also conducted in a private location with only the researcher/research assistant and participant present (Aims 2, 3 and 5). Procedures involving direction observations or intervention were always conducted in the participants' private homes (Aim 4).
- v. All interview transcripts were fully deidentified by the researcher to ensure that the privacy of the participants was retained—all names and other identifying information contained within the transcripts was disguised to secure confidentiality and protect participants' identities—this was achieved by using pseudonyms and changing the names of locations; these pseudonyms were also used in the thesis and journal articles. The data was also stored, and is archived, in a secure electronic format and remains deidentified, using only alphanumeric codes to identify questionnaires or transcripts, rather than personal identifiers. The individual data can, therefore, not be traced back to specific participants.
- vi. Coders of the AMSS and AQS (Aim 4) needed to be able to observe full parent-child interactions including vocalisations/conversations, major and minor movements, as well as facial expressions and other body language. Therefore, anonymisation through distorting the sound or images on the video-recordings would have made these obsolete for the purposes of coding the AMSS and AQS. As such, these video-recordings were shared with coders unaltered. Coders signed confidentiality agreements preventing the recordings from being shared or used for any other purpose beyond the study (Addendum H). Video-recordings were shared on a secure external hard drive which was returned to the researcher upon completion of the coding. Similarly, video-recordings of the ABC sessions were handed over to the researcher on a secure external hard drive by each of the intervenors upon completion of the intervention, for secure storage.
- vii. Coders who independently coded interview transcripts signed confidentiality agreements (Addendum H). Furthermore, only already deidentified interview transcripts were shared with coders, protecting participants' identities.
- viii. Parents were trained to collect saliva samples from their own children (Aim 4) so that this was carried out by a familiar and safe adult rather than a stranger, possibly reducing discomfort and irritation for the child and facilitating a smoother collection process.
- ix. The risks and mitigating measures noted here were contained in the information letters and were also explained to participants, verbally. This procedure gave participants a fair chance to ask questions at any point, and to opt out of the research in consideration of the risks involved.

All participants were afforded a ‘cooling off’ period between being invited to participate and formally consenting, as well as data collection.

- x. Parents were also fully informed, in the informed consent documentation, about what would be required in terms of their child’s involvement in the data collection and intervention procedures. This allowed for an informed decision about whether or not they granted permission for their child’s participation. Both parental consent for their own involvement (Addendum F), and parental permission for the child’s involvement (Addendum G), were required. Given the young age (< 3 years) and the presence of significant developmental delays, child assent was waived in the current study.
- xi. Participants were informed in the informed consent documentation that they could withdraw from the study at any time without any consequence for themselves, or their child.
- xii. As part of the informed consent process, participants were also informed of the publication of the findings of the study. The study’s findings will be made available to all participants upon completion.
- xiii. With regards to Article 1, all published articles were publicly accessible and, therefore, did not require specific permission to access and use. Although most of the intervention manuals were not in the public domain, these were requested from the custodians and developers of these interventions. During this process, the custodians/developers signed consent, agreeing for the manuals to be used for the purposes of the study.

1.6.4 Benefits of the Study

- i. There were no direct benefits for those participating in relation to Aims 2, 3 or 5.
- ii. Indirect benefits related to Aims 2 and 3 included contributing towards an understanding of the experiences of parents and caregivers of children with ID in South Africa. This was considered beneficial because it could potentially assist the field to better understand the challenges, supports, perceptions of current care, and needs of parents of children with ID, which could inform interventions and services that respond to these, thus providing support to parents and caregivers.
- iii. Indirect benefits related to Aim 5 included contributing towards potential adaptations to the ABC intervention to enhance its applicability in the South African context for children with ID, therefore increasing access to support for an underserved group.
- iv. Direct benefits related to Aim 4 for both parents/caregivers and children included the potential to experience improved parent-child relationships resulting from the ABC intervention, promoting psychological health and wellbeing for both parent/caregiver and child.
- v. Indirect benefits related to Aim 4 included establishing the effects of the ABC intervention in children with ID in South Africa, making a contribution to the body of literature on attachment-

based interventions for this cohort of children in the local context, which remains underexplored. The findings may also serve to motivate for a larger randomised controlled trial, which could further enhance the evidence base thus possibly elevating the significance of attachment-based interventions in treating childhood problems, especially in children with ID, a historically neglected population in the local and international literature.

1.6.5 Risk-Benefit Ratio

In this study, the benefits were assessed as outweighing the risks. Although there were risks, these were considered to be generally minimal to medium in nature. There were also both direct and indirect benefits to the participants depending on which aspects of the study they participated in. Substantial measures were taken to mitigate against the risks, and it was judged that these risks were justified. The information obtained in the study could not have been obtained from other sources. For example, information on parent-child interactive behaviours is best obtained from directly observing parent-child interactions, and parents of children with ID are best positioned to speak to the experiences of parenting a child with ID. The study also has potential practical/clinical value in that it will inform South African professionals about the importance, value and effectiveness of the ABC intervention in addressing attachment-related outcomes for children with ID. The study also has scientific value in that it adds to the limited research on attachment-based interventions in children with ID, and in South Africa. The adult participants in the study were not deemed to be a vulnerable population, but the few children involved were regarded as vulnerable both by virtue of their young age and their developmental delays. However, the children in the study were never engaged on their own, or even directly, by the researcher even during observations which were naturalistic and unobtrusive (the researcher remained as ‘invisible’ as possible, interacting in a very limited capacity with either the parent or child). The ABC intervention also makes an explicit point of noting that intervenors are to avoid direct contact with the child to encourage interaction between the parent and child as much as possible. Hence, the people in greatest contact with the child, usually in a naturalistic fashion as opposed to artificial scenarios, were the parents of those children. The intervention was also focused on further strengthening the relationship between the parent and their child, thus attempting to harness the capacity of the parent to serve as the child’s secure base and safe haven. Thus, despite the vulnerable status of the child, the constant presence of their parents and the focus of the intervention on building and supporting a positive parent-child relationship is believed to have provided conditions of safety, mitigating against the vulnerability of the child.

1.7 Outline of the Thesis

Section I

Section I contextualises the study and provides a review of the pertinent literature related to the fields of attachment and attachment-based interventions, on the one hand, and intellectual disabilities, on the other, as well as the intersection of the two. The study's aims, research designs and methodological approaches are also discussed. References relevant to Section I are included.

Section II

Section II presents the results of the study, encapsulated within four separate journal article manuscripts. The submission guidelines for the journals in which the manuscripts have been published, or to which the article manuscripts have been submitted, precede each manuscript. References are provided for each article manuscript, separately. Each article manuscript is presented according to the formatting requirements for each journal. Hence, the formatting may differ between manuscripts, and from Sections I and III of this thesis. The article manuscripts and the relevant academic journals are listed in Table 4 below:

Table 4

Article Manuscript Titles and Journals

	Article Title	Journal
Article 1	Exploring the practice elements of attachment-based interventions: A distillation-and-matching review.	<i>Attachment & Human Development</i>
Article 2	Parenting children with intellectual disabilities in Gauteng, South Africa: Caregiving challenges, current care, and needs.	<i>Intellectual and Developmental Disabilities</i>
Article 3	Using Attachment and Biobehavioral Catch-up with young children with developmental delays: A multiple-baseline trial of attachment, sensitivity, and cortisol.	<i>Journal of Intellectual Disabilities</i>
Article 4	Adapting Attachment and Biobehavioral Catch-up for infants and young children with intellectual disabilities and developmental delays in South Africa: Reflections and recommendations from local stakeholders.	<i>Infant Mental Health Journal</i>

Section III

Section III concludes the study. Here, the researcher reflects on the findings of the study in relation to its specific aims. The researcher's personal reflections on the execution of the study are also included. To conclude, the strengths and limitations are discussed, followed by recommendations for practice as

well as future research. A reference list is provided at the end of Section III, following by in integrated reference list.

Addenda

The addenda relating to ethical approvals, consent documentation, confidentiality agreements, letters of goodwill, interview schedules, and plagiarism screening is provided.

1.8 References

- Abidin, R. R. (2012). *Parenting Stress Index, fourth edition (PSI-4)*. Psychological Assessment Resources.
- Adnams, C. (2010). Perspectives of intellectual disability in South Africa: Epidemiology, policy, services for children and adults. *Current Opinion in Psychiatry*, 23, 436-440. <https://doi.org/10.1097/YCO.0b013e32833cfc2d>
- Ahmad, S., & Khanam, S. J. (2016). Parenting stress in mothers of children with disabilities: A comparative study. *Pakistan Journal of Psychology*, 47(1), 57-69.
- Ahmed, S. K. (2024). The pillars of trustworthiness in qualitative research. *Journal of Medicine, Surgery, and Public Health*, 2, Article 100051. <https://doi.org/10.1016/j.glmedi.2024.100051>
- Ahnert, L., & Schoppe-Sullivan, S. J. (2020). Fathers from an attachment perspective. *Attachment & Human Development*, 22(1), 1-3. <https://doi.org/10.1080/14616734.2019.1589054>
- Ainsworth, M. D. S. (1969). *Maternal sensitivity scales*. http://www.psychology.sunysb.edu/attachment/measures/content/ainsworth_scales.html
- Ainsworth, M. D. S. (1977). Attachment theory and its utility in cross-cultural research. In P. H. Leiderman, S. R. Tulkin, & A. Rosenfeld (Eds.), *Culture and infancy: Variations in the human experience* (pp. 49-67). Academic Press.
- Ainsworth, M. D. S., & Bell, S. M. (1970). Attachment, exploration and separation: Illustrated by the behavior of one-year-olds in a strange situation. *Child Development*, 41(1), 49-67. <https://doi.org/10.2307/1127388>
- Ainsworth, M. D. S., & Bell, S. M. (1974). Mother-infant interaction and the development of competence. In K. J. Connolly & J. Bruner (Eds.), *The growth of competence* (pp. 97-118). Academic Press.
- Ainsworth, M. D. S., Bell, S. M., & Stayton, D. J. (1991). Infant-mother attachment and social development: 'Socialisation' as a product of reciprocal responsiveness to signals. In M. Woodhead, R. Carr, & P. Light (Eds.), *Child development in social context: Becoming a person* (pp. 30-55). Routledge.
- Ainsworth, M. D. S., Bell, S. M. V., & Stayton, D. J. (1971). Individual differences in strange-situation behaviour of one-year-olds. In H. R. Schaffer (Ed.), *The origins of human social relations* (pp. 17-57). Academic Press.

- Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Lawrence Erlbaum.
- Ainsworth, M. D. S., & Wittig, B. A. (1969). Attachment and exploratory behavior of one-year-olds in a strange situation. In B. M. Foss (Ed.), *Determinants of infant behavior IV* (pp. 111-136). Methuen & Co LTD.
- Aktan, O., Orakçı, Ş., & Durnalı, M. (2020). Investigation of the relationship between burnout, life satisfaction and quality of life in parents of children with disabilities. *European Journal of Special Needs Education*, 35(5), 679-695. <https://doi.org/10.1080/08856257.2020.1748429>
- Alexander, S. L., Frederico, M., Long, M., & Vicendese, D. (2024). Attachment security in children with disability or developmental delay: Systematic review of quality and interventions. *Journal of Occupational Therapy, Schools, & Early Intervention*, 17(2), 228-258. <https://doi.org/10.1080/19411243.2023.2177237>
- Alhazmi, A., Petersen, R., & Donald, K. A. (2018). Quality of life among parents of South African children with autism spectrum disorder. *Acta Neuropsychiatrica*, 30(4), 226-231. <https://doi.org/10.1017/neu.2018.5>
- Allemang, B., Sitter, K., & Dimitropoulos, G. (2022). Pragmatism as a paradigm for patient-oriented research. *Health Expectations*, 25(1), 38-47. <https://doi.org/10.1111/hex.13384>
- Alsarhi, K. R., Prevoo, M., Alink, L., & Mesman, J. (2021a). Observing sensitivity in slums in Yemen: The veiled challenge. *Attachment & Human Development*, 23(2), 176-187. <https://doi.org/10.1080/14616734.2020.1828540>
- Alsarhi, K. R., Prevoo, M. J. L., Alink, L. R. A., & Mesman, J. (2021b). Sensitive parenting in urban slums in Makassar, Indonesia: The roles of experienced child maltreatment and sociodemographic risk. *Attachment & Human Development*, 23(2), 199-211. <https://doi.org/10.1080/14616734.2020.1828546>
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th edition, text revision). APA.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th edition). APA.
- American Psychiatric Association. (2022). *Diagnostic and statistical manual of mental disorders* (5th edition, text revision). APA.

- Aparicio, E. M., Denmark, N., Berlin, L. J., & Jones Harden, B. (2016). First-generation Latina mothers' experiences of supplementing home-based early head start with the Attachment and Biobehavioral Catch-up program. *Infant Mental Health Journal*, 37(5), 537-548. <https://doi.org/10.1002/imhj.21586>
- Armijo-Olivo, S., Stiles, C. R., Hagen, N. A., Biondo, P. D., & Cummings, G. G. (2012). Assessment of study quality for systematic reviews: A comparison of the Cochrane Collaboration Risk of Bias tool and the Effective Public Health Practice Project Quality Assessment tool: Methodological research. *Journal of Evaluation in Clinical Practice*, 18(1), 12-18. <https://doi.org/10.1111/j.1365-2753.2010.01516.x>
- Asanjarani, F., Abadi, F. D., Ghomi, M., Woudstra, M. L., & Mesman, J. (2021). Video observations of maternal sensitivity in urban and rural Iran: An exploratory study. *Attachment & Human Development*, 23(2), 164-175. <https://doi.org/10.1080/14616734.2020.1828532>
- Atkinson, L., Chisholm, V. C., Scott, B., Goldberg, S., Vaughn, B. E., Blackwell, J., Dickens, S., & Tam, F. (1999). Maternal sensitivity, child functional level, and attachment in Down syndrome. *Monographs of the Society for Research in Child Development*, 64(3), 45-66. <https://doi.org/10.1111/1540-5834.00033>
- Atkinson, L., Niccols, A., Paglia, A., Coolbear, J., Parker, K. C. H., Poulton, L., Guger, S., & Sitarenios, G. (2000). A meta-analysis of time between maternal sensitivity and attachment assessments: Implications for internal working models in infancy/toddlerhood. *Journal of Social and Personal Relationships*, 17(6), 791-810. <https://doi.org/10.1177/0265407500176005>
- Aviezer, O., Sagi, A., Joels, T., & Ziv, Y. (1999). Emotional availability and attachment representations in kibbutz infants and their mothers. *Developmental Psychology*, 35(3), 811-821. <https://doi.org/10.1037//0012-1649.35.3.811>
- Badu, E. (2016). Experiences of parents of children with intellectual disabilities in the Ashanti region of Ghana. *Journal of Social Inclusion*, 7(1), 20-30. <https://doi.org/10.36251/josi100>
- Bae, Y. J., Gaudl, A., Jaeger, S., Stadelmann, S., Hiemisch, A., Kiess, W., Willenberg, A., Schaab, M., von Klitzing, K., Thiery, J., Ceglarek, U., Dohnert, M., & Kratzsch, J. (2016). Immunoassay or LC-MS/MS for the measurement of salivary cortisol in children?. *Clinical Chemistry and Laboratory Medicine*, 54(5), 811-822. <https://doi.org/10.1515/cclm-2015-0412>
- Bagwell-Gray, M. E., Grube, W., Mendenhall, A., Jen, S., Olaleye, O., & Sattler, P. (2023). A qualitative exploration of caregivers' experiences with the Attachment and Biobehavioral

- Catch-up (ABC) parenting program. *Infant Mental Health Journal*, 44(3), 406-421. <https://doi.org/10.1002/imhj.22057>
- Bailey, H. N., Moran, G., Pederson, D. R., & Bento, S. (2007). Understanding the transmission of attachment using variable- and relationship-centered approaches. *Development and Psychopathology*, 19(2), 313-343. <https://doi.org/10.1017/S0954579407070162>
- Bain, K. (2014). "New Beginnings" in South African shelters for the homeless: Piloting of a group psychotherapy intervention for high-risk mother-infant dyads. *Infant Mental Health Journal*, 35(6), 591-603. <https://doi.org/10.1002/imhj.21457>
- Baker, B. L., Blacher, J., Crnic, K. A., & Edelbrock, C. (2002). Behavior problems and parenting stress in families of three-year-old children with and without developmental delays. *American Journal on Mental Retardation*, 107(6), 433-444. [https://doi.org/10.1352/0895-8017\(2002\)107<0433:Bpapsi>2.0.Co;2](https://doi.org/10.1352/0895-8017(2002)107<0433:Bpapsi>2.0.Co;2)
- Baker, B. L., McIntyre, L. L., Blacher, J., Crnic, K., Edelbrock, C., & Low, C. (2003). Pre-school children with and without developmental delay: Behaviour problems and parenting stress over time. *Journal of Intellectual Disability Research*, 47(4-5), 217-230. <https://doi.org/https://doi.org/10.1046/j.1365-2788.2003.00484.x>
- Bakermans-Kranenburg, M. J., Lotz, A., Alyousefi-van Dijk, K., & Van IJzendoorn, M. (2019). Birth of a father: Fathering in the first 1,000 days. *Child Development Perspectives*, 13(4), 247-253. <https://doi.org/10.1111/cdep.12347>
- Bakermans-Kranenburg, M. J., Van IJzendoorn, M. H., & Juffer, F. (2003). Less is more: Meta-analyses of sensitivity and attachment interventions in early childhood. *Psychological Bulletin*, 129(2), 195-215. <https://doi.org/10.1037/0033-2909.129.2.195>
- Bakermans-Kranenburg, M. J., Van IJzendoorn, M. H., & Juffer, F. (2005). Disorganized infant attachment and preventive interventions: A review and meta-analysis. *Infant Mental Health Journal*, 26(3), 191-216. <https://doi.org/10.1002/imhj.20046>
- Barak-Levy, Y., & Atzaba-Poria, N. (2020). A mediation model of parental stress, parenting, and risk factors in families having children with mild intellectual disability. *Research in Developmental Disabilities*, 98, Article 103577. <https://doi.org/10.1016/j.ridd.2020.103577>
- Barak-Levy, Y., & Paryente, B. (2023). Diving into the resolution process: Parent's reactions to child's diagnosis. *International Journal of Environmental Research and Public Health*, 20(4), Article 3295. <https://doi.org/10.3390/ijerph20043295>

- Barnes, J., & Theule, J. (2019). Maternal depression and infant attachment security: A meta-analysis. *Infant Mental Health Journal*, 40(6), 817-834. <https://doi.org/10.1002/imhj.21812>
- Barnett, D., Clements, M., Kaplan-Estrin, M., McCaskill, J. W., Hunt, K. H., Butler, C. M., Schram, J. L., & Janisse, H. C. (2006). Maternal resolution of child diagnosis: Stability and relations with child attachment across the toddler to preschooler transition. *Journal of Family Psychology*, 20(1), 100-107. <https://doi.org/10.1037/0893-3200.20.1.100>
- Barroso, N. E., Hungerford, G. M., Garcia, D., Graziano, P. A., & Bagner, D. M. (2016). Psychometric properties of the Parenting Stress Index-Short Form (PSI-SF) in a high-risk sample of mothers and their infants. *Psychological Assessment*, 28(10), 1331-1335. <https://doi.org/10.1037/pas0000257>
- Barth, R. P., Kolivoski, K. M., Lindsey, M. A., Lee, B. R., & Collins, K. S. (2014). Translating the common elements approach: Social work's experiences in education, practice, and research. *Journal of Clinical Child and Adolescent Psychology*, 43(2), 301-311. <https://doi.org/10.1080/15374416.2013.848771>
- Behrens, K. Y., Parker, A. C., & Haltigan, J. D. (2011). Maternal sensitivity assessed during the Strange Situation Procedure predicts child's attachment quality and reunion behaviors. *Infant Behavior and Development*, 34(2), 378-381. <https://doi.org/10.1016/j.infbeh.2011.02.007>
- Beighton, C., & Wills, J. (2017). Are parents identifying positive aspects to parenting their child with an intellectual disability or are they just coping? A qualitative exploration. *Journal of Intellectual Disabilities*, 21(4), 325-345. <https://doi.org/10.1177/1744629516656073>
- Bergsund, H. B., Drozd, F., & Jacobsen, H. (2024). Implementing Attachment and Biobehavioral Catch-up in Norway: Experiences from CWS parents, clinicians and leaders. *European Journal of Social Work*, 27(1), 69-82. <https://doi.org/10.1080/13691457.2022.2077320>
- Berlin, L. J., Martoccio, T. L., Bryce, C. I., & Jones Harden, B. (2019). Improving infants' stress-induced cortisol regulation through attachment-based intervention: A randomized controlled trial. *Psychoneuroendocrinology*, 103, 225-232. <https://doi.org/10.1016/j.psyneuen.2019.01.005>
- Berlin, L. J., Martoccio, T. L., & Jones Harden, B. (2018). Improving Early Head Start's impacts on parenting through attachment-based intervention: A randomized controlled trial. *Developmental Psychology*, 54(12), 2316-2327. <https://doi.org/10.1037/dev0000592>

- Berlin, L. J., Shanahan, M., & Carmody, K. A. (2014). Promoting supportive parenting in new mothers with substance-use problems: A pilot randomized trial of residential treatment plus an attachment-based parenting program. *Infant Mental Health Journal*, 35(1), 81-85. <https://doi.org/10.1002/imhj.21427>
- Bernard, K., Dozier, M., Bick, J., Lewis-Morrarty, E., Lindhiem, O., & Carlson, E. (2012). Enhancing attachment organization among maltreated children: Results of a randomized clinical trial. *Child Development*, 83(2), 623-636. <https://doi.org/10.1111/j.1467-8624.2011.01712.x>
- Bernard, K., Hostinar, C. E., & Dozier, M. (2015). Intervention effects on diurnal cortisol rhythms of child protective services-referred infants in early childhood: Preschool follow-up results of a randomized clinical trial. *JAMA Pediatrics*, 169(2), 112-119. <https://doi.org/10.1001/jamapediatrics.2014.2369>
- Bernard, K., Lee, A. H., & Dozier, M. (2017). Effects of the ABC intervention on foster children's receptive vocabulary: Follow-up results from a randomized clinical trial. *Child Maltreatment*, 22(2), 174-179. <https://doi.org/10.1177/1077559517691126>
- Bernard, K., Nissim, G., Vaccaro, S., Harris, J. L., & Lindhiem, O. (2018). Association between maternal depression and maternal sensitivity from birth to 12 months: A meta-analysis. *Attachment & Human Development*, 20(6), 578-599. <https://doi.org/10.1080/14616734.2018.1430839>
- Bernard, K., Simons, R., & Dozier, M. (2015). Effects of an attachment-based intervention on child protective services—referred mothers' event-related potentials to children's emotions. *Child Development*, 86(6), 1673-1684. <https://doi.org/10.1111/cdev.12418>
- Bernard, K., Zwerling, J., & Dozier, M. (2015). Effects of early adversity on young children's diurnal cortisol rhythms and externalizing behavior. *Developmental Psychobiology*, 57(8), 935-947. <https://doi.org/10.1002/dev.21324>
- Bernheimer, L. P., & Keogh, B. K. (1988). Stability of cognitive performance of children with developmental delays. *American Journal on Mental Retardation*, 92(6), 539-542.
- Bick, J., & Dozier, M. (2013). The effectiveness of an attachment-based intervention in promoting foster mothers' sensitivity toward foster infants. *Infant Mental Health Journal*, 34(2), 95-103. <https://doi.org/10.1002/imhj.21373>

- Bick, J., Palmwood, E. N., Zajac, L., Simons, R., & Dozier, M. (2019). Early parenting intervention and adverse family environments affect neural function in middle childhood. *Biological Psychiatry*, 85(4), 326-335. <https://doi.org/10.1016/j.biopsych.2018.09.020>
- Biringen, Z., Robinson, J. L., & Emde, R. N. (2000a). Appendix A: The Emotional Availability Scales (2nd edition; an abridged infancy/early childhood version). *Attachment & Human Development*, 2(2), 251-255. <https://doi.org/10.1080/14616730050085617>
- Biringen, Z., Robinson, J. L., & Emde, R. N. (2000b). Appendix B: The Emotional Availability Scales (3rd edition; an abridged infancy/early childhood version). *Attachment & Human Development*, 2(2), 256-270. <https://doi.org/10.1080/14616730050085626>
- Biswas, S., Moghaddam, N., & Tickle, A. (2015). What are the factors that influence parental stress when caring for a child with an intellectual disability? A critical literature review. *International Journal of Developmental Disabilities*, 61(3), 127-146. <https://doi.org/10.1179/2047387714y.00000000043>
- Blacher, J. (1984). Attachment and severely handicapped children: Implications for intervention. *Journal of Developmental and Behavioral Pediatrics*, 5(4), 178-183.
- Blacher, J., & Baker, B. L. (2007). Positive impact of intellectual disability on families. *American Journal on Mental Retardation*, 112(5), 330-348. [https://doi.org/10.1352/0895-8017\(2007\)112\[0330:PIOIDO\]2.0.CO;2](https://doi.org/10.1352/0895-8017(2007)112[0330:PIOIDO]2.0.CO;2).
- Boland, R., Verduin, M. L., & Ruiz, P. (2021). *Kaplan & Sadock's synopsis of psychiatry: Behavioral sciences/clinical psychiatry* (12th edition). Wolters Kluwer.
- Booth, A. T., Macdonald, J. A., & Youssef, G. J. (2018). Contextual stress and maternal sensitivity: A meta-analytic review of stress associations with the Maternal Behavior Q-sort in observational studies. *Developmental Review*, 48, 145-177. <https://doi.org/10.1016/j.dr.2018.02.002>
- Booth, P. B., & Jernberg, A. M. (2010). *Theraplay: Helping parents and children build better relationships through attachment-based play* (3rd edition). Jossey-Bass.
- Bowlby, J. (1952). *Maternal care and mental health: A report prepared on behalf of the World Health Organization as a contribution to the United Nations programme for the welfare of homeless children* (2nd edition). WHO. <https://iris.who.int/handle/10665/40724>
- Bowlby, J. (1969). *Attachment and loss: Volume 1. Attachment*. Basic Books.
- Bowlby, J. (1973). *Attachment and loss: Volume 2. Separation anxiety and anger*. Basic Books.

- Brady, S. R. (2016). The delphi method. In L. A. Jason & D. S. Glenwick (Eds.), *Handbook of methodological approaches to community-based research: Qualitative, quantitative, and mixed methods* (pp. 61-67). Oxford University Press.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. <https://doi.org/10.1191/1478088706qp063oa>
- Braun, V., & Clarke, V. (2013). *Successful qualitative research: A practical guide for beginners*. Sage.
- Braun, V., & Clarke, V. (2022). *Thematic analysis: A practical guide*. Sage.
- Bretherton, I. (1992). The origins of attachment theory: John Bowlby and Mary Ainsworth. *Developmental Psychology*, 28(5), 759-775. <https://doi.org/10.1037/0012-1649.28.5.759>
- Bridges, F. A., & Cicchetti, D. (1982). Mothers' ratings of the temperament characteristics of Down syndrome infants. *Developmental Psychology*, 18(2), 238-244. <https://doi.org/10.1037/0012-1649.18.2.238>
- Broesch, T., Rochat, P., Olah, K., Broesch, J., & Henrich, J. (2016). Similarities and differences in maternal responsiveness in three societies: Evidence from Fiji, Kenya, and the United States. *Child Development*, 87(3), 700-711. <https://doi.org/10.1111/cdev.12501>
- Brown, F. L., de Graaff, A. M., Annan, J., & Betancourt, T. S. (2017). Annual research review: Breaking cycles of violence - a systematic review and common practice elements analysis of psychosocial interventions for children and youth affected by armed conflict. *Journal of Child Psychology and Psychiatry*, 58(4), 507-524. <https://doi.org/10.1111/jcpp.12671>
- Brown, M. A., McIntyre, L. L., Crnic, K. A., Baker, B. L., & Blacher, J. (2011). Preschool children with and without developmental delay: Risk, parenting, and child demandingness. *Journal of Mental Health Research in Intellectual Disabilities*, 4(3), 206-226. <https://doi.org/10.1080/19315864.2011.596990>
- Bryman, A. (2006). Integrating quantitative and qualitative research: How is it done?. *Qualitative Research*, 6(1), 97-113. <https://doi.org/10.1177/1468794106058877>
- Buckley, N., Glasson, E. J., Chen, W., Epstein, A., Leonard, H., Skoss, R., Jacoby, P., Blackmore, A. M., Srinivasjois, R., Bourke, J., Sanders, R. J., & Downs, J. (2020). Prevalence estimates of mental health problems in children and adolescents with intellectual disability: A systematic review and meta-analysis. *Australian and New Zealand Journal of Psychiatry*, 54(10), 970-984. <https://doi.org/10.1177/0004867420924101>

- Bulté, I., & Onghena, P. (2009). Randomization tests for multiple-baseline designs: An extension of the SCRT-R package. *Behavioral Research Methods*, 41(2), 477-485. <https://doi.org/10.3758/BRM.41.2.477>
- Bulté, I., & Onghena, P. (2012). When the truth hits you between the eyes. *Methodology: European Journal of Research Methods for the Behavioral and Social Sciences*, 8(3), 104-114. <https://doi.org/10.1027/1614-2241/a000042>
- Burke, M. M., & Heller, T. (2017). Disparities in unmet service needs among adults with intellectual and other developmental disabilities. *Journal of Applied Research in Intellectual Disabilities*, 30(5), 898-910. <https://doi.org/10.1111/jar.12282>
- Buthlezi, S., & Mawila, D. (2024). There is always sorrow: Risk factors faced by parents of children presenting with severe intellectual disabilities. *Journal of Intellectual Disability - Diagnosis and Treatment*, 12(1), 12-21. <https://doi.org/10.6000/2292-2598.2024.12.01.2>
- Caballero, A., & Connell, J. E. (2010). Evaluation of the effects of social cue cards for preschool age children with autism spectrum disorders (ASD). *Journal of Behavior Assessment and Intervention in Children*, 1(1), 25-42. <https://doi.org/10.1037/h0100358>
- Cadman, T., Diamond, P. R., & Fearon, P. (2018). Reassessing the validity of the Attachment Q-sort: An updated meta-analysis. *Infant and Child Development*, 27(1), Article e2034. <https://doi.org/10.1002/icd.2034>
- Callus, A.-M., Bonello, I., Mifsud, C., & Fenech, R. (2019). Overprotection in the lives of people with intellectual disability in Malta: Knowing what is control and what is enabling support. *Disability & Society*, 34(3), 345-367. <https://doi.org/10.1080/09687599.2018.1547186>
- Campbell, S. B., Matestic, P., von Stauffenberg, C., Mohan, R., & Kirchner, T. (2007). Trajectories of maternal depressive symptoms, maternal sensitivity, and children's functioning at school entry. *Developmental Psychology*, 43(5), 1202-1215. <https://doi.org/10.1037/0012-1649.43.5.1202>
- Candela, A. (2019). Exploring the function of member checking. *The Qualitative Report*, 24(3), 619-628. <https://doi.org/10.46743/2160-3715/2019.3726>
- Capri, C., Abrahams, L., McKenzie, J., Coetzee, O., Mkabile, S., Saptouw, M., Hooper, A., Smith, P., Adnams, C., & Swartz, L. (2018). Intellectual disability rights and inclusive citizenship in South Africa: What can a scoping review tell us?. *African Journal of Disability*, 7, Article 396. <https://doi.org/10.4102/ajod.v7i0.396>

- Carmody, K. A., Murray, K. J., Williams, B., Frost, A., Coleman, C., & Sullivan, K. (2023). Enhancing early parenting in the community: Preliminary results from a learning collaborative approach to scale up Attachment and Biobehavioral Catch-up. *Infant Mental Health Journal*, 44(6), 752-766. <https://doi.org/10.1002/imhj.22081>
- Caron, E. B., Bernard, K., & Dozier, M. (2018). In vivo feedback predicts parent behavior change in the attachment and biobehavioral catch-up intervention. *Journal of Clinical Child & Adolescent Psychology*, 47(S1), s35-s46. <https://doi.org/10.1080/15374416.2016.1141359>
- Carrera, P., Zablah, F. M., de la Rosa, Y., & Benito-Gomez, M. (2024). Scaling up Attachment and Biobehavioral Catch-up with Latine families: Implementation processes and effectiveness. *Infant Mental Health Journal*, Advance online publication. <https://doi.org/10.1002/imhj.22141>
- Carroll, C., Patterson, M., Wood, S., Booth, A., Rick, J., & Balain, S. (2007). A conceptual framework for implementation fidelity. *Implementation Science*, 2, Article 40. <https://doi.org/10.1186/1748-5908-2-40>
- Chauke, T., Poggenpoel, M., Myburgh, C. P. H., & Ntshingila, N. (2021). Experiences of parents of an adolescent with intellectual disability in Giyani, Limpopo province, South Africa. *Health SA*, 26, Article 1538. <https://doi.org/10.4102/hsag.v26i0.1538>
- Chorpita, B. F., & Daleiden, E. L. (2009). Mapping evidence-based treatments for children and adolescents: Application of the distillation and matching model to 615 treatments from 322 randomized trials. *Journal of Consulting and Clinical Psychology*, 77(3), 566-579. <https://doi.org/10.1037/a0014565>
- Chorpita, B. F., Daleiden, E. L., & Weisz, J. R. (2005). Identifying and selecting the common elements of evidence based interventions: A distillation and matching model. *Mental Health Services Research*, 7(1), 5-20. <https://doi.org/10.1007/s11020-005-1962-6>
- Christianson, A. L., Zwane, M. E., Manga, P., Rosen, E., Venter, A., Downs, D., & Kromberg, J. G. R. (2002). Children with intellectual disability in rural South Africa: Prevalence and associated disability. *Journal of Intellectual Disability Research*, 46(2), 179-186. <https://doi.org/10.1046/j.1365-2788.2002.00390.x>
- Clinchy, A. R., & Mills-Koonce, W. R. (2013). Trajectories of intrusive parenting during infancy and toddlerhood as predictors of rural, low-income African American boys' school-related outcomes. *American Journal of Orthopsychiatry*, 83(2-3), 194-206. <https://doi.org/10.1111/ajop.12028>

- Çolak, B., & Kahriman, İ. (2023). Evaluation of family burden and quality of life of parents with children with disability. *The American Journal of Family Therapy*, 51(2), 113-133. <https://doi.org/10.1080/01926187.2021.1941421>
- Colonnesi, C., Draijer, E. M., Jan, J. M. S. G., Van der Bruggen, C. O., Bogels, S. M., & Noom, M. J. (2011). The relation between insecure attachment and child anxiety: A meta-analytic review. *Journal of Clinical Child and Adolescent Psychology*, 40(4), 630-645. <https://doi.org/10.1080/15374416.2011.581623>
- Cooke, J. E., Deneault, A. A., Devereux, C., Eirich, R., Fearon, R. M. P., & Madigan, S. (2022). Parental sensitivity and child behavioral problems: A meta-analytic review. *Child Development*, 93(5), 1231-1248. <https://doi.org/10.1111/cdev.13764>
- Cooke, J. E., Kochendorfer, L. B., Stuart-Parrigon, K. L., Koehn, A. J., & Kerns, K. A. (2019). Parent-child attachment and children's experience and regulation of emotion: A meta-analytic review. *Emotion*, 19(6), 1103-1126. <https://doi.org/10.1037/emo0000504>
- Cooke, J. E., Stuart-Parrigon, K. L., Movahed-Abtahi, M., Koehn, A. J., & Kerns, K. A. (2016). Children's emotion understanding and mother-child attachment: A meta-analysis. *Emotion*, 16(8), 1102-1106. <https://doi.org/10.1037/emo0000221>
- Cooper, P. J., Landman, M., Tomlinson, M., Molteno, C., Swartz, L., & Murray, L. (2002). Impact of a mother-infant intervention in an indigent peri-urban South African context: Pilot study. *The British Journal of Psychiatry*, 180(1), 76-81. <https://doi.org/http://dx.doi.org/10.1192/bjp.180.1.76>
- Cooper, P. J., Tomlinson, M., Swartz, L., Landman, M., Molteno, C., Stein, A., McPherson, K., & Murray, L. (2009). Improving quality of mother-infant relationship and infant attachment in socioeconomically deprived community in South Africa: Randomised controlled trial. *British Medical Journal*, 338, b974. <https://doi.org/10.1136/bmj.b974>
- Cooper, P. J., Tomlinson, M., Swartz, L., Woolgar, M., Murray, L., & Molteno, C. (1999). Post-partum depression and the mother-infant relationship in a South African peri-urban settlement. *The British Journal of Psychiatry*, 175(6), 554-558. <https://doi.org/http://dx.doi.org/10.1192/bjp.175.6.554>
- Cooper, S., Smiley, E., Morrison, J., Williamson, A., & Allan, L. (2007). Mental ill-health in adults with intellectual disabilities: Prevalence and associated factors. *The British Journal of Psychiatry*, 190(1), 27-35. <https://doi.org/10.1192/bjp.bp.106.022483>

- Costello, A. H., Roben, C. K. P., Schein, S. S., Blake, F., & Dozier, M. (2019). Monitoring provider fidelity of a parenting intervention using observational methods. *Professional Psychology: Research and Practice*, 50(4), 264-271. <https://doi.org/10.1037/pro0000236>
- Craig, F., Operto, F. F., De Giacomo, A., Margari, L., Frolli, A., Conson, M., Ivagnes, S., Monaco, M., & Margari, F. (2016). Parenting stress among parents of children with neurodevelopmental disorders. *Psychiatry Research*, 242, 121-129. <https://doi.org/10.1016/j.psychres.2016.05.016>
- Craig, R. J. (2005). The clinical process of interviewing. In R. J. Craig (Ed.), *Clinical and diagnostic interviewing* (2nd edition, pp. 21-41). Aronson.
- Craig, S. G., Dawson, A., Chen, S., Moretti, M. M., & Pepler, D. J. (2024). A systematic review of callous-unemotional traits and attachment in children and adolescents. *Attachment & Human Development*, Advance online publication. <https://doi.org/10.1080/14616734.2024.2349569>
- Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd edition). Sage.
- Cuzzocrea, F., Murdaca, A. M., Costa, S., Filippello, P., & Larcan, R. (2015). Parental stress, coping strategies and social support in families of children with a disability. *Child Care in Practice*, 22(1), 3-19. <https://doi.org/10.1080/13575279.2015.1064357>
- Dagan, O., & Sagi-Schwartz, A. (2021). Early attachment networks to multiple caregivers: History, assessment models, and future research recommendations. *New Directions for Child and Adolescent Development*, 2021(180), 9-19. <https://doi.org/10.1002/cad.20446>
- Dagan, O., Schuengel, C., Verhage, M. L., Madigan, S., Roisman, G. I., Bernard, K., Duschinsky, R., Bakermans-Kranenburg, M., Bureau, J. F., Sagi-Schwartz, A., Eiden, R. D., Wong, M. S., Brown, G. L., Soares, I., Oosterman, M., Fearon, R. M. P., Steele, H., Martins, C., Aviezer, O., & The Collaboration on Attachment to Multiple Parents and Outcomes Synthesis. (2024). Configurations of mother-child and father-child attachment relationships as predictors of child language competence: An individual participant data meta-analysis. *Child Development*, 95(1), 50-69. <https://doi.org/10.1111/cdev.13998>
- Dagan, O., Schuengel, C., Verhage, M. L., Van IJzendoorn, M. H., Sagi-Schwartz, A., Madigan, S., Duschinsky, R., Roisman, G. I., Bernard, K., Bakermans-Kranenburg, M., Bureau, J. F., Volling, B. L., Wong, M. S., Colonnese, C., Brown, G. L., Eiden, R. D., Fearon, R. M. P., Oosterman, M., Aviezer, O., Cummings, E. M., & The Collaboration on Attachment to Multiple Parents and Outcomes Synthesis. (2021). Configurations of mother-child and father-child attachment as predictors of internalizing and externalizing behavioral problems: An individual

- participant data (IPD) meta-analysis. *New Directions in Child and Adolescent Development*, 2021(180), 67-94. <https://doi.org/10.1002/cad.20450>
- Damen, S., Kef, S., Worm, M., Janssen, M. J., & Schuengel, C. (2011). Effects of video-feedback interaction training for professional caregivers of children and adults with visual and intellectual disabilities. *Journal of Intellectual Disability Research*, 55(6), 581-595. <https://doi.org/10.1111/j.1365-2788.2011.01414.x>
- Daniel, J. (2012). *Sampling essentials: Practical guidelines for making sampling choices*. Sage.
- Dawson, N. (2022). Contextual ghosts in the nursery: Systemic influences on sensitive maternal responsiveness in a low to middle income country. *Psychoanalytic Social Work*, 29(1), 1-26. <https://doi.org/10.1080/15228878.2021.1878044>
- Dawson, N., Bain, K., & Mesman, J. (2018). Comparing two measures of maternal sensitivity: Goodness of fit with a South African cultural context. *Attachment & Human Development*. Advance online publication. <https://doi.org/10.1080/14616734.2018.1454056>
- Dawson, N., Bain, K., & Mesman, J. (2021). Observing maternal sensitivity in a South African township: An exploratory study into behavioral features using different measures. *Attachment & Human Development*, 23(2), 150-163. <https://doi.org/10.1080/14616734.2020.1828531>
- De Gaetano, K., Saviola, D., Brunetti, D., & De Tanti, A. (2022). The importance of assessing parent stress in families with children with severe neuromotor and intellectual disability - a pilot study. *Applied Neuropsychology: Child*, 11(4), 804-810. <https://doi.org/10.1080/21622965.2021.1971525>
- Deans, C. L. (2020). Maternal sensitivity, its relationship with child outcomes, and interventions that address it: A systematic literature review. *Early Child Development and Care*, 190(2), 252-275. <https://doi.org/10.1080/03004430.2018.1465415>
- De Jonckheere, M., & Vaughn, L. M. (2019). Semistructured interviewing in primary care research: A balance of relationship and rigour. *Family Medicine and Community Health*, 7(2), Article e000057. <https://doi.org/10.1136/fmch-2018-000057>
- Deneault, A. A., Bakermans-Kranenburg, M. J., Groh, A. M., Fearon, P. R. M., & Madigan, S. (2021). Child-father attachment in early childhood and behavior problems: A meta-analysis. *New Directions for Child and Adolescent Development*, 2021(180), 43-66. <https://doi.org/10.1002/cad.20434>

- Deneault, A. A., Hammond, S. I., & Madigan, S. (2023). A meta-analysis of child-parent attachment in early childhood and prosociality. *Developmental Psychology*, 59(2), 236-255. <https://doi.org/10.1037/dev0001484>
- Department of Basic Education. (2015). *Report on the implementation of education white paper 6 on inclusive education: An overview for the period: 2013-2015*. DBE. <https://static.pmg.org.za/160308overview.pdf>
- Department of Education. (2001). *Education white paper 6: Special needs education—building an inclusive education and training system*. DoE. https://www.gov.za/sites/default/files/gcis_document/201409/educ61.pdf
- Department of Social Development. (2009). *Integrated national strategy on support services to children with disabilities*. DSD.
- Development of Social Development. (2015). *National integrated early childhood development policy*. DSD. https://www.gov.za/sites/default/files/gcis_document/201610/national-integrated-ecd-policy-web-version-final-01-08-2016a.pdf
- Department of Women, Youth and Persons with Disabilities. (2022). *Annual progress report on implementation of the white paper on the rights of persons with disabilities: 2017-2020*. DWYPD. https://www.gov.za/sites/default/files/gcis_document/202211/47526gon2753.pdf
- De Sas Kropiwnicki, Z. O., Elphick, J., & Elphick, R. (2014). Standing by themselves: Caregivers' strategies to ensure the right to education for children with disabilities in Orange Farm, South Africa. *Childhood*, 21(3), 354-368. <https://doi.org/10.1177/0907568214526263>
- De Wolff, M. S., & Van IJzendoorn, M. H. (1997). Sensitivity and attachment: A meta-analysis on parental antecedents of infant attachment. *Child Development*, 68(4), 571-591. <https://doi.org/10.1111/j.1467-8624.1997.tb04218.x>
- Di Renzo, M., Guerriero, V., Zavattini, G. C., Petrillo, M., Racinaro, L., & Bianchi di Castelbianco, F. (2020). Parental attunement, insightfulness, and acceptance of child diagnosis in parents of children with autism: Clinical implications. *Frontiers in Psychology*, 11, Article 1849. <https://doi.org/10.3389/fpsyg.2020.01849>
- Diamond, L. M. (2015). Stress and attachment. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and research: New directions and emerging themes* (pp. 97-123). Guilford Press.

- Dickson, R., Cherry, M. G., & Boland, A. (2014). Carrying out a systematic review as a master's thesis. In M. Boland, M. G. Cherry, & R. Dickson (Eds.), *Doing a systematic review: A student's guide* (pp. 1-16). Sage.
- Docrat, S., Besada, D., Cleary, S., Daviaud, E., & Lund, C. (2019). Mental health system costs, resources and constraints in South Africa: A national survey. *Health Policy and Planning*, 34(9), 706-719. <https://doi.org/10.1093/heapol/czz085>
- Dolev, S. (2006). *Insightfulness and the reaction to diagnosis in mothers of children with autism: Associations with maternal sensitivity* [Unpublished doctoral thesis]. University of Haifa.
- Douglas, T., Redley, B., & Ottmann, G. (2016). The first year: The support needs of parents caring for a child with an intellectual disability. *Journal of Advanced Nursing*, 72(11), 2738-2749. <https://doi.org/https://doi.org/10.1111/jan.13056>
- Dozier, M., & Bernard, K. (2017). Attachment and Biobehavioral Catch-up: Addressing the needs of infants and toddlers exposed to inadequate or problematic caregiving. *Current Opinion in Psychology*, 15, 111-117. <https://doi.org/https://doi.org/10.1016/j.copsyc.2017.03.003>
- Dozier, M., & Bernard, K. (2019). *Coaching parents of vulnerable infants: The Attachment and Biobehavioral Catch-up approach*. Guilford Press.
- Dozier, M., & Bernard, K. (2023). Intervening early: Socioemotional interventions targeting the parent–infant relationship. *Annual Review of Developmental Psychology*, 5(1), 3.1-3.21. <https://doi.org/10.1146/annurev-devpsych-120621-043254>
- Dozier, M., Bick, J., & Bernard, K. (2011). Attachment-based treatment for young, vulnerable children. In J. D. Osofsky (Ed.), *Clinical work with traumatized young children* (pp. 75-95). Guilford Press.
- Dozier, M., Lindheim, O., Lewis, E., Bick, J., Bernard, K., & Peloso, E. (2009). Effects of a foster parent training program on young children's attachment behaviors: Preliminary evidence from a randomized clinical trial. *Child and Adolescent Social Work Journal*, 26(4), 321-332. <https://doi.org/10.1007/s10560-009-0165-1>
- Dozier, M., Manni, M., Gordon, M. K., Peloso, E., Gunnar, M. R., Stovall-McClough, K. C., Eldreth, D., & Levine, S. (2006). Foster children's diurnal production of cortisol: An exploratory study. *Child Maltreatment*, 11(2), 189-197. <https://doi.org/10.1177/1077559505285779>

- Dozier, M., Peloso, E., Lewis, E., Laurenceau, J., & Levine, S. (2008). Effects of an attachment-based intervention on the cortisol production of infants and toddlers in foster care. *Development and Psychopathology*, 20(3), 845-859. <https://doi.org/10.1017/S0954579408000400>
- du Toit, D., & Mohamed, A. R. (2023). Theraplay for children in South Africa: Therapists' considerations for its use in the local context. In Z. G. Knight (Ed.), *The training and practice of psychotherapy in post-apartheid South Africa: Case studies, controversies and contemplations* (pp. 55-76). Nova Science Publishers.
- Dugmore, N. (2011). The development of parent-infant/child psychotherapy in South Africa: A review of the history from infancy towards maturity. *Journal of Child and Adolescent Mental Health*, 23(2), 75-90. <https://doi.org/10.2989/17280583.2011.634547>
- Dugmore, N. (2012). The development of psychoanalytic parent-infant/child psychotherapy in South Africa: Adaptive responses to contextual challenges. *Journal of Child and Adolescent Mental Health*, 24(1), 73-88. <https://doi.org/10.2989/17280583.2011.620963>
- Duma, V. V., Tshabalala, N., & Mji, G. (2021). The black hole of dealing with a disability diagnosis: Views of South African rural parents. *African Journal of Disability*, 10, Article 951. <https://doi.org/10.4102/ajod.v10i0.951>
- Durà-Vilà, G., Dein, S., & Hodes, M. (2010). Children with intellectual disability: A gain not a loss: Parental beliefs and family life. *Clinical Child Psychology and Psychiatry*, 15(2), 171-184. <https://doi.org/10.1177/1359104509341009>
- Duschinsky, R. (2015). The emergence of the disorganized/disoriented (D) attachment classification, 1979-1982. *History of Psychology*, 18(1), 32-46. <https://doi.org/10.1037/a0038524>
- Dusenbury, L., Brannigan, R., Falco, M., & Hansen, W. B. (2003). A review of research on fidelity of implementation: Implications for drug abuse prevention in school settings. *Health Education Research*, 18(2), 237-256. <https://doi.org/10.1093/her/18.2.237>
- Easterbrooks, M. A., Bureau, J. F., & Lyons-Ruth, K. (2012). Developmental correlates and predictors of emotional availability in mother-child interaction: A longitudinal study from infancy to middle childhood. *Development and Psychopathology*, 24(1), 65-78. <https://doi.org/10.1017/S0954579411000666>
- Edmonds, W., & Kennedy, T. (2017). *An applied guide to research designs*. Sage. <https://doi.org/doi.org/10.4135/9781071802779>

- Edwards, E. P., Eiden, R. D., & Leonard, K. E. (2006). Behavior problems in 18- to 36-month-old children of alcoholic fathers: Secure mother–infant attachment as a protective factor. *Development and Psychopathology*, 18(2), 395-407. <https://doi.org/10.1017/S0954579406060214>
- Egeland, B., Weinfeld, N. S., Bosquet, M., & Cheng, V. K. (2000). Remembering, repeating, and working through: Lessons from attachment-based interventions. In J. D. Osofsky & H. E. Fitzgerald (Eds.), *Handbook of infant mental health: Volume 4* (pp. 35-89). Wiley.
- Einfeld, S. L., Ellis, L. A., & Emerson, E. (2011). Comorbidity of intellectual disability and mental disorder in children and adolescents: A systematic review. *Journal of Intellectual & Developmental Disability*, 36(2), 137-143. <https://doi.org/10.1080/13668250.2011.572548>
- Elgeddawy, M., & Abouraia, M. (2024). Pragmatism as a research paradigm. *Proceedings of the 23rd European Conference on Research Methodology for Business and Management Studies*, 23(1), 71-74. <https://doi.org/10.34190/ecrm.23.1.2444>
- Engell, T., Kirkoen, B., Hammerstrom, K. T., Kornor, H., Ludvigsen, K. H., & Hagen, K. A. (2020). Common elements of practice, process and implementation in out-of-school-time academic interventions for at-risk children: A systematic review. *Prevention Science*, 21(4), 545-556. <https://doi.org/10.1007/s11121-020-01091-w>
- Facompré, C. R., Bernard, K., & Waters, T. E. A. (2018). Effectiveness of interventions in preventing disorganized attachment: A meta-analysis. *Development and Psychopathology*, 30(1), 1-11. <https://doi.org/10.1017/S0954579417000426>
- Fearon, R. M. P., & Belsky, J. (2016). Precursors of attachment security. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (3rd edition, pp. 291-313). Guilford Press.
- Fearon, R. P., Bakermans-Kranenburg, M. J., Van IJzendoorn, M. H., Lapsley, A. M., & Roisman, G. I. (2010). The significance of insecure attachment and disorganization in the development of children's externalizing behavior: A meta-analytic study. *Child Development*, 81(2), 435-456. <https://doi.org/10.1111/j.1467-8624.2009.01405.x>
- Fekedulegn, D. B., Andrew, M. E., Burchfiel, C. M., Violanti, J. M., Hartley, T. A., Charles, L. E., & Miller, D. B. (2007). Area under the curve and other summary indicators of repeated waking cortisol measurements. *Psychosomatic Medicine*, 69(7), 651-659. <https://doi.org/10.1097/PSY.0b013e31814c405c>

- Feniger-Schaal, R., & Joels, T. (2018). Attachment quality of children with ID and its link to maternal sensitivity and structuring. *Research in Developmental Disabilities*, 76, 56-64. <https://doi.org/10.1016/j.ridd.2018.03.004>
- Feniger-Schaal, R., & Oppenheim, D. (2013). Resolution of the diagnosis and maternal sensitivity among mothers of children with intellectual disability. *Research in Developmental Disabilities*, 34(1), 306-313. <https://doi.org/10.1016/j.ridd.2012.08.007>
- Feniger-Schaal, R., Oppenheim, D., & Koren-Karie, N. (2011, 31 March-2 April). *Maternal insightfulness and security of attachment among children with intellectual disability*. Poster presented at the annual meeting of the Society for Research in Child Development, Montreal, Canada.
- Feniger-Schaal, R., Oppenheim, D., & Koren-Karie, N. (2019). Parenting children with intellectual disability: Linking maternal insightfulness to sensitivity. *Journal of Intellectual Disability Research*, 63(10), 1285-1289. <https://doi.org/10.1111/jir.12614>
- Feniger-Schaal, R., Oppenheim, D., Koren-Karie, N., & Yirmiya, N. (2012). Parenting and intellectual disability: An attachment perspective. In J. A. Burack, R. M. Hodapp, G. Iarocci, & E. Zigler (Eds.), *The Oxford handbook of intellectual disability and development* (pp. 334-348). Oxford University Press.
- Fenning, R. M., Baker, J. K., Baker, B. L., & Crnic, K. A. (2014). Parent-child interaction over time in families of young children with borderline intellectual functioning. *Journal of Family Psychology*, 28(3), 326-335. <https://doi.org/10.1037/a0036537>
- Fidler, D. J., Hodapp, R. M., & Dykens, E. M. (2000). Stress in families of young children with Down syndrome, Williams syndrome, and Smith-magenis syndrome. *Early Education and Development*, 11(4), 395-406. https://doi.org/10.1207/s15566935eed1104_2
- Fieggen, K. J., Lambie, L. A., & Donald, K. A. (2019). Investigating developmental delay in South Africa: A pragmatic approach. *South African Medical Journal*, 109(4), 210-213. <https://doi.org/10.7196/SAMJ.2019.v109i4.13991>
- Fink, E., & de Rosnay, M. (2023). Examining links between affective empathy, cognitive empathy, and peer relationships at the transition to school. *Social Development*, 32(4), 1208-1226. <https://doi.org/10.1111/sode.12685>

- Flagg, A., Costello, A. H., Roben, C. K. P., & Dozier, M. (2022). Changes in provider fidelity after introducing a new model of intervention. *Current Psychology*, 41(6), 3906-3915. <https://doi.org/10.1007/s12144-020-00910-1>
- Fletcher, A. J., & Marchildon, G. P. (2014). Using the delphi method for qualitative, participatory action research in health leadership. *International Journal of Qualitative Methods*, 13(1), 1-18. <https://doi.org/10.1177/160940691401300101>
- Fletcher, H. K. (2016). Attachment relationships between parents and their children: The impact of ‘the loss of the healthy child’. In H. K. Fletcher, A. Flood, & D. J. Hare (Eds.), *Attachment in intellectual and developmental disability: A clinician’s guide to practice and research* (pp. 33-58). Wiley.
- Floyd, F. J., Harter, K. S. M., & Costigan, C. L. (2004). Family problem-solving with children who have mental retardation. *American Journal on Mental Retardation*, 109(6), 507-524. [https://doi.org/10.1352/0895-8017\(2004\)109<507:Fpwcwh>2.0.Co;2](https://doi.org/10.1352/0895-8017(2004)109<507:Fpwcwh>2.0.Co;2)
- Forrer, M. L., de Moor, M. H. M., Schuengel, C., & Oosterman, M. (2024). Early parenting precursors of child developmental outcomes: What counts beyond parental sensitivity?. *Parenting*, 24(2-3), 67-77. <https://doi.org/10.1080/15295192.2024.2310853>
- Fouche, C. B., Strydom, H., & Roestenburg, W. J. H. (2021). *Research at grass roots: For social sciences and human service professions* (5th edition). Van Schaik.
- Fourment, K., Espinoza, C., Ribeiro, A. C. L., & Mesman, J. (2022). Latin American attachment studies: A narrative review. *Infant Mental Health Journal*, 43(4), 653-676. <https://doi.org/10.1002/imhj.21995>
- Fourment, K., Noblega, M., Conde, G., Del Prado, J. N., & Mesman, J. (2021). Maternal sensitivity in rural Andean and Amazonian Peru. *Attachment & Human Development*, 23(2), 134-149. <https://doi.org/10.1080/14616734.2020.1828515>
- Fouts, H. N., & Lamb, M. E. (2005). Weaning emotional patterns among the Bofi foragers of central Africa: The role of maternal availability and sensitivity. In M. E. Lamb & B. S. Hewlett (Eds.), *Hunter-gatherer childhoods: Evolutionary, developmental, and cultural perspectives* (pp. 309-321). Transaction.
- Gallo, K. P., Comer, J. S., & Barlow, D. H. (2013). Single-case experimental designs and small pilot trial designs. In J. S. Comer & P. C. Kendall (Eds.), *The Oxford handbook of research strategies for clinical psychology* (pp. 24-39). Oxford University Press.

- Ganiban, J., Barnett, D., & Cicchetti, D. (2000). Negative reactivity and attachment: Down syndrome's contribution to the attachment–temperament debate. *Development and Psychopathology*, 12(1), 1-21. <https://doi.org/10.1017/s0954579400001012>
- Garland, A. F., Hawley, K. M., Brookman-Frazee, L., & Hurlburt, M. S. (2008). Identifying common elements of evidence-based psychosocial treatments for children's disruptive behavior problems. *Journal of the American Academy of Child and Adolescent Psychiatry*, 47(5), 505-514. <https://doi.org/10.1097/CHI.0b013e31816765c2>
- Garnett, M., Bernard, K., Hoyer, J., Zajac, L., & Dozier, M. (2020). Parental sensitivity mediates the sustained effect of Attachment and Biobehavioral Catch-up on cortisol in middle childhood: A randomized clinical trial. *Psychoneuroendocrinology*, 121, Article 104809. <https://doi.org/10.1016/j.psyneuen.2020.104809>
- Gast, D. L. (2010). Replication. In D. L. Gast (Ed.), *Single subject research methodology in behavioral sciences* (pp. 110-128). Routledge.
- Gaudreau, C., Delgado, A., Confair-Jones, R., Flambaum, S., Hirsh-Pasek, K., Raby, K. L., Dozier, M., & Golinkoff, R. M. (2024). The unanticipated side effects of an attachment intervention: Parents ask higher quality questions. *Developmental Psychology*, 60(3), 456-466. <https://doi.org/10.1037/dev0001707>
- Gebeyehu, F., Sahile, A., & Ayalew, M. (2019). Burden, social support, and life satisfaction among caregivers of children with intellectual disability: The case of Felege Abay and Shembt primary schools, Bahir Dar, Ethiopia. *International Quarterly of Community Health Education*, 39(3), 147-153. <https://doi.org/10.1177/0272684X18819974>
- Gerlach, J., Fossel, J. M., Vierhaus, M., Sann, A., Eickhorst, A., Zimmermann, P., & Spangler, G. (2022). Family risk and early attachment development: The differential role of parental sensitivity. *Infant Mental Health Journal*, 43(2), 340-356. <https://doi.org/10.1002/imhj.21964>
- Gerstein, E. D., Crnic, K. A., Blacher, J., & Baker, B. L. (2009). Resilience and the course of daily parenting stress in families of young children with intellectual disabilities. *Journal of Intellectual Disability Research*, 53(12), 981-997. <https://doi.org/10.1111/j.1365-2788.2009.01220.x>
- Glidden, L. M. (2012). Family well-being and children with intellectual disability. In J. A. Burack, R. M. Hodapp, G. Iarocci, & E. Zigler (Eds.), *The Oxford handbook of intellectual disability and development* (pp. 303-317). Oxford University Press.

- Goldsmith, H. H., & Alansky, J. A. (1987). Maternal and infant temperamental predictors of attachment: A meta-analytic review. *Journal of Consulting & Clinical Psychology*, 55(6), 805-816. <https://doi.org/10.1037/0022-006X.55.6.805>
- Golinkoff, R. M., Can, D. D., Soderstrom, M., & Hirsh-Pasek, K. (2015). (Baby)talk to me. *Current Directions in Psychological Science*, 24(5), 339-344. <https://doi.org/10.1177/09637214155595345>
- Green, J., Charman, T., Pickles, A., Wan, M. W., Elsabbagh, M., Slonims, V., Taylor, C., McNally, J., Booth, R., Gliga, T., Jones, E. J. H., Harrop, C., Bedford, R., & Johnson, M. H. (2015). Parent-mediated intervention versus no intervention for infants at high risk of autism: A parallel, single-blind, randomised trial. *The Lancet Psychiatry*, 2(2), 133-140. [https://doi.org/10.1016/s2215-0366\(14\)00091-1](https://doi.org/10.1016/s2215-0366(14)00091-1)
- Groh, A. M., Fearon, R. M. P., Van IJzendoorn, M. H., Bakermans-Kranenburg, M. J., & Roisman, G. I. (2017). Attachment in the early life course: Meta-analytic evidence for its role in socioemotional development. *Child Development Perspectives*, 11(1), 70-76. <https://doi.org/10.1111/cdep.12213>
- Groh, A. M., Fearon, R. P., Bakermans-Kranenburg, M. J., Van IJzendoorn, M. H., Steele, R. D., & Roisman, G. I. (2014). The significance of attachment security for children's social competence with peers: A meta-analytic study. *Attachment & Human Development*, 16(2), 103-136. <https://doi.org/10.1080/14616734.2014.883636>
- Groh, A. M., Roisman, G. I., Van IJzendoorn, M. H., Bakermans-Kranenburg, M. J., & Fearon, R. P. (2012). The significance of insecure and disorganized attachment for children's internalizing symptoms: A meta-analytic study. *Child Development*, 83(2), 591-610. <https://doi.org/10.1111/j.1467-8624.2011.01711.x>
- Grossmann, K. E., & Grossmann, K. (2021). Universal and culturally specific aspects of sensitive responsiveness to young children. *Attachment & Human Development*, 23(2), 231-238. <https://doi.org/10.1080/14616734.2020.1828550>
- Grube, W. A., & Liming, K. W. (2018). Attachment and Biobehavioral Catch-up: A systematic review. *Infant Mental Health Journal*, 39(6), 656-673. <https://doi.org/10.1002/imhj.21745>
- Gunnar, M. R., Brodersen, L., Nachmias, M., Buss, K., & Rigatuso, J. (1996). Stress reactivity and attachment security. *Developmental Psychobiology*, 29(3), 191-204. [https://doi.org/10.1002/\(SICI\)1098-2302\(199604\)29:3<191::AID-DEV1>3.0.CO;2-M](https://doi.org/10.1002/(SICI)1098-2302(199604)29:3<191::AID-DEV1>3.0.CO;2-M)

- Gunnar, M. R., & Donzella, B. (2002). Social regulation of the cortisol levels in early human development. *Psychoneuroendocrinology*, 27(1), 199-220. [https://doi.org/http://dx.doi.org/10.1016/S0306-4530\(01\)00045-2](https://doi.org/http://dx.doi.org/10.1016/S0306-4530(01)00045-2)
- Gunnar, M. R., & White, B. P. (2001). Salivary cortisol measures in infant and child assessment. In L. T. Singer & P. S. Zeskind (Eds.), *Biobehavioral assessment of the infant* (pp. 167-189). Guilford Press.
- Gupta, V. B. (2007). Comparison of parenting stress in different developmental disabilities. *Journal of Developmental and Physical Disabilities*, 19(4), 417-425. <https://doi.org/10.1007/s10882-007-9060-x>
- Gupta, V. B., Mehrotra, P., & Mehrotra, N. (2012). Parental stress in raising a child with disabilities in India. *Disability, CBR & Inclusive Development*, 23(2), 41-52. <https://doi.org/10.5463/dcid.v23i2.119>
- Guralnick, M. J. (2017). Early intervention for children with intellectual disabilities: An update. *Journal of Applied Research in Intellectual Disabilities*, 30(2), 211-229. <https://doi.org/10.1111/jar.12233>
- Haller, K., Stolfi, A., & Duby, J. (2022). Comparison of unmet health care needs in children with intellectual disability, autism spectrum disorder and both disorders combined. *Journal of Intellectual Disability Research*, 66(7), 617-627. <https://doi.org/10.1111/jir.12932>
- Hamadi, L., & Fletcher, H. K. (2021). Are people with an intellectual disability at increased risk of attachment difficulties? A critical review. *Journal of Intellectual Disabilities*, 25(1), 114-130. <https://doi.org/10.1177/1744629519864772>
- Hare, D. J., Fletcher, H. K., & Flood, A. (2016). Introduction. In H. K. Fletcher, A. Flood, & D. J. Hare (Eds.), *Attachment in intellectual and developmental disability: A clinician's guide to practice and research* (pp. 1-7). Wiley.
- Hartley, S. L., Papp, L. M., Mihaila, I., Bussanich, P. M., Goetz, G., & Hickey, E. J. (2017). Couple conflict in parents of children with versus without autism: Self-reported and observed findings. *Journal of Child and Family Studies*, 26(8), 2152-2165. <https://doi.org/10.1007/s10826-017-0737-1>
- Hassall, R., Rose, J., & McDonald, J. (2005). Parenting stress in mothers of children with an intellectual disability: The effects of parental cognitions in relation to child characteristics and family

- support. *Journal of Intellectual Disability Research*, 49(6), 405-418. <https://doi.org/10.1111/j.1365-2788.2005.00673.x>
- Hastings, R. P. (2016). Do children with intellectual and developmental disabilities have a negative impact on other family members? The case for rejecting a negative narrative. In R. M. Hodapp & D. J. Fidler (Eds.), *International review of research in developmental disabilities: Fifty years of research in intellectual and developmental disabilities* (Volume 50, pp. 165-194). Academic Press. <https://doi.org/10.1016/bs.irrdd.2016.05.002>
- Hayes, S. C. (1981). Single-case experimental designs and empirical clinical practice. *Journal of Consulting and Clinical Psychology*, 49(2), 193-211. <https://doi.org/10.1037/0022-006X.49.2.193>
- Heiman, T. (2002). Parents of children with disabilities: Resilience, coping, and future expectations. *Journal of Developmental and Physical Disabilities*, 14(2), 159-171. <https://doi.org/10.1023/A:1015219514621>
- Hepworth, A. D., Berlin, L. J., Martoccio, T. L., Cannon, E. N., Berger, R. H., & Harden, B. J. (2020). Supporting infant emotion regulation through attachment-based intervention: A randomized controlled trial. *Prevention Science*, 21(5), 702-713. <https://doi.org/10.1007/s11121-020-01127-1>
- Herring, S., Gray, K., Taffe, J., Tonge, B., Sweeney, D., & Einfeld, S. (2006). Behaviour and emotional problems in toddlers with pervasive developmental disorders and developmental delay: Associations with parental mental health and family functioning. *Journal of Intellectual Disability Research*, 50(12), 874-882. <https://doi.org/10.1111/j.1365-2788.2006.00904.x>
- Hofstra, E., Kasius, M. C., & Vermeiren, R. R. J. M. (2023). Treating children with disturbed attachment and an intellectual disability: Effectiveness of Theraplay-based treatment. *International Journal of Play Therapy*, 32(4), 230-242. <https://doi.org/10.1037/pla0000204>
- Horner, R. H., Carr, E. G., Halle, J., McGee, G., Odom, S., & Wolery, M. (2005). The use of single-subject research to identify evidence-based practice in special education. *Exceptional Children*, 71(2), 165-179. <https://doi.org/10.1177/001440290507100203>
- Hoye, J. R., Cheishvili, D., Yarger, H. A., Roth, T. L., Szyf, M., & Dozier, M. (2020). Preliminary indications that the Attachment and Biobehavioral Catch-up intervention alters DNA methylation in maltreated children. *Development and Psychopathology*, 32(4), 1486-1494. <https://doi.org/http://dx.doi.org/10.1017/S0954579419001421>

- Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15(9), 1277-1288. <https://doi.org/10.1177/1049732305276687>
- Hunter, D., McCallum, J., & Howes, D. (2019). Defining exploratory-descriptive qualitative (EDQ) research and considering its application to healthcare. *GSTF Journal of Nursing and Health Care*, 4(1), Advance online publication. <https://eprints.gla.ac.uk/180272/7/180272.pdf>
- Ilifa Labantwana. (2012). *Home visiting for households with children not in formal ECD: Evidence from the Sobambisana Initiative*. Ilifa Labantwana. <https://ilifalabantwana.co.za/wp-content/uploads/2017/06/Home-visiting-for-households-with-children-not-in-formal-ECD.pdf>
- Janse van Rensburg, A., Khan, R., Wouters, E., van Rensburg, D., Fourie, P., & Bracke, P. (2018). At the coalface of collaborative mental health care: A qualitative study of governance and power in district-level service provision in South Africa. *The International Journal of Health Planning and Management*, 33(4), 1121-1135. <https://doi.org/10.1002/hpm.2593>
- Janssen, C., Schuengel, C., & Stolk, J. (2002). Understanding challenging behaviour in people with severe and profound intellectual disability: A stress-attachment model. *Journal of Intellectual Disability Research*, 46(6), 445-453. <https://doi.org/10.1046/j.1365-2788.2002.00430.x>
- Jarrett, M. A., & Ollendick, T. H. (2012). Treatment of comorbid attention-deficit/hyperactivity disorder and anxiety in children: A multiple baseline design analysis. *Journal of Consulting and Clinical Psychology*, 80(2), 239-244. <https://doi.org/10.1037/a0027123>
- Jenaro, C., Flores, N., Gutierrez-Bermejo, B., Vega, V., Perez, C., & Cruz, M. (2020). Parental stress and family quality of life: Surveying family members of persons with intellectual disabilities. *International Journal of Environmental Research and Public Health*, 17(23), Article 9007. <https://doi.org/10.3390/ijerph17239007>
- John, A. (2012). Stress among mothers of children with intellectual disabilities in urban India: Role of gender and maternal coping. *Journal of Applied Research in Intellectual Disabilities*, 25(4), 372-382. <https://doi.org/10.1111/j.1468-3148.2011.00672.x>
- Johnson, R. F., O'Reilly, M., & Vostanis, P. (2006). Caring for children with learning disabilities who present problem behaviours: A maternal perspective. *Journal of Child Health Care*, 10(3), 188-198. <https://doi.org/10.1177/1367493506066480>
- Jones, P. R. (2019). A note on detecting statistical outliers in psychophysical data. *Attention, Perception, & Psychophysics*, 81(5), 1189-1196. <https://doi.org/10.3758/s13414-019-01726-3>

- Jonker, D., Sterkenburg, P. S., & Van Rensburg, E. (2015). Caregiver-mediated therapy for an adult with visual and intellectual impairment suffering from separation anxiety. *Research in Developmental Disabilities*, 47, 1-13. <https://doi.org/10.1016/j.ridd.2015.08.005>
- Juffer, F., Bakermans-Kranenburg, M. J., & Van IJzendoorn, M. H. (2008). *Manual: Video-feedback intervention to promote positive parenting and sensitive discipline (VIPP-SD)*. Leiden University, Centre for Child and Family Studies.
- Kaptein, S., Jansen, D. E., Vogels, A. G., & Reijneveld, S. A. (2008). Mental health problems in children with intellectual disability: Use of the Strengths and Difficulties Questionnaire. *Journal of Intellectual Disability Research*, 52(2), 125-131. <https://doi.org/10.1111/j.1365-2788.2007.00978.x>
- Kaushik, V., & Walsh, C. A. (2019). Pragmatism as a research paradigm and its implications for social work research. *Social Sciences*, 8(9), Article 255. <https://doi.org/10.3390/socsci8090255>
- Kazdin, A. E. (1982). *Single-case research designs: Methods for clinical and applied settings*. Oxford University Press.
- Keeney, S., Hasson, F., & McKenna, H. (2011). *The delphi technique in nursing and health research*. Wiley-Blackwell.
- Keller, H. (2007). *Cultures of infancy*. Erlbaum.
- Keller, H. (2013). Attachment and culture. *Journal of Cross-Cultural Psychology*, 44(2), 175-194. <https://doi.org/10.1177/0022022112472253>
- Keller, H. (2016). Attachment. A pancultural need but a cultural construct. *Current Opinion in Psychology*, 8, 59-63. <https://doi.org/10.1016/j.copsy.2015.10.002>
- Keller, H. (2018). Universality claim of attachment theory: Children's socioemotional development across cultures. *Proceedings of the National Academy of Sciences of the United States of America*, 115(45), 11414-11419. <https://doi.org/10.1073/pnas.1720325115>
- Keller, H., Bard, K., Morelli, G., Chaudhary, N., Vicedo, M., Rosabal-Coto, M., Scheidecker, G., Murray, M., & Gottlieb, A. (2018). The myth of universal sensitive responsiveness: Comment on Mesman et al. (2017). *Child Development*, 89(5), 1921-1928. <https://doi.org/10.1111/cdev.13031>

- Kelly, L. M., & Cordeiro, M. (2020). Three principles of pragmatism for research on organizational processes. *Methodological Innovations*, 13(2), 1-10.
<https://doi.org/10.1177/2059799120937242>
- Kenkel, W. M., Perkeybile, A. M., & Carter, C. S. (2017). The neurobiological causes and effects of alloparenting. *Developmental Neurobiology*, 77(2), 214-232.
<https://doi.org/10.1002/dneu.22465>
- Keogh, B. K., Bernheimer, L. P., & Guthrie, D. (1997). Stability and change over time in cognitive level of children with delays. *American Journal on Mental Retardation*, 101(4), 365-373.
- Kermorian, R., & Leiderman, P. H. (1986). Infant attachment to mother and child caretaker in an East African community. *International Journal of Behavioral Development*, 9(4), 455-469.
<https://doi.org/10.1177/016502548600900404>
- Khan, G., Isaacs, D., Makoe, M. G., Fluks, L. L., Mokhele, T., & Mokomane, Z. (2020). Service providers' perceptions of families caring for children with disabilities in resource-poor settings in South Africa. *Child & Family Social Work*, 25(4), 823-831.
<https://doi.org/10.1111/cfs.12761>
- Kirschbaum, C., & Hellhammer, D. H. (1994). Salivary cortisol in psychoneuroendocrine research: Recent developments and applications. *Psychoneuroendocrinology*, 19(4), 313-333.
[https://doi.org/http://dx.doi.org/10.1016/0306-4530\(94\)90013-2](https://doi.org/http://dx.doi.org/10.1016/0306-4530(94)90013-2)
- Kiru, E., & Cooc, N. (2018). A comparative analysis of access to education for students with disabilities in Brazil, Canada, and South Africa. *Journal of International Special Needs Education*, 21(2), 34-44. <https://doi.org/10.9782/16-00024R4>
- Kleefman, M., Reijneveld, S. A., & Jansen, D. E. M. C. (2015). Prevalence and determinants of need for formal parenting support among parents raising a child with a borderline to mild intellectual disability. *Journal of Intellectual & Developmental Disability*, 40(1), 49-56.
<https://doi.org/10.3109/13668250.2014.956659>
- Kleintjies, S., Flisher, A. J., Fick, M., Railoun, M., Lund, C., Molteno, C., & Robertson, B. A. (2006). The prevalence of mental disorders among children, adolescents and adults in the Western Cape, South Africa. *African Journal of Psychiatry*, 9(3), 157-160.
<https://doi.org/10.4314/ajpsy.v9i3.30217>
- Knox, J., Arpadi, S. M., Kauchali, S., Craib, M., Kvalsvig, J. D., Taylor, M., Bah, F., Mellins, C., & Davidson, L. L. (2018). Screening for developmental disabilities in HIV positive and HIV

- negative children in South Africa: Results from the Asenze study. *PLoS One*, 13(7), Article e0199860. <https://doi.org/10.1371/journal.pone.0199860>
- Komanchuk, J., Letourneau, N., Duffett-Leger, L., & Cameron, J. L. (2023). History of “serve and return” and a synthesis of the literature on its impacts on children’s health and development. *Issues in Mental Health Nursing*, 44(5), 406-417. <https://doi.org/10.1080/01612840.2023.2192794>
- Konner, M. (2005). Hunter-gatherer infancy and childhood: The !Kung and others. In M. E. Lamb & B. S. Hewlett (Eds.), *Hunter-gatherer childhoods: Evolutionary, developmental, and cultural perspectives* (pp. 19-64). Transaction.
- Korom, M., Goldstein, A., Tabachnick, A. R., Palmwood, E. N., Simons, R. F., & Dozier, M. (2021). Early parenting intervention accelerates inhibitory control development among CPS-involved children in middle childhood: A randomized clinical trial. *Developmental Science*, 24(3), Article e13054. <https://doi.org/10.1111/desc.13054>
- Koskentausta, T., Iivanainen, M., & Almqvist, F. (2007). Risk factors for psychiatric disturbance in children with intellectual disability. *Journal of Intellectual Disability Research*, 51(1), 43-53. <https://doi.org/10.1111/j.1365-2788.2006.00871.x>
- Kratochwill, T. R., & Levin, J. R. (2010). Enhancing the scientific credibility of single-case intervention research: Randomization to the rescue. *Psychological Methods*, 15(2), 124-144. <https://doi.org/10.1037/a0017736>
- Kromberg, J., Christianson, A. L., Manga, P., Zwane, M. E., Rosen, E., Venter, A., & Homer, S. (1997). Intellectual disability in rural black children in the Bushbuckridge district of South Africa. *Southern African Journal of Child and Adolescent Mental Health*, 9(1), 2-11. <https://doi.org/10.1080/16826108.1997.9632485>
- Kromberg, J., Zwane, E., Manga, P., Venter, A., Rosen, E., & Christianson, A. (2008). Intellectual disability in the context of a South African population. *Journal of Policy and Practice in Intellectual Disabilities*, 5(2), 89-95. <https://doi.org/10.1111/j.1741-1130.2008.00153.x>
- Labella, M. H., Eiden, R. D., Roben, C. K. P., & Dozier, M. (2021). Adapting an evidence-based home visiting intervention for mothers with opioid dependence: Modified Attachment and Biobehavioral Catch-up. *Frontiers in Psychology*, 12, Article 675866. <https://doi.org/10.3389/fpsyg.2021.675866>

- Labella, M. H., Lind, T., Sellers, T., Roben, C. K. P., & Dozier, M. (2020). Emotion regulation among children in foster care versus birth parent care: Differential effects of an early home-visiting intervention. *Journal of Abnormal Child Psychology*, 48(8), 995-1006. <https://doi.org/10.1007/s10802-020-00653-4>
- Labella, M. H., Raby, K. L., Bourne, S. V., Trahan, A. C., Katz, D., & Dozier, M. (2024). Is Attachment and Biobehavioral Catch-up effective for parents with insecure attachment states of mind?. *Child Development*, 95(2), 648-655. <https://doi.org/10.1111/cdev.14002>
- Lane, J. D., & Gast, D. L. (2014). Visual analysis in single case experimental design studies: Brief review and guidelines. *Neuropsychological Rehabilitation*, 24(3-4), 445-463. <https://doi.org/10.1080/09602011.2013.815636>
- le Roux, S. M., Donald, K. A., Brittain, K., Phillips, T. K., Zerbe, A., Nguyen, K. K., Strandvik, A., Kroon, M., Abrams, E. J., & Myer, L. (2018). Neurodevelopment of breastfed HIV-exposed uninfected and HIV-unexposed children in South Africa. *AIDS*, 32(13), 1781-1791. <https://doi.org/10.1097/QAD.0000000000001872>
- Lee, B. R., Ebesutani, C., Kolivoski, K. M., Becker, K. D., Lindsey, M. A., Brandt, N. E., Cammack, N., Strieder, F. H., Chorpita, B. F., & Barth, R. P. (2014). Program and practice elements for placement prevention: A review of interventions and their effectiveness in promoting home-based care. *American Journal of Orthopsychiatry*, 84(3), 244-256. <https://doi.org/10.1037/h0099811>
- Lee, J. (2013). Maternal stress, well-being, and impaired sleep in mothers of children with developmental disabilities: A literature review. *Research in Developmental Disabilities*, 34(11), 4255-4273. <https://doi.org/10.1016/j.ridd.2013.09.008>
- Letourneau, N., Tryphonopoulos, P., Giesbrecht, G., Dennis, C. L., Bhogal, S., & Watson, B. (2015). Narrative and meta-analytic review of interventions aiming to improve maternal-child attachment security. *Infant Mental Health Journal*, 36(4), 366-387. <https://doi.org/10.1002/imhj.21525>
- Levitt, H., Butler, M., & Hill, T. (2006). What clients find helpful in psychotherapy: Developing principles for facilitating moment-to-moment change. *Journal of Counselling*, 53(3), 314-324. <https://doi.org/10.1037/002-0167.53.3.314>
- Lewis-Morrarty, E., Dozier, M., Bernard, K., Terracciano, S. M., & Moore, S. V. (2012). Cognitive flexibility and theory of mind outcomes among foster children: Preschool follow-up results of

- a randomized clinical trial. *Journal of Adolescent Health*, 51(2, Supplement), S17-S22. <https://doi.org/10.1016/j.jadohealth.2012.05.005>
- Li, S., Ran, G., & Chen, X. (2021). Linking attachment to empathy in childhood and adolescence: A multilevel meta-analysis. *Journal of Social and Personal Relationships*, 38(11), 3350-3377. <https://doi.org/10.1177/02654075211031006>
- Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gotzsche, P. C., Ioannidis, J. P., Clarke, M., Devereaux, P. J., Kleijnen, J., & Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: Explanation and elaboration. *PLoS Medicine*, 6(7), Article e1000100. <https://doi.org/10.1371/journal.pmed.1000100>
- Licata-Dandel, M., Wenzel, A. S., Kristen-Antonow, S., & Sodian, B. (2021). Predicting child problem behaviour at school age: The role of maternal sensitivity, child temperament and theory of mind. *Infant and Child Development*, 30(6), Article e2264. <https://doi.org/10.1002/icd.2264>
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage.
- Lind, T., Bernard, K., Ross, E., & Dozier, M. (2014). Intervention effects on negative affect of CPS-referred children: Results of a randomized clinical trial. *Child Abuse & Neglect*, 38, 1459-1467. <https://doi.org/10.1016/j.chiabu.2014.04.004>
- Lind, T., Bernard, K., Yarger, H. A., & Dozier, M. (2020). Promoting compliance in children referred to child protective services: A randomized clinical trial. *Child Development*, 91(2), 563-576. <https://doi.org/10.1111/cdev.13207>
- Lind, T., Lee Raby, K., Caron, E. B., Roben, C. K., & Dozier, M. (2017). Enhancing executive functioning among toddlers in foster care with an attachment-based intervention. *Development and Psychopathology*, 29(2), 575-586. <https://doi.org/10.1017/S0954579417000190>
- Lind, T., Lee Raby, K., Goldstein, A., Bernard, K., Caron, E. B., Yarger, H. A., Wallin, A., & Dozier, M. (2021). Improving social-emotional competence in internationally adopted children with the Attachment and Biobehavioral Catch-up intervention. *Developmental and Psychopathology*, 33(3), 957-969. <https://doi.org/10.1017/s0954579420000255>
- Llewellyn, G., & McConnell, D. (1999, 8-9 July). *Sharing the care: The support interview guide*. 11th Australasian Human Development Conference, Sydney, Australia.

- Lovejoy, M. C., Graczyk, P. A., O'Hare, E., & Neuman, G. (2000). Maternal depression and parenting behavior: A meta-analytic review. *Clinical Psychology Review*, 20(5), 561-592. [https://doi.org/10.1016/S0272-7358\(98\)00100-7](https://doi.org/10.1016/S0272-7358(98)00100-7)
- Lyons-Ruth, K., Easterbrooks, M. A., & Cibelli, C. D. (1997). Infant attachment strategies, infant mental lag, and maternal depressive symptoms: Predictors of internalizing and externalizing problems at age 7. *Developmental Psychology*, 33(4), 681-692. <https://doi.org/10.1037/0012-1649.33.4.681>
- Lucassen, N., Tharner, A., Van IJzendoorn, M. H., Bakermans-Kranenburg, M. J., Volling, B. L., Verhulst, F. C., Lambregtse-Van den Berg, M. P., & Tiemeier, H. (2011). The association between paternal sensitivity and infant-father attachment security: A meta-analysis of three decades of research. *Journal of Family Psychology*, 25(6), 986-992. <https://doi.org/10.1037/a0025855>
- Madigan, S., Atkinson, L., Laurin, K., & Benoit, D. (2013). Attachment and internalizing behavior in early childhood: A meta-analysis. *Developmental Psychology*, 49(4), 672-689. <https://doi.org/10.1037/a0028793>
- Madigan, S., Brumariu, L. E., Villani, V., Atkinson, L., & Lyons-Ruth, K. (2016). Representational and questionnaire measures of attachment: A meta-analysis of relations to child internalizing and externalizing problems. *Psychological Bulletin*, 142(4), 367-399. <https://doi.org/10.1037/bul0000029>
- Madigan, S., Deneault, A. A., Duschinsky, R., Bakermans-Kranenburg, M. J., Schuengel, C., Van IJzendoorn, M. H., Ly, A., Fearon, R. M. P., Eirich, R., & Verhage, M. L. (2024). Maternal and paternal sensitivity: Key determinants of child attachment security examined through meta-analysis. *Psychological Bulletin*, 150(7), 839-872. <https://doi.org/10.1037/bul0000433>
- Madigan, S., Fearon, R. M. P., Van IJzendoorn, M. H., Duschinsky, R., Schuengel, C., Bakermans-Kranenburg, M. J., Ly, A., Cooke, J. E., Deneault, A.-A., Oosterman, M., & Verhage, M. L. (2023). The first 20,000 strange situation procedures: A meta-analytic review. *Psychological Bulletin*, 149(1-2), 99-132. <https://doi.org/10.1037/bul0000388>
- Magnusson, D., Sweeney, F., & Landry, M. (2019). Provision of rehabilitation services for children with disabilities living in low- and middle-income countries: A scoping review. *Disability and Rehabilitation*, 41(7), 861-868. <https://doi.org/10.1080/09638288.2017.1411982>

- Main, M., & Solomon, J. (1986). Discovery of a new, insecure-disorganized/disoriented attachment pattern. In M. Yogman & T. B. Brazelton (Eds.), *Affective development in infancy* (pp. 95-124). Ablex.
- Main, M., & Solomon, J. (1990). Procedures for identifying infants as disorganized/disoriented during the Ainsworth Strange Situation. In M. T. Greenberg, D. Cicchetti, & E. M. Cummings (Eds.), *Attachment in the preschool years: Theory, research, and intervention* (pp. 121-160). University of Chicago Press.
- Makwela, M. M., Smit, E. I., & Mabvurira, V. (2021). Legislation and service provision for children with disabilities in South Africa: A social work perspective. *Technium Social Sciences Journal*, 22, 741-751.
- Malatji, K. S., & Ndebele, C. (2018). Challenges experienced by women in raising children with intellectual disabilities. *African Journal for Physical Activity and Health Sciences*, 24(Supplement 1), 129-141. <https://doi.org/doi:10.10520/EJC-13283544ce>
- Mamedova, K., Laurenzi, C. A., Gordon, S., Tomlinson, M., & Fearon, P. (2024). Identifying the common elements of early childhood interventions supporting cognitive development in low- and middle-income countries. *Adversity and Resilience Science*, 55(1), 55-79. <https://doi.org/10.1007/s42844-023-00105-0>
- Manolov, R., Losada, J. L., Chacon-Moscato, S., & Sanduvete-Chaves, S. (2016). Analyzing two-phase single-case data with non-overlap and mean difference indices: Illustration, software tools, and alternatives. *Frontiers in Psychology*, 7, Article 32. <https://doi.org/10.3389/fpsyg.2016.00032>
- Marlowe, F. W. (2005). Who tends Hadza children?. In M. E. Lamb & B. S. Hewlett (Eds.), *Hunter-gatherer childhoods: Evolutionary, developmental, and cultural perspectives* (pp. 177-190). Transaction.
- Marvin, R. S., & Pianta, R. C. (1996). Mothers' reactions to their child's diagnosis: Relations with security of attachment. *Journal of Clinical Child Psychology*, 25(4), 436-445. https://doi.org/10.1207/s15374424jccp2504_8
- Marvin, R. S., Van Devender, T. L., Iwanga, M. I., LeVine, S., & LeVine, R. A. (1977). Infant-caregiver attachment among the Hausa of Nigeria. In H. McGurk (Ed.), *Ecological factors in human development* (pp. 247-259). North-Holland Publishing Co.
- Masefield, S. C., Prady, S. L., Sheldon, T. A., Small, N., Jarvis, S., & Pickett, K. E. (2020). The caregiver health effects of caring for young children with developmental disabilities: A meta-

- analysis. *Maternal and Child Health Journal*, 24(5), 561-574. <https://doi.org/10.1007/s10995-020-02896-5>
- Masulani-Mwale, C., Kauye, F., Gladstone, M., & Mathanga, D. (2018). Prevalence of psychological distress among parents of children with intellectual disabilities in Malawi. *BMC Psychiatry*, 18, Article 146. <https://doi.org/10.1186/s12888-018-1731-x>
- Masulani-Mwale, C., Mathanga, D., Silungwe, D., Kauye, F., & Gladstone, M. (2016). Parenting children with intellectual disabilities in Malawi: The impact that reaches beyond coping?. *Child: Care, Health and Development*, 42(6), 871-880. <https://doi.org/10.1111/cch.12368>
- Mattie, L. J., Loveall, S. J., Channell, M. M., & Rodgers, D. B. (2023). Perspectives on adaptive functioning and intellectual functioning measures for intellectual disabilities behavioral research. *Frontiers in Psychology*, 14, Article 1084576. <https://doi.org/10.3389/fpsyg.2023.1084576>
- Maulik, P. K., Harbour, C. K., & McCarthy, J. (2014). Epidemiology. In E. Tsakanikos & J. McCarthy (Eds.), *Handbook of psychopathology in intellectual disability: Research, practice, and policy* (pp. 9-21). Springer.
- Maulik, P. K., Mascarenhas, M. N., Mathers, C. D., Dua, T., & Saxena, S. (2011). Prevalence of intellectual disability: A meta-analysis of population-based studies. *Research in Developmental Disabilities*, 32(2), 419-436. <https://doi.org/10.1016/j.ridd.2010.12.018>
- Mazza, M. G., Rossetti, A., Crespi, G., & Clerici, M. (2020). Prevalence of co-occurring psychiatric disorders in adults and adolescents with intellectual disability: A systematic review and meta-analysis. *Journal of Applied Research in Intellectual Disabilities*, 33(2), 126-138. <https://doi.org/10.1111/jar.12654>
- Mbanjwa, S., & Harvey, C. (2023). South African single mothers' experiences of raising a child with a disability. *African Journal of Disability*, 12, Article a1321. <https://doi.org/10.4102/ajod>
- Mbatha, N. L., & Mokwena, K. E. (2023). Parental stress in raising a child with developmental disabilities in a rural community in South Africa. *International Journal of Environmental Research and Public Health*, 20(5), Article 3969. <https://doi.org/10.3390/ijerph20053969>
- McIntyre, L. L. (2008). Parent training for young children with developmental disabilities: Randomized controlled trial. *American Journal on Mental Retardation*, 113(5), 356-368. <https://doi.org/10.1352/2008.113:356-368>

- McKenzie, J. A., McConkey, R., & Adnams, C. (2013). Intellectual disability in Africa: Implications for research and service development. *Disability and Rehabilitation*, 35(20), 1750-1755. <https://doi.org/10.3109/09638288.2012.751461>
- McLeod, J. (2010). *Case study research in counselling and psychotherapy*. Sage.
- Meade, E. B., Dozier, M., & Bernard, K. (2014). Using video feedback as a tool in training parent coaches: Promising results from a single-subject design. *Attachment & Human Development*, 16(4), 356-370. <https://doi.org/10.1080/14616734.2014.912488>
- Meins, E., Fernyhough, C., Fradley, E., & Tuckey, M. (2001). Rethinking maternal sensitivity: Mothers' comments on infants' mental processes predict security of attachment at 12 months. *Journal of Child Psychology and Psychiatry*, 42(5), 637-648. <https://doi.org/10.1111/1469-7610.00759>
- Mengist, W., Soromessa, T., & Legese, G. (2020). Method for conducting systematic literature review and meta-analysis for environmental science research. *MethodsX*, 7, Article 100777. <https://doi.org/10.1016/j.mex.2019.100777>
- Mesman, J. (2018). Sense and sensitivity: A response to the commentary by Keller et al. (2018). *Child Development*, 89(5), 1929-1931. <https://doi.org/10.1111/cdev.13030>
- Mesman, J. (2021). Video observations of sensitivity in context: Integrating insights from seven cultural communities. *Attachment & Human Development*, 23(2), 212-221. <https://doi.org/10.1080/14616734.2020.1828547>
- Mesman, J., Basweti, N., & Misati, J. (2021). Sensitive infant caregiving among the rural Gusii in Kenya. *Attachment & Human Development*, 23(2), 124-133. <https://doi.org/10.1080/14616734.2020.1828512>
- Mesman, J., & Emmen, R. A. G. (2013). Mary Ainsworth's legacy: A systematic review of observational instruments measuring parental sensitivity. *Attachment & Human Development*, 15(5/6), 485-506. <https://doi.org/10.1080/14616734.2013.820900>
- Mesman, J., Minter, T., Angged, A., Cisse, I. A. H., Salali, G. D., & Migliano, A. B. (2018). Universality without uniformity: A culturally inclusive approach to sensitive responsiveness in infant caregiving. *Child Development*, 89(3), 837-850. <https://doi.org/10.1111/cdev.12795>
- Mesman, J., Van IJzendoorn, M. H., & Sagi-Schwartz, A. (2016). Cross-cultural patterns of attachment: Universal and contextual dimensions. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of*

attachment: Theory, research, and clinical applications (3rd edition, pp. 852-877). Guilford Press.

- Mikulincer, M., & Shaver, P. R. (2012). An attachment perspective on psychopathology. *World Psychiatry, 11*(1), 11-15. <https://doi.org/10.1016/j.wpsyc.2012.01.003>
- Miller, K. N., Bourne, S. V., Dahl, C. M., Costello, C., Attinelly, J., Jennings, K., & Dozier, M. (2024). Using randomized controlled trials to ask questions regarding developmental psychopathology: A tribute to Dante Cicchetti. *Development and Psychopathology*, Advance online publication. <https://doi.org/10.1017/S0954579424000245>
- Minde, K., Minde, R., & Vogel, W. (2006). Culturally sensitive assessment of attachment in children aged 18-40 months in a South African township. *Infant Mental Health Journal, 27*(6), 544-558. <https://doi.org/10.1002/imhj.20106>
- Mitter, N., Ali, A., & Scior, K. (2019). Stigma experienced by families of individuals with intellectual disabilities and autism: A systematic review. *Research in Developmental Disabilities, 89*, 10-21. <https://doi.org/10.1016/j.ridd.2019.03.001>
- Mkabile, S., Garrun, K. L., Shelton, M., & Swartz, L. (2021). African families' and caregivers' experiences of raising a child with intellectual disability: A narrative synthesis of qualitative studies. *African Journal of Disability, 10*, Article 827. <https://doi.org/10.4102/ajod.v10i0.827>
- Mkabile, S., & Swartz, L. (2020a). Caregivers' and parents' explanatory models of intellectual disability in Khayelitsha, Cape Town, South Africa. *Journal of Applied Research in Intellectual Disabilities, 33*(5), 1026-1037. <https://doi.org/10.1111/jar.12725>
- Mkabile, S., & Swartz, L. (2020b). 'I waited for it until forever': Community barriers to accessing intellectual disability services for children and their families in Cape Town, South Africa. *International Journal of Environmental Research and Public Health, 17*(22), Article 8504. <https://doi.org/10.3390/ijerph17228504>
- Mkabile, S., & Swartz, L. (2022). Putting cultural difference in its place: Barriers to access to health services for parents of children with intellectual disability in an urban African setting. *International Journal of Social Psychiatry, 68*(8), 1614-1622. <https://doi.org/10.1177/00207640211043150>
- Mkhize, M., & Sibanda, M. (2020). A review of selected studies on the factors associated with the nutrition status of children under the age of five years in South Africa. *International Journal of*

Environmental Research and Public Health, 17(21), Article 7973.
<https://doi.org/10.3390/ijerph17217973>

- Mmangaliso, A., & Lupuwana, V. P. P. (2021). Psychosocial experiences of family caregivers of children with intellectual disabilities in Alice, Eastern Cape, South Africa. *Southern African Journal of Social Work and Social Development*, 33(3), Article 7052.
<https://doi.org/doi:10.25159/2415-5829/7052>
- Modula, M. J. (2022). The support needs of families raising children with intellectual disability. *African Journal of Disability*, 11, Article 952. <https://doi.org/10.4102/ajod.v11i0.952>
- Modula, M. J., & Chipu, M. G. (2024). Exploring information needs among family caregivers of children with intellectual disability in a rural area of South Africa: A qualitative study. *BMC Public Health*, 24, Article 1139. <https://doi.org/10.1186/s12889-024-18606-7>
- Mohamed, A. R., & Mkabile, S. (2015). An attachment-focused parent-child intervention for biting behaviour in a child with intellectual disability: A clinical case study. *Journal of Intellectual Disabilities*, 19(3), 251-265. <https://doi.org/10.1177/1744629515572711>
- Molteno, G., Molteno, C. D., Finchilescu, G., & Dawes, A. R. L. (2001). Behavioural and emotional problems in children with intellectual disability attending special schools in Cape Town, South Africa. *Journal of Intellectual Disability Research*, 45(6), 515-520.
<https://doi.org/https://doi.org/10.1046/j.1365-2788.2001.00368.x>
- Montealegre-Ramón, M. d. P., Martínez-Fuentes, M. T., Pérez-López, J., & Sierra-García, P. (2024). Maternal sensitivity, early interactions and infant attachment: A systematic review. *Early Child Development and Care*, Advance online publication.
<https://doi.org/10.1080/03004430.2024.2386324>
- Mooya, H., Sichimba, F., & Bakermans-Kranenburg, M. (2016). Infant-mother and infant-sibling attachment in Zambia. *Attachment & Human Development*, 18(6), 618-635.
<https://doi.org/10.1080/14616734.2016.1235216>
- Morelli, G. A., & Tronick, E. Z. (1991). Efe multiple caretaking and attachment. In J. L. Gerwitz & W. M. Kurtines (Eds.), *Intersections with attachment* (pp. 41-52). Lawrence Erlbaum Associates.
- Morris, L. D., Grimmer, K. A., Twizeyemariya, A., Coetzee, M., Leibbrandt, D. C., & Louw, Q. A. (2021). Health system challenges affecting rehabilitation services in South Africa. *Disability and Rehabilitation*, 43(6), 877-883. <https://doi.org/10.1080/09638288.2019.1641851>

- Morwane, R. E. (2023). Inclusion of individuals with disabilities in vocational training in South Africa?. In S. Halder, S. Dada, & R. Banerjee (Eds.), *The Routledge handbook of inclusive education for teacher educators: Issues, considerations, and strategies* (pp. 638-650). Routledge.
- Mountain, G., Cahill, J., & Thorpe, H. (2017). Sensitivity and attachment interventions in early childhood: A systematic review and meta-analysis. *Infant Behavior and Development*, 46, 14-32. <https://doi.org/10.1016/j.infbeh.2016.10.006>
- Munir, K. M. (2016). The co-occurrence of mental disorders in children and adolescents with intellectual disability/intellectual developmental disorder. *Current Opinion in Psychiatry*, 29(2), 95-102. <https://doi.org/10.1097/YCO.0000000000000236>
- Murray, L., De Pascalis, L., Tomlinson, M., Vally, Z., Dadomo, H., MacLachlan, B., Woodward, C., & Cooper, P. J. (2016). Randomized controlled trial of a book-sharing intervention in a deprived South African community: Effects on carer-infant interactions, and their relation to infant cognitive and socioemotional outcome. *Journal of Child Psychology and Psychiatry*, 57(12), 1370-1379. <https://doi.org/10.1111/jcpp.12605>
- Naber, F. B. A., Swinkels, S. H. N., Buitelaar, J. K., Bakermans-Kranenburg, M. J., Van IJzendoorn, M. H., Dietz, C., Daalen, E., & Engeland, H. (2006). Attachment in toddlers with autism and other developmental disorders. *Journal of Autism and Developmental Disorders*, 37(6), 1123-1138. <https://doi.org/10.1007/s10803-006-0255-2>
- National Collaborating Centre for Mental Health. (2015). *Children's attachment: Attachment in children and young people who are adopted from care, in care or at risk of going into care*. National Institution for Health and Care Excellence. <https://www.nice.org.uk/guidance/NG26>
- National Home Visiting Resource Center. (2018). *2018 home visiting yearbook*. NHVRC. https://nhvrc.org/legacy_yearbook/2018-home-visiting-yearbook/
- National Home Visiting Resource Center. (2019). *2019 home visiting yearbook*. NHVRC. <https://nhvrc.org/yearbook/2019-yearbook/>
- National Home Visiting Resource Center. (2020). *2020 home visiting yearbook*. NHVRC. <https://nhvrc.org/yearbook/2020-yearbook/>
- National Home Visiting Resource Center. (2021). *2021 home visiting yearbook*. NHVRC. <https://nhvrc.org/yearbook/2021-yearbook/>

- National Home Visiting Resource Center. (2022). *2022 home visiting yearbook*. NHVRC. <https://nhvrc.org/yearbook/2022-yearbook/>
- National Home Visiting Resource Center. (2023). *2023 home visiting yearbook*. NHVRC. <https://nhvrc.org/yearbook/2023-yearbook/>
- Nel, M., & Grosser, M. M. (2016). An appreciation of learning disabilities in the South African context. *Learning Disabilities: A Contemporary Journal*, 14(1), 79-92.
- Neuhauser, A. (2018). Predictors of maternal sensitivity in at-risk families. *Early Child Development and Care*, 188(2), 126-142. <https://doi.org/10.1080/03004430.2016.1207065>
- Niedbalski, J. (2023). (Extra) ordinary parenting: Parents of children with disabilities in the context of disability stigma and pride. *Journal of Intellectual Disabilities*, 27(3), 648-670. <https://doi.org/10.1177/17446295221100037>
- Norlin, D., & Broberg, M. (2013). Parents of children with and without intellectual disability: Couple relationship and individual well-being. *Journal of Intellectual Disability Research*, 57(6), 552-566. <https://doi.org/10.1111/j.1365-2788.2012.01564.x>
- O’Byrne, E., McCusker, C., & McSweeney, S. (2023). The impact of the “Attachment and Biobehavioural Catch-up” program on attachment related parent behavior—A systematic review. *Infant Mental Health Journal*, 44(1), 76-91. <https://doi.org/10.1002/imhj.22025>
- Oelofsen, N., & Richardson, P. (2006). Sense of coherence and parenting stress in mothers and fathers of preschool children with developmental disability. *Journal of Intellectual and Developmental Disability*, 31(1), 1-12. <https://doi.org/10.1080/13668250500349367>
- Olivier, L., Curfs, L. M., & Viljoen, D. L. (2016). Fetal alcohol spectrum disorders: Prevalence rates in South Africa. *South African Medical Journal*, 106(6, Supplement 1), S103-S106. <https://doi.org/10.7196/SAMJ.2016.v106i6.11009>
- Olusanya, B. O., Wright, S. M., Nair, M. K. C., Boo, N.-Y., Halpern, R., Kuper, H., Abubakar, A. A., Almasri, N. A., Arabloo, J., Arora, N. K., Backhaus, S., Berman, B. D., Breinbauer, C., Carr, G., de Vries, P. J., del Castillo-Hegy, C., Eftekhari, A., Gladstone, M. J., Hoekstra, R. A., Kancherla, V., Mulaudzi, M. C., Kakooza-Mwesige, A., Ogbo, F. A., Olsen, H. E., Olusanya, J. O., Pandey, A., Samms-Vaughan, M. E., Servili, C., Shaheen, A., Smythe, T., Wertlieb, D., Williams, A. N., Newton, C. R. J., Davis, A. C., & Kassebaum, N. J. (2020). Global burden of childhood epilepsy, intellectual disability, and sensory impairments. *Pediatrics*, 146(1), Article e20192623. <https://doi.org/10.1542/peds.2019-2623>

- Onghena, P., Maes, B., & Heyvaert, M. (2018). Mixed methods single case research: State of the art and future directions. *Journal of Mixed Methods Research*, 13(4), 461-480. <https://doi.org/10.1177/1558689818789530>
- Oosterman, M., & Schuengel, C. (2008). Attachment in foster children associated with caregivers' sensitivity and behavioral problems. *Infant Mental Health Journal*, 29(6), 609-623. <https://doi.org/10.1002/imhj.20198>
- Oppenheim, D., Dolev, S., Koren-Karie, N., Sher-Censor, E., Yirmiya, N., & Salomon, S. (2007). Parental resolution of the child's diagnosis and the parent-child relationship: Insights from the Reaction to Diagnosis Interview. In D. Oppenheim & D. F. Goldsmith (Eds.), *Attachment theory in clinical work with children: Bridging the gap between research and practice* (pp. 109-136). Guilford Press.
- Oppenheim, D., & Koren-Karie, N. (2002). Mothers' insightfulness regarding their children's internal worlds: The capacity underlying secure child-mother relationships. *Infant Mental Health Journal*, 23(6), 593-605. <https://doi.org/10.1002/imhj.10035>
- Oppenheim, D., Koren-Karie, N., Dolev, S., & Yirmiya, N. (2012). Maternal sensitivity mediates the link between maternal insightfulness/resolution and child-mother attachment: The case of children with autism spectrum disorder. *Attachment & Human Development*, 14(6), 567-584. <https://doi.org/10.1080/14616734.2012.727256>
- Oppenheim, D., Koren-Karie, N., Slonim, M., Mottes-Peleg, M., Sher-Censor, E., Dolev, S., & Yirmiya, N. (2024). Maternal and paternal insightfulness and reaction to the diagnosis in families of preschoolers with autism spectrum disorder: Associations with observed parental sensitivity and inter-parent interaction. *Attachment & Human Development*, Advance online publication. <https://doi.org/10.1080/14616734.2024.2326416>
- Oti-Boadi, M. (2017). Exploring the lived experiences of mothers of children with intellectual disability in Ghana. *SAGE Open*, 7(4), 1-12. <https://doi.org/10.1177/2158244017745578>
- Pallini, S., Baiocco, R., Schneider, B. H., Madigan, S., & Atkinson, L. (2014). Early child-parent attachment and peer relations: A meta-analysis of recent research. *Journal of Family Psychology*, 28(1), 118-123. <https://doi.org/10.1037/a0035736>
- Pallini, S., Chirumbolo, A., Morelli, M., Baiocco, R., Laghi, F., & Eisenberg, N. (2018). The relation of attachment security status to effortful self-regulation: A meta-analysis. *Psychological Bulletin*, 144(5), 501-531. <https://doi.org/10.1037/bul0000134>

- Pallini, S., Morelli, M., Chirumbolo, A., Baiocco, R., Laghi, F., & Eisenberg, N. (2019). Attachment and attention problems: A meta-analysis. *Clinical Psychology Review*, 74, Article 101772. <https://doi.org/10.1016/j.cpr.2019.101772>
- Parker, R. I., & Vannest, K. (2009). An improved effect size for single-case research: Nonoverlap of all pairs. *Behaviour Therapy*, 40, 357-367. [https://doi.org/0005-7894/08/357-367\\$1.00/0](https://doi.org/0005-7894/08/357-367$1.00/0)
- Patton, K. A., Ware, R., McPherson, L., Emerson, E., & Lennox, N. (2018). Parent-related stress of male and female carers of adolescents with intellectual disabilities and carers of children within the general population: A cross-sectional comparison. *Journal of Applied Research in Intellectual Disabilities*, 31(1), 51-61. <https://doi.org/10.1111/jar.12292>
- Patty, N. J. S., van Meeteren, K. M., Willemsen, A. M., Mol, M. A. E., Verdonk, M., Ketelaar, M., & Schuengel, C. (2024). Understanding burnout among parents of children with complex care needs: A scoping review followed by a stakeholder consultation. *Journal of Child and Family Studies*, 33(5), 1378-1392. <https://doi.org/10.1007/s10826-024-02825-y>
- Pedersen, F. A., Bryan, Y., Huffman, L., & Del Carmen, R. (1989). Construction of self and offspring in the pregnancy and early infancy periods. Meetings of the Society for Research in Child Development (SRCD), Kansas City, USA.
- Pederson, D. R., Bailey, H. N., Tarabulsky, G. M., Bento, S., & Moran, G. (2014). Understanding sensitivity: Lessons learned from the legacy of Mary Ainsworth. *Attachment & Human Development*, 16(3), 261-270. <https://doi.org/10.1080/14616734.2014.900094>
- Pederson, D. R., Gleason, K. E., Moran, G., & Bento, S. (1998). Maternal attachment representations, maternal sensitivity, and the infant-mother attachment relationship. *Developmental Psychology*, 34(5), 925-932. <https://doi.org/10.1037//0012-1649.34.5.925>
- Pederson, D. R., & Moran, G. (1995). A categorical description of infant-mother relationships in the home and its relation to Q-sort measures of infant-mother interaction. *Monographs of the Society for Research in Child Development*, 60(2/3), 111-132.
- Pederson, D. R., Moran, G., Sitko, C., Campbell, K., Ghesquire, K., & Acton, H. (1990). Maternal sensitivity and the security of infant-mother attachment: A Q-sort study. *Child Development*, 61(6), 1974-1983. <https://doi.org/10.2307/1130851>
- Peer, J. W., & Hillman, S. B. (2014). Stress and resilience for parents of children with intellectual and developmental disabilities: A review of key factors and recommendations for practitioners.

- Journal of Policy and Practice in Intellectual Disabilities*, 11(2), 92-98.
<https://doi.org/10.1111/jppi.12072>
- Pepperdine, C. R., & McCrimmon, A. W. (2018). Test review: Vineland Adaptive Behavior Scales, third edition (Vineland-3) by Sparrow, S. S., Cicchetti, D. V., & Saulnier, C. A. *Canadian Journal of School Psychology*, 33(2), 157-163. <https://doi.org/10.1177/0829573517733845>
- Perez, E. M., Hendricks, M. K., Beard, J. L., Murray-Kolb, L. E., Berg, A., Tomlinson, M., Irlam, J., Isaacs, W., Njengele, T., Sive, A., & Vernon-Feagans, L. (2005). Mother-infant interactions and infant development are altered by maternal iron deficiency anemia. *Journal of Nutrition*, 135(4), 850-855. <https://doi.org/10.1093/jn/135.4.850>
- Perrone, L., Imrisek, S. D., Dash, A., Rodriguez, M., Monticciolo, E., & Bernard, K. (2021). Changing parental depression and sensitivity: Randomized clinical trial of ABC's effectiveness in the community. *Development and Psychopathology*, 33(3), 1026-1040. <https://doi.org/10.1017/s0954579420000310>
- Peterson, N. J., Drotar, D., Olness, K., Guay, L., & Kiziri-Mayengo, R. (2001). The relationship of maternal and child HIV infection to security of attachment among Ugandan infants. *Child Psychiatry and Human Development*, 32(1), 3-17. <https://doi.org/http://dx.doi.org/10.1023/A:1017581412328>
- Petticrew, M., & Roberts, H. (2006). *Systematic reviews in the social sciences: A practical guide*. Blackwell.
- Pianta, R. C., Marvin, R. S., Britner, P. A., & Borowitz, K. C. (1996). Mothers' resolution of their children's diagnosis: Organized patterns of caregiving representations. *Infant Mental Health Journal*, 17(3), 239-256. [https://doi.org/https://doi.org/10.1002/\(SICI\)1097-0355\(199623\)17:3<239::AID-IMHJ4>3.0.CO;2-J](https://doi.org/https://doi.org/10.1002/(SICI)1097-0355(199623)17:3<239::AID-IMHJ4>3.0.CO;2-J)
- Pinderhughes, E. E., Nix, R., Foster, E. M., Jones, D., & The Conduct Problems Prevention Research Group. (2001). Parenting in context: Impact of neighborhood poverty, residential stability, public services, social networks, and danger on parental behaviors. *Journal of Marriage and Family*, 63(4), 941-953. <https://doi.org/10.1111/j.1741-3737.2001.00941.x>
- Pinquart, M. (2022). Attachment security to mothers and fathers: A meta-analysis on mean-level differences and correlations of behavioural measures. *Infant and Child Development*, 31(6), Article e2364. <https://doi.org/10.1002/icd.2364>

- Pinquart, M. (2023). Attachment security with mothers and fathers: A meta-analysis on mean-level differences and correlations of verbal attachment measures. *Journal of Child and Family Studies*, 32(12), 3848-3859. <https://doi.org/10.1007/s10826-023-02585-1>
- Platje, E., Sterkenburg, P., Overbeek, M., Kef, S., & Schuengel, C. (2018). The efficacy of VIPP-V parenting training for parents of young children with a visual or visual-and-intellectual disability: A randomized controlled trial. *Attachment & Human Development*, 20(5), 455-472. <https://doi.org/10.1080/14616734.2018.1428997>
- Platt, J. M., Keyes, K. M., McLaughlin, K. A., & Kaufman, A. S. (2019). Intellectual disability and mental disorders in a US population representative sample of adolescents. *Psychological Medicine*, 49(6), 952-961. <https://doi.org/10.1017/S0033291718001605>
- Porter, C. L., & Hsu, H. C. (2003). First-time mothers' perceptions of efficacy during the transition to motherhood: Links to infant temperament. *Journal of Family Psychology*, 17(1), 54-64. <https://doi.org/10.1037/0893-3200.17.1.54>
- Poslawsky, I. E., Naber, F. B., Bakermans-Kranenburg, M. J., van Daalen, E., van Engeland, H., & Van IJzendoorn, M. H. (2015). Video-feedback intervention to promote positive parenting adapted to autism (VIPP-AUTI): A randomized controlled trial. *Autism*, 19(5), 588-603. <https://doi.org/10.1177/1362361314537124>
- Potter-Dickey, A., Letourneau, N., & de Koning, A. P. J. (2020). Associations between neurodevelopmental disorders and attachment patterns in preschool-aged children: Systematic review. *Current Developmental Disorders Reports*, 7(4), 277-289. <https://doi.org/10.1007/s40474-020-00219-5>
- Powell, B., Cooper, G., Hoffman, K., & Marvin, B. (2014). *The Circle of Security intervention: Enhancing attachment in early parent-child relationships*. Guilford Press.
- PracticeWise. (2005). *Psychosocial and combined treatments coding manual*. Author.
- Prag, A., Donald, K. A., Weldon, E., Halligan, S. L., Stein, D. J., & Malcolm-Smith, S. (2023). Has maternal sensitivity been comprehensively investigated in Sub-Saharan Africa? A narrative scoping review. *Acta Neuropsychiatrica*, Advance online publication. <https://doi.org/10.1017/neu.2023.20>
- Pruessner, J. C., Kirschbaum, C., Meinlschmid, G., & Hellhammer, D. H. (2003). Two formulas for computation of the area under the curve represent measures of total hormone concentration

- versus time-dependent change. *Psychoneuroendocrinology*, 28(7), 916-931. [https://doi.org/10.1016/s0306-4530\(02\)00108-7](https://doi.org/10.1016/s0306-4530(02)00108-7)
- Purswell, K. E., & Ray, D. C. (2014). Research with small samples: Considerations for single case and randomized small group experimental designs. *Counseling Outcome Research and Evaluation*, 5(2), 116-126. <https://doi.org/10.1177/2150137814552474>
- Pustejovsky, J. E., & Swan, D. M. (2018). *Single-case effect size calculator (version 0.5) web application*. <https://jepusto.shinyapps.io/SCD-effect-sizes/>
- Raby, K. L., Freedman, E., Yarger, H. A., Lind, T., & Dozier, M. (2019). Enhancing the language development of toddlers in foster care by promoting foster parents' sensitivity: Results from a randomized controlled trial. *Developmental Science*, 22(2), Article e12753. <https://doi.org/10.1111/desc.12753>
- Raby, K. L., Waters, T. E. A., Tabachnick, A. R., Zajac, L., & Dozier, M. (2021). Increasing secure base script knowledge among parents with Attachment and Biobehavioral Catch-up. *Development and Psychopathology*, 33(2), 554-564. <https://doi.org/10.1017/S0954579420001765>
- Ramsden, R., Reeves, E., Whitwell, E., Lane, N., & Fletcher, H. K. (2024). A systematic review of attachment interventions for people with intellectual disability and their caregivers. *Journal of Intellectual Disabilities*, Advance online publication. <https://doi.org/10.1177/17446295241289734>
- Redmond, B., & Richardson, V. (2003). Just getting on with it: Exploring the service needs of mothers who care for young children with severe/profound and life-threatening intellectual disability. *Journal of Applied Research in Intellectual Disabilities*, 16(3), 205-218. <https://doi.org/10.1046/j.1468-3148.2003.00165.x>
- Republic of South Africa. (2013). *Protection of personal information act 4 of 2013*. RSA. https://www.gov.za/sites/default/files/gcis_document/201409/3706726-11act4of2013popi.pdf
- Ribeiro, A. C. L., Seidl-de-Moura, M. L., Fernandes Mendes, D. M. L., & Mesman, J. (2021). Maternal sensitivity in interactions with their 2-month-old infants in Rio de Janeiro - Brazil. *Attachment & Human Development*, 23(2), 188-198. <https://doi.org/10.1080/14616734.2020.1828543>
- Richman, D. M., Belmont, J. M., Kim, M., Slavin, C. B., & Hayner, A. K. (2009). Parenting stress in families of children with Cornelia de Lange syndrome and Down syndrome. *Journal of*

Developmental and Physical Disabilities, 21(6), 537-553. <https://doi.org/10.1007/s10882-009-9156-6>

- Richter, L. (2022). The power of simple behaviours for human connection: Promoting intuitive parent–child interactions for healthy development. *Early Childhood Matters*, 131, 20-23. <https://earlychildhoodmatters.online/2022/the-power-of-simple-behaviours-for-human-connection/>
- Risi, A., Pickard, J. A., & Bird, A. L. (2021). The implications of parent mental health and wellbeing for parent-child attachment: A systematic review. *PLoS One*, 16(12), Article e0260891. <https://doi.org/10.1371/journal.pone.0260891>
- Roben, C. K. P., Dozier, M., Caron, E. B., & Bernard, K. (2017). Moving an evidence-based parenting program into the community. *Child Development*, 88(5), 1447-1452. <https://doi.org/10.1111/cdev.12898>
- Rodas, N. V., Zeedyk, S. M., & Baker, B. L. (2016). Unsupportive parenting and internalising behaviour problems in children with or without intellectual disability. *Journal of Intellectual Disability Research*, 60(12), 1200-1211. <https://doi.org/10.1111/jir.12332>
- Rodrigues, M., Sokolovic, N., Madigan, S., Luo, Y., Silva, V., Misra, S., & Jenkins, J. (2021). Paternal sensitivity and children's cognitive and socioemotional outcomes: A meta-analytic review. *Child Development*, 92(2), 554-577. <https://doi.org/10.1111/cdev.13545>
- Rohwerder, B. (2018). *K4d helpdesk report: Disability stigma in developing countries*. Institute of Development Studies. https://opendocs.ids.ac.uk/opendocs/bitstream/handle/20.500.12413/13795/Disability_stigma_in_developing_countries.pdf?sequence=1
- Rutgers, A. H., Bakermans-Kranenburg, M. J., Van IJzendoorn, M. H., & van Berckelaer-Onnes, I. A. (2004). Autism and attachment: A meta-analytic review. *Journal of Child Psychology and Psychiatry*, 45(6), 1123-1134. <https://doi.org/10.1111/j.1469-7610.2004.t01-1-00305.x>
- Rydzewska, E., Dunn, K., Cooper, S. A., & Kinnear, D. (2021). Mental ill-health in mothers of people with intellectual disabilities compared with mothers of typically developing people: A systematic review and meta-analysis. *Journal of Intellectual Disability Research*, 65(6), 501-534. <https://doi.org/10.1111/jir.12827>
- Sadiki, M. C. (2022). Parenting a child with disability in rural South Africa: Navigating the healthcare system. *African Journal of Disability*, 11, Article 942. <https://doi.org/10.4102/ajod.v11i0.942>

- Sadiki, T. G., & Mashegoane, S. (2019). Caring for children with an intellectual disability: An exploratory qualitative study. *Journal of Psychology in Africa*, 29(2), 191-194. <https://doi.org/10.1080/14330237.2019.1603020>
- Saloojee, G., Phohole, M., Saloojee, H., & IJsselmuiden, C. (2007). Unmet health, welfare and educational needs of disabled children in an impoverished South African peri-urban township. *Child: Care, Health and Development*, 33(3), 230-235. <https://doi.org/10.1111/j.1365-2214.2006.00645.x>
- Sambu, W. (2019). Child nutrition. In M. Shung-King, L. Lake, D. Sanders, & M. Hendricks (Eds.), *South African child gauge 2019: Child and adolescent health—Leave no one behind* (pp. 234-239). Children's Institute/University of Cape Town. www.ci.uct.ac.za/sites/default/files/content_migration/health_uct_ac_za/533/files/ChildGauge_2019_final_print%2520%2528sm%2529.pdf
- Sameroff, A. J., & Fiese, B. H. (2000). Transactional regulation: The developmental ecology of early intervention. In J. P. Shonkoff & S. J. Meisels (Eds.), *Handbook of early childhood intervention* (pp. 135-159). Cambridge University Press. <https://doi.org/10.1017/cbo9780511529320.009>
- Savari, K., Naseri, M., & Savari, Y. (2023). Evaluating the role of perceived stress, social support, and resilience in predicting the quality of life among the parents of disabled children. *International Journal of Disability, Development and Education*, 70(5), 644-658. <https://doi.org/10.1080/1034912x.2021.1901862>
- Scavarda, A. (2024). The shame-blame complex of parents with cognitively disabled children in Italy. *Sociology of Health & Illness*, 46(5), 966-983. <https://doi.org/10.1111/1467-9566.13742>
- Schalock, R. L., Luckasson, R., & Tassé, M. J. (2021). *Intellectual disability: Definition, diagnosis, classification, and systems of supports* (12th edition). American Association on Intellectual and Developmental Disabilities (AAIDD).
- Scherer, N., Verhey, I., & Kuper, H. (2019). Depression and anxiety in parents of children with intellectual and developmental disabilities: A systematic review and meta-analysis. *PLoS One*, 14(7), Article e0219888. <https://doi.org/10.1371/journal.pone.0219888>
- Schneider, B. H., Atkinson, L., & Tardif, C. (2001). Child-parent attachment and children's peer relations: A quantitative review. *Developmental Psychology*, 37(1), 86-100. <https://doi.org/10.1037/0012-1649.37.1.86>

- Schuengel, C., & Janssen, C. (2006). People with mental retardation and psychopathology: Stress, affect regulation and attachment: A review. *International Review of Research in Mental Retardation*, 32, 229-260. [https://doi.org/10.1016/S0074-7750\(06\)32008-3](https://doi.org/10.1016/S0074-7750(06)32008-3)
- Schuengel, C., Sterkenburg, P. S., Jeczynski, P., Janssen, C. G., & Jongbloed, G. (2009). Supporting affect regulation in children with multiple disabilities during psychotherapy: A multiple case design study of therapeutic attachment. *Journal of Consulting and Clinical Psychology*, 77(2), 291-301. <https://doi.org/10.1037/a0014274>
- Schuringa, H., van Nieuwenhuijzen, M., Orobio de Castro, B., & Matthys, W. (2015). Parenting and the parent-child relationship in families of children with mild to borderline intellectual disabilities and externalizing behavior. *Research in Developmental Disabilities*, 36, 1-12. <https://doi.org/https://doi.org/10.1016/j.ridd.2014.08.018>
- Scior, K., Hamid, A., Hastings, R., Werner, S., Belton, C., Laniyan, A., Patel, M., & Kett, M. (2015). *Intellectual disabilities: Raising awareness and combating stigma—A global review. Executive summary and recommendations.* University College London. <https://www.ucl.ac.uk/intellectual-developmental-disabilities-research/sites/intellectual-developmental-disabilities-research/files/ExecSummary.pdf>
- Scior, K., Hamid, A., Hastings, R., Werner, S., Belton, C., Laniyan, A., Patel, M., & Kett, M. (2020). Intellectual disability stigma and initiatives to challenge it and promote inclusion around the globe. *Journal of Policy and Practice in Intellectual Disabilities*, 17(2), 165-175. <https://doi.org/10.1111/jppi.12330>
- Seys, D. (1987). *Kwaliteit van zorg: Zorg voor kwaliteit (Quality of care: Caring for quality)* [Unpublished doctoral thesis]. University of Nijmegen.
- Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, 22(2), 63-75. <https://doi.org/10.3233/EFI-2004-22201>
- Sher-Censor, E., & Shahar-Lahav, R. (2022). Parents' resolution of their child's diagnosis: A scoping review. *Attachment & Human Development*, 24(5), 580-604. <https://doi.org/10.1080/14616734.2022.2034899>
- Shin, H., Park, Y. J., & Kim, M. J. (2006). Predictors of maternal sensitivity during the early postpartum period. *Journal of Advanced Nursing*, 55(4), 425-434. <https://doi.org/10.1111/j.1365-2648.2006.03943.x>

- Shin, J., Nhan, N. V., Crittenden, K. S., Hong, H. T. D., Flory, M., & Ladinsky, J. (2006). Parenting stress of mothers and fathers of young children with cognitive delays in Vietnam. *Journal of Intellectual Disability Research*, 50(10), 748-760. <https://doi.org/10.1111/j.1365-2788.2006.00840.x>
- Shonkoff, J. P. (2015). The neurobiology of early childhood development and the foundation of a sustainable society. In P. T. M. Marope & Y. Kaga (Eds.), *Investing against evidence: The global state of early childhood care and education* (pp. 55-71). UNESCO Publishing. http://www.ibe.unesco.org/sites/default/files/resources/investing_against_evidence_pdf.jpg_.pdf
- Siddaway, A. P., Wood, A. M., & Hedges, L. V. (2019). How to do a systematic review: A best practice guide for conducting and reporting narrative reviews, meta-analyses, and meta-syntheses. *Annual Review of Psychology*, 70, 747-770. <https://doi.org/10.1146/annurev-psych-010418-102803>
- Singer, G. H. S. (2006). Meta-analysis of comparative studies of depression in mothers of children with and without developmental disabilities. *American Journal on Mental Retardation*, 111(3), 155-169. [https://doi.org/10.1352/0895-8017\(2006\)111\[155:Mocsod\]2.0.Co;2](https://doi.org/10.1352/0895-8017(2006)111[155:Mocsod]2.0.Co;2)
- Slade, A., Sadler, L. S., Webb, D. L., Simpson, T., & Close, N. (2018). *Minding the baby: Treatment manual* (5th edition). Yale University.
- Slone, M., Durrheim, K., Kaminer, D., & Lachman, P. (1999). Issues in the identification of comorbidity of mental retardation and psychopathology in a multicultural context. *Social Psychiatry and Psychiatric Epidemiology*, 34(4), 190-194. <https://doi.org/10.1007/s001270050132>
- Solomon, J., & George, C. (2016). The measurement of attachment security and related constructs in infancy and early childhood. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (3rd edition, pp. 366-396). Guilford Press.
- Sorsdahl, K., Petersen, I., Myers, B., Zingela, Z., Lund, C., & van der Westhuizen, C. (2023). A reflection of the current status of the mental healthcare system in South Africa. *SSM - Mental Health*, 4, Article 100247. <https://doi.org/10.1016/j.ssmmh.2023.100247>
- Sparrow, S. S., Cicchetti, D. V., & Saulnier, C. A. (2016). *Vineland adaptive behavior scales, third edition (Vineland-3)*. Pearson.
- Spear, C. F. M. S., Strickland-Cohen, M. K. P., Romer, N. P., & Albin, R. W. P. (2013). An examination of social validity within single-case research with students with emotional and behavioral

- disorders. *Remedial and Special Education*, 34(6), 357-370. <https://doi.org/10.1177/0741932513490809>
- Spies, R., Sterkenburg, P. S., van Rensburg, E., & Schuengel, C. (2016). Attachment relationships of preschool-aged children of mothers with HIV and HIV-related psychosis. *Attachment & Human Development*, 18(5), 473-486. <https://doi.org/10.1080/14616734.2016.1184291>
- Spies, R., Sterkenburg, P. S., van Rensburg, E., & Schuengel, C. (2017). HIV/AIDS and psychosis: Needs, challenges, and support of affected mothers. *Journal of Child and Family Studies*, 26(1), 183-193. <https://doi.org/10.1007/s10826-016-0543-1>
- Spiker, D., Boyce, G. C., & Boyce, L. K. (2002). Parent-child interactions when young children have disabilities. *International Review of Research in Mental Retardation*, 25, 35-70. [https://doi.org/10.1016/S0074-7750\(02\)80005-2](https://doi.org/10.1016/S0074-7750(02)80005-2)
- Sprang, G. (2009). The efficacy of a relational treatment for maltreated children and their families. *Child and Adolescent Mental Health*, 14(2), 81-88. <https://doi.org/10.1111/j.1475-3588.2008.00499.x>
- Spruit, A., Goos, L., Weenink, N., Rodenburg, R., Niemeyer, H., Stams, G. J., & Colonnaesi, C. (2020). The relation between attachment and depression in children and adolescents: A multilevel meta-analysis. *Clinical Child and Family Psychology Review*, 23(1), 54-69. <https://doi.org/10.1007/s10567-019-00299-9>
- Stansert Katzen, L., Tomlinson, M., Christodoulou, J., Laurenzi, C., le Roux, I., Baker, V., Mbewu, N., le Roux, K. W., & Rotheram Borus, M. J. (2020). Home visits by community health workers in rural South Africa have a limited, but important impact on maternal and child health in the first two years of life. *BMC Health Services Research*, 20(1), Article 594. <https://doi.org/10.1186/s12913-020-05436-7>
- Statistics South Africa. (2023). *Census 2022: Statistical release*. SSA. https://census.statssa.gov.za/assets/documents/2022/P03014_Census_2022_Statistical_Release.pdf
- Staunton, E., Kehoe, C., & Sharkey, L. (2023). Families under pressure: Stress and quality of life in parents of children with an intellectual disability. *Irish Journal of Psychological Medicine*, 40(2), 192-199. <https://doi.org/10.1017/ipm.2020.4>
- Steele, H., & Steele, M. (Eds.) (2018). *Handbook of attachment-based interventions*. Guilford Press.

- Stein, D. J., Sorsdahl, K., & Lund, C. (2018). Intellectual disability in South Africa: Addressing a crisis in mental health services. *South African Medical Journal*, 108(3), 147-148. <https://doi.org/10.7196/SAMJ.2018.v108i3.13171>
- Sterkenburg, P. S. (2008). *Intervening in stress, attachment and challenging behavior: Effects in children with multiple disabilities* [Doctoral thesis, Vrije Universiteit Amsterdam]. VU Research Portal. <https://research.vu.nl/en/publications/intervening-in-stress-attachment-and-challenging-behaviour-effect>
- Sterkenburg, P. S., Janssen, C. G. C., & Schuengel, C. (2008). The effect of an attachment-based behaviour therapy for children with visual and severe intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, 21(2), 126-135. <https://doi.org/10.1111/j.1468-3148.2007.00374.x>
- Sterkenburg, P. S., Schuengel, C., & Janssen, C. (2008). Developing a therapeutic relationship with a blind client with a severe intellectual disability and persistent challenging behaviour. *Disability and Rehabilitation*, 30(17), 1318-1327. <https://doi.org/10.1080/09638280701482597>
- Suchman, N. E. (2016). Mothering from the Inside Out: A mentalization-based therapy for mothers in treatment for drug addiction. *International Journal of Birth and Parent Education*, 3(4), 19-24.
- Suchman, N., Berg, A., Abrahams, L., Abrahams, T., Adams, A., Cowley, B., Decoste, C., Hawa, W., Lachman, A., Mpinda, B., Cader-Mokoa, N., Nama, N., & Voges, J. (2019). Mothering from the Inside Out: Adapting an evidence-based intervention for high-risk mothers in the Western Cape of South Africa. *Development and Psychopathology*, 32(1), 105-122. <https://doi.org/10.1017/S0954579418001451>
- Swan, D. M., & Pustejovsky, J. E. (2018). *Basic effect sizes calculations using SingleCaseES*. <https://cran.r-project.org/web/packages/SingleCaseES/vignettes/Using-SingleCaseES.html>
- Tabachnick, A. R., He, Y., Zajac, L., Carlson, E. A., & Dozier, M. (2022). Secure attachment in infancy predicts context-dependent emotion expression in middle childhood. *Emotion*, 22(2), 258-269. <https://doi.org/10.1037/emo0000985>
- Tabachnick, A. R., Raby, K. L., Goldstein, A., Zajac, L., & Dozier, M. (2019). Effects of an attachment-based intervention in infancy on children's autonomic regulation during middle childhood. *Biological Psychology*, 143, 22-31. <https://doi.org/10.1016/j.biopsycho.2019.01.006>
- Tassé, M. J., & Kim, M. (2023). Examining the relationship between adaptive behavior and intelligence. *Behavioral Sciences*, 13(3), Article 252. <https://doi.org/10.3390/bs13030252>

- Tassé, M. J., Luckasson, R., & Schalock, R. L. (2016). The relation between intellectual functioning and adaptive behavior in the diagnosis of intellectual disability. *Intellectual and Developmental Disabilities*, 54(6), 381-390. <https://doi.org/10.1352/1934-9556-54.6.381>
- Tekola, B., Kinfé, M., Girma, F., Hanlon, C., & Hoekstra, R. A. (2020). Perceptions and experiences of stigma among parents of children with developmental disorders in Ethiopia: A qualitative study. *Social Science & Medicine*, 256, Article 113034. <https://doi.org/10.1016/j.socscimed.2020.113034>
- Tereno, S., Savelon, S. V., & Guedeney, A. (2019). Preventive parent-young child interaction interventions to promote optimal attachment. *Current Opinion in Psychiatry*, 32(6), 542-548. <https://doi.org/10.1097/ycp.0000000000000552>
- Tessier, R., Tarabulsky, G. M., Larin, S., Laganière, J., Gagnon, M.-F., & Trahan, J. (2002). A home-based description of attachment in physically disabled infants. *Social Development*, 11(2), 147-165. <https://doi.org/https://doi.org/10.1111/1467-9507.00192>
- Theule, J., Germain, S. M., Cheung, K., Hurl, K. E., & Markel, C. (2016). Conduct disorder/oppositional defiant disorder and attachment: A meta-analysis. *Journal of Developmental and Life-Course Criminology*, 2(2), 232-255. <https://doi.org/10.1007/s40865-016-0031-8>
- Thorpe, D., Silver, J., Perrone, L., DeSantis, N., Dash, A., Rodriguez, M., Beras-Monticciolo, E., & Bernard, K. (2022). Ecological predictors of parental beliefs about infant crying in a randomized clinical trial of ABC. *Journal of Clinical Child and Adolescent Psychology*, 51(5), 780-795. <https://doi.org/10.1080/15374416.2021.1916939>
- Tilahun, D., Hanlon, C., Fekadu, A., Tekola, B., Baheretibeb, Y., & Hoekstra, R. A. (2016). Stigma, explanatory models and unmet needs of caregivers of children with developmental disorders in a low-income African country: A cross-sectional facility-based survey. *BMC Health Services Research*, 16, Article 152. <https://doi.org/10.1186/s12913-016-1383-9>
- Todd, S., & Jones, S. (2003). 'Mum's the word!': Maternal accounts of dealings with the professional world. *Journal of Applied Research in Intellectual Disabilities*, 16(3), 229-244. <https://doi.org/10.1046/j.1468-3148.2003.00163.x>
- Tomlinson, M. (2001). Mother-infant attachment, culture and research: A pilot study. *Southern African Journal of Child and Adolescent Mental Health*, 13(1), 41-54. <https://doi.org/10.1080/16826108.2001.9632391>

- Tomlinson, M., Cooper, P., & Murray, L. (2005). The mother–infant relationship and infant attachment in a South African peri-urban settlement. *Child Development*, 76(5), 1044-1054. <https://doi.org/10.1111/j.1467-8624.2005.00896.x>
- Tomlinson, M., Murray, L., & Cooper, P. J. (2010). Attachment theory, culture, and Africa: Past, present, and future. In P. Erdman & K. M. Ng (Eds.), *Attachment: Expanding the cultural connections* (pp. 181–194). Routledge.
- Tomlinson, M., Rabie, S., Skeen, S., Hunt, X., Murray, L., & Cooper, P. J. (2020). Improving mother–infant interaction during infant feeding: A randomised controlled trial in a low-income community in South Africa. *Infant Mental Health Journal*, 41(6), 850-858. <https://doi.org/10.1002/imhj.21881>
- Tomlinson, M., Yasamy, M. T., Emerson, E., Officer, A., Richler, D., & Saxena, S. (2014). Setting global research priorities for developmental disabilities, including intellectual disabilities and autism. *Journal of Intellectual Disability Research*, 58(12), 1121-1130. <https://doi.org/10.1111/jir.12106>
- Totsika, V., Hastings, R. P., Vagenas, D., & Emerson, E. (2014). Parenting and the behavior problems of young children with an intellectual disability: Concurrent and longitudinal relationships in a population-based study. *American Journal of Intellectual and Developmental Disabilities*, 119(5), 422-435. <https://doi.org/10.1352/1944-7558-119.5.422>
- Totsika, V., Liew, A., Absoud, M., Adnams, C., & Emerson, E. (2022). Mental health problems in children with intellectual disability. *The Lancet Child & Adolescent Health*, 6(6), 432-444. [https://doi.org/10.1016/S2352-4642\(22\)00067-0](https://doi.org/10.1016/S2352-4642(22)00067-0)
- Trafford, Z. (2023). ‘People don’t understand what we go through!’: Caregiver views on South Africa’s Care Dependency Grant. *African Journal of Disability*, 12, Article a1114. <https://doi.org/10.4102/ajod.v12i0.1114>
- Trafford, Z., & Swartz, L. (2023). The Care Dependency Grant for children with disabilities in South Africa: Perspectives from implementation officials. *Development Southern Africa*, 40(2), 259-272. <https://doi.org/10.1080/0376835x.2021.1981250>
- True, M. M., Pisani, L., & Oumar, F. (2001). Infant-mother attachment among the Dogon of Mali. *Child Development*, 72(5), 1451-1466. <https://doi.org/10.1111/1467-8624.00359>

- Trute, B., Worthington, C., & Hiebert-Murphy, D. (2008). Grandmother support for parents of children with disabilities: Gender differences in parenting stress. *Families, Systems, & Health*, 26(2), 135-146. <https://doi.org/10.1037/1091-7527.26.2.135>
- Tryphonopoulos, P. D., Letourneau, N., & DiTommaso, E. (2016). Caregiver-infant interaction quality: A review of observational assessment tools. *Comprehensive Child and Adolescent Nursing*, 39(2), 107-138. <https://doi.org/10.3109/01460862.2015.1134720>
- Valadez, E. A., Tottenham, N., Korom, M., Tabachnick, A. R., Pine, D. S., & Dozier, M. (2024). A randomized controlled trial of a parenting intervention during infancy alters amygdala-prefrontal circuitry in middle childhood. *Journal of the American Academy of Child and Adolescent Psychiatry*, 63(1), 29-38. <https://doi.org/10.1016/j.jaac.2023.06.015>
- Valadez, E. A., Tottenham, N., Tabachnick, A. R., & Dozier, M. (2020). Early parenting intervention effects on brain responses to maternal cues among high-risk children. *American Journal of Psychiatry*, 177(9), 818-826. <https://doi.org/10.1176/appi.ajp.2020.20010011>
- Van den Boom, D. C. (1994). The influence of temperament and mothering on attachment and exploration: An experimental manipulation of sensitive responsiveness among lower class mothers with irritable infants. *Child Development*, 65(5), 1457-1477. <https://doi.org/10.2307/1131511>
- Van den Broek, E. G. C., van Eijden, A. J. P. M., Overbeek, M. M., Kef, S., Sterkenburg, P. S., & Schuengel, C. (2017). A systematic review of the literature on parenting of young children with visual impairments and the adaptations for Video-feedback Intervention to Promote Positive Parenting (VIPP). *Journal of Developmental and Physical Disabilities*, 29(3), 503-545. <https://doi.org/10.1007/s10882-016-9529-6>
- Van der Mark, E. J., Conradie, I., Dedding, C. W. M., & Broerse, J. E. W. (2019). ‘We create our own small world’: Daily realities of mothers of disabled children in a South African urban settlement. *Disability & Society*, 34(1), 95-120. <https://doi.org/10.1080/09687599.2018.1511415>
- Van der Mescht, P., Geertsema, S., Le Roux, M., Graham, M. A., & Johnson, E. (2023). The potential burden experienced by South African caregivers of children with severe intellectual disability. *South African Journal of Childhood Education*, 13(1), Article a1219. <https://doi.org/10.4102/sajce.v13i1.1219>

- Van IJzendoorn, M. H., & De Wolff, M. S. (1997). In search of the absent father—Meta-analyses of infant-father attachment: A rejoinder to our discussants. *Child Development*, 68(4), 604-609. <https://doi.org/10.1111/j.1467-8624.1997.tb04223.x>
- Van IJzendoorn, M. H., Goldberg, S., Kroonenberg, P. M., & Frenkel, O. J. (1992). The relative effects of maternal and child problems on the quality of attachment: A meta-analysis of attachment in clinical samples. *Child Development*, 63(4), 840-858.
- Van IJzendoorn, M. H., Juffer, F., & Duyvestyn, M. G. C. (1995). Breaking the intergenerational cycle of insecure attachment: A review of the effects of attachment-based interventions on maternal sensitivity and infant security. *Journal of Child Psychology and Psychiatry*, 36(2), 225-248. <https://doi.org/10.1111/j.1469-7610.1995.tb01822.x>
- Van IJzendoorn, M. H., & Sagi, A. (1999). Cross-cultural patterns of attachment: Universal and contextual dimensions. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research and clinical applications* (2nd edition, pp. 713-734). Guildford Press.
- Van IJzendoorn, M. H., Schuengel, C., & Bakermans-Kranenburg, M. J. (1999). Disorganized attachment in early childhood: Meta-analysis of precursors, concomitants, and sequelae. *Development and Psychopathology*, 11(2), 225-250. <https://doi.org/10.1017/S0954579499002035>
- Van IJzendoorn, M. H., Schuengel, C., Wang, Q., & Bakermans-Kranenburg, M. J. (2023). Improving parenting, child attachment, and externalizing behaviors: Meta-analysis of the first 25 randomized controlled trials on the effects of Video-feedback Intervention to Promote Positive Parenting and Sensitive Discipline. *Development and Psychopathology*, 35(1), 241-256. <https://doi.org/10.1017/S0954579421001462>
- Van IJzendoorn, M. H., Vereijken, C. M. J. L., Bakermans-Kranenburg, M. J., & Riksen-Walraven, J. M. (2004). Assessing attachment security with the Attachment Q sort: Meta-analytic evidence for the validity of the observer AQS. *Child Development*, 75(4), 1188-1213. <https://doi.org/10.1111/j.1467-8624.2004.00733.x>
- Vandesande, S., Bosmans, G., & Maes, B. (2019). Can I be your safe haven and secure base? A parental perspective on parent-child attachment in young children with a severe or profound intellectual disability. *Research in Developmental Disabilities*, 93, Article 103452. <https://doi.org/10.1016/j.ridd.2019.103452>
- Vandesande, S., Bosmans, G., Schuengel, C., & Maes, B. (2019). Young children with significant developmental delay differentiate home observed attachment behaviour towards their parents.

Journal of Applied Research in Intellectual Disabilities, 32(1), 106-120.
<https://doi.org/10.1111/jar.12513>

- Vandesande, S., Bosmans, G., Sterkenburg, P., Schuengel, C., Van Den Noortgate, W., & Maes, B. (2020). Comfort provided by parents versus strangers after eliciting stress in children with severe or profound intellectual disabilities: Does it make a difference? *Attachment & Human Development*, 22(4), 425-447. <https://doi.org/10.1080/14616734.2019.1659835>
- Vandesande, S., Steegmans, D., & Maes, B. (2023). Parents' views on facilitating and inhibiting factors in the development of attachment relationships with their children with severe disabilities. *Journal of Social and Personal Relationships*, 40(2), 600-623. <https://doi.org/10.1177/02654075221122717>
- Vannest, K. J., Parker, R. I., Gonen, O., & Adiguzel, T. (2016). *Single case research: Web based calculators for SCR analysis (version 2.0)*. Texas A&M University. <http://www.singlecaseresearch.org/calculators/theil-sen>
- Vanwalleghe, S., & Miljkovitch, R. (2023). A systematic review on attachment and Down syndrome. *Journal of Intellectual & Developmental Disability*, 48(4), 409-420. <https://doi.org/10.3109/13668250.2023.2208744>
- Vanwalleghe, S., Miljkovitch, R., & Vinter, A. (2021). Attachment representations among school-age children with intellectual disability. *Research in Developmental Disabilities*, 118, Article 104064. <https://doi.org/10.1016/j.ridd.2021.104064>
- Vaughn, B. E., Goldberg, S., Atkinson, L., Marcovitch, S., MacGregor, D., & Seifer, R. (1994). Quality of toddler-mother attachment in children with Down syndrome: Limits to interpretation of Strange Situation behavior. *Child Development*, 65(1), 95-108. <https://doi.org/10.2307/1131368>
- Vergunst, R., Swartz, L., Hem, K. G., Eide, A. H., Mannan, H., MacLachlan, M., Mji, G., Braathen, S. H., & Schneider, M. (2017). Access to health care for persons with disabilities in rural South Africa. *BMC Health Services Research*, 17, Article 741. <https://doi.org/10.1186/s12913-017-2674-5>
- Verhage, M. L., Oosterman, M., & Schuengel, C. (2013). Parenting self-efficacy predicts perceptions of infant negative temperament characteristics, not vice versa. *Journal of Family Psychology*, 27(5), 844-849. <https://doi.org/10.1037/a0034263>

- Vig, S., Kaminer, R. K., & Jedrysek, E. (1987). A later look at borderline and mildly retarded preschoolers. *Journal of Developmental & Behavioral Pediatrics*, 8(1), 12-17.
- Visscher, L., Evenboer, K. E., Jansen, D. E. M. C., Scholte, R. H. J., Knot-Dickscheit, J., Veerman, J. W., Reijneveld, S. A., & van Yperen, T. A. (2018). Identifying practice and program elements of interventions for families with multiple problems: The development of a taxonomy. *Children and Youth Services Review*, 95, 64-70. <https://doi.org/10.1016/j.childyouth.2018.10.030>
- Wang, F., Cox, M. J., Mills-Koonce, R., & Snyder, P. (2015). Parental behaviors and beliefs, child temperament, and attachment disorganization. *Family Relations*, 64(2), 191-204. <https://doi.org/10.1111/fare.12120>
- Wang, X., & Yu, Q. (2005). Unbiasedness of the theil-sen estimator. *Journal of Nonparametric Statistics*, 17(6), 685-695. <https://doi.org/10.1080/10485250500039452>
- Waters, E. (1987). *Attachment Q-set (version 3)*. https://psychology.psy.sunysb.edu/attachment/measures/content/aqs_items.pdf
- Watson, P. J., & Workman, E. A. (1981). The non-concurrent multiple baseline across-individuals design: An extension of the traditional multiple baseline design. *Journal of Behavior Therapy and Experimental Psychiatry*, 12(3), 257-259. [https://doi.org/10.1016/0005-7916\(81\)90055-0](https://doi.org/10.1016/0005-7916(81)90055-0)
- Wedderburn, C. J., Yeung, S., Rehman, A. M., Stadler, J. A. M., Nhapi, R. T., Barnett, W., Myer, L., Gibb, D. M., Zar, H. J., Stein, D. J., & Donald, K. A. (2019). Neurodevelopment of HIV-exposed uninfected children in South Africa: Outcomes from an observational birth cohort study. *The Lancet Child & Adolescent Health*, 3(11), 803-813. [https://doi.org/10.1016/S2352-4642\(19\)30250-0](https://doi.org/10.1016/S2352-4642(19)30250-0)
- Weisz, J. R., Chorpita, B. F., Palinkas, L. A., Schoenwald, S. K., Miranda, J., Bearman, S. K., Daleiden, E. L., Ugueto, A. M., Ho, A., Martin, J., Gray, J., Alleyne, A., Langer, D. A., Southam-Gerow, M. A., Gibbons, R. D., & Research Network on Youth Mental Health. (2012). Testing standard and modular designs for psychotherapy treating depression, anxiety, and conduct problems in youth: A randomized effectiveness trial. *Archives of General Psychiatry*, 69(3), 274-282. <https://doi.org/10.1001/archgenpsychiatry.2011.147>
- West, A. L., Berlin, L. J., Goodman, A., Endy, K., Manzon, C., & Harden, B. J. (2022). Home-based Early Head Start plus Attachment and Biobehavioral Catch-up: A qualitative study of implementation outcomes. *Journal of Child and Family Studies*, 31(4), 1057-1068. <https://doi.org/10.1007/s10826-021-02189-7>

- Westlake, F., Westlake, M., & Totsika, V. (2024). A systematic review and meta-analysis of the effectiveness of interventions targeting the parent-child relationship in families of children with an intellectual disability. *Journal of Applied Research in Intellectual Disabilities*, 37(6), Article e13273. <https://doi.org/10.1111/jar.13273>
- White, N., & Hastings, R. P. (2004). Social and professional support for parents of adolescents with severe intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, 17(3), 181-190. <https://doi.org/10.1111/j.1468-3148.2004.00197.x>
- Whittle, E. L., Fisher, K. R., Reppermund, S., & Trollor, J. (2019). Access to mental health services: The experiences of people with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, 32(2), 368-379. <https://doi.org/10.1111/jar.12533>
- Willemsen-Swinkels, S. H. N., Bakermans-Kranenburg, M. J., Buitelaar, J. K., Van IJzendoorn, M. H., & van Engeland, H. (2000). Insecure and disorganised attachment in children with a pervasive developmental disorder: Relationship with social interaction and heart rate. *Journal of Child Psychology and Psychiatry*, 41(6), 759-767. <https://doi.org/10.1111/1469-7610.00663>
- Willingham-Storr, G. L. (2014). Parental experiences of caring for a child with intellectual disabilities: A UK perspective. *Journal of Intellectual Disabilities*, 18(2), 146-158. <https://doi.org/10.1177/1744629514525132>
- Wilmschurst, J. M., Burgess, J., Hartley, P., & Eley, B. (2006). Specific neurologic complications of human immunodeficiency virus type 1 (HIV-1) infection in children. *Journal of Child Neurology*, 21(9), 788-794. <https://doi.org/10.1177/08830738060210091901>
- Wolf, M. M. (1978). Social validity: The case for subjective measurement or how applied behavior analysis is findings its heart. *Journal of Applied Behavior Analysis*, 11(2), 203-214.
- Wong, S. B., Wang, T. S., Tsai, W. H., Tzeng, I. S., & Tsai, L. P. (2021). Parenting stress in families of children with Prader-Willi syndrome. *American Journal of Medical Genetics*, 185(1), 83-89. <https://doi.org/10.1002/ajmg.a.61915>
- Woodgate, R. L., Ateah, C., & Secco, L. (2008). Living in a world of our own: The experience of parents who have a child with autism. *Qualitative Health Research*, 18(8), 1075-1083. <https://doi.org/10.1177/1049732308320112>
- World Health Organisation. (2022). *International classification of diseases, 11th revision*. WHO.

- World Health Organisation, United Nations Children's Emergency Fund, & World Bank Group. (2018). *Nurturing care for early childhood development: A framework for helping children survive and thrive to transform health and human potential*. WHO. <https://apps.who.int/iris/bitstream/handle/10665/272603/9789241514064-eng.pdf>
- World Health Organisation, & World Bank. (2011). *World report on disability*. WHO. <https://www.who.int/publications/i/item/9789241564182>
- Wright, B., & Edginton, E. (2016). Evidence-based parenting interventions to promote secure attachment: Findings from a systematic review and meta-analysis. *Global Pediatric Health*, 3, 1-14. <https://doi.org/10.1177/2333794x16661888>
- Wright, B., Hackney, L., Hughes, E., Barry, M., Glaser, D., Prior, V., Allgar, V., Marshall, D., Barrow, J., Kirby, N., Garside, M., Kaushal, P., Perry, A., & McMillan, D. (2017). Decreasing rates of disorganised attachment in infants and young children, who are at risk of developing, or who already have disorganised attachment. A systematic review and meta-analysis of early parenting interventions. *PLoS One*, 12(7), Article e0180858. <https://doi.org/10.1371/journal.pone.0180858>
- Xu, X., Liu, Z., Gong, S., & Wu, Y. (2022). The relationship between empathy and attachment in children and adolescents: Three-level meta-analyses. *International Journal of Environmental Research and Public Health*, 19(3), Article 1391. <https://doi.org/10.3390/ijerph19031391>
- Yaholkoski, A., Hurl, K., & Theule, J. (2016). Efficacy of the Circle of Security intervention: A meta-analysis. *Journal of Infant, Child, and Adolescent Psychotherapy*, 15(2), 95-103. <https://doi.org/10.1080/15289168.2016.1163161>
- Yang, P., Lung, F. W., Jong, Y. J., Hsu, H. Y., & Chen, C. C. (2010). Stability and change of cognitive attributes in children with uneven/delayed cognitive development from preschool through childhood. *Research in Developmental Disabilities*, 31(4), 895-902. <https://doi.org/10.1016/j.ridd.2010.02.011>
- Yarger, H. A., Bernard, K., Caron, E. B., Wallin, A., & Dozier, M. (2020). Enhancing parenting quality for young children adopted internationally: Results of a randomized controlled trial. *Journal of Clinical Child & Adolescent Psychology*, 49(3), 378-390. <https://doi.org/10.1080/15374416.2018.1547972>
- Yarger, H. A., Bronfman, E., Carlson, E., & Dozier, M. (2020). Intervening with Attachment and Biobehavioral Catch-up to decrease disrupted parenting behavior and attachment

- disorganization: The role of parental withdrawal. *Development and Psychopathology*, 32(3), 1139-1148. <https://doi.org/10.1017/S0954579419000786>
- Yarger, H. A., Hoye, J. R., & Dozier, M. (2016). Trajectories of change in Attachment and Biobehavioral Catch-up among high-risk mothers: A randomized clinical trial. *Infant Mental Health Journal*, 37(5), 525-536. <https://doi.org/10.1002/imhj.21585>
- Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th edition). Sage.
- Zaidman-Zait, A., Mirenda, P., Zumbo, B. D., Wellington, S., Dua, V., & Kalynchuk, K. (2010). An item response theory analysis of the Parenting Stress Index-Short Form with parents of children with autism spectrum disorders. *Journal of Child Psychology and Psychiatry*, 51(11), 1269-1277. <https://doi.org/10.1111/j.1469-7610.2010.02266.x>
- Zajac, L., Raby, K. L., & Dozier, M. (2020). Sustained effects on attachment security in middle childhood: Results from a randomized clinical trial of the Attachment and Biobehavioral Catch-up (ABC) intervention. *Journal of Child Psychology and Psychiatry*, 61(4), 417-424. <https://doi.org/https://doi.org/10.1111/jcpp.13146>
- Zhang, J., Zhang, Y., Mao, Y., & Wang, Y. (2024). The relationship between insecure attachment and alexithymia: A meta-analysis. *Current Psychology*, 43(7), 5804-5825. <https://doi.org/10.1007/s12144-023-04749-0>
- Zhao, M., Fu, W., & Ai, J. (2021). The mediating role of social support in the relationship between parenting stress and resilience among Chinese parents of children with disability. *Journal of Autism and Developmental Disorders*, 51(10), 3412-3422. <https://doi.org/10.1007/s10803-020-04806-8>
- Zuurmond, M., Seeley, J., Nyant, G. G., Baltussen, M., Abanga, J., Polack, S., Bernays, S., & Shakespeare, T. (2020). Exploring caregiver experiences of stigma in Ghana: They insult me because of my child. *Disability & Society*, 37(5), 827-848. <https://doi.org/10.1080/09687599.2020.1851172>

SECTION II: MANUSCRIPTS

2.1 Article 1

Article Title: Exploring the practice elements of attachment-based interventions: A distillation-and-matching review.

Journal: *Attachment & Human Development*

Submission Status: Submitted (under review)

Required Length: Submissions should not exceed 7 500 words, including abstract.

Current Length: 7 489 words, including abstract.

2.1.1 Author Submission Guidelines: *Attachment & Human Development*

The author submission guidelines were retrieved from the journal's [website](#).

2.1.1.1 About the Journal

Attachment & Human Development is an international, peer-reviewed journal publishing high-quality, original research. Please see the journal's [Aims & Scope](#) for information about its focus and peer-review policy.

Please note that this journal only publishes manuscripts in English.

Attachment & Human Development accepts the following types of article:

- Research Article
- Narrative Review

2.1.1.2 Open Access

You have the option to publish open access in this journal via our Open Select publishing program. Publishing open access means that your article will be free to access online immediately on publication, increasing the visibility, readership and impact of your research. Articles published Open Select with Taylor & Francis typically receive 45% more citations* and over 6 times as many downloads** compared to those that are not published Open Select.

Your research funder or your institution may require you to publish your article open access. Visit our [Author Services](#) website to find out more about open access policies and how you can comply with these.

You will be asked to pay an article publishing charge (APC) to make your article open access and this cost can often be covered by your institution or funder. Use our [APC finder](#) to view the APC for this journal.

Please visit our [Author Services website](#) if you would like more information about our Open Select Program.

*Citations received up to 9th June 2021 for articles published in 2018-2022. Data obtained on 23rd August 2023, from Digital Science's Dimensions platform, available at <https://app.dimensions.ai>

**Usage in 2020-2022 for articles published in 2018-2022.

2.1.1.3 Peer Review and Ethics

Taylor & Francis is committed to peer-review integrity and upholding the highest standards of review. Once your paper has been assessed for suitability by the editor, it will then be double anonymous peer reviewed by two independent, anonymous expert. If you have shared an earlier version of your Author's Original Manuscript on a preprint server, please be aware that anonymity cannot be guaranteed. Further information on our preprints policy and citation requirements can be found on our [Preprints Author Services page](#). Find out more about [what to expect during peer review](#) and read our guidance on [publishing ethics](#).

2.1.1.4 Preparing your Manuscript

2.1.1.4.1 Article Types

Research Article

- Should be written with the following elements in the following order: title page; abstract; keywords; main text introduction, materials and methods, results, discussion; acknowledgments; declaration of interest statement; references; appendices (as appropriate); table(s) with caption(s) (on individual pages); figures; figure captions (as a list)
- Should be between 6000 and 7500 words, inclusive of:
 - Abstract
- Should contain any number of **keywords**. Read [making your article more discoverable](#), including information on choosing a title and search engine optimization.

Narrative Review

- Should be written with the following elements in the following order: title page; abstract; keywords; main text introduction, materials and methods, results, discussion; acknowledgments; declaration of interest statement; references; appendices (as appropriate); table(s) with caption(s) (on individual pages); figures; figure captions (as a list)
- Should be between 6000 and 7500 words, inclusive of:
 - Abstract
- Should contain any number of **keywords**. Read [making your article more discoverable](#), including information on choosing a title and search engine optimization.

2.1.1.4.2 Style Guidelines

Please refer to these [quick style guidelines](#) when preparing your paper, rather than any published articles or a sample copy.

Any spelling style is acceptable so long as it is consistent within the manuscript.

Please use double quotation marks, except where “a quotation is ‘within’ a quotation”.

Please note that long quotations should be indented without quotation marks.

2.1.1.4.3 Formatting and Templates

Papers may be submitted in Word format. Figures should be saved separately from the text. To assist you in preparing your paper, we provide formatting template(s).

[Word templates](#) are available for this journal. Please save the template to your hard drive, ready for use.

If you are not able to use the template via the links (or if you have any other template queries) please contact us [here](#).

2.1.1.4.4 References

Please use this [reference style](#) when preparing your paper. An [EndNote output style](#) is also available to assist you.

2.1.1.4.5 Taylor & Francis Editing Services

To help you improve your manuscript and prepare it for submission, Taylor & Francis provides a range of editing services. Choose from options such as English Language Editing, which will ensure that your article is free of spelling and grammar errors, Translation, and Artwork Preparation. For more information, including pricing, [visit this website](#).

2.1.1.4.6 Checklist: What to Include

1. **Author details.** Please ensure all listed authors meet the [Taylor & Francis authorship criteria](#). All authors of a manuscript should include their full name and affiliation on the cover page of the manuscript. Where available, please also include ORCiDs and social media handles (Facebook, Twitter or LinkedIn). One author will need to be identified as the corresponding author, with their email address normally displayed in the article PDF (depending on the journal) and the online article. Authors' affiliations are the affiliations where the research was conducted. If any of the named co-authors moves affiliation during the peer-review process,

the new affiliation can be given as a footnote. Please note that no changes to affiliation can be made after your paper is accepted. [Read more on authorship](#).

2. You can opt to include a **video abstract** with your article. [Find out how these can help your work reach a wider audience, and what to think about when filming](#).
3. **Funding details.** Please supply all details required by your funding and grant-awarding bodies as follows:

<i>For</i>	<i>single</i>	<i>agency</i>	<i>grants</i>
This work was supported by the [Funding Agency] under Grant [number xxxx].			
<i>For</i>	<i>multiple</i>	<i>agency</i>	<i>grants</i>
This work was supported by the [Funding Agency #1] under Grant [number xxxx]; [Funding Agency #2] under Grant [number xxxx]; and [Funding Agency #3] under Grant [number xxxx].			
4. **Disclosure statement.** This is to acknowledge any financial or non-financial interest that has arisen from the direct applications of your research. If there are no relevant competing interests to declare please state this within the article, for example: *The authors report there are no competing interests to declare*. [Further guidance on what is a conflict of interest and how to disclose it](#).
5. **Data availability statement.** Authors are required to provide a data availability statement, detailing where data associated with a paper can be found and how it can be accessed. If data cannot be made open, authors should state why in the data availability statement. The DAS should include the hyperlink, DOI or other persistent identifier associated with the data set(s), or information on how the data can be requested from the authors. [Templates](#) are also available to support authors.
6. **Data deposition.** If you choose to share or make the data underlying the study open, please deposit your data in a [recognized data repository](#) prior to or at the time of submission. You will be asked to provide the DOI, pre-reserved DOI, or other persistent identifier for the data set.
7. **Supplemental online material.** Supplemental material can be a video, dataset, filesset, sound file or anything which supports (and is pertinent to) your paper. We publish supplemental material online via Figshare. Find out more about [supplemental material and how to submit it with your article](#).
8. **Figures.** Figures should be high quality (1200 dpi for line art, 600 dpi for grayscale and 300 dpi for colour, at the correct size). Figures should be supplied in one of our preferred file formats: EPS, PS, JPEG, TIFF, or Microsoft Word (DOC or DOCX) files are acceptable for

figures that have been drawn in Word. For information relating to other file types, please consult our [Submission of electronic artwork](#) document.

9. **Tables.** Tables should present new information rather than duplicating what is in the text. Readers should be able to interpret the table without reference to the text. Please supply editable files.
10. **Equations.** If you are submitting your manuscript as a Word document, please ensure that equations are editable. More information about [mathematical symbols and equations](#).
11. **Units.** Please use [SI units](#) (non-italicized).

2.1.1.5 Using Third-Party Material

You must obtain the necessary permission to reuse third-party material in your article. The use of short extracts of text and some other types of material is usually permitted, on a limited basis, for the purposes of criticism and review without securing formal permission. If you wish to include any material in your paper for which you do not hold copyright, and which is not covered by this informal agreement, you will need to obtain written permission from the copyright owner prior to submission. More information on [requesting permission to reproduce work\(s\) under copyright](#).

2.1.1.6 Submitting Your Paper

This journal uses Routledge's [Submission Portal](#) to manage the submission process. The Submission Portal allows you to see your submissions across Routledge's journal portfolio in one place. To submit your manuscript please click [here](#).

Please note that *Attachment & Human Development* uses [Crossref™](#) to screen papers for unoriginal material. By submitting your paper to *Attachment & Human Development* you are agreeing to originality checks during the peer-review and production processes.

On acceptance, we recommend that you keep a copy of your Accepted Manuscript. Find out more about [sharing your work](#).

2.1.1.7 Data Sharing Policy

This journal applies the Taylor & Francis [share upon reasonable request data sharing policy](#). Authors agree to make data and materials supporting the results or analyses presented in their paper available upon reasonable request. It is up to the author to determine whether a request is reasonable. Authors are required to [cite any data sets referenced](#) in the article and provide a [Data Availability Statement](#). Please

note that data should only be shared if it is ethically correct to do so, where this does not violate the protection of human subjects, or other valid ethical, privacy, or security concerns.

At the point of submission, you will be asked if there is a data set associated with the paper. If you reply yes, you will be required to provide the DOI, pre-registered DOI, hyperlink, or other persistent identifier associated with the data set(s). If you have selected to provide a pre-registered DOI, please be prepared to share the reviewer URL associated with your data deposit, upon request by reviewers.

Where one or multiple data sets are associated with a manuscript, these are not formally peer reviewed as a part of the journal submission process. It is the author's responsibility to ensure the soundness of data. Any errors in the data rest solely with the producers of the data set(s).

2.1.1.8 Publication Charges

There are no submission fees, publication fees or page charges for this journal.

Color figures will be reproduced in color in your online article free of charge. If it is necessary for the figures to be reproduced in color in the print version, a charge will apply.

Charges for color figures in print are £300 per figure (\$400 US Dollars; \$500 Australian Dollars; €350). For more than 4 color figures, figures 5 and above will be charged at £50 per figure (\$75 US Dollars; \$100 Australian Dollars; €65). Depending on your location, these charges may be subject to local taxes.

2.1.1.9 Copyright Options

Copyright allows you to protect your original material, and stop others from using your work without your permission. Taylor & Francis offers a number of different license and reuse options, including Creative Commons licenses when publishing open access. [Read more on publishing agreements](#).

2.1.1.10 My Authored Works

On publication, you will be able to view, download and check your article's metrics (downloads, citations and Altmetric data) via [My Authored Works](#) on Taylor & Francis Online. This is where you can access every article you have published with us, as well as your [free eprints link](#), so you can quickly and easily share your work with friends and colleagues.

We are committed to promoting and increasing the visibility of your article. Here are some tips and ideas on how you can work with us to [promote your research](#).

2.1.2 Article 1 Manuscript

Exploring the practice elements of attachment-based interventions: A distillation-and-matching review

Ahmed Riaz Mohamed^{1,2,4}, Paula Sterkenburg^{1,3}, Esmé van Rensburg² & Carlo Schuengel¹

¹Department of Clinical Child and Family Studies, Vrije Universiteit, Amsterdam, Netherlands, ²Department of Psychology, North-West University, Potchefstroom, South Africa, ³Department of Assessment and Treatment, Bartiméus, Doorn, Netherlands, ⁴Department of Psychology, University of Pretoria, Pretoria, South Africa

Author Note

Corresponding author: Ahmed Riaz Mohamed, Department of Psychology, University of Pretoria, Private Bag X20, Hatfield, 0028, Pretoria, South Africa. Email:

ahmed.mohamed@up.ac.za

Abstract

This systematic review sought to apply the Distillation and Matching Model to the empirical literature on attachment-based interventions to identify practice elements common across these interventions and to describe their occurrence for target populations. Across 60 studies, 23 practice elements were extracted from 45 intervention protocols that were tested in trials to be effective on attachment, sensitivity and/or parent-child interaction outcomes. Findings show that practice elements were most differentiated for child age (≤ 6 months; 7-35 months+3-11 years; 12-18 years) although further differentiations were found for location, ethnicity, and risk status. While there is similarity across practice element profiles regarding the use of relationship-building, video-feedback, psychoeducation and home-based approaches, some distinctions were observed. Interventions for younger infants frequently involved direct demonstration and modelling, while those for older infants and young children consisted of feedback-based approaches. Interventions for vulnerable, at-risk parents consisted of intensive guidance, while those for groups indigenous to North America benefitted from a comprehensive, multifaceted package of practice elements. Interventions for adolescent-aged children were frequently implemented in parent-group format, involving role-plays and discussions between parents, with limited direct involvement of the child. These distinctions may inform differential clinical applications of attachment-based interventions informed by the needs of specific populations.

Keywords: Attachment-based Interventions; Distillation and Matching Model; Practice Elements; Common Elements; Systematic Review

Exploring the practice elements of attachment-based interventions: A distillation-and-matching review

The introduction of attachment theory into psychological discourse by Bowlby (1969) as well as Ainsworth et al.'s (1978) empirical contributions with the Strange Situation Procedure have led to the broad recognition of the developmental and mental health benefits of secure attachment as well as the negative consequences of insecure and disorganised attachments. For example, secure attachments are associated with social competence (Groh et al., 2014), prosociality (Deneault et al., 2023), empathy (Xu et al., 2022), and emotional regulation in children (Cooke et al., 2019). Insecure and disorganised attachments, on the other hand, are associated with an increased risk of internalising and externalising behavioural difficulties (Fearon et al., 2010; Groh et al., 2012; Madigan et al., 2013), particularly for children who have insecure attachments to both parents (Dagan et al., 2021). Furthermore, attachment insecurity/disorganisation is associated with specific psychopathological outcomes such as childhood depression (Spruit et al., 2019), anxiety (Colonnesi et al., 2011), and conduct problems (Theule et al., 2016). Therefore, attachment-based interventions have been developed for intervention and parenting support.

Attachment-based interventions are often parenting-focused and parent-mediated. For example, the Circle of Security (COS; Powell et al., 2014) and Mothering from the Inside Out (MIO; Suchman et al., 2017) interventions are geared towards improving child attachment security and reducing disorganisation by targeting parents' mental representations of attachment and reflective functioning capacities. Alternatively, interventions such as Video-feedback Intervention to Promote Positive Parenting and Sensitive Discipline (VIPP-SD; Van IJzendoorn et al., 2023) and Attachment and Biobehavioral Catch-up (ABC; Dozier & Bernard, 2019) use video-feedback and in-the-moment commenting on parent-infant

interactions as their primary interventional elements to bring about changes in parenting behaviours.

Evidence from existing research syntheses covering the corpus of attachment-based interventions supports their effectiveness, overall. This applies to specific intervention packages as well as the broader set of attachment-based interventions. For instance, the pooled effects on both parental sensitivity and child attachment outcomes have been demonstrated in a meta-analysis of the VIPP-SD (Van IJzendoorn et al., 2023) and systematic reviews of the ABC (Grube & Liming, 2018; O’Byrne et al., 2023) interventions. Meta-analyses of the broader set of attachment-based interventions have demonstrated similar effects, supporting their overall effectiveness on attachment security and parental sensitivity (Bakermans-Kranenburg et al., 2003; Letourneau et al., 2015) as well as attachment disorganisation (Facompré et al., 2018; Mountain et al., 2017; Wright & Edginton, 2016; Wright et al., 2017). Furthermore, moderator analyses revealed relatively strong effects for interventions focusing on sensitivity (as opposed to a focus on mental representations, or support), using video-feedback, consisting of less than 16 sessions, and interventions starting after six months postpartum (Bakermans-Kranenburg et al., 2003; Facompré et al., 2018; Letourneau et al., 2015).

An alternative approach to understanding the effectiveness of interventions is to study the specific components, or practice elements, that occur across effective attachment-based interventions. Profiles of practice elements may be associated with particular client characteristics such as, for example, child age which could allow for the tailoring of interventions for specific children at the level of combinations of individual practice elements. Chorpita et al. (2005) proposed the Distillation and Matching Model (DMM) to describe, in detail, the practice elements that comprise evidence-based treatments for children. The DMM seeks to map, empirically, the practice elements linked with positive

effects on treatment outcomes, describing how these practice elements may be associated with client or contextual characteristics. These associations then provide a basis for testing decision tools that match specific combinations of practice elements to the characteristics of the presenting problem, client, and setting, for superior effectiveness. The first aspect of the DMM, *distillation*, involves conceptualising interventions as composites of individual practice elements—as opposed to single units of analysis—that can be empirically grouped. The second aspect, *matching*, involves summarising various characteristics that may have relevance for selecting interventions such as, for example, client demographics (e.g., age, ethnicity). This allows for an empirical determination of the linkages between these characteristics and the practice elements identified during the distillation process to establish which characteristics are associated most commonly with effective interventions. Secondly, matching allows for the determination of which characteristics matter the most by ranking each in order of their degree of association with profiles of practice elements.

To date, the distillation-and-matching approach has been applied to investigate treatments in various domains including children’s disruptive behaviour problems (Garland et al., 2008), social work practice (Barth et al., 2014; Lee et al., 2014), psychosocial interventions for children and youth affected by armed conflicts (Brown et al., 2017), interventions for families with multiple problems (Visscher et al., 2018), and early childhood interventions supporting cognitive development in low- and middle-income countries (Mamedova et al., 2024). To increase access to ever more effective attachment-based interventions, the distil-and-match approach may also be applied to the current body of evidence to gain understanding of the components of effective interventions and their linkages with contextual and population variables.

The aim of this systematic review was to apply the DMM to 1) identify and distil the practice elements common across attachment-based interventions as reported in the literature;

and 2) to match profiles of practice elements to study/client characteristics to explore for whom practice elements, and combinations thereof, may be best suited.

Method

The Distillation and Matching Model

The DMM seeks to provide a description of the clinical strategies that characterise evidence-based treatments. To achieve this, the DMM methodology makes use of patterns of frequencies of these clinical strategies to guide the empirical assembly of a distillation tree, or dendrogram, that serves to organise the literature according to set of *a priori* selected variables (i.e., child age, ethnicity, risk status, and location). The DMM aims to achieve three goals: i) to map, empirically, the clinical strategies associated with positive intervention outcomes; ii) to facilitate elucidation of the underlying relations between these clinical strategies and client or contextual variables; and iii) to generate hypotheses related to potential heuristics that could be applied to novel situations (Chorpita & Daleiden, 2009). In order to achieve this, the following procedures were followed.

Literature Search Strategy

The literature search was initiated by hand-searching the reference lists of existing published meta-analyses and systematic reviews of attachment-based interventions (Bakermans-Kranenburg et al., 2003; Bakermans-Kranenburg et al., 2005; Facompré et al., 2018; Letourneau et al., 2015; Mortensen & Mastergeorge, 2014; Mountain et al., 2017; Wright & Edginton, 2016; Wright et al., 2017). This was accompanied by electronic searches, during December 2022, within the following scholarly databases: SCOPUS, Web of Science, PsycINFO, PsycARTICLES and PubMed. Search terms such as “attachment”, “sensitivity” and “intervention” were used and combined as follows: (attachment and intervention*) OR (attachment and prevent*) OR (attachment and therapist*) AND (sensitivity* and intervention*) OR

(sensitiv* and prevent*) OR (sensitiv* and therapeut*) AND (random* control* trial). The search strategy and screening process is outlined in the PRISMA flow chart in Figure 1, and the inclusion criteria are presented in Table 1.

<Insert Table 1 here>

<Insert Figure 1 here>

Data Extraction

Studies were coded using the *Practicewise Psychosocial and Combined Treatments Coding Manual* (PracticeWise, 2005). This coding system summarises a variety of variables related to studies, study groups and intervention protocol. Both study characteristics and intervention protocols were coded independently by the first author and a second rater (LW; PS), achieving initial agreement of 86% and 81%, respectively. The full sample of studies and protocols/descriptions was subject to consensus discussions between raters to validate coding and resolve discrepancies. Analyses were performed on the post-consensus data. Although data were extracted from all studies designated for inclusion in the review, only those data pertaining to study groups associated with a ‘winning’ intervention protocol (i.e., a group for which the active intervention outperformed the control condition on the outcomes of interest at the $p < .05$ level) were included in the data set for analyses (Chorpita & Daleiden, 2009).

Coding for Study Characteristics

The following data related to study characteristics were extracted from each study using the PracticeWise coding system: study design, child characteristics (i.e., age, ethnicity, risk status, and location), outcomes measured and treatment effects. The outcomes and treatment effects were used to determine which study groups received ‘winning’ protocols. The child characteristics—child age, child ethnicity, child risk status, and location—were

used to delineate practice element profiles for the purposes of matching in accordance with the DMM.

Coding for Practice Elements

Simultaneously, intervention protocols were coded for the purposes of extracting practice elements. Chorpita and Daleiden (2009) define a practice element as a discrete clinical technique (e.g., psychoeducation) that is part of a larger manualised intervention (e.g., VIPP-SD). Intervention manuals were requested, in writing, from the developers of the interventions tested in the RCTs included in the review. The studies containing winning interventions included 45 distinct intervention protocols of which 20 full manuals were successfully obtained for coding. The remaining interventions were coded using the best available description of the intervention in the published article (Chorpita et al., 2005). Using the PracticeWise (2005) coding system, the manuals and descriptions were coded for an initial set of 73 practice elements. However, to capture attachment-based interventions specifically, the authors adapted the original PracticeWise (2005) system to facilitate the successful coding of attachment-based practice elements that were not contained within the original coding system (see Mohamed et al., 2021). An additional 16 practice elements were identified and included in the adaptation, which was used to code the intervention manuals and descriptions in conjunction with the PracticeWise system. Hence, a total of 89 practice elements were coded for. In line with the DMM, practice elements were coded as either present or absent in any given protocol. Practice elements with a low frequency in the overall dataset (i.e. with a count of ≤ 3) were excluded from the analysis (Chorpita & Daleiden, 2009; Mamedova et al., 2024). This resulted in the retention of 23 practice elements for inclusion in the analysis—seven from the original PracticeWise list, and all 16 from the adaptation (see Table S1—Supplementary Material for the practice elements and their definitions).

Quality Assessment

The first author and a second rater (CM) independently assessed the methodological quality of the studies included in the analysis using the Effective Public Health Practice Project (EPHPP) Quality Assessment Tool for Quantitative Studies (Armijo-Olivo et al., 2012). There was a moderate, 61% initial agreement between coders. All discrepancies were resolved via discussion and consensus.

Data Analytic Approach

Exploratory data analyses were undertaken using SPSS (version 29) and were based on the adapted data mining approach described by Chorpita and colleagues (Chorpita & Daleiden, 2009; Chorpita et al., 2005). As per the DMM, analyses were applied only to those studies which contained winning intervention protocols ($n = 60$). First, child characteristics (child age, ethnicity, risk status and location) were categorised. Four child age categories were created: ≤ 6 months; 7-35 months; 3-11 years; 12-18 years. The eight categories of ethnicity contained in the PracticeWise coding system were used: White; Black/African American; Hispanic/Latino; Asian; Native Hawaiian/Pacific Islander; American Indian/Alaska Native; Other/Unknown; Multiethnic. Three categories were created for risk status: SES Risk (e.g., low income, unemployment, homelessness); Abuse Risk (e.g. maltreatment, physical/sexual abuse, exposure to violence); Other Risk (e.g. parental psychopathology, parental substance abuse). Lastly, location was delineated into two categories: developing and developed (United Nations-defined developing/developed economies; UNCTAD, 2024). The frequencies of practice elements across studies for each of these categories were then computed and tabulated, creating a practice element profile for each category within child age, ethnicity, risk status, and location.

Next, to detect the degree of similarity between the practice element profiles amongst the categories within each variable, intraclass correlation coefficients (ICCs) were computed as an index of pattern similarity (Chorpita & Daleiden, 2009). Due to differential reporting across studies, the number of study groups represented varied between categories. Hence, to standardise the data for analysis purposes, the ICCs were computed on the proportions of the frequencies rather than on the absolute frequency counts. Using the ICCs, the proportions of practice elements for each category were compared to that of every other category within each variable, in pairs. A high pairwise ICC indicated that two categories were highly similar in the frequency of practice elements. Subsequently, within each variable, the pair of categories with the highest ICC was merged into a single category. The frequencies were then recalculated and the ICCs recomputed to determine whether any further merging of categories was possible among the newly created categories. This was repeated until no further merging was possible within each variable.

To build a dendrogram, the final merged categories for each variable were then examined to identify optimal splits. The variable with the lowest average ICC value amongst its final, merged categories was regarded as maximally informative as it indicated practice element patterns that were, on average, most differentiated compared to other variables. This variable was chosen as the first branch in the dendrogram with its component (merged) categories each serving as a branch node. This procedure was then repeated within each branch node of the first branch. All remaining variables were examined for merging, and then split for the next branch as described above. This process continued until there were no further variables to consider, all categories merged into a single category, or the criterion for determining a branch split was not met.

Analyses were performed using multiple criteria for merging categories within variables to assess which criterion yielded the dendrogram that was most differentiated and,

therefore, maximally informative. These criteria were based on eight non-overlapping ICC bands: .9-1; .8-.899; .7-.799; .6-.699; .5-.599; .4-.499; .3-.399; and .2-.299. The pair of categories with the highest ICC value which met or exceeded the criterion were merged. No further merging was possible when none of the pairwise ICC values fell within or exceeded the merge criterion.

Results

Description of Studies

Initially, 5,501 articles were identified through electronic databases and hand-searching. Following the removal of duplicates, 5,186 articles were screened by title and abstract resulting in 233 full-text articles which were screened according to the inclusion criteria. Subsequently, 106 full-text articles met the inclusion criteria. These 106 articles reported on 100 studies of which 60 contained ‘winning’ intervention protocols (see Table S2—Supplementary Material for an overview of the included studies). All studies included in the review were RCTs of attachment-based interventions.

Setting and Participant Characteristics

Most studies were conducted in developed settings ($n = 50$). Among developing regions, only one study was conducted in Africa, followed by South America ($n = 4$), and Asia ($n = 5$). Most studies involved children in the 7-35 months age category ($n = 25$), followed by the ≤ 6 months and 3-11 years age categories ($n = 6$ each). Studies involving adolescent-age children (12-18 years) were least represented ($n = 3$). A notable number of studies did not report child age ($n = 20$). Studies often reported multiple risks within and between child risk categories. Of the studies reporting at least one risk for each category, 24 reported SES Risk (including low income, homelessness, parental unemployment), 15 reported Other Risk (including parental psychopathology, parental substance abuse, physical ill-health), 11 reported Abuse Risk (including maltreatment, neglect, physical/sexual abuse,

domestic violence), and 10 did not report risk status. Only a limited number of studies reported on child ethnicity ($n = 10$).

Interventions and Outcomes

Across the 60 studies, 45 intervention protocols were evaluated (see Table S2—Supplementary Material for an overview). Studies included in the final analyses were those that demonstrated significant effects on attachment ($n = 20$), sensitivity ($n = 42$), or parent-child interaction outcomes ($n = 7$). Nine studies showed intervention effects on more than one of these outcomes. All interventions, regardless of the age of the target children, were directed at parents. Mothers were the main targets although a minority of studies also included fathers ($n = 8$). The bulk of the interventions focused directly on enhancing parental sensitivity and promoting parent-child interactions (e.g., ABC), or adjusting parent mental representations of attachment and mentalising capacities (e.g., MIO). Most interventions were home-based ($n = 47$) and involved both parent and child together ($n = 48$), either in full or in part. Other intervention formats included one-on-one ($n = 27$) or group-based ($n = 8$) sessions only with parents. The frequency of sessions ranged from daily to monthly, although most interventions were carried out on a weekly basis ($n = 45$).

Methodological Quality Assessment

EPHPP global ratings were strong to moderate for the majority (70%) of studies. An overview of ratings for each EPHPP domain is presented in Figures S1 and S2—Supplementary Material.

Dendrogram

Decreasing the merge criterion resulted in dendrograms with fewer branch nodes, increasingly merged categories, and decreasing differentiation within variables. Although the strictest criterion (ICC band: .9-1) resulted in the dendrogram with the greatest number of nodes (22), some of the final branches produced high average ICCs amongst its categories

(close to .9), indicating high similarity of practice element profiles. Therefore, the dendrogram produced by the next criterion (ICC Band: .8-.899) was examined. This criterion produced a dendrogram with 11 nodes and average ICC values that suggested greater differentiation. Lower merge criteria resulted in either 7-, or 2-nodes, or in a collapsing of all categories, all of which limited the informational value of the dendrogram. Hence, the 11-node dendrogram produced using the .8-.899 merge criterion was selected for further interpretation—see Figure 2.

As the most differentiated variable ($ICC_{ave} = .349$), Child Age emerged as the first branch in the dendrogram, split into three nodes (≤ 6 months; 7-35 months + 3-11 years; 12-18 years). Location became the second branch for both the ≤ 6 months node ($ICC_{ave} = .230$) and the 7-35 months + 3-11 years node ($ICC_{ave} = .722$), each splitting into two nodes (*Developing* and *Developed*). No studies within the 12-18 years category were conducted in developing settings and none reported either Abuse Risk, Other Risk, or any Ethnicity. As a result, the 12-18 years node did not produce further branching and became a terminal node. The *Developing* and *Developed* nodes within the ≤ 6 months age category became terminal nodes because Ethnicity was not reported by any of the studies in this age category. Furthermore, SES and Abuse Risk were not reported in the *Developing* node, and all risk categories merged for the *Developed* node. Within the 7-35 months + 3-11 years age category, the *Developing* node became a terminal node because Abuse Risk and Other Risk were not reported, and only one ethnic group was reported. The *Developed* node, however, split into two ethnicity nodes: *Native Hawaiian/Pacific Islander + American Indian/Alaska Native*; and *all other ethnicities combined*. The former became a terminal node because all risk categories within this node merged. The latter further split into two Child Risk nodes: *SES Risk + Abuse Risk*; and *Other Risk*, which became terminal nodes because no further variables were available for consideration.

<Insert Figure 2 here>

Practice Element Profiles

The overall practice element profile for the full sample of studies is shown in Figure S3—Supplementary Material. Below, the practice element profiles for the seven terminal nodes are described as these serve as the final profiles incorporating all variables in preceding branches of the dendrogram (Figure 2). This description is organised according to the ‘parent nodes’ of the dendrogram (i.e. the nodes of the first branching—Child Age).

Overall, several practice elements were consistently highly, or minimally, frequent across most terminal nodes. Highly frequent were *Relationship-building and Maintenance*, *Accessibility Promotion*, psychoeducation-oriented approaches, and video-feedback. Rarely used, overall, were practice elements with a peripheral, or no explicit, focus on parent-child interactions—these were *Case Management*, *Homework*, *Individual Therapy for the Caregiver*, *Family Therapy*, *Caregiver Coping*, and *Skin-to-skin Contact*.

Parent Node: ≤ 6 months

The terminal nodes for this age group appear in Figure 3. Within this age category, only one study—evaluating Kangaroo Mother Care—was conducted in a developing setting. This intervention included only two practice elements: *Accessibility Promotion* and *Skin-to-Skin Contact*. Given that this is based on only one study and intervention, this holds limited informational value.

The remaining five studies among infants in this age group were conducted in developed settings and featured 20 of the 23 practice elements. Psychoeducation directed at the caregiver, particularly on caregiving (*Psychoeducation—Caregiving*) and attachment-related constructs (*Attachment Awareness*), were the most frequently occurring elements (80-

100%). Interventions were conducted largely in the home or in a hospital setting; hence *Accessibility Promotion* is amongst the most frequent elements reported (80%). When the two video-feedback elements are taken together, they occur in 60% of the interventions for this age group in developed settings, alongside *Case Management*, *Relationship-building and Maintenance*, *Interaction Guidance* and *Therapist Support/Modelling*. Other direct, interaction-focused elements such as *Skin-to-Skin Contact*, *Facilitated Play/Interaction*, *Speaking for the Baby/Child*, and *In-vivo Feedback* were amongst the least frequent as were reflection-focused elements (*Insight-building: Parent Attachment*, *Parenting Narratives*, and *Tools to Stimulate Reflection*). *Parent/Peer Support/Modelling* was not reported indicating that none of the interventions at this level were conducted in parent groups.

<Insert Figure 3 here>

Parent Node: 7-35 months + 3-11 years

The four terminal nodes for the merged 7-35 months + 3-11 years age category appear in Figure 4. For studies conducted in Developing settings 17 of the 23 practice elements were apparent. All interventions involved general psychoeducation directed at the caregiver (*Psychoeducation—Caregiver*). Other psychoeducation-related elements focused on specific themes related to caregiving (*Psychoeducation—Caregiving*), attachment (*Attachment Awareness*), and interaction (*Interaction Guidance*) were also amongst the most frequent (75-100%). Following this were practice elements geared toward directly intervening in parent-child interactions such as *Attending*, *Speaking for the Baby/Child*, and *Video-feedback* (50-75%). Amongst the least reported were practice elements related to parental reflections (e.g., *Insight-building: Parent Attachment*, *Tools to Stimulate Reflection*, and *Parenting Narratives*). *Accessibility Promotion* was highly frequent (75%), suggesting that most of the

interventions were home-based, while only a few were conducted in parent groups, given the lower frequency of *Parent/Peer Support/Modelling* (25%).

Amongst White, Black/African American, Hispanic/Latino, Asian, Other/Unknown as well as Multiethnic 7-month to 11-year-olds exposed to SES and Abuse Risk in Developed settings, 16 of the 23 practice elements were apparent. All interventions were home-based, reflected in the 100% *Accessibility Promotion* frequency. *Attachment Awareness* was also a feature of all interventions for this subgroup accompanied by high frequencies of other psychoeducation-related elements (*Psychoeducation—Caregiver*, *Psychoeducation—Caregiving*, and *Interaction Guidance*), which occurred in 60-80% of the interventions. Interestingly, practice elements directed at caregiver-child interactions were less frequent: *Facilitated Play/Interaction*, *Speaking for the Baby/Child*, *In-vivo Feedback* and *Video-feedback* all occurred at a rate of 40%. This was notably different to the practice element profile amongst the same age, ethnic, and location group, but for children exposed to Other Risk, which contained 14 of the 23 practice elements. *Accessibility Promotion* and the psychoeducation-oriented elements remained highly frequent (100%). However, the interaction-oriented elements such as *Video-feedback*, *In-vivo Feedback* and *Facilitated Play/Interactions* were proportionally more frequent, all occurring in 100% of the interventions for the Other Risk subgroup.

<Insert Figure 4 here>

For children identified as Native Hawaiian/Pacific Islander or American Indian/Alaska Native in Developed settings who were aged between 7 months and 11 years, interventions featured 12 of the 23 practice elements. Eight of these occurred in all interventions with a mixture of psychoeducation-oriented elements (*Psychoeducation—*

Caregiver, Psychoeducation—Caregiving, and Attachment Awareness), interaction-focused elements (*Video-feedback* and *Speaking for the Baby/Child*), and reflection-based elements (*Tools to Stimulate Reflection*). The remaining four—*Case Management, Attending, Interaction Guidance* and *Insight-building: Parent Attachment*—occurred in at least 50% of the interventions but reflected a similar mix between psychoeducation, interaction and reflection.

Parent Node: 12-18 years

The terminal node for the 12-18 years age category appears in Figure 5. Across the three studies conducted with adolescent-aged children, interventions featured 15 of the 23 practice elements. The interventions involved a high degree of psychoeducation-based practice elements for caregivers. This included *Psychoeducation—Caregiver, Psychoeducation—Caregiving, Attachment Awareness* as well as *Interaction Guidance*. These, in addition to *Relationship-building and Maintenance* and *Parent/Peer Support/Modelling*, were features of all the interventions for this age group. Two-thirds of interventions featured *Therapist Support/Modelling* and reflection-focused practice elements in the form of *Tools to Stimulate Reflection* and *Insight-building: Parent Attachment*. *Parenting Narratives* was, however, the least frequent of the reflection-based elements (33%). Least frequent, or absent, were practice elements related to direct demonstration and in-vivo intervention in parent-child interactions (*In-vivo Feedback, Facilitated Play/Interactions, Speaking for the Baby/Child, and Video-feedback*).

<Insert Figure 5 here>

Discussion

The aim of this systematic review was to apply the DMM to 1) distil the practice elements common across effective attachment-based interventions as reported in the literature; and 2) to match profiles of practice elements to child characteristics, specifically child age, ethnicity, location and risk status, to explore for whom particular practice elements may be best suited. Overall, there were many similarities in practice elements across attachment-based interventions. However, there were also distinctions between practice element profiles which could inform clinical application for particular subgroups.

Practice Elements Applicable Across Subgroups

Relationship-building and Maintenance, Accessibility Promotion, psychoeducation-based approaches and video-feedback appeared to be foundational practice elements that are frequently used in interventions across subgroups. This is expected given that *Relationship-building and Maintenance* refers to common factors of psychosocial interventions, such as approaches that contribute towards establishing and maintaining the working alliance (Tschacher et al., 2015). Furthermore, this practice element encapsulates a strengths-based approach focused on encouragement and social reinforcement to build parenting capacities. Common across attachment-based interventions, therefore, is a supportive working alliance geared towards capacity-building via an encouraging and strengths-based approach to intervening with parenting and parent-child relationships.

A second foundational practice element common across interventions for most subgroups was *Accessibility Promotion* which encompasses approaches that increase clients' access to intervention (e.g., provision of transport). A notable majority of interventions included in this review were home-based. As such, it is highly common for attachment-based interventions to be taken into clients' homes, thus facilitating their accessibility and accounting for the widespread prevalence of *Accessibility Promotion*. This is consistent with

the literature demonstrating the effectiveness of home-based interventions for families of young children (Peacock et al., 2013; Sweet & Appelbaum, 2004). An exception to this trend are attachment-based interventions targeting adolescent-aged children (e.g., Connect Programme; Moretti & Connect Clinical Team, 2020), which are, generally, not home-based. This is, however, developmentally consistent given the shift during adolescence towards individuation and time spent with peers outside of the home (Moretti & Peled, 2004). Thus, while home-based approaches are standard across attachment-based interventions during infancy and early to middle childhood, this is not a feature of interventions for adolescents.

A third group of practice elements focused on psychoeducation was also common in interventions across subgroups, suggesting that these are also relatively standard features of attachment-based interventions. These included general psychoeducation for parents (*Psychoeducation—Caregiver*), attachment-focused psychoeducation (*Attachment Awareness*) and parenting-focused psychoeducation (*Psychoeducation—Caregiving*), respectively, all of which occurred with high frequency, overall. This aligns with the literature on psychological interventions which has confirmed psychoeducation as an effective, flexible and widely applicable intervention mechanism (Lukens & McFarlane, 2004).

Fourth, when the two *Video-feedback* practice elements are considered together, they were featured in interventions across most subgroups with a high frequency. Video-feedback is a now well-established strategy with demonstrable effectiveness in interventions for children including those targeted at parental sensitivity and attachment (Balldin et al., 2018; van IJzendoorn et al., 2023). While some interventions intentionally focus exclusively on positive feedback, most interventions prioritise positive feedback while also offering gentle, constructive suggestions and guidance in areas where parents are struggling. Ultimately, the approach looks to provide parents an opportunity to observe and think differently about their parenting behaviours while also sensitising them to their child's needs (Juffer & Steele, 2014;

Steele et al., 2014), and enhancing confidence as well as competence in their parenting capacities (Balldin et al., 2018). Video-feedback is, therefore, an important, largely standard, feature of attachment-based interventions, overall. However, as with *Accessibility Promotion*, the exception to this pattern are interventions for adolescent-age children which do not include video-feedback. This is likely because these interventions often do not include the direct involvement of the adolescent child.

On the other end of the spectrum were practice elements that, overall, were relatively infrequent across attachment-based interventions. Unsurprisingly, most of these were practice elements not directly related to parent-child interactions or the parent-child relationship such as *Case Management*, *Homework*, *Individual Therapy for the Caregiver*, *Family Therapy* and *Caregiver Coping*. One reason for this could be the narrow focus in attachment theory on what happens in parent-child interactions, rather than processes at the family systems level and beyond. Regarding *Homework*, specifically, although this may well be related to intervention content and foci, homework has been found to be poorly engaged with by parents in both general parenting interventions (Danko et al., 2016) and some attachment-based interventions (Mohamed et al., 2023). This may explain why *Homework* is not commonly featured.

Although the reflection-based practice elements (*Parenting Narratives*, *Insight-building: Parent Attachment*, and *Tools to Stimulate Reflection*) were not absent, they were among the least apparent, overall. Indeed, only a small number of studies involved intervention protocols that exclusively focused on this, such as the MIO. This is due possibly to the finding that representation-focused interventions are less effective at improving sensitivity and attachment security compared to interventions focused more directly on shifting parenting behaviours (Bakermans-Kranenburg et al., 2003). Some interventions have, however, attempted to find a middle ground in acknowledging the influence of parents'

mental representations in the automaticity of parenting behaviours without revising the representations themselves, such as the ABC's focus on the parent's 'voices from the past' (Dozier & Bernard, 2019). In general, therefore, attachment-based interventions tend to include practice elements that directly address parenting behaviours with less of an emphasis on shifting parental mental representations.

Skin-to-skin Contact, a practice element that is more closely related to parent-child interaction was, however, also relatively infrequent, except for infants 6 months and younger. This is possibly due to the fact that proximity-seeking involving direct physical contact and touch may be crucial during early infancy as a developmental necessity but, after 6 months, proximity may be better conceptualised as a spatial construct that is not dependent on physical contact (Ettenberger et al., 2021). Attachment-based interventions for older infants and toddlers, therefore, feature *Skin-to-skin Contact* to a lesser degree than those targeting newborns and young infants.

Practice Elements Applicable to Specific Subgroups

Only one study conducted among infants 6 months and younger with a 'winning' intervention was located in a developing setting which precludes broader inferences about the practice element profile for this subgroup. This does, however, underscore the need to expand the research agenda on attachment-based interventions in the so-called 'majority world' (Khan et al., 2022), given that this is where most of the world's children reside (Keller, 2018). For developed settings, however, in effective attachment-based interventions for infants 6 months and younger, practice elements focused more directly on parent-infant interactions were less frequent and, when present, involved direct demonstration and modelling by intervenors. Many interventions for this age group (≤ 6 months) are aimed at primiparous mothers and their newborn infants. Due to their newness to the mothering role they may require didactic instruction and direct demonstration to learn new skills which may explain

the combination of practice elements focused on psychoeducation and direct demonstration for this subgroup.

Practice elements for children aged 7 months to 11 years clustered differently compared to the younger age group. For this older age cohort in developing settings, direct demonstration fell away and was replaced with interaction-based approaches such as video-feedback, coupled with *Attending* and *Speaking for the Baby/Child*. The greater interactive capacities in the child and increasing bids for social engagement may speak to the greater prevalence of interaction-based practice elements compared to the younger infant (≤ 6 months) age group. It may also be that parents of children older than 6 months have increasingly adapted to the parenting role and, therefore, no longer require intensive demonstration or modelling. Instead, interventions may start to capitalise on these emerging parenting behaviours that can be further enhanced or adjusted through feedback mechanisms and reinforcement. This is evident in interventions such as the ABC and VIPP-SD that are targeted at children older than 6 months and rarely involve modelling in favour of practice elements geared towards positive, supportive feedback on parent-child interactions (Dozier & Bernard, 2019; Van IJzendoorn et al., 2023). As such, feedback-based techniques such as video-feedback appear to be prioritised over both direct demonstration/modelling and reflection-based approaches across interventions for children aged 7 months to 11 years in developing settings.

With regards to psychoeducation, *Interaction Guidance*—information-sharing/education related to parent-child interactions—was present to a lesser extent than other didactic elements, overall. However, it was highly prevalent for two subgroups within the 7-month to 11-year age group: 1) those in developing settings; and 2) those in developed settings exposed to Other Risk for all ethnicities (other than Native Hawaiian/Pacific Islander and American Indian/Alaska Native). This may indicate that parents of children in these

subgroups are more in need of information on the importance of parent-child interactions compared to other subgroups. The Other Risk subgroup, for example, refers largely to parent-centred problems such as psychopathology, substance abuse, and chronic illness which may impact on parental sensitivity and availability (e.g., Bernard et al., 2018), indicating the need to augment, through intervention, parental awareness around parent-child interactions for what may be a particularly vulnerable group of parents. This is further supported by the high frequency of the *Facilitated Play/Interaction* practice element, suggesting that this subgroup may require more intensive parenting support in terms of the development of sensitive behaviours that can promote real-time parent-child interactions to align with the awareness raised through *Interaction Guidance*.

Facilitated Play/Interaction was, however, absent in interventions for children aged 7 months to 11 years in developing settings. This may indicate that this particular group of parents need informational support that might be less available in their contexts, supported by video-feedback, instead of directly facilitated interactions, to facilitate the enactment of information received through *Interaction Guidance* within parent-child interactions. This may allow these parents to observe themselves applying the learnings and to more closely monitor their progress. This may be particularly useful when the concepts are new but also when language-related distinctions or barriers occur which could be minimised through visual media, like video, to facilitate parents' deeper learnings in developing, majority world contexts (Juffer & Steele, 2014).

Among the other interaction-oriented practice elements, *Attending* and *In-vivo Feedback* were most frequent in interventions for the Other Risk subgroup. Additionally, *Therapist Support/Modelling* and *In-vivo Feedback* were either featured only for this subgroup, or very infrequently featured in others. Developers of the ABC intervention, which prioritises *In-vivo Feedback*, have acknowledged that this is an 'unusual' element (Dozier &

Bernard, 2019). It has also been experienced by intervenors as initially challenging to apply in practice (Mohamed et al., 2023). This may explain its lower frequency in attachment-based interventions, broadly. However, despite its ‘unusual’ and challenging nature, it is a frequent element for the particularly vulnerable group of parents in the Other Risk subgroup, compared to the SES+Abuse Risk subgroup. This may be indicative of the potency of their need for a more intensive and direct intervention approach to support their parenting in the context of significant biopsychosocial challenges.

The practice element profile for children originating from within communities indigenous to Hawaii, Alaska and continental USA in the 7-month to 11-year age group contained comparatively fewer practice elements, overall. However, most of these practice elements occurred in all studies for this subgroup and reflected a balance between psychoeducation-, interaction-, and reflection-based practice elements. This suggests a comprehensive, multi-faceted ‘package’ of practice elements. Indigenous communities are amongst the most disenfranchised groups in the USA, with limited integration in society, histories of colonisation, displacement, violence, intergenerational trauma and significantly greater psychosocial concerns, such as substance abuse and mental illness, compared with other groups in the USA (Spillane et al., 2023; Walls et al., 2022). These factors may impact caregiving systems in unique ways for indigenous communities which may require a comprehensive approach to intervening in parent-child relationships. This could explain why the package of practice elements common for this subgroup is as multifaceted as represented here, and also why it is among the few subgroups for which *Case Management* is a comparatively frequent practice element (Ziguras & Stuart, 2000).

Distinct from other subgroups, all interventions for the adolescent-age (12-18 year) cohort included *Parent/Peer Support/Modelling*. This indicates that all the interventions for this age group were in parent-group format and involved parents sharing their experiences,

supporting one another, and engaging in role-plays with the support of the intervenor (*Therapist Support/Modelling*). Most of the interventions for adolescents did not involve the adolescent-child which is why there was limited, or no, use of interaction-oriented practice elements (e.g., video-feedback), although in the one intervention that did include the child, *Facilitated Play/Interaction* and *In-vivo Feedback* were used, rather than *Video-feedback*. Reflection-oriented practice elements were more frequent and better represented than interaction-oriented elements for this subgroup. This may be because immediate parent-child interactions are less a feature of attachment-based interventions due to adolescents' increased individuation and independence from their parents. Furthermore, attachment is increasingly representational, as opposed to behavioural, at this stage (Moretti & Peled, 2004). Where interaction-related issues were addressed more directly, this appears to have been accounted for in role-plays, or similar activities, between parents in parent groups, rather than between parents and their adolescents, such as in the Connect Programme.

Limitations and Recommendations for Future Research

Firstly, the study was limited by the inconsistent reporting of variables in individual studies. Although 60 studies were included in the analysis, due to lack of reporting of child characteristics in studies, the number of groups within categories was notably reduced, limiting the broader inferences that can be made based on the findings. This likely affected the proportions of practice element frequencies. Second, of the 45 interventions, just under half were coded using the full intervention manual. The remainder were coded using the descriptions of the interventions in the published articles which are necessarily truncated descriptions. The resultant coding may, therefore, have underrepresented the true frequencies of some practice elements due to the lack of detail about interventions when full manuals were not available for coding. Furthermore, it is also possible that the adaptations made to the coding system to code for attachment-based practice elements still require further refinement

and evaluation to facilitate accuracy and interrater reliability. Third, while the assumption is that the frequency of a practice element is an indication of its value/usefulness, it is acknowledged that frequencies do not reveal anything about how effective each practice element is (Engell et al., 2020). Chorpita et al. (2011) note that data aggregation approaches such as the one adopted in this study are only an intermediate step towards dismantling/additive effectiveness trials, microtrials, or similar research endeavours, to answer questions around the efficacy of specific practice elements and so-called ‘active ingredients’ (see Leijten et al., 2021). Furthermore, in moving from more descriptive to inferential analyses, future studies could consider the use of individual participant data meta-analyses to answer more specific questions about which practice elements of attachment-based interventions work for whom. Fourth, inherent to the DMM, practice elements were identified on a dichotomised basis—presence or absence within a protocol. This, however, does not account for dosage or intensity related to the use of any given practice element, the sequencing of practice elements, or how practice elements may be combined to achieve intervention outcomes (Chorpita et al., 2007). Future research could, therefore, address not only the frequency, but also the dosage and combinations of practice elements that may be effective in the context of attachment-based interventions. Fifth, the DMM’s focus on practice elements does not speak to the content of interventions. Hence, two adaptations of a manual for the same intervention may be identical in their practice elements but may differ in the content of the material. Future research could, therefore, conduct analyses at the level of the material content—in addition to practice elements—in the form of content analyses of attachment-based intervention manuals to evaluate how intervention content may be associated with intervention effectiveness or population characteristics. Finally, the use of ICCs as the index of pattern similarity may have affected the nature of the results. It is

possible that using an alternative index may have resulted in a differently shaped dendrogram and, hence different practice element profiles for interpretation (Chorpita & Daleiden, 2009).

Conclusion

This review sought to distil the practice elements of attachment-based interventions and to match profiles of practice elements to child age, ethnicity, location and risk status. The study found that numerous practice elements were common across age, ethnic, location and risk status subgroups and, therefore, are standard features of most attachment-based interventions. These included *Relationship-building and Maintenance*, *Accessibility Promotion*, various psychoeducation-focused approaches, and video-feedback. Clinicians seeking to tailor attachment-based interventions may, therefore, consider these elements as standard, regardless of population.

In addition to these standard elements, some distinctions were noted in the practice element profiles for particular subgroups, which may inform how clinicians differentially apply interventions for specific populations. Practice elements involving skin-to-skin contact and direct demonstration/modelling were prominent in interventions for young infants (≤ 6 months). For older children (7 months to 11 years) in developing settings, however, this was superseded by practice elements focused on feedback related to parent-child interactions. In developed settings for this age group, interventions for groups originating from communities indigenous to North America and the Pacific included a comprehensive package reflecting a balance between psychoeducation-, interaction- and reflection-oriented approaches, augmented with case management. Interventions for those in the 7-month to 11-year age group in developed settings from all other ethnic groups who were exposed to Other Risks included practice elements more heavily focused direct guidance (e.g., *Facilitated Play/Interaction*) for a group of parents whose at-risk status may necessitate more intensive instruction. Interventions for those exposed other kinds of risk (e.g., SES Risk), however,

involved practice elements focused more on capitalising on parents' existing capacities through supportive feedback (e.g., video-feedback), with less of an emphasis on intensive, direct guidance. Lastly, interventions for adolescent-age children rarely involved the adolescent child directly. As such, these interventions were regularly conducted in parent-group format and involved role-plays and group discussions—supported/guided by the intervenor—rather than in-session direct facilitation of, or feedback on, parent-child interactions.

This was the first study to conduct an analysis of attachment-based interventions at the level of their component practice elements. Although the number of studies within subgroups was limited, the findings of this review may offer some preliminary evidence for how these practice elements may be differentially organised for particular groups. This suggests that the needs of these subgroups may differ from one another when considering the use of attachment-based intervention. This may have implications for clinical practice as it could inform potential practice element-based modular approaches that can be designed and tailored by clinicians for specific groups based on these differential needs and their associated practice element profiles. Such modular approaches have, in other contexts, been found to outperform standard care models of intervention for youth (Weisz et al., 2012), making this a promising avenue for both future research as well as expanded and augmented praxis in the field of attachment-based interventions.

Acknowledgements

The authors wish to thank the intervention developers who shared their manuals with the review team for the purposes of the study as well as PracticeWise for the use of their coding system. Gratitude is also extended to Owen Crawford, Cameron Johnson, Chloe Moodley, and Lucia Willems for their invaluable assistance at various stages of the review process. The financial assistance of the National Research Foundation (NRF) in South Africa (Grant UID:

105603) and Organisation for Health Research and Development ZonMw in the Netherlands (Grant Number: 641001101), towards this research is hereby acknowledged. Opinions expressed and conclusions arrived at, are those of the authors and are not necessarily to be attributed to the NRF. This study was made possible by the Vrije Universiteit Amsterdam-NRF Desmond Tutu Doctoral Programme which is coordinated by the South Africa-Vrije Universiteit Strategic Alliance (SAVUSA).

Declaration of Competing Interests

The authors declare that there are no potential conflicts of interest.

Author Contributions

ARM coordinated the study as the principal investigator, conducted the literature search, extracted and analysed the data, conducted the methodological quality assessments, and wrote all sections of the first and subsequent drafts of the manuscript. PS was involved with independently extracting data. ARM and PS identified practice element codes for the adaptations to the coding system and ARM developed the draft definitions. CS served as a consultant in the adaptation of the practice element coding system and supervised the data analytic process. PS, EvR, and CS reviewed drafts and contributed to all parts of latter versions of the manuscript.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author, ARM, upon reasonable request. This request is also subject to approval by the institutional body which serves as the custodian of the data.

References

Agha Mohammad Hasani, P., Sheikh Fathollahi, M., Gerami Fard, A., & Mokhtari, M. (2020). Effectiveness of happiness training on the pattern of parent-child relationships

- and the hope of parents with autistic children. *Iranian Rehabilitation Journal*, 18(3), 309-318. <https://doi.org/10.32598/irj.18.3.946.1>
- Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Lawrence Erlbaum.
- Akai, C. E., Guttentag, C. L., Baggett, K. M., Noria, C. C., & The Center for the Prevention of Child Neglect. (2008). Enhancing parenting practices of at-risk mothers. *Journal of Primary Prevention*, 29(3), 223-242. <https://doi.org/10.1007/s10935-008-0134-z>
- Alsancak-Akbulut, C., Sahin-Acar, B., & Sumer, N. (2021). Effect of video-feedback intervention on Turkish mothers' sensitivity and physical intrusiveness: A randomized control trial. *Attachment & Human Development*, 23(6), 795-813. <https://doi.org/10.1080/14616734.2020.1753085>
- Alvarenga, P., Cerezo, M. A., Wiese, E., & Piccinini, C. A. (2020). Effects of a short video feedback intervention on enhancing maternal sensitivity and infant development in low-income families. *Attachment & Human Development*, 22(5), 534-554. <https://doi.org/10.1080/14616734.2019.1602660>
- Ammaniti, M., Speranza, A. M., Tambelli, R., Muscetta, S., Lucarelli, L., Vismara, L., Odorisio, F., & Cimino, S. (2006). A prevention and promotion intervention program in the field of mother-infant relationship. *Infant Mental Health Journal*, 27(1), 70-90. <https://doi.org/10.1002/imhj.20081>
- Ammerman, R. T., Peugh, J. L., Teeters, A. R., Sakuma, K. K., Jones, D. E., Hostetler, M. L., Van Ginkel, J. B., & Feinberg, M. E. (2022). Promoting parenting in home visiting: A CACE analysis of family foundations. *Journal of Family Psychology*, 36(2), 225-235. <https://doi.org/10.1037/fam0000888>
- Armijo-Olivo, S., Stiles, C. R., Hagen, N. A., Biondo, P. D., & Cummings, G. G. (2012). Assessment of study quality for systematic reviews: A comparison of the Cochrane

- Collaboration Risk of Bias tool and the Effective Public Health Practice Project quality assessment tool: Methodological research. *Journal of Evaluation in Clinical Practice*, 18(1), 12-18. <https://doi.org/10.1111/j.1365-2753.2010.01516.x>
- Armstrong, K. L., Fraser, J. A., Dadds, M. R., & Morris, J. (2000). Promoting secure attachment, maternal mood and child health in a vulnerable population, a randomized controlled trial. *Journal of Paediatrics and Child Health*, 36(6), 555-562. <https://doi.org/10.1046/j.1440-1754.2000.00591.x>
- Bakermans-Kranenburg, M. J., Juffer, F., & van IJzendoorn, M. H. (1998). Interventions with video feedback and attachment discussions: Does type of maternal insecurity make a difference? *Infant Mental Health Journal*, 19(2), 202–219. [https://doi.org/10.1002/\(SICI\)1097-0355\(199822\)19:2<202::AID-IMHJ8>3.0.CO;2-P](https://doi.org/10.1002/(SICI)1097-0355(199822)19:2<202::AID-IMHJ8>3.0.CO;2-P)
- Bakermans-Kranenburg, M. J., van IJzendoorn, M. H., & Juffer, F. (2003). Less is more: Meta-analyses of sensitivity and attachment interventions in early childhood. *Psychological Bulletin*, 129(2), 195-215. <https://doi.org/10.1037/0033-2909.129.2.195>
- Bakermans-Kranenburg, M. J., van IJzendoorn, M. H., & Juffer, F. (2005). Disorganized infant attachment and preventive interventions: A review and meta-analysis. *Infant Mental Health Journal*, 26(3), 191-216. <https://doi.org/10.1002/imhj.20046>
- Balldin, S., Fisher, P. A., & Wirtberg, I. (2018). Video feedback intervention with children. *Research on Social Work Practice*, 28(6), 682-695. <https://doi.org/10.1177/1049731516671809>
- Barlow, J., Davis, H., McIntosh, E., Jarrett, P., Mockford, C., & Stewart-Brown, S. (2007). Role of home visiting in improving parenting and health in families at risk of abuse and neglect: Results of a multicentre randomised controlled trial and economic evaluation. *Archives of Disease in Childhood*, 92(3), 229-233. <https://doi.org/10.1136/adc.2006.095117>

- Barone, L., Barone, V., Dellagiulia, A., & Lionetti, F. (2018). Testing an attachment-based parenting intervention-VIPP-FC/A in adoptive families with post-institutionalized children: Do maternal sensitivity and genetic markers count? *Frontiers in Psychology*, 9, Article 156. <https://doi.org/10.3389/fpsyg.2018.00156>
- Barone, L., Carone, N., Costantino, A., Genschow, J., Merelli, S., Milone, A., Polidori, L., Ruglioni, L., & Moretti, M. M. (2021b). Effect of a parenting intervention on decreasing adolescents' behavioral problems via reduction in attachment insecurity: A longitudinal, multicenter, randomized controlled trial. *Journal of Adolescence*, 91, 82-96. <https://doi.org/10.1016/j.adolescence.2021.07.008>
- Barone, L., Carone, N., Salazar-Jimenez, J. G., & Ortiz Munoz, J. A. (2021a). Enhancing food habits via sensitivity in rural low-SES mothers of children aged 1-3 living in Colombia: A randomized controlled trial using video-feedback intervention. *Attachment & Human Development*, 23(6), 831-852. <https://doi.org/10.1080/14616734.2020.1784243>
- Barth, R. P., Kolivoski, K. M., Lindsey, M. A., Lee, B. R., & Collins, K. S. (2014). Translating the common elements approach: Social Work's experiences in education, practice, and research. *Journal of Clinical Child and Adolescent Psychology*, 43(2), 301-311. <https://doi.org/10.1080/15374416.2013.848771>
- Berlin, L. J., Martoccio, T. L., & Jones Harden, B. (2018). Improving Early Head Start's impacts on parenting through attachment-based intervention: A randomized controlled trial. *Developmental Psychology*, 54(12), 2316-2327. <https://doi.org/10.1037/dev0000592>
- Bernard, K., Dozier, M., Bick, J., Lewis-Morrarty, E., Lindhiem, O., & Carlson, E. (2012). Enhancing attachment organization among maltreated children: Results of a

- randomized clinical trial. *Child Development*, 83(2), 623-636.
<https://doi.org/10.1111/j.1467-8624.2011.01712.x>
- Bernard, K., Nissim, G., Vaccaro, S., Harris, J. L., & Lindhiem, O. (2018). Association between maternal depression and maternal sensitivity from birth to 12 months: A meta-analysis. *Attachment & Human Development*, 20(6), 578-599.
<https://doi.org/10.1080/14616734.2018.1430839>
- Bick, J., & Dozier, M. (2013). The effectiveness of an attachment-based intervention in promoting foster mothers' sensitivity toward foster infants. *Infant Mental Health Journal*, 34(2), 95-103. <https://doi.org/10.1002/imhj.21373>
- Blizzard, A. M., Barroso, N. E., Ramos, F. G., Graziano, P. A., & Bagner, D. M. (2018). Behavioral parent training in infancy: What about the parent-infant relationship? *Journal of Clinical Child and Adolescent Psychology*, 47(Suppl), S341-S353.
<https://doi.org/10.1080/15374416.2017.1310045>
- Booth-LaForce, C., Oxford, M. L., O'Leary, R., & Buchwald, D. S. (2022). Promoting First Relationships for primary caregivers and toddlers in a native community: A randomized controlled trial. *Prevention Science*, Advance Online Publication.
<https://doi.org/10.1007/s11121-022-01415-y>
- Borelli, J. L., Kerr, M. L., Smiley, P. A., Rasmussen, H. F., Hecht, H. K., & Campos, B. (2022). Relational Savoring intervention: Positive impacts for mothers and evidence of cultural compatibility for Latinas. *Emotion*, Advance Online Publication.
<https://doi.org/10.1037/emo0001102>
- Bowlby, J. (1969). *Attachment and loss: Volume 1. Attachment*. Basic Books.
- Brown, F. L., de Graaff, A. M., Annan, J., & Betancourt, T. S. (2017). Annual research review: Breaking cycles of violence - a systematic review and common practice elements analysis of psychosocial interventions for children and youth affected by

armed conflict. *Journal of Child Psychology and Psychiatry*, 58(4), 507-524.

<https://doi.org/10.1111/jcpp.12671>

Chorpita, B. F., Becker, K. D., & Daleiden, E. L. (2007). Understanding the common elements of evidence-based practice: Misconceptions and clinical examples. *Journal of the American Academy of Child and Adolescent Psychiatry*, 46(5), 647-652.

<https://doi.org/10.1097/chi.0b013e318033ff71>

Chorpita, B. F., & Daleiden, E. L. (2009). Mapping evidence-based treatments for children and adolescents: Application of the distillation and matching model to 615 treatments from 322 randomized trials. *Journal of Consulting and Clinical Psychology*, 77(3), 566-579. <https://doi.org/10.1037/a0014565>

Chorpita, B. F., Daleiden, E. L., & Weisz, J. R. (2005). Identifying and selecting the common elements of evidence based interventions: A distillation and matching model. *Mental Health Services Research*, 7(1), 5-20. <https://doi.org/10.1007/s11020-005-1962-6>

Chorpita, B. F., Rotheram-Borus, M. J., Daleiden, E. L., Bernstein, A., Cromley, T., Swendeman, D., & Regan, J. (2011). The old solutions are the new problem: How do we better use what we already know about reducing the burden of mental illness? *Perspectives on Psychological Science*, 6(5), 493-497.

<https://doi.org/10.1177/1745691611418240>

Cicchetti, D., Rogosch, F. A., & Toth, S. L. (2006). Fostering secure attachment in infants in maltreating families through preventive interventions. *Development and Psychopathology*, 18(3), 623-649. <https://doi.org/10.1017/S0954579406060329>

Colonnese, C., Draijer, E. M., Jan, J. M. S. G., van der Bruggen, C. O., Bogels, S. M., & Noom, M. J. (2011). The relation between insecure attachment and child anxiety: A meta-analytic review. *Journal of Clinical Child and Adolescent Psychology*, 40(4), 630-645. <https://doi.org/10.1080/15374416.2011.581623>

- Cooke, J. E., Kochendorfer, L. B., Stuart-Parrigon, K. L., Koehn, A. J., & Kerns, K. A. (2019). Parent-child attachment and children's experience and regulation of emotion: A meta-analytic review. *Emotion, 19*(6), 1103-1126. <https://doi.org/10.1037/emo0000504>
- Cooper, P. J., Tomlinson, M., Swartz, L., Landman, M., Molteno, C., Stein, A., McPherson, K., & Murray, L. (2009). Improving quality of mother-infant relationship and infant attachment in socioeconomically deprived community in South Africa: Randomised controlled trial. *British Medical Journal, 338*, b974. <https://doi.org/10.1136/bmj.b974>
- Dagan, O., Schuengel, C., Verhage, M. L., van, I. M. H., Sagi-Schwartz, A., Madigan, S., Duschinsky, R., Roisman, G. I., Bernard, K., Bakermans-Kranenburg, M., Bureau, J. F., Volling, B. L., Wong, M. S., Colonnese, C., Brown, G. L., Eiden, R. D., Fearon, R. M. P., Oosterman, M., Aviezer, O., Cummings, E. M., & The Collaboration on Attachment to Multiple Parents and Outcomes Synthesis. (2021). Configurations of mother-child and father-child attachment as predictors of internalizing and externalizing behavioral problems: An individual participant data (IPD) meta-analysis. *New Directions in Child and Adolescent Development, 2021*(180), 67-94. <https://doi.org/10.1002/cad.20450>
- Danko, C. M., Brown, T., Van Schoick, L., & Budd, K. S. (2016). Predictors and correlates of homework completion and treatment outcomes in parent-child interaction therapy. *Child & Youth Care Forum, 45*(3), 467-485. <https://doi.org/10.1007/s10566-015-9339-5>
- Dehghani, A., Malekpour, M., Abedi, A., & Amiri, S. (2014). The efficacy of Circle of Security on attachment and well-being in preschool children. *Management Science Letters, 4*, 607-612. <https://doi.org/10.5267/j.msl.2013.12.031>

- Deneault, A. A., Hammond, S. I., & Madigan, S. (2023). A meta-analysis of child-parent attachment in early childhood and prosociality. *Developmental Psychology*, 59(2), 236-255. <https://doi.org/10.1037/dev0001484>
- Dozier, M., & Bernard, K. (2019). *Coaching parents of vulnerable infants: The Attachment and Biobehavioral Catch-up approach*. Guilford.
- Dozier, M., Lindheim, O., Lewis, E., Bick, J., Bernard, K., & Peloso, E. (2009). Effects of a foster parent training program on young children's attachment behaviors: Preliminary evidence from a randomized clinical trial. *Child and Adolescent Social Work Journal*, 26(4), 321-332. <https://doi.org/10.1007/s10560-009-0165-1>
- Dubois-Comtois, K., Cyr, C., Tarabulsy, G. M., St-Laurent, D., Bernier, A., & Moss, E. (2017). Testing the limits: Extending attachment-based intervention effects to infant cognitive outcome and parental stress. *Development and Psychopathology*, 29(2), 565-574. <https://doi.org/10.1017/s0954579417000189>
- Ekrami, F., Mohammad-Alizadeh Charandabi, S., Babapour Kheiroddin, J., & Mirghafourvand, M. (2020). Effect of counseling on maternal-fetal attachment in women with unplanned pregnancy: A randomized controlled trial. *Journal of Reproductive and Infant Psychology*, 38(2), 151-165. <https://doi.org/10.1080/02646838.2019.1636943>
- Engell, T., Kirkoen, B., Hammerstrom, K. T., Kornor, H., Ludvigsen, K. H., & Hagen, K. A. (2020). Common elements of practice, process and implementation in out-of-school-time academic interventions for at-risk children: A systematic review. *Prevention Science*, 21(4), 545-556. <https://doi.org/10.1007/s11121-020-01091-w>
- Ettenberger, M., Bieleninik, L., Epstein, S., & Elefant, C. (2021). Defining attachment and bonding: Overlaps, differences and implications for music therapy clinical practice and research in the neonatal intensive care unit (NICU). *International Journal of*

Environmental Research and Public Health, 18(4), Article 1733.

<https://doi.org/10.3390/ijerph18041733>

- Facompré, C. R., Bernard, K., & Waters, T. E. A. (2018). Effectiveness of interventions in preventing disorganized attachment: A meta-analysis. *Development and Psychopathology*, 30(1), 1-11. <https://doi.org/10.1017/S0954579417000426>
- Fearon, R. P., Bakermans-Kranenburg, M. J., van IJzendoorn, M. H., Lapsley, A. M., & Roisman, G. I. (2010). The significance of insecure attachment and disorganization in the development of children's externalizing behavior: A meta-analytic study. *Child Development*, 81(2), 435-456. <https://doi.org/10.1111/j.1467-8624.2009.01405.x>
- Flierman, M., Koldewijn, K., Meijssen, D., van Wassenae-Leemhuis, A., Aarnoudse-Moens, C., van Schie, P., & Jeukens-Visser, M. (2016). Feasibility of a preventive parenting intervention for very preterm children at 18 months corrected age: A randomized pilot trial. *Journal of Pediatrics*, 176, 79-85. <https://doi.org/10.1016/j.jpeds.2016.05.071>
- Garland, A. F., Hawley, K. M., Brookman-Frazee, L., & Hurlburt, M. S. (2008). Identifying common elements of evidence-based psychosocial treatments for children's disruptive behavior problems. *Journal of the American Academy of Child and Adolescent Psychiatry*, 47(5), 505-514. <https://doi.org/10.1097/CHI.0b013e31816765c2>
- Groh, A. M., Fearon, R. P., Bakermans-Kranenburg, M. J., van IJzendoorn, M. H., Steele, R. D., & Roisman, G. I. (2014). The significance of attachment security for children's social competence with peers: A meta-analytic study. *Attachment & Human Development*, 16(2), 103-136. <https://doi.org/10.1080/14616734.2014.883636>
- Groh, A. M., Roisman, G. I., van IJzendoorn, M. H., Bakermans-Kranenburg, M. J., & Fearon, R. P. (2012). The significance of insecure and disorganized attachment for children's internalizing symptoms: A meta-analytic study. *Child Development*, 83(2), 591-610. <https://doi.org/10.1111/j.1467-8624.2011.01711.x>

- Grube, W. A., & Liming, K. W. (2018). Attachment and Biobehavioral Catch-up: A systematic review. *Infant Mental Health Journal*, 39(6), 656-673.
<https://doi.org/10.1002/imhj.21745>
- Heinicke, C. M., Fineman, N. R., Ponce, V. A., & Guthrie, D. (2001). Relation-based intervention with at-risk mothers: Outcome in the second year of life. *Infant Mental Health Journal*, 22(4), 431-462. <https://doi.org/10.1002/imhj.1010>
- Heinicke, C. M., Fineman, N. R., Ruth, G., Recchia, S. L., Guthrie, D., & Rodning, C. (1999). Relationship-based intervention with at-risk mothers: Outcome in the first year of life. *Infant Mental Health Journal*, 20(4), 349-374.
[https://doi.org/10.1002/\(SICI\)1097-0355\(199924\)20:4<349::AID-IMHJ1>3.0.CO;2-X](https://doi.org/10.1002/(SICI)1097-0355(199924)20:4<349::AID-IMHJ1>3.0.CO;2-X)
- Hoegler, S., Mills, A. L., Feda, A., & Cummings, E. M. (2022). Randomized preventive intervention for families: Adolescents' emotional insecurity and attachment to fathers. *Journal of Family Psychology*, Advance Online Publication.
<https://doi.org/10.1037/fam0001042>
- Hoffenkamp, H. N., Tooten, A., Hall, R. A., Braeken, J., Eliens, M. P., Vingerhoets, A. J., & van Bakel, H. J. (2015). Effectiveness of hospital-based video interaction guidance on parental interactive behavior, bonding, and stress after preterm birth: A randomized controlled trial. *Journal of Consulting and Clinical Psychology*, 83(2), 416-429.
<https://doi.org/10.1037/a0038401>
- Jangjoo, S., Lotfi, R., Assareh, M., & Kabir, K. (2021). Effect of counselling on maternal-fetal attachment in unwanted pregnancy: A randomised controlled trial. *Journal of Reproductive and Infant Psychology*, 39(3), 225-235.
<https://doi.org/10.1080/02646838.2019.1673891>

- Juffer, F., & Steele, M. (2014). What words cannot say: The telling story of video in attachment-based interventions. *Attachment & Human Development*, 16(4), 307-314.
<https://doi.org/10.1080/14616734.2014.912484>
- Khan, T., Abimbola, S., Kyobutungi, C., & Pai, M. (2022). How we classify countries and people-and why it matters. *BMJ Global Health*, 7(6), Article e009704.
<https://doi.org/10.1136/bmjgh-2022-009704>
- Kalinauskiene, L., Cekuoliene, D., Van IJzendoorn, M. H., Bakermans-Kranenburg, M. J., Juffer, F., & Kusakovskaja, I. (2009). Supporting insensitive mothers: The Vilnius randomized control trial of video-feedback intervention to promote maternal sensitivity and infant attachment security. *Child: Care, Health and Development*, 35(5), 613-623. <https://doi.org/10.1111/j.1365-2214.2009.00962.x>
- Kasari, C., Siller, M., Huynh, L. N., Shih, W., Swanson, M., Hellemann, G. S., & Sugar, C. A. (2014). Randomized controlled trial of parental responsiveness intervention for toddlers at high risk for autism. *Infant Behavior & Development*, 37(4), 711-721.
<https://doi.org/10.1016/j.infbeh.2014.08.007>
- Keller, H. (2018). Universality claim of attachment theory: Children's socioemotional development across cultures. *Proceedings of the National Academy of Sciences of the United States of America*, 115(45), 11414-11419.
<https://doi.org/10.1073/pnas.1720325115>
- Klein Velderman, M., Bakermans-Kranenburg, M. J., Juffer, F., & van IJzendoorn, M. H. (2006a). Effects of attachment-based interventions on maternal sensitivity and infant attachment: Differential susceptibility of highly reactive infants. *Journal of Family Psychology*, 20(2), 266-274. <https://doi.org/10.1037/0893-3200.20.2.266>
- Klein Velderman, M., Bakermans-Kranenburg, M. J., Juffer, F., van IJzendoorn, M. H., Mangelsdorf, S., & Zevalkink, J. (2006b). Preventing preschool externalizing

- behavior problems through video-feedback intervention in infancy. *Infant Mental Health Journal*, 27(5), 466-493. <https://doi.org/10.1002/imhj>
- Lee, B. R., Ebesutani, C., Kolivoski, K. M., Becker, K. D., Lindsey, M. A., Brandt, N. E., Cammack, N., Strieder, F. H., Chorpita, B. F., & Barth, R. P. (2014). Program and practice elements for placement prevention: A review of interventions and their effectiveness in promoting home-based care. *American Journal of Orthopsychiatry*, 84(3), 244-256. <https://doi.org/10.1037/h0099811>
- Leijten, P., Weisz, J. R., & Gardner, F. (2021). Research strategies to discern active psychological therapy components: A scoping review. *Clinical Psychological Science*, 9(3), 307-322. <https://doi.org/10.1177/2167702620978615>
- Letourneau, N., Tryphonopoulos, P., Giesbrecht, G., Dennis, C. L., Bhogal, S., & Watson, B. (2015). Narrative and meta-analytic review of interventions aiming to improve maternal-child attachment security. *Infant Mental Health Journal*, 36(4), 366-387. <https://doi.org/10.1002/imhj.21525>
- Lukens, E. P., & McFarlane, W. R. (2004). Psychoeducation as evidence-based practice: Considerations for practice, research, and policy. *Brief Treatment and Crisis Intervention*, 4(3), 205-225. <https://doi.org/10.1093/brief-treatment/mhh019>
- Madigan, S., Atkinson, L., Laurin, K., & Benoit, D. (2013). Attachment and internalizing behavior in early childhood: A meta-analysis. *Developmental Psychology*, 49(4), 672-689. <https://doi.org/10.1037/a0028793>
- Mamedova, K., Laurenzi, C. A., Gordon, S., Tomlinson, M., & Fearon, P. (2024). Identifying the common elements of early childhood interventions supporting cognitive development in low- and middle-income countries. *Adversity and Resilience Science*, 55(1), 55-79. <https://doi.org/10.1007/s42844-023-00105-0>

- Mohamed, A. R., Sterkenburg, P., van Rensburg, E., & Schuengel, C. (2023). Adapting Attachment and Biobehavioral Catch-up for infants and young children with intellectual disabilities and developmental delays in South Africa: Reflections and recommendations from local stakeholders. *Infant Mental Health Journal*, 44(1), 54-75. <https://doi.org/10.1002/imhj.22027>
- Mohamed, A. R., Sterkenburg, P., van Rensburg, E., & Schuengel, C. (2021). *The development of a novel supplemental coding system for investigating the practice elements of attachment-based interventions*. [Unpublished manuscript]. <https://doi.org/10.31234/osf.io/bxdyz>
- Moran, G., Pederson, D. R., & Krupka, A. (2005). Maternal unresolved attachment status impedes the effectiveness of interventions with adolescent mothers. *Infant Mental Health Journal*, 26(3), 231-249. <https://doi.org/10.1002/imhj.20045>
- Moretti, M.M., & Connect Clinical Team. (2020). *Connect—parents and caregivers: An attachment based and trauma informed program for parents and caregivers*. [Unpublished manuscript].
- Moretti, M. M., & Peled, M. (2004). Adolescent-parent attachment: Bonds that support healthy development. *Paediatrics & Child Health*, 9(8), 551–555. <https://doi.org/10.1093/pch/9.8.551>
- Mortensen, J. A., & Mastergeorge, A. M. (2014). A meta-analytic review of relationship-based interventions for low-income families with infants and toddlers: Facilitating supportive parent-child interactions. *Infant Mental Health Journal*, 35(4), 336-353. <https://doi.org/10.1002/imhj.21451>
- Moss, E., Dubois-Comtois, K., Cyr, C., Tarabulsy, G. M., St-Laurent, D., & Bernier, A. (2011). Efficacy of a home-visiting intervention aimed at improving maternal sensitivity, child attachment, and behavioral outcomes for maltreated children: A

- randomized control trial. *Development and Psychopathology*, 23(1), 195-210.
<https://doi.org/10.1017/S0954579410000738>
- Mountain, G., Cahill, J., & Thorpe, H. (2017). Sensitivity and attachment interventions in early childhood: A systematic review and meta-analysis. *Infant Behavior and Development*, 46, 14-32. <https://doi.org/10.1016/j.infbeh.2016.10.006>
- Negrao, M., Pereira, M., Soares, I., & Mesman, J. (2014). Enhancing positive parent-child interactions and family functioning in a poverty sample: A randomized control trial. *Attachment & Human Development*, 16(4), 315-328.
<https://doi.org/10.1080/14616734.2014.912485>
- O’Byrne, E., McCusker, C., & McSweeney, S. (2023). The impact of the “Attachment and Biobehavioural Catch-up” program on attachment related parent behavior-A systematic review. *Infant Mental Health Journal*, 44(1), 76-91.
<https://doi.org/10.1002/imhj.22025>
- O’Connor, T. G., Matias, C., Futh, A., Tantam, G., & Scott, S. (2013). Social learning theory parenting intervention promotes attachment-based caregiving in young children: Randomized clinical trial. *Journal of Clinical Child & Adolescent Psychology*, 42(3), 358-370. <https://doi.org/10.1080/15374416.2012.723262>
- Onozawa, K., Glover, V., Adams, D., Modi, N., & Kumar, R. C. (2001). Infant massage improves mother-infant interaction for mothers with postnatal depression. *Journal of Affective Disorders*, 63(1-3), 201-207. [https://doi.org/10.1016/S0165-0327\(00\)00198-1](https://doi.org/10.1016/S0165-0327(00)00198-1)
- Ordway, M. R., Sadler, L. S., Dixon, J., Close, N., Mayes, L., & Slade, A. (2014). Lasting effects of an interdisciplinary home visiting program on child behavior: Preliminary follow-up results of a randomized trial. *Journal of Pediatric Nursing*, 29(1), 3-13.
<https://doi.org/10.1016/j.pedn.2013.04.006>

- Oxford, M. L., Spieker, S. J., Lohr, M. J., & Fleming, C. B. (2016). Promoting First Relationships: Randomized trial of a 10-week home visiting program with families referred to child protective services. *Child Maltreatment*, 21(4), 267-277.
<https://doi.org/10.1177/1077559516668274>
- Peacock, S., Konrad, S., Watson, E., Nickel, D., & Muhajarine, N. (2013). Effectiveness of home visiting programs on child outcomes: A systematic review. *BMC Public Health*, 13, Article 17. <https://doi.org/10.1186/1471-2458-13-17>
- Perrone, L., Imrisek, S. D., Dash, A., Rodriguez, M., Monticciolo, E., & Bernard, K. (2021). Changing parental depression and sensitivity: Randomized clinical trial of ABC's effectiveness in the community. *Development and Psychopathology*, 33(3), 1026-1040. <https://doi.org/10.1017/s0954579420000310>
- Powell, B., Cooper, G., Hoffman, K., & Marvin, B. (2014). *The Circle of Security intervention: Enhancing attachment in early parent-child relationships*. Guilford Press.
- PracticeWise. (2005). *Psychosocial and combined treatments coding manual*. Author.
- Raby, K. L., Freedman, E., Yarger, H. A., Lind, T., & Dozier, M. (2019). Enhancing the language development of toddlers in foster care by promoting foster parents' sensitivity: Results from a randomized controlled trial. *Developmental Science*, 22(2), Article e12753. <https://doi.org/10.1111/desc.12753>
- Roggman, L. A., Boyce, L. K., & Cook, G. A. (2009). Keeping kids on track: Impacts of a parenting-focused Early Head Start program on attachment security and cognitive development. *Early Education & Development*, 20(6), 920-941.
<https://doi.org/10.1080/10409280903118416>
- Sadler, L. S., Slade, A., Close, N., Webb, D. L., Simpson, T., Fennie, K., & Mayes, L. C. (2013). Minding the Baby: Enhancing reflectiveness to improve early health and

- relationship outcomes in an interdisciplinary home-visiting program. *Infant Mental Health Journal*, 34(5), 391-405. <https://doi.org/10.1002/imhj.21406>
- Sajaniemi, N., Makela, J., Salokorpi, T., von Wendt, L., Hamalainen, T., & Hakamies-Blomqvist, L. (2001). Cognitive performance and attachment patterns at four years of age in extremely low birth weight infants after early intervention. *European Child & Adolescent Psychiatry*, 10(2), 122-129. <https://doi.org/10.1007/s007870170035>.
- Siller, M., Hutman, T., & Sigman, M. (2013). A parent-mediated intervention to increase responsive parental behaviors and child communication in children with ASD: A randomized clinical trial. *Journal of Autism and Developmental Disorders*, 43(3), 540-555. <https://doi.org/10.1007/s10803-012-1584-y>
- Siller, M., Swanson, M., Gerber, A., Hutman, T., & Sigman, M. (2014). A parent-mediated intervention that targets responsive parental behaviors increases attachment behaviors in children with ASD: Results from a randomized clinical trial. *Journal of Autism and Developmental Disorders*, 44(7), 1720-1732. <https://doi.org/10.1007/s10803-014-2049-2>
- Slade, A., Holland, M. L., Ordway, M. R., Carlson, E. A., Jeon, S., Close, N., Mayes, L. C., & Sadler, L. S. (2020). Minding the Baby: Enhancing parental reflective functioning and infant attachment in an attachment-based, interdisciplinary home visiting program. *Development and Psychopathology*, 32(1), 123-137. <https://doi.org/10.1017/S0954579418001463>
- Spieker, S. J., Oxford, M. L., Kelly, J. F., Nelson, E. M., & Fleming, C. B. (2012). Promoting First Relationships: Randomized trial of a relationship-based intervention for toddlers in child welfare. *Child Maltreatment*, 17(4), 271-286. <https://doi.org/10.1177/1077559512458176>

- Spillane, N. S., Schick, M. R., Kirk-Provencher, K. T., Nalven, T., Goldstein, S. C., Crawford, M. C., & Weiss, N. H. (2023). Trauma and substance use among indigenous peoples of the United States and Canada: A scoping review. *Trauma, Violence, & Abuse*, 24(5), 3297-3312. <https://doi.org/10.1177/15248380221126184>
- Spruit, A., Goos, L., Weenink, N., Rodenburg, R., Niemeyer, H., Stams, G. J., & Colonnese, C. (2019). The relation between attachment and depression in children and adolescents: A multilevel meta-analysis. *Clinical Child and Family Psychology Review*, 23(1), 54-69. <https://doi.org/10.1007/s10567-019-00299-9>
- Steele, H., Murphy, A., Bonuck, K., Meissner, P., & Steele, M. (2019). Randomized control trial report on the effectiveness of Group Attachment-Based Intervention (GABI): Improvements in the parent-child relationship not seen in the control group. *Developmental Psychopathology*, 31(1), 203-217. <https://doi.org/10.1017/S0954579418001621>
- Steele, M., Steele, H., Bate, J., Knafo, H., Kinsey, M., Bonuck, K., Meisner, P., & Murphy, A. (2014). Looking from the outside in: The use of video in attachment-based interventions. *Attachment & Human Development*, 16(4), 402-415. <https://doi.org/10.1080/14616734.2014.912491>
- St Pierre, R. G., & Layzer, J. I. (1999). Using home visits for multiple purposes: The Comprehensive Child Development Program. *The Future of Children*, 9(1), 134-151.
- Stronach, E. P., Toth, S. L., Rogosch, F., & Cicchetti, D. (2013). Preventive interventions and sustained attachment security in maltreated children. *Development and Psychopathology*, 25(4, Part 1), 919-930. <https://doi.org/10.1017/S0954579413000278>
- Suchman, N. E., DeCoste, C. L., McMahon, T. J., Dalton, R., Mayes, L. C., & Borelli, J. (2017). Mothering from the Inside Out: Results of a second randomized clinical trial

testing a mentalization-based intervention for mothers in addiction treatment.

Development and Psychopathology, 29(2), 617-636.

<https://doi.org/10.1017/S0954579417000220>

Sweet, M. A., & Appelbaum, M. I. (2004). Is home visiting an effective strategy? A meta-analytic review of home visiting programs for families with young children. *Child Development*, 75(5), 1435-1456. <https://doi.org/10.1111/j.1467-8624.2004.00750.x>

Tereno, S., Madigan, S., Lyons-Ruth, K., Plamondon, A., Atkinson, L., Guedeney, N., Greacen, T., Dugravier, R., Saias, T., & Guedeney, A. (2017). Assessing a change mechanism in a randomized home-visiting trial: Reducing disrupted maternal communication decreases infant disorganization. *Development and Psychopathology*, 29(2), 637-649. <https://doi.org/10.1017/S0954579417000232>

Tessier, R., Cristo, M., Velez, S., Giron, M., de Calume, Z. F., Ruiz-Palaez, J. G., Charpak, Y., & Charpak, N. (1998). Kangaroo Mother Care and the bonding hypothesis. *Pediatrics*, 102(2), Article e17. <https://doi.org/10.1542/peds.102.2.e17>

Theule, J., Germain, S. M., Cheung, K., Hurl, K. E., & Markel, C. (2016). Conduct disorder/oppositional defiant disorder and attachment: A meta-analysis. *Journal of Developmental and Life-Course Criminology*, 2(2), 232-255. <https://doi.org/10.1007/s40865-016-0031-8>

Toth, S. L., Rogosch, F. A., Manly, J. T., & Cicchetti, D. (2006). The efficacy of Toddler-Parent Psychotherapy to reorganize attachment in the young offspring of mothers with major depressive disorder: A randomized preventive trial. *Journal of Consulting and Clinical Psychology*, 74(6), 1006-1016. <https://doi.org/10.1037/0022-006X.74.6.1006>

Tschacher, W., Haken, H., & Kyselo, M. (2015). Alliance: A common factor of psychotherapy modeled by structural theory. *Frontiers in Psychology*, 6, Article 421. <https://doi.org/10.3389/fpsyg.2015.00421>

United Nations Conference on Trade & Development/UNCTAD. (2024). *Classifications: Developing and developed regions*.

<https://unctadstat.unctad.org/EN/Classifications.html>

Valades, J., Murray, L., Bozicevic, L., De Pascalis, L., Barindelli, F., Meglioli, A., & Cooper, P. (2021). The impact of a mother-infant intervention on parenting and infant response to challenge: A pilot randomized controlled trial with adolescent mothers in El Salvador. *Infant Mental Health Journal*, 42(3), 400-412.

<https://doi.org/10.1002/imhj.21917>

van Andel, H., Post, W., Jansen, L., Van der Gaag, R. J., Knorth, E., & Grietens, H. (2016).

Optimizing foster family placement for infants and toddlers: A randomized controlled trial on the effect of the foster family intervention. *American Journal of Orthopsychiatry*, 86(3), 332-344. <https://doi.org/10.1037/ort0000162>

van Doesum, K. T. M., Riksen-Walraven, J. M., Hosman, C. M. H., & Hoefnagels, C. (2008).

A randomized controlled trial of home-visiting intervention aimed at preventing relationship problems in depressed mothers and their infants. *Child Development*, 79(3), 547-561. <https://doi.org/10.1111/j.1467-8624.2008.01142.x>

van IJzendoorn, M. H., Schuengel, C., Wang, Q., & Bakermans-Kranenburg, M. J. (2023).

Improving parenting, child attachment, and externalizing behaviors: Meta-analysis of the first 25 randomized controlled trials on the effects of Video-feedback Intervention to Promote Positive Parenting and Sensitive Discipline. *Development and Psychopathology*, 35(1), 241-256. <https://doi.org/10.1017/S0954579421001462>

Visser, L., Evenboer, K. E., Jansen, D. E. M. C., Scholte, R. H. J., Knot-Dickscheit, J.,

Veerman, J. W., Reijneveld, S. A., & van Yperen, T. A. (2018). Identifying practice and program elements of interventions for families with multiple problems: The

- development of a taxonomy. *Children and Youth Services Review*, 95, 64-70.
<https://doi.org/10.1016/j.childyouth.2018.10.030>
- Walls, M., Hautala, D., Cole, A., Kosobuski, L., Weiss, N., Hill, K., & Ozhaawashkodewe'iganiikwe Williams, S. (2022). Socio-cultural integration and holistic health among indigenous young adults. *BMC Public Health*, 22(1), Article 1002. <https://doi.org/10.1186/s12889-022-13395-3>
- Walter, I., Landers, S., Quehenberger, J., Carlson, E., & Brisch, K. H. (2019). The efficacy of the attachment-based SAFE prevention program: A randomized control trial including mothers and fathers. *Attachment & Human Development*, 21(5), 510-531.
<https://doi.org/10.1080/14616734.2019.1582599>
- Weisz, J. R., Chorpita, B. F., Palinkas, L. A., Schoenwald, S. K., Miranda, J., Bearman, S. K., Daleiden, E. L., Ugueto, A. M., Ho, A., Martin, J., Gray, J., Alleyne, A., Langer, D. A., Southam-Gerow, M. A., Gibbons, R. D., & Research Network on Youth Mental Health. (2012). Testing standard and modular designs for psychotherapy treating depression, anxiety, and conduct problems in youth: A randomized effectiveness trial. *Archives of General Psychiatry*, 69(3), 274-282.
<https://doi.org/10.1001/archgenpsychiatry.2011.147>
- Wright, B., & Edginton, E. (2016). Evidence-based parenting interventions to promote secure attachment: Findings from a systematic review and meta-analysis. *Global Pediatric Health*, 3, 1-14. <https://doi.org/10.1177/2333794x16661888>
- Wright, B., Hackney, L., Hughes, E., Barry, M., Glaser, D., Prior, V., Allgar, V., Marshall, D., Barrow, J., Kirby, N., Garside, M., Kaushal, P., Perry, A., & McMillan, D. (2017). Decreasing rates of disorganised attachment in infants and young children, who are at risk of developing, or who already have disorganised attachment. A systematic review

- and meta-analysis of early parenting interventions. *PLoS One*, 12(7), Article e0180858. <https://doi.org/10.1371/journal.pone.0180858>
- Xu, X., Liu, Z., Gong, S., & Wu, Y. (2022). The relationship between empathy and attachment in children and adolescents: Three-level meta-analyses. *International Journal of Environmental Research and Public Health*, 19(3), Article 1391. <https://doi.org/10.3390/ijerph19031391>
- Yagmur, S., Mesman, J., Malda, M., Bakermans-Kranenburg, M. J., & Ekmekci, H. (2014). Video-feedback intervention increases sensitive parenting in ethnic minority mothers: A randomized control trial. *Attachment & Human Development*, 16(4), 371-386. <https://doi.org/10.1080/14616734.2014.912489>
- Yarger, H. A., Bernard, K., Caron, E. B., Wallin, A., & Dozier, M. (2020). Enhancing parenting quality for young children adopted internationally: Results of a randomized controlled trial. *Journal of Clinical Child & Adolescent Psychology*, 49(3), 378-390. <https://doi.org/10.1080/15374416.2018.1547972>
- Yarger, H. A., Hoyer, J. R., & Dozier, M. (2016). Trajectories of change in Attachment and Biobehavioral Catch-up among high-risk mothers: A randomized clinical trial. *Infant Mental Health Journal*, 37(5), 525-536. <https://doi.org/10.1002/imhj.21585>
- Ziguras, S. J., & Stuart, G. W. (2000). A meta-analysis of the effectiveness of mental health case management over 20 years. *Psychiatric Services*, 51(11), 1410-1421. <https://doi.org/10.1176/appi.ps.51.11.1410>

Table 1

Criteria for the inclusion of studies.

Publication Period	January 1998 – December 2022
Population, or participants and conditions of interest	Studies including children of any age.
Interventions or exposures	Caregiver-focused interventions aimed at addressing attachment security/organisation in the child, and/or caregiver sensitivity.
Outcomes of interest	1. Attachment security or organisation using any method of assessment. 2. Caregiver sensitivity using any method of assessment (including outcomes related to parent-child interactions).
Setting	Any
Study designs	Randomised controlled/clinical trials (RCT)—only studies which included a process of full randomisation of participants into an intervention group and at least one control condition. (Partially randomised studies were excluded i.e. a study that randomly assigned participants to an intervention group and a control group, but also included a non-randomised comparison group in the analysis.)
Language	Only articles published in English.

Figure 1

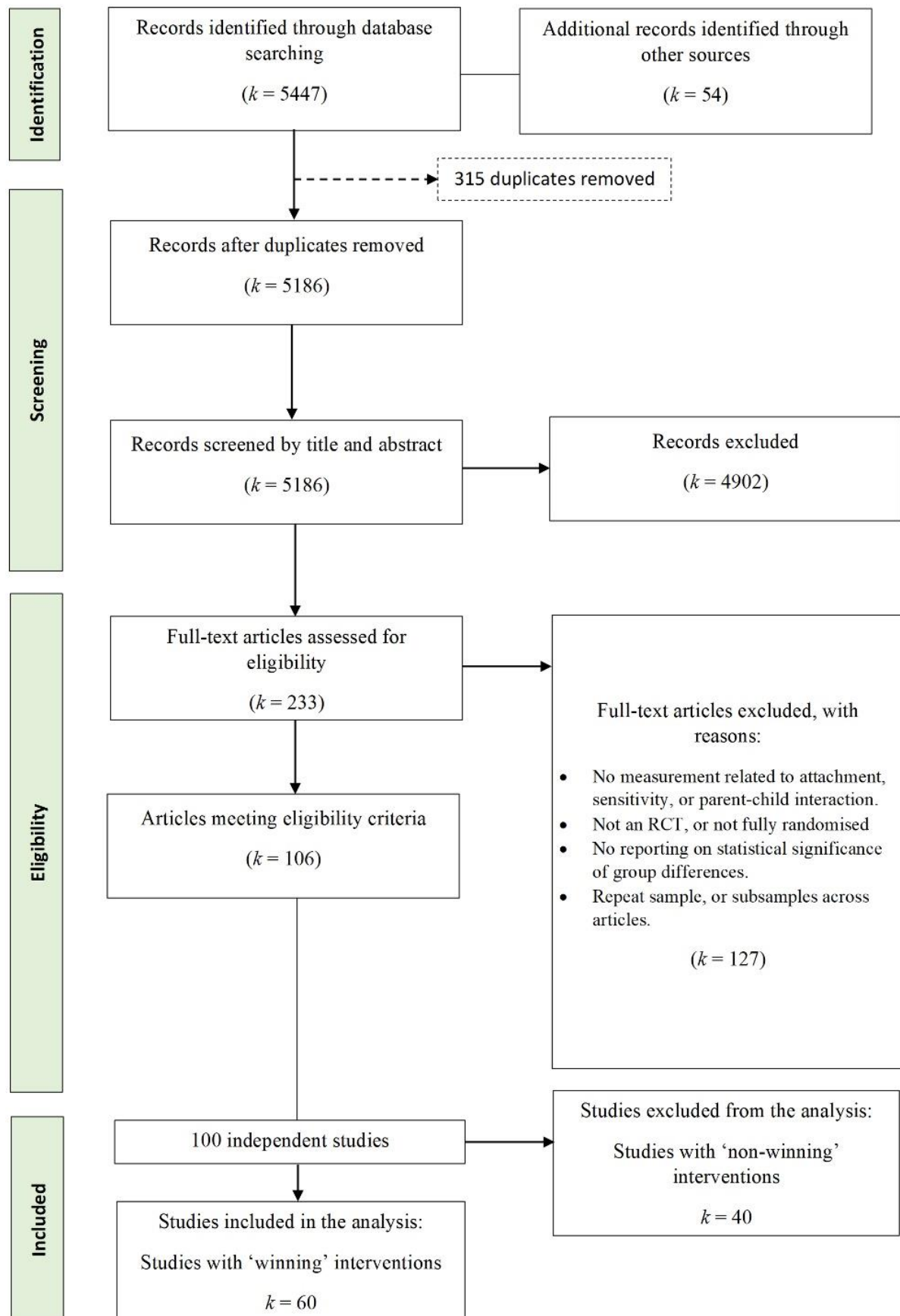
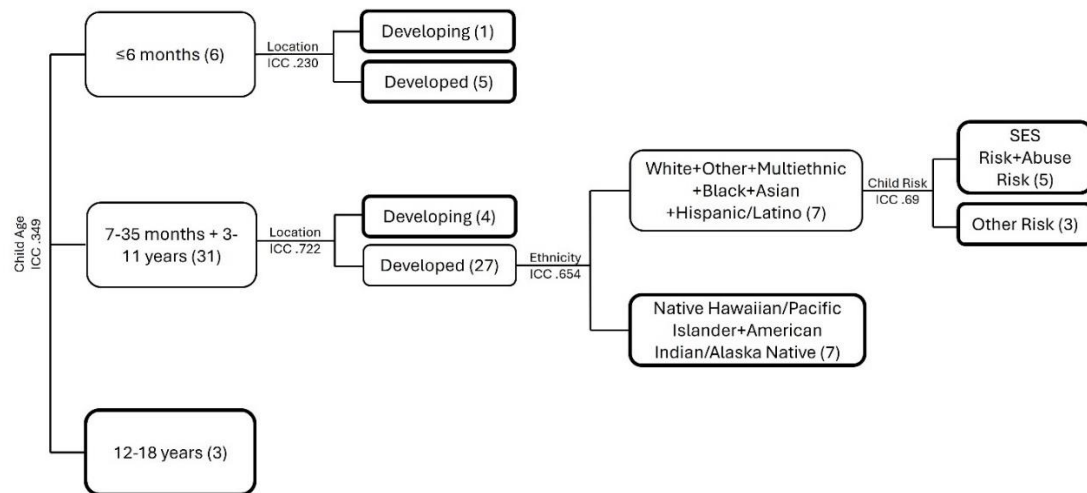
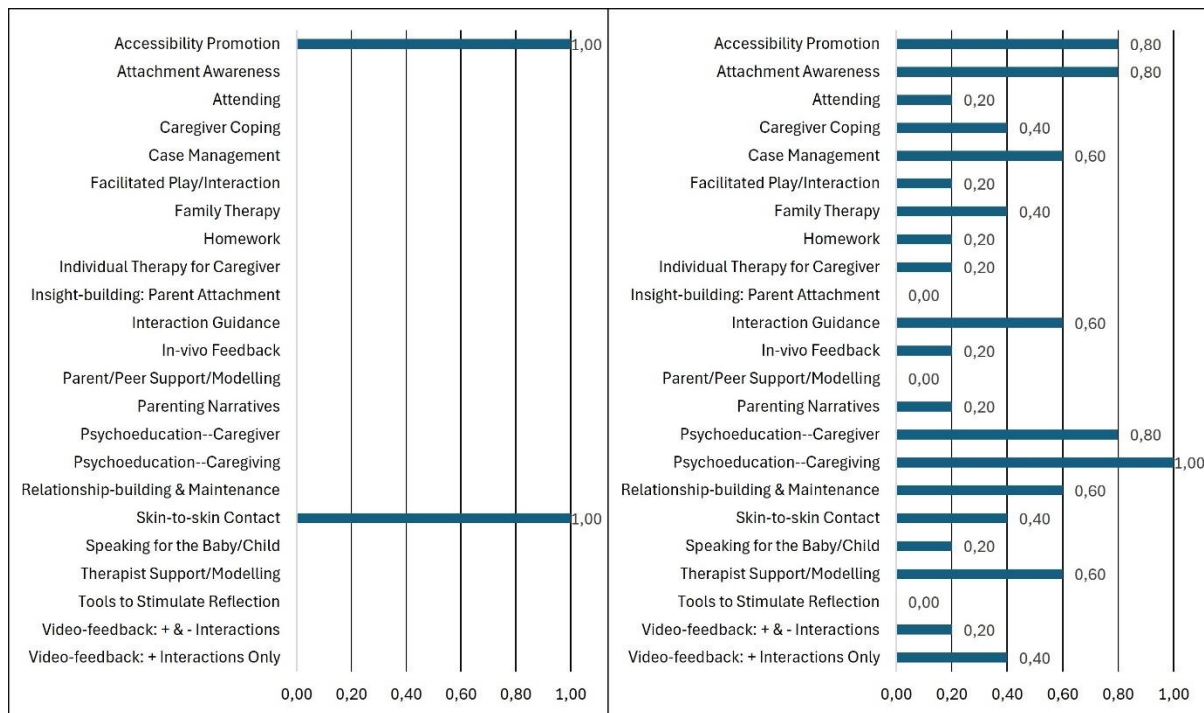


Figure 2



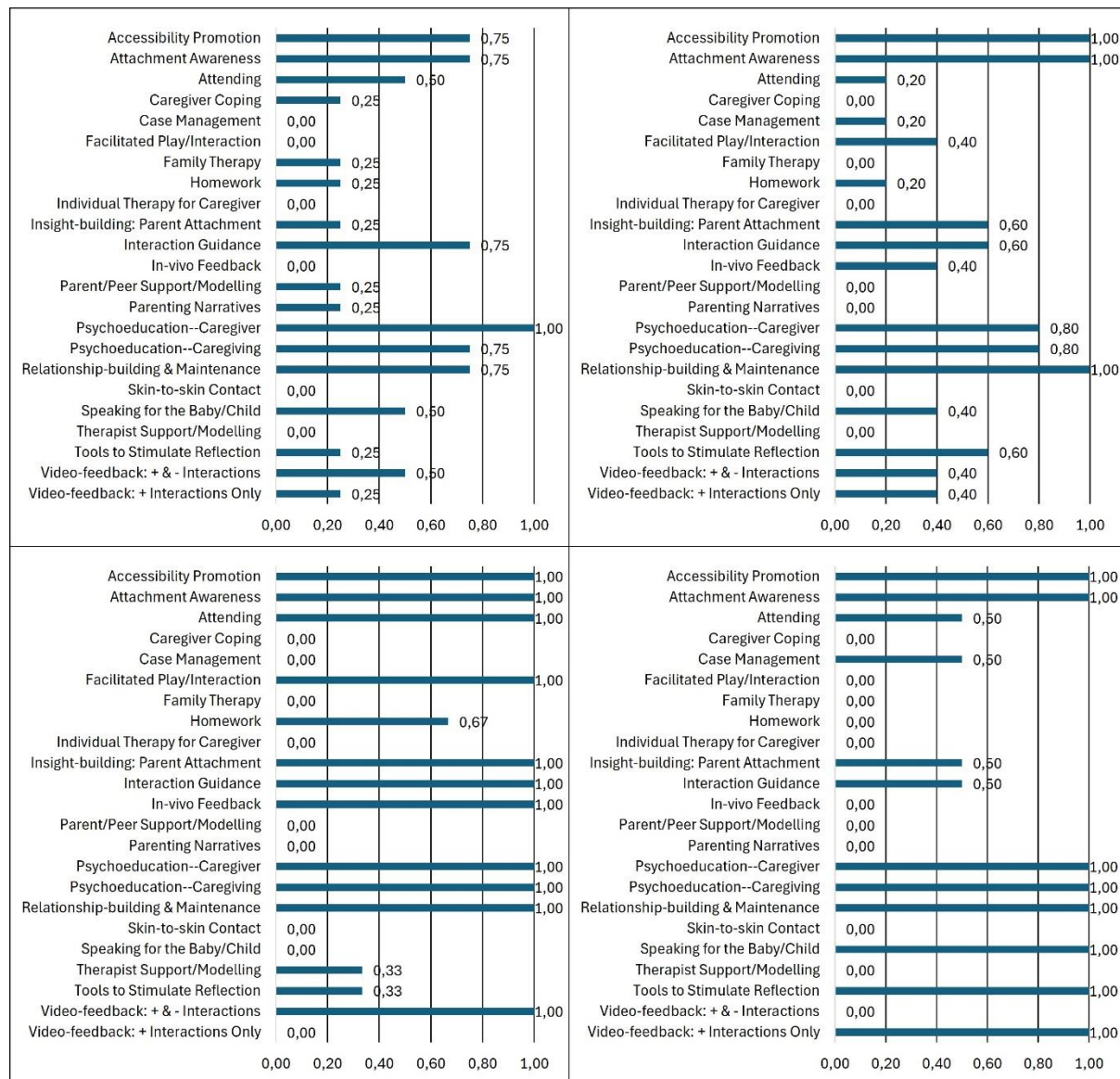
Note: Dendrogram resulting from the .8-.899 ICC Band merge criterion. ICC figures are the lowest average ICCs amongst categories, used to determine branching. Bold outlines indicate terminal nodes in the dendrogram and figures in parentheses indicate the number of study groups within each node.

Figure 3



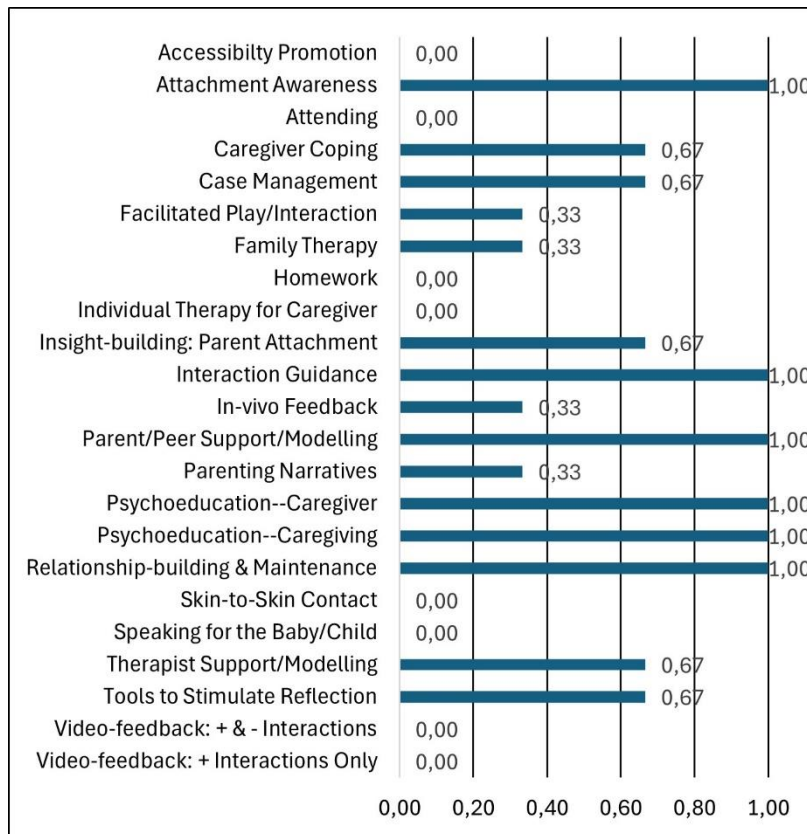
Note. Left panel: Developing ($n = 1$). Right panel: Developed ($n = 5$).

Figure 4



Note. Top Left Panel: Developing ($n = 4$). Top Right Panel: Developed; White+Black/African American+Asian+Hispanic/Latino+Other/Unknown+Multiethnic; SES+Abuse Risk ($n = 5$). Bottom Left Panel: Developed; White+Black/African American+Asian+Hispanic/Latino+Other/Unknown+Multiethnic; Other Risk ($n = 3$). Bottom Right Panel: Developed; Native Hawaiian/Pacific Islander+American Indian/Alaska Native ($n = 7$).

Figure 5



Note. $n = 3$

Figure Captions:

Figure 1: PRISMA Flow Diagram of the Literature Search and Screening Process

Figure 2: Dendrogram

Figure 3: Practice Element Profile: ≤ 6 months

Figure 4: Practice Element Profiles: 7-35 months + 3-11 years

Figure 5: Practice Element Profile: 12-18 years

SUPPLEMENTARY MATERIAL: ARTICLE 1

Table S1

Practice Elements and Definitions

Practice Element	Definition
<i>Original PracticeWise System</i>	
Accessibility Promotion	Any strategy used to make services convenient and accessible or to proactively enhance treatment participation. This might include “appointment reminders” (e.g., telephone confirmations, reminder letters, web-based treatment reminders (incl. email contacts), text messages), availability of on-site child care (“child care”), after-hours scheduling, drop-in appointments (“flexible scheduling”), holding treatment sessions at a local school, the family’s home, or other convenient site (“location”), and transportation to appointments, bus tokens, gas money (“transportation”).
Attending	Exercises involving the youth and caretaker playing together in a specific manner to facilitate their improved verbal communication and nonverbal interaction. Typically the caretaker is instructed to provide a running commentary or description on the youth’s activities, and is instructed not to give commands, criticize, or question the youth. Attending can be done with the therapist observing, or assigned as homework.
Case Management	The coordination and oversight of multiple therapeutic supports, including both formal and informal, for an identified youth.
Caregiver Coping	Exercises or strategies designed to enhance caretakers’ ability to deal with stressful situations, exclusive of formal interventions targeting one or more caretaker (which are coded as individual therapy for caregiver, marital therapy, and/or communications skills as appropriate).
Family Therapy	A set of approaches designed to shift patterns of relationships and interactions within a family, typically involving interaction and exercises with the youth, the caretakers, and sometimes siblings. Sometimes family therapy is performed with a single client, but uses the same approaches to shifting patterns of family interactions that are part of more traditional, multiclient family therapy. Just having sessions with the family is not sufficient to code this “Family Therapy” code, as that itself would just format related information. Again, the “Family Therapy” code is designed to capture family interventions aimed at relational restructuring between the parent and child, as well as any other relevant family members.
Individual Therapy for Caregiver	Any therapy designed directly to target individual (non-dyadic) psychopathology in one or more of the youth’s caretakers. If the therapy for caretakers involves marital therapy or communication skills (both of which are dyadic), those are not coded here, unless there are additional services for individual caretaker psychopathology, in which case all that apply should be coded.
Psychoeducation—Caregiver	The formal review of information with the caretaker(s) (Socratic or otherwise) about the development of the child’s problem and its

relation to a proposed intervention. This often involves an emphasis on the caretaker's role in either or both. This can include multiple media (e.g., videotape about mental health problem) and statements such as, "parents met with therapists to get information on therapy."

Attachment-based Adaptation

Attachment Awareness	Code this when the manual specifies that the therapist provides suggestions/recommendations/guidance to the parent on attachment-related constructs. "Attachment-related constructs" would include matters relating to the parent's sensitivity and responsiveness to the child's cues and needs. This includes joint observation of the child/infant during intervention sessions (note, this does not refer to parent-child interaction during sessions), and raising the parent's awareness of the importance of attachment, and healthy parent-child relationships.
Facilitated Play/Interaction	This is coded when the therapist directly facilitates play and/or interaction between the parent and infant/child during the intervention sessions. This does not refer to the therapist playing with the baby or child, nor does it refer to the therapist demonstrating to the parent how to play with the child. This latter practice would be coded as "Therapist Support/Modelling (Direct Demonstration)". Rather, it involves the parent playing with the child while the therapist comments and facilitates the parent's positive interaction during his/her play with the child.
Homework	This is coded with the parent is assigned a task or exercise to do in between intervention sessions. These tasks/exercises are then usually reviewed in the next intervention session.
Insight-building: Parent Attachment	Strategies used by the therapist to facilitate the parent gaining insight into themselves and how their own childhood experiences may be impacting on how they parent their own child. This includes developing an awareness into their attachment representations, or become aware of the "shark music" or "ghosts in the nursery". Included here are strategies used to facilitate for the parent their capacity to mentalise themselves.
Interaction Guidance	General information offered by the therapist on interaction and building a relationship with the child. Also included here may be information about how to offer emotional or practical support to the child as well as aspects on how to improve communication with the child. The distinguishing feature here is that this relates specifically to information sharing with the parent, and does not involve any feedback on observations made of the parent-child interaction (In Vivo Feedback), not does it involve the therapist directly facilitating interactions (Facilitated Play/Interaction).
In-vivo Feedback	This is coded when the therapist provides direct feedback to the parent on the parent-child interaction in real-time and as it happens in the presence of the therapist. This is sometimes referred to as "in-the-moment" commentary.
Parenting Narratives	This refers to parents being given an opportunity—whether in an individual or group context—to convey and reflect on their own difficult parenting experiences in a safe space. Also within this domain are techniques used to shift/restructure the parent's mental representation of the child/parent-child relationship.

Parent/Peer Support/Modelling	This is coded in the context of interventions using parent groups where parents share their experiences of parenting and learn from one another's parenting experiences in a supportive environment.
Psychoeducation—Caregiving	Coded here are therapist suggestions/recommendations and guidance around general parenting practices. Included here would be guidance around child development and highlighting the importance of interaction with the child/baby in caregiving and child development. Guidance on issues such as the baby's needs, crying, feeding, sleeping etc should be coded here. Guidance can be either verbal or can involve the use of videos or leaflets/brochures etc.
Relationship-building & Maintenance	This encompasses practices where the parent learns how to be in relationship through being in relationship with the therapist. This does not involve direct modelling of specific behaviours (e.g. therapist demonstrating for the parent how to soothe the baby), but is implicit in the therapeutic relationship (e.g. the therapist adopts a holding and empathic stance so that the parent feels contained). This can also be referred to as the client internalising the therapeutic relationship. The therapist's use of basic counselling skills in a reflective discussion with the parent that contains warmth, empathy, and positive regard in the absence of advice-giving, problem-solving, recommendations or suggestions from the therapist. This is also coded when the manual states that--usually in the beginning of treatment--the therapist takes time specifically to get to know the parent/family in order to establish a therapeutic alliance, or to build the therapeutic relationship so that the treatment is carried out on the basis of a safe, secure and holding relationship. Some may refer to this as establishing a secure base for the parent. Therapist encouragement of the parent, and the celebration and consolidation of gains/progress are also coded here, as well as the reinforcement of parent success.
Skin-to-skin Contact	This is coded when any form of skin-to-skin contact, specifically between parent and infant/child, is used as a distinct technique in the manual. This would include, for example, practices such as baby massage and kangaroo mother care. Importantly, this goes beyond routine contact that might happen during play or general physical interaction i.e. the practice must be distinctive.
Speaking for the Baby/Child	This applies when the therapist offers to the parent suggestions of what the infant/child might be thinking or feeling at any given moment during intervention sessions. This is coded when the manual requires the therapist to speak on behalf of the child (i.e. from the child's perspective). Also included here are instances when the therapist facilitates the caregiver's in-vivo verbalisation their child's feeling/needs/motivations etc (i.e. facilitates the caregiver's mentalising of the child).
Therapist Support/Modelling (Direct Demonstration)	Here, code any technique that involves the therapist directly demonstrating specific desired behaviours to the parent. For example, if the description in either the study or the manual states that the therapist demonstrated for the parent how to play with the infant/child, or demonstrated for the parent how to respond to the child's distress. This would not be coded if the therapist simply instructed the parent, or made suggestions/recommendations to the parent on how to interact with the child--In this instance, code "Psychoeducation-Parenting" instead.

Tools to Stimulate Reflection

This is coded when the intervention requires the use of stimulus materials/tools to stimulate reflective discussion or exploration for the parent. This would include the use of DVDs, pamphlets, brochures, questionnaires, forms, activity sheets etc. Note that this does not refer to fidelity assessments, or research assessments. This refers specifically to the use of such tools with the purpose of stimulating exploration or discussion around particular areas such as, for example, the parent's own attachment history, or experiences of being parented. These are tools built into the intervention itself not the measures used to assess outcomes in terms of the research design of the study. If brochures were merely handed out for information/education purposes and not used for stimulus purposes, this would not be coded here and would instead be coded as "Psychoeducation-Parenting".

Video-feedback: Positive Interactions Only

Code this when video material of the parent and child interacting together is used in the intervention. This would involve video-recording interactions, and the therapist reviewing only positive interactions in these recordings with the parent. Note that using generic/stock videos, or DVDs etc should not be coded here, and should be coded as "Tools to stimulate reflection/insight" instead.

Video-feedback: Positive & Negative Interactions

Code this when video material of the parent and child interacting together is used in the intervention. This would involve video-recording interactions, and the therapist reviewing both positive and negative interactions in these recordings with the parent. Note that using generic/stock videos, or DVDs etc should not be coded here, and should be coded as "Tools to stimulate reflection" instead, if applicable.

Note: Practice element definitions for the original PracticeWise system have been reproduced from the PracticeWise manual (PracticeWise, 2005).

Table S2

Overview of Included Studies and Interventions

Authors & Year	Intervention	Winning Outcome ¹	Child Age Category	Ethnicity Reported	Location	Risk Status Categories
Agha Mohammad Hasani et al. (2020)	Fordyce Happiness Training	Parent-Child Interaction	3-11 years	No	Developing (Iran)	NR
Akai et al. (2008)	My Baby & Me	Sensitivity Parent-Child Interaction	≤6 months	No	Developed (USA)	NR
Alsancak-Akbulut et al. (2021)	Video-feedback Intervention to Promote Positive Parenting and Sensitive Discipline	Sensitivity	7-35 months	No	Developing (Turkey)	SES Risk
Alvarenga et al. (2020)	Maternal Sensitivity Programme	Sensitivity	NR	No	Developing (Brazil)	NR
Ammaniti et al. (2006)	Home Visiting Programme	Sensitivity	NR	No	Developed (Italy)	Other Risk
Ammerman et al. (2022)	Family Foundations Home Visiting	Sensitivity	NR	No	Developed (USA)	Abuse Risk SES Risk Other Risk
Armstrong et al. (2000)	Nurse Home Visits	Sensitivity	≤6 months	No	Developed (Australia)	NR
Bakermans-Kranenburg et al. (1998)	Video-feedback Intervention	Sensitivity	NR	No	Developed (Netherlands)	NR
Barlow et al. (2007)	Family Partnership Model	Sensitivity Parent-Child Interaction	NR	No	Developed (UK)	Abuse Risk SES Risk Other Risk
Barone et al. (2018)	Video-feedback Intervention to Promote	Sensitivity	7-35 months	No	Developed (Italy)	NR

Barone et al. (2021a)	Positive Parenting—Foster Care/Adoption Video-feedback Intervention to Promote Positive Parenting and Sensitive Discipline	Sensitivity	7-35 months	Yes	Developing (Colombia)	SES Risk
Barone et al. (2021b) ³	Connect for Parents	Attachment	12-18 years	No	Developed (Italy)	SES Risk
Barone et al. (2021b) ³	Connect for Parents	Attachment	12-18 years	No	Developed (Italy)	SES Risk
Berlin et al. (2018)	Attachment and Biobehavioral Catchup-Infant	Sensitivity	7-35 months	No	Developed (USA)	Abuse Risk SES Risk
Bernard et al. (2012)	Attachment and Biobehavioral Catchup-Infant	Attachment	7-35 months	No	Developed (USA)	Abuse Risk SES Risk
Bick & Dozier (2013)	Attachment and Biobehavioral Catchup-Infant	Sensitivity	7-35 months	No	Developed (USA)	Abuse Risk SES Risk
Blizzard et al. (2018)	Infant Behaviour Programme	Sensitivity	7-35 months	No	Developed (USA)	SES Risk
Booth-LaForce et al (2022)	Promoting First Relationships	Sensitivity	7-35 months	Yes	Developed (USA)	SES Risk
Borelli et al. (2022)	Relational Savouring	Sensitivity	7-35 months	Yes	Developed (USA)	SES Risk
Cicchetti et al. (2006) & Stronach et al. (2013) ²	Infant-Parent Psychotherapy	Attachment	NR	No	Developed (USA)	Abuse Risk SES Risk
Cooper et al. (2009)	Thula Sana (based on <i>The Social Baby</i>)	Attachment Sensitivity	NR	Yes	Developing (South Africa)	SES Risk

Dehghani et al. (2014)	Circle of Security	Attachment	7-35 months	No	Developing (Iran)	NR
Dozier et al. (2009)	Attachment and Biobehavioral Catchup-Infant	Attachment	7-35 months	No	Developed (USA)	Abuse Risk
Dubois-Comtois et al. (2017)	Attachment Video-feedback Interventions	Sensitivity	7-35 months	No	Developed (Canada)	Abuse Risk SES Risk
Ekrami et al. (2020)	Individual & Group Counselling	Attachment	NR	No	Developing (Iran)	SES Risk Other Risk
Flierman et al. (2016)	ToP+ Programme	Sensitivity Parent-Child Interaction	NR	No	Developed (Netherlands)	SES Risk
Heinicke et al. (1999) & Heinicke et al. (2001) ²	UCLA Family Development Project intervention	Attachment Sensitivity	NR	No	Developed (USA)	SES Risk
Hoegler et al. (2022)	Family Communication Project	Attachment	12-18 years	No	Developed (USA)	NR
Hoffenkamp et al. (2015)	Video Interaction Guidance	Sensitivity	NR	No	Developed (Netherlands)	Other Risk
Jangjoo et al. (2021)	Group Counselling	Attachment	NR	No	Developing (Iran)	Other Risk
Kalinauskiene et al. (2009)	Video-feedback Intervention to Promote Positive Parenting and Sensitive Discipline	Sensitivity	≤6 months	No	Developed (Lithuania)	NR
Kasari et al. (2014)	Focussed Playtime Intervention	Sensitivity	7-35 months	Yes	Developed (USA)	Other Risk

Klein Velderman et al. (2006a) & Klein Velderman et al. (2006b) ²	Video-feedback Intervention to Promote Positive Parenting	Sensitivity	7-35 months	No	Developed (Netherlands)	NR
Moran et al. (2005)	Home-visiting intervention involving video-feedback	Sensitivity	NR	No	Developed (Canada)	Abuse Risk SES Risk Other Risk
Moss et al. (2011)	Attachment Video Intervention/Generations	Sensitivity	3-11 years	No	Developed (Canada)	Abuse Risk SES Risk
Negrao et al. (2014)	Video-feedback Intervention to Promote Positive Parenting and Sensitive Discipline	Sensitivity	7-35 months	No	Developed (Portugal)	Abuse Risk SES Risk
O'Connor et al. (2013)	Incredible Years Programme	Sensitivity	3-11 years	No	Developed (UK)	SES Risk
Onozawa et al. (2001)	Infant Massage	Parent-Child Interaction	≤6 months	No	Developed (UK)	Other Risk
Oxford et al. (2016)	Promoting First Relationships	Sensitivity	7-35 months	Yes	Developed (USA)	Abuse Risk SES Risk
Perrone et al. (2021)	Attachment and Biobehavioral Catchup-Infant	Sensitivity	7-35 months	No	Developed (USA)	Abuse Risk SES Risk
Raby et al. (2019)	Attachment and Biobehavioral Catchup-Toddler	Sensitivity	3-11 years	Yes	Developed (USA)	Abuse Risk SES Risk Other Risk
Roggman et al. (2009)	Bear River Early Head Start Programme	Attachment	NR	No	Developed (USA)	SES Risk Other Risk
Sadler et al. (2013) & Ordway et al. (2014) ²	Minding the Baby	Attachment	7-35 months	No	Developed (USA)	Abuse Risk

Sajaniemi et al. (2001)	Occupational Therapy visits	Attachment	NR	No	Developed (Finland)	Other Risk
Siller et al. (2013) & Siller et al. (2014) ²	Focussed Playtime Intervention	Attachment Sensitivity	3-11 years	No	Developed (USA)	SES Risk Other Risk
Slade et al. (2020)	Minding The Baby	Attachment	NR	No	Developed (USA)	Abuse Risk SES Risk
Spieker et al. (2012)	Promoting First Relationships	Sensitivity	7-35 months	Yes	Developed (USA)	Abuse Risk SES Risk
Steele et al. (2019)	Group Attachment-based Intervention	Sensitivity	NR	No	Developed (USA)	Abuse Risk SES Risk
St Pierre & Layzer (1999)	Comprehensive Child Developmental Programme	Parent-Child interaction	NR	Yes	Developed (USA)	SES Risk Other Risk
Suchman et al. (2017)	Mothering from the Inside Out	Sensitivity	7-35 months	No	Developed (USA)	Abuse Risk SES Risk Other Risk
Tereno et al. (2017)	Compétences parentales et Attachement dans la Petite Enfance: Diminution des risques liés aux troubles de santé mentale et Promotion de la résilience project (CAPEDP)	Attachment Sensitivity	7-35 months	No	Developed (France)	SES Risk Other Risk
Tessier et al. (1998)	Kangaroo Mother Care	Sensitivity	≤6 months	No	Developing (Colombia)	Other Risk
Toth et al. (2006)	Toddler-Parent Psychotherapy	Attachment	7-35 months	No	Developed (USA)	Other Risk

Valades et al. (2021)	Crianza Temprana/Early Parenting (based on Thula Sana)	Sensitivity	NR	No	Developing (El Salvador)	SES Risk Other Risk
van Andel et al. (2016)	Foster Family Intervention	Sensitivity Parent-Child Interaction	7-35 months	No	Developed (Netherlands)	Abuse Risk
van Doesum et al. (2008)	Home-visiting intervention	Attachment Sensitivity	≤6 months	No	Developed (Netherlands)	SES Risk Other Risk
Walter et al. (2019)	Secure Attachment Family Education	Attachment	NR	No	Developed (Germany)	Other Risk
Yagmur et al. (2014)	Video-feedback Intervention to Promote Positive Parenting and Sensitive Discipline—Turkish Minorities	Sensitivity	7-35 months	No	Developed (Netherlands)	NR
Yarger et al. (2016)	Attachment and Biobehavioral Catch-up-Infant	Sensitivity	7-35 months	Yes	Developed (USA)	Abuse Risk SES Risk
Yarger et al. (2020)	Attachment and Biobehavioral Catchup-Infant	Sensitivity	7-35 months	Yes	Developed (USA)	Other Risk

NR=Not Reported

¹Outcomes pertaining to the current review (i.e. child attachment outcomes; parenting outcomes; interaction outcomes)

²Where two papers are listed together, the second paper reports on follow-up data. Therefore, although separate publications, the papers report on data from the same study sample just at different points in time. They are therefore listed together.

³Data reported separately for two groups in one article. Hence, this was extracted as two studies.

Figure S1

Overall Methodological Quality Assessment Ratings ($n = 60$)

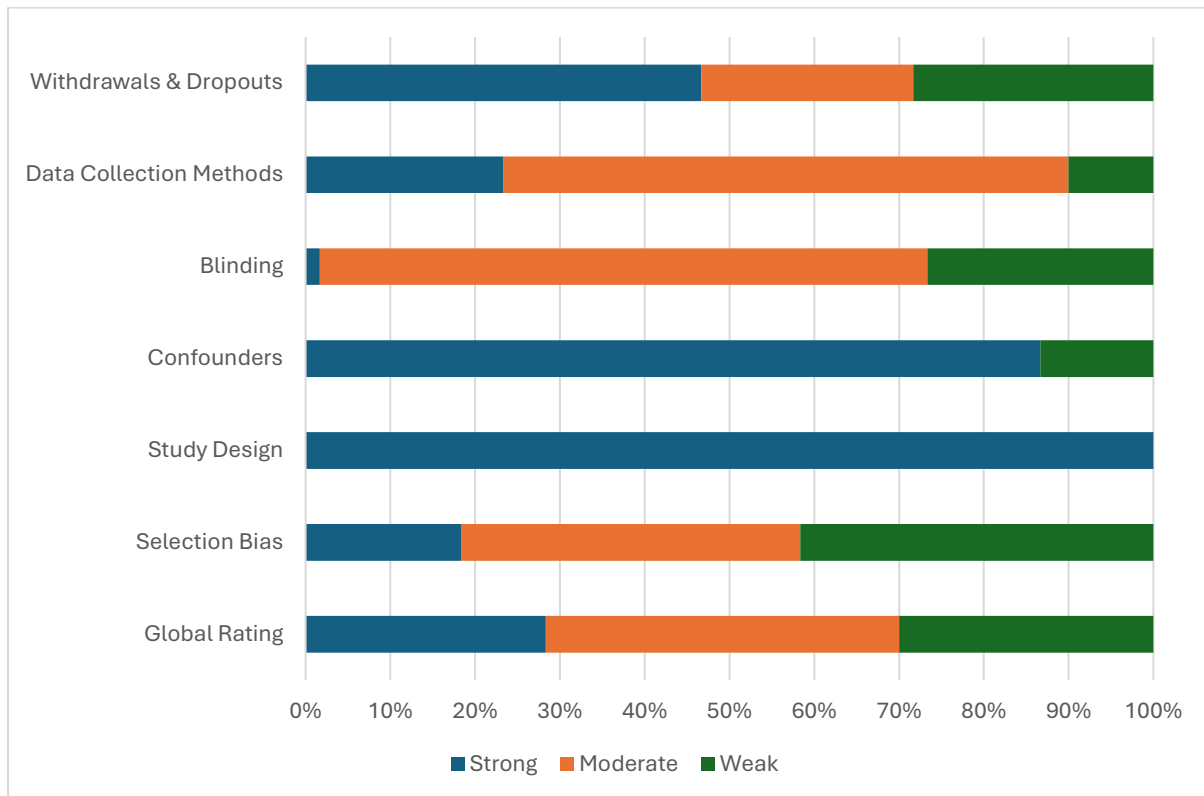


Figure S2

Methodological Quality Assessments: Domain-level Ratings per Study

Study	Global Rating	Selection Bias	Study Design	Confounders	Blinding	Data Collection Methods	Withdrawals & Dropouts
<i>Agha Mohammad Hasani et al. (2020)</i>							
<i>Akai et al. (2008)</i>							
<i>Alsancak-Akbulut et al. (2021)</i>							
<i>Alvarenga et al. (2020)</i>							
<i>Ammaniti et al. (2006)</i>							
<i>Ammerman et al. (2022)</i>							
<i>Armstrong et al. (2000)</i>							
<i>Bakermans-Kranenburg et al. (1998)</i>							
<i>Barlow et al. (2007)</i>							
<i>Barone et al. (2018)</i>							
<i>Barone et al. (2021a)</i>							
<i>Barone et al. (2021b)</i>							
<i>Barone et al. (2021b)</i>							
<i>Berlin et al. (2018)</i>							
<i>Bernard et al. (2012)</i>							
<i>Bick & Dozier (2013)</i>							
<i>Blizzard et al. (2018)</i>							
<i>Booth-LaForce et al. (2022)</i>							
<i>Borelli et al. (2022)</i>							
<i>Cicchetti et al. (2006) & Stronach et al. (2013)</i>							
<i>Cooper et al. (2009)</i>							
<i>Dehghani et al. (2014)</i>							

<i>Dozier et al. (2009)</i>							
<i>Dubois-Camtois et al. (2017)</i>							
<i>Ekrami et al. (2020)</i>							
<i>Flierman et al. (2016)</i>							
<i>Heinicke et al. (1999) & Heinicke et al. (2001)</i>							
<i>Hoegler et al. (2022)</i>							
<i>Hoffenkamp et al. (2015)</i>							
<i>Jangjoo et al. (2021)</i>							
<i>Kalinauskiene et al. (2009)</i>							
<i>Kasari et al. (2014)</i>							
<i>Klein Velderman et al (2006a) & Klein Velderman et al (2006b)</i>							
<i>Moran et al. (2005)</i>							
<i>Moss et al. (2011)</i>							
<i>Negrao et al. (2014)</i>							
<i>O'Connor et al. (2013)</i>							
<i>Onozawa et al. (2001)</i>							
<i>Oxford et al. (2016)</i>							
<i>Perrone et al. (2021)</i>							
<i>Raby et al. (2019)</i>							
<i>Roggman et al. (2009)</i>							
<i>Sadler et al. (2013) & Ordway et al. (2014)</i>							
<i>Sajaniemi et al. (2001)</i>							
<i>Siller et al. (2013) & Siller et al. (2014)</i>							
<i>Slade et al. (2020)</i>							

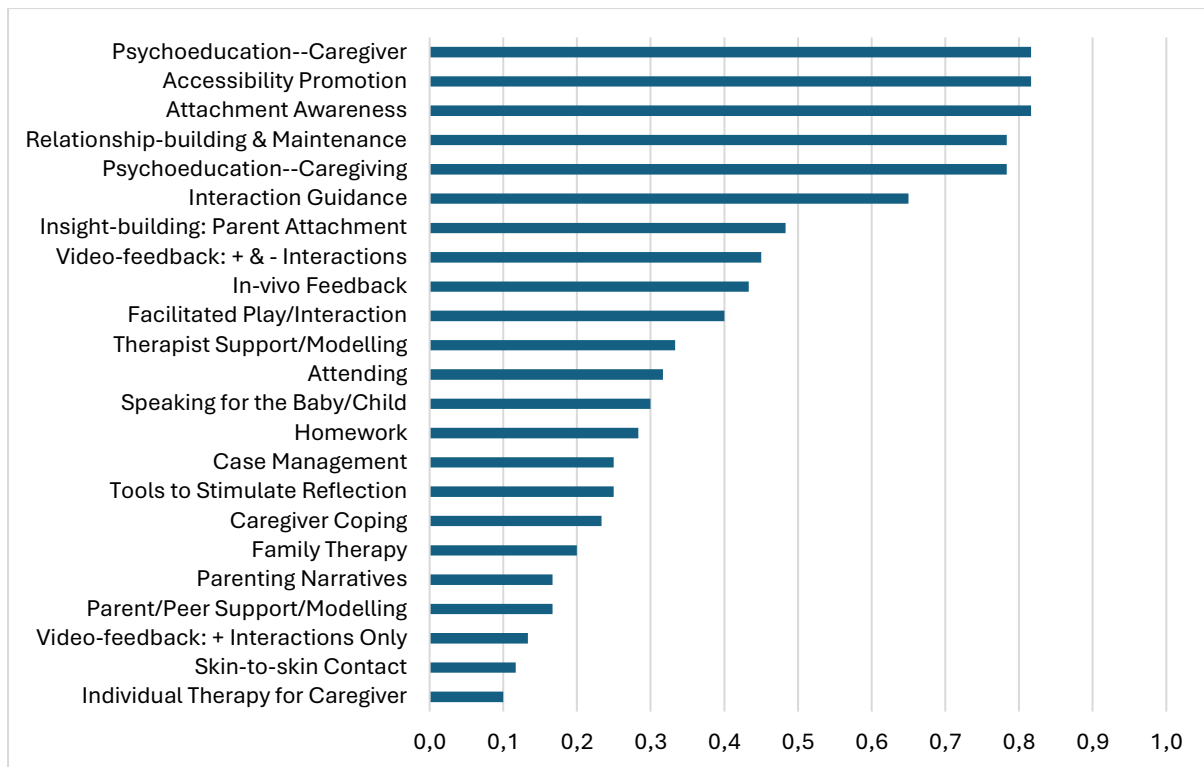
<i>Spieker et al. (2012)</i>							
<i>Steele et al. (2019)</i>							
<i>St Pierre & Layzer (1999)</i>							
<i>Suchman et al. (2017)</i>							
<i>Tereno et al. (2017)</i>							
<i>Tessier et al. (1998)</i>							
<i>Toth et al. (2006)</i>							
<i>Valades et al. (2021)</i>							
<i>van Andel et al. (2016)</i>							
<i>van Doesum et al. (2008)</i>							
<i>Walter et al. (2019)</i>							
<i>Yagmur et al. (2014)</i>							
<i>Yarger et al. (2016)</i>							
<i>Yarger et al. (2020)</i>							

Key:

Strong	Moderate	Weak

Figure S3

Overall Practice Element Profile ($n = 60$)



2.2 Article 2

Article Title: Parenting children with intellectual disabilities in Gauteng, South Africa: Caregiving challenges, current care, and needs.

Journal: *Intellectual and Developmental Disabilities*

Submission Status: Submitted (under review)

Required Length: Submissions should not exceed 30 pages, all-inclusive.

Current Length: 30 pages, including all components.

2.2.1 Author Submission Guidelines: *Intellectual and Developmental Disabilities*

The author submission guidelines were retrieved from the journal's [website](#).

2.2.1.1 General Information

Intellectual and Developmental Disabilities (IDD) uses a Web-based manuscript submission and peer-review system called PeerTrack. Manuscripts must be submitted electronically to www.editorialmanager.com/idd. All manuscripts are peer-reviewed by anonymous reviewers selected by the Editor or an Associate Editor. IDD strives towards fairness, courteousness, and constructive feedback during the review process. The initial review process ordinarily takes 8 to 10 weeks, and revisions are often requested.

Corresponding authors who require assistance in submitting their manuscripts through PeerTrack should contact the editorial office via e-mail (hewit005@umn.edu). PeerTrack is able to convert most word-processing files, but it is recommended that authors upload manuscripts that were created using MS Word if possible.

The submission process has several steps:

- **Technical Check:** This process takes 1-2 weeks after manuscript is submitted. If there are issues with APA7 formatting, the abstract length, identifying information, manuscript length, or other issues the manuscript will be returned to the author to have these basic issues addressed and the manuscript will need to be changed based on the initial feedback and resubmitted.
- **Initial Peer Review:** Once the technical check is complete, manuscripts are assigned to at least two external peer reviewers, typically within 2-3 weeks. It is sometimes difficult to find reviewers with the appropriate content expertise and availability to review a given article, and this added time to find additional peer reviewers can extend the time it takes for an article to move through the review stage. Once the reviewers have agreed to review the manuscript, they have 30 days to submit their objective review. Following the initial peer review, revisions are almost always requested. Outcomes from the peer review process include *Accept*, *Accept with minor revisions*, *Accept with major revisions*, or *Reject*.
- **Revision Following Initial Peer Review:** Following the initial peer review, authors are given the opportunity to revise their manuscripts. Once received, revised manuscripts are assigned to the editor or an associate editor and go back out for peer reviewers within 2-3 weeks. They are instructed to review the revisor letter and the revised manuscript to determine if the concerns identified in the initial review have been attended to in a satisfactory manner.

Outcomes from the peer review process for revised manuscripts include *Accept*, *Accept with minor revisions*, *Accept with major revisions*, or *Reject*.

- **Final Determination:** Once the peer review process has concluded with a determination that the manuscript should be accepted, the author is notified by the Editor within 2 weeks.
- **Following Notification of Acceptance:** Once manuscripts have been accepted, they go into a queue for publication in the journal. The publisher (AAIDD) will reach out to the authors for completion of agreements and a pre-publication final review of the copyedited manuscript. All accepted articles are posted on the AAIDD pre-publication website as their anticipated issue approaches. They remain there until they are in the print journal.

Potential authors should carefully read the editorial policy. All manuscripts are peer reviewed. Manuscripts are judged on research quality, relevance to policy or practice, potential reader interest, originality, and clarity of writing. Research papers based on quantitative, qualitative, and mixed methods analyses are reviewed based on standards appropriate to the methodology used in the study. Other submissions are reviewed according to scholarly and best practice standards. Authors should address the implications of their findings for policy and practice. Theoretical and conceptual manuscripts, perspectives on topical issues and debates, and literature reviews that include syntheses of recent research are published in the "Perspectives" section of the journal. IDD welcomes thoughtful, well-reasoned, interesting, clearly written contributions for this section that demonstrate a clear understanding of the related literature, policy and practice guidelines. Due to the volume of manuscripts submitted, systematic/scoping literature reviews will be accepted only in cases where there is a clear new contribution to the literature.

2.2.1.2 Materials Needed for Initial Manuscript Submission

Before submitting a manuscript, please gather the following information:

- All Authors
 - First Names, Middle Names/Initials, Last Names
 - Institutional Affiliation
 - Departmental Affiliation
 - E-mail addresses
- Title and Running Title (copy and paste these from your manuscript)
- Abstract (**No more than 120 words** - copy and paste this from your manuscript)
- Key words (up to 5 of them)
- An **unblinded** title page
- A blinded title page (this means a title page without attribution to authors or their affiliations so that peer reviewers cannot see this information)

- Manuscript files in Microsoft Word (doc or docx) are preferred, but other word processing software may be workable.
- All tables and/or figures will be submitted individually as either MS Word or Excel files. These should NOT be included in the manuscript document.
- Supplemental materials and appendices should be removed, as they will not be included in the peer review process and will not be published. Authors can host supplemental materials on their own websites and provide a link to the readers on how to access supplemental materials.

The separate **Cover Page** should include the following elements:

TITLE OF MANUSCRIPT

(All Authors' First Names, Middle Initials [if applicable], Surnames [in order of authorship])

Corresponding Author:

Author Name, Highest degree earned, title (if applicable),

Email address: xxxx@xxx.edu

Institutional Affiliation,

Departmental Affiliation,

Street Address,

City, State, Zip, Country

For all Co-Authors:

Author Name, Highest degree earned, title (if applicable),

Institutional Affiliation,

City, State, Zip, Country

2.2.1.3 Acknowledgements

Authors should indicate if their manuscript's findings were presented previously at a professional conference (oral or poster). Authors should also indicate if the production of their manuscript was funded through a specific source (e.g., what entity; grant number(s) if applicable). Finally, authors have the option of briefly expressing thanks to others who have provided special support to them during the development of an article (e.g., appreciation for feedback on earlier drafts of an article).

Manuscript files should not contain any identifying information (authors or institutional affiliation), but the following components (as appropriate) should be included in the submission:

- Title & Running Title
- Abstract

- Key words
- Manuscript Text
- Introduction
- Literature review
- Study purpose with research questions and hypotheses
- Methods
- Results
- Discussion
- Limitations
- Conclusions
- References
- Tables and/or Figures

2.2.1.4 Style

IDD strictly adheres to the 7th edition of the Publication Manual of the American Psychological Association (APA, 7th edition). This website may be helpful ([APA 7th Edition Guidance](#)). **All** sections of the manuscript (including headers, sub-headers, citations, quotations, references, and tables) should be double-spaced with a 1-inch margin on all sides. Footnotes should **not** be included in manuscripts.

- An abstract of **no more than 120 words** is required.
- Up to 5 keywords are accepted.
- Manuscripts must be in English.
- Manuscripts **should not exceed 30 pages** in length, including all references and tables/figures (they will be returned at the time of technical check if they are too long).
- Please include no more than 5 tables and/or figures.
- References must be in **APA, 7th edition** style.
- Accompanying **figures must be submitted as separate files** (not embedded in the text) and **must be over 300 dpi resolution**. It is the authors' responsibility to submit publishable graphic elements. An article cannot be published if figures cannot be provided in high-resolution formats. Figures should be black and white, not in color.
- **Tables must be submitted as separate files** (not embedded in the text) and must be in Word or Excel format. Individual tables should not exceed 4 pages in length.
- All components need to be double-spaced.
- Content footnotes are **not** used.
- Supplemental materials are not reviewed or published.

Because manuscripts are reviewed anonymously, the authors' names and other identifying information **should not** appear anywhere in the manuscript (the authors' information is captured in PeerTrack). Likewise, other identifying information, such as acknowledgments, should not be included in submitted manuscripts.

The Editor reserves the right to reject manuscripts that do not meet the standards contained in the IDD Editorial Policy ([IDD Editorial Policy](#)).

2.2.1.5 Manuscript Resubmissions

For manuscript resubmissions after revisions are addressed, the same requirements must be met as with a new submission. *IDD* adheres to the 7th edition of the Publication Manual of the American Psychological Association (APA, 7th edition). All sections of the manuscript (including quotations, references, and tables) should be double-spaced with a 1-inch margin on all sides.

- A rebuttal letter (aka revisor letter) indicating how the authors have addressed the reviewer's comments.
- Do not submit the manuscript, tables or figures with any track changes – accept all of them before resubmitting (they will fail technical check if submitted with track changes).
- An abstract of no more than 120 words is required.
- Up to 5 keywords are accepted.
- Manuscripts should not exceed 30 pages in length, including all references, tables and figures.
- Please include no more than 5 tables.
- References must be in **APA, 7th edition** style.
- Accompanying figures must be submitted as separate files (not embedded in the text) and must be over 300 dpi resolution. It is the authors' responsibility to submit publishable graphic elements. An article cannot be published if figures cannot be provided in high-resolution formats. Figures should be black and white, not in color.
- Tables must be submitted as separate files (not embedded in the text) and must be in Microsoft Word or Excel format.
- All components need to be double-spaced.
- Cannot include any footnotes as they will not be used.
- Cannot include any supplemental materials as they will not be included in the peer review process and will not be published. Authors can host supplemental materials on their own websites and provide a link to the readers on how to access supplemental materials.

As with a new submission, manuscripts are reviewed anonymously; therefore, the authors' names and other identifying information **should not** appear on the cover page nor anywhere in the manuscript.

2.2.1.6 Abbreviations and Terminology

Abbreviations should be held to a minimum and spelled out in their first use in the manuscript. The names of groups or experimental conditions are usually not abbreviated. The full names of tests should be given when they are first mentioned, with the common shortened form in parentheses with a citation of the source.

IDD adheres to AAIDD's policy regarding the use of **people-first language**. Authors should use language that emphasizes the humanity of people with disabilities. If the author is intentionally using **identity first language** out of respect to a specific group, this should be explicitly stated with an explanation and **may** be permitted at the discretion of the Editor. Generic descriptive terms, such as people, participants, students, children, and adults are preferred over subjects or informants. Language should be free of gender bias.

2.2.1.7 Numerical and Illustrative Presentations

The metric system should be used for all expressions of linear measures, weight, and volume. Tables and figures should be kept to a minimum. Information should be presented only once, whether in the text or in a table or figure. For this reason, short tables may be deleted or combined into larger ones during the copyediting process.

Tables must be created using the table function of Microsoft Word. All columns should be provided with headings. All figures must be high-resolution images, scanned at an absolute minimum of 300 dpi (dots per inch); please ensure this benchmark when resubmitting your article.

Any accompanying tables and/or figures must be submitted as separate files (not embedded in the text). Please note that **any tables or figures accompanying your article will be reproduced in black and white**. It is the authors' responsibility to submit tables and figures of appropriate quality. Failure to do so may delay publication of your article.

Release forms (signed, dated, and witnessed) must accompany photographs of human subjects. Care should be taken to conceal the identity of people in such photographs. Authors must also secure permission to use any copyrighted tables or figures.

2.2.1.8 Footnotes

Footnotes are not used in the journal. The Author Note at the end of the manuscript can be used to (a) acknowledge grant support or help in carrying out the research or in preparation of the manuscript, (b) noting change in affiliation of an author, or (c) stating the availability of supplementary information.

2.2.1.9 Ethical Standards

All investigations using human participants must have been approved by the Human Subjects Review Committee of the author's institution. Submission of a manuscript to *IDD* while that manuscript is under review by another journal is unacceptable. Presentation of a manuscript in electronic form on the Internet is considered to constitute publication and may be grounds for rejection of the paper by this journal.

2.2.1.10 Accepted Manuscripts

After a manuscript is accepted for publication by the Editor, the remainder of the production process, including copyediting, is coordinated by AAIDD's Publications Department (journals@aaidd.org). Authors will be sent a copyedited manuscript; any changes or corrections must be made at this stage. Authors will not receive galleys. The Editor reserves the right to make editorial changes in accepted articles that do not alter the meaning of the text. Tables that exceed 4 double-spaced pages are subject to being published online only, at the discretion of AAIDD. If authors wish to receive a complimentary copy of the issue in which their article is published, they must include a complete mailing address in the PeerTrack system.

2.2.1.11 Data-Sharing

After research results are published, authors will not withhold the data on which their conclusions are based from other professionals who seek to verify the substantive claims through reanalysis and who intend to use such data only for that purpose, provided that the confidentiality of the participants can be protected and unless legal rights concerning proprietary data preclude their release.

[Copyright Form for Authors](#)

2.2.1.12 Copyright Assignment

In compliance with the Copyright Revision Act of 1976, if a manuscript is accepted for publication, the author(s) must sign a Copyright Assignment and Agreement conveying all copyright ownership, including electronic rights, to AAIDD. For papers funded through the National Institutes of Health, Institute of Education Sciences, or the UK's Wellcome Trust, authors are solely responsible for and explicitly permitted to submit their final, accepted paper to the respective public database, following the terms set forth in the copyright agreement form signed by all authors whose work is accepted for publication.

2.2.1.13 Copyright Clearance Center

The American Association on Intellectual and Developmental Disabilities has registered its journals and books with the Copyright Clearance Center (CCC). For permission to use part or all of an article or other material, please contact:

Customer Relations, CCC

222 Rosewood Dr.

Danvers, NJ 01923

Phone: 978-750-8400

Fax: 978-646-8600

Email: info@copyright.com

Or visit: www.copyright.com

2.2.1.14 Reprints

Authors may purchase a PDF of their article on the AAIDD journals site if they don't already have access through a membership or subscription.

2.2.1.15 Editor

Amy S. Hewitt, PhD, FAAIDD, University of Minnesota, Institute on Community Integration

2.2.1.15.1 Assistant Editor

Sandra L. Pettingell

2.2.1.15.2 Associate Editors

Kruti Acharya, Matthew Bogenschutz, Alexandra Bonardi, Amy Esler, Susan Haverkamp, Kelly Nye-Lengerman, Michelle Reynolds, Robert L. Schalock, Jan Siska

2.2.1.15.3 Statistical Consultant

Leslie Shaw

2.2.1.15.4 Editorial Office Address

Intellectual and Developmental Disabilities

Attn: Amy S. Hewitt, Editor

2025 East River Parkway (MIDB 2-323)

Minneapolis, MN 55414

Phone: 612-625-1098

Email: hewit005@umn.edu

2.2.2 Article 2 Manuscript

Parenting children with intellectual disabilities in Gauteng, South Africa: Caregiving challenges, current care, and needs

Ahmed Riaz Mohamed^{a,b,d}, Paula Sterkenburg^{a,c}, Esmé van Rensburg^b, and Carlo Schuengel^a

^aClinical Child and Family Studies and Amsterdam Public Health Research Institute, Vrije Universiteit, Amsterdam, Netherlands, ^bDepartment of Psychology, North-West University, Potchefstroom, South Africa, ^cDepartment of Assessment and Treatment, Bartiméus, Doorn, Netherlands, ^dDepartment of Psychology, University of Pretoria, Pretoria, South Africa

Author Note

Corresponding Author: Ahmed Riaz Mohamed, Department of Psychology, University of Pretoria, Pretoria, South Africa. Email: Ahmed.Mohamed@up.ac.za

Abstract

This study explored parenting-related challenges, perceptions of current care, and needs among primary caregivers of children with intellectual disability in Gauteng, South Africa. Caregivers from urban centres completed measures of parenting stress, parenting-related self-efficacy, support networks and current care. Interviews were also conducted with caregivers and healthcare-professionals. Findings indicate that parenting stress and self-efficacy may be at risk in this group. Explanations focused on feelings of guilt and inadequacy related to being criticised, lack of assistance, and difficulties understanding their child's needs and coming to terms with the diagnosis. These factors were thought to impact the caregiver-child relationship. Caregivers accessed informal/semi-formal support and expressed satisfaction with the services their children received. However, gaps exist in formal supports for caregivers focused on building caregiver-child relationships.

Keywords: intellectual disabilities; parenting challenges; current care; parenting needs; South Africa

Parenting children with intellectual disabilities in Gauteng, South Africa: Caregiving challenges, current care, and needs

Intellectual disability (ID) is a lifelong neurodevelopmental condition associated with intensive support needs in the domains of health, education, communication and self-care, which regularly remain unmet (Haller et al., 2022). This may be particularly acute in lower-resourced settings such as South Africa where there are fewer specialised services dedicated to the assessment and treatment of people with ID and limited training in disability-related care for health professionals (McKenzie et al., 2013). Although recent epidemiological studies of ID in South Africa are unavailable, data from the 2022 national census show that close to 2% of those aged five years or older—equivalent to almost a million individuals—have so-called ‘communication and self-care disabilities’ (Statistics South Africa, 2023). However, the alignment of this category with more established definitions of ID or adaptive functioning is unknown which precludes firm estimates of ID in South Africa. Nonetheless, the limited and fragmented available health and mental health services are overwhelmed by the demand (Sorsdahl et al., 2023). It is, therefore, not uncommon for South Africans with ID and their caregivers to experience significant delays in being accommodated in specialised health and mental health services, special needs schooling, protected work placements, or supervised residential care, particularly—although not exclusively—for those unable to access such services privately (Saloojee et al., 2007). As a result, parents and others in the parenting role may experience notable physical, psychological, financial, and social strain in their role as caregivers of children with disabilities (Sakwape et al., 2023).

Although South Africa has seen important disability-focused policy reforms there is little evidence that this has impacted the lives of children with disabilities. For example, plans (see Department of Education, 2001) to realise inclusive education remain unimplemented (Nel & Grosser, 2016), with only 7.6% of children with disabilities in South Africa estimated to be attending school (Kiru & Cooc, 2018). Similarly, caregivers of children with ID in South Africa face numerous barriers to accessing healthcare services in townships (see Mkabile & Swartz, 2020b) and, more so, in rural communities (Vergunst et al., 2017). Access to social assistance for people with disabilities in South Africa is also limited. This is due to a shortage of social service professionals, the marginalisation of early intervention services and poor funding of non-governmental and community-based initiatives, constraining their capacity to offer services to meet the developmental needs of children with disabilities (Khan et al., 2020). In this context, the burden of care for primary caregivers of a child

with ID (CWID) in South Africa is bound to be high (Mkabile & Swartz, 2020b), which may impact their psychological wellbeing (Biswas et al., 2015).

Parenting in the Context of Intellectual Disability

Studies show that caregivers of children with ID are at increased risk of elevated parenting-related stress and poorer mental health (for reviews, see Rydzewska et al., 2021 and Scherer et al., 2019), and this risk appears even greater in countries with underdeveloped systems for supporting such families (John, 2012; Mbatha & Mokwena, 2023). The availability of support for primary caregivers of children with developmental disabilities may, however, be a key factor in reducing parenting stress and burden (Martinez & Turnage, 2022; van der Mescht et al., 2023). This, in turn, may impact children with ID since those whose caregivers' psychological wellbeing is compromised are at greater risk for socioemotional problems (Riemersma et al., 2022). This may be explained by studies indicating that factors such as parental stress (Booth et al., 2018) and the mental ill-health of caregivers (Bernard et al., 2018) are associated with less sensitive parenting. Gerlach et al. (2022), for instance, found that sensitive parenting mediated the relationship between family risk (e.g. parenting stress) and child attachment. They also found that risk groups did not differ in attachment security when responsive parenting was high, pointing towards the potentially protective role of positive parenting behaviours. Although children with neurodevelopmental conditions do not necessarily display elevated rates of insecure attachment (Madigan et al., 2023), positive parenting behaviours may continue to facilitate more adaptive parent-child interactions in service of improved socioemotional functioning in children with ID. Hence, enhancing sensitively responsive caregiving through support for caregivers that reduce parenting stress and psychological distress may be an important interventional strategy, especially in the context of ID where parenting stress is a noteworthy risk factor, particularly in under-resourced settings. This particular area remains underexplored in the context of parenting a child with intellectual disabilities. Enhancing parenting capacities may also contribute to caregivers' sense of perceived mastery—a significant mechanism in developing self-efficacy (Bandura, 1977)—which is inversely associated with parenting stress (Farmer & Lee, 2011). Some studies have found that caregivers of children with developmental disabilities are at greater risk of reduced self-efficacy with regards to their caregiving role (Al-Kandari & Al-Qashan, 2009; Smart, 2016), suggesting that this may be an area in need to further support.

Parenting a Child with Intellectual Disability in South Africa

There are various factors that may characterise the experiences of caregivers of a CWID in South Africa. One study found that parents of children with developmental disabilities in rural South Africa had

parenting stress that was ‘significantly high’ and was predicted by the non-placement of the child in school (Mbatha & Mokwena, 2023). Furthermore, qualitative investigations have found this stress to be shaped by limited access to professional and community support, stigma, financial constraints, and disturbances in family relationships in both rural (Hadebe, 2024; Malatji & Ndebele, 2018; Mmangaliso & Lupuwana, 2021; Modula, 2022) and peri-urban township communities (Mkabile & Swartz, 2020a, 2020b) in South Africa. However, these studies do not yet speak to the needs of caregivers of a CWID with respect to caregiver-child interactions and the caregiver-child relationship. Exploring where best to support caregivers of a CWID regarding their resources and capacity for responsive caregiving is a key component featured within the Nurturing Care Framework for Early Childhood Development (World Health Organisation et al., 2018). This framework seeks to promote the survival and thriving of all children as outlined in the United Nations Sustainable Development Goals but may require specific provisions for children with disabilities (Wertlieb, 2018). This highlights the importance, therefore, of exploring factors such as caregiving capacities in the context of ID to advance the understanding of nurturing care in this cohort.

The Current Study

The overall aim of this study was to describe and understand the parenting experiences of primary caregivers of a CWID in South Africa. Specifically, the study’s objectives were to explore the parenting-related challenges, perceptions of current care services and support structures, as well as the parenting-related needs with regards to caring for a CWID in South Africa from the perspectives of primary caregivers as well as healthcare practitioners who work closely with primary caregivers of children with intellectual and developmental disabilities. As such, the study sought to answer the following research question: What are the parenting-related challenges, perceptions of current care services, support structures and parenting-related needs of primary caregivers of children with ID in Gauteng, South Africa?

Methods

Study Design

The study was exploratory in nature and adopted a convergent mixed-methods design (Creswell & Plano Clark, 2018) in which complementary quantitative and qualitative cross-sectional data were collected concurrently with the aim of converging the two datasets at the point of interpretation. This allowed for triangulation for a more comprehensive understanding of the problem (Creswell & Plano Clark, 2018).

Participants

The full sample consisted of 45 participants. This included 40 primary caregivers of a CWID and, for the purposes of data triangulation, five expert-participants. All 40 caregivers completed the quantitative component. Of these, 10 further consented to participating in the qualitative component. Expert-participants only participated in the qualitative component.

Caregivers were recruited using purposive sampling through schools for learners with special educational needs in Johannesburg and Pretoria, South Africa, or through a non-governmental organisation in Pretoria providing support to families of a CWID. Caregivers were eligible if they were the adult primary caregiver (parental or non-parental) of a child younger than 18 years who had been diagnosed with a mild to moderate ID. Using expert sampling (Daniel, 2012), expert-participants were recruited via a gatekeeper with access to a network of health professionals. Experts were eligible if they were a health professional registered with the Health Professions Council of South Africa who had at least one year of professional experience working with children with intellectual and developmental delays/disabilities.

Initially, 60 primary caregivers expressed interest in participating. After being contacted, 14 (23.3%) declined participation due to limited availability, difficulties scheduling an appointment for data collection, or disinterest after obtaining more information on the study. Of the 46 who agreed, six returned incomplete questionnaires, resulting in a final caregiver sample of 40. The mean age, in years, of the caregivers and their children in the full sample was 42.3 (SD = 8.1) and 13 (SD = 3.5), respectively. All children were in the mild-to-moderate range of ID. Half the caregivers were either Black-African or Coloured while the other half were White, and the majority of the caregivers were female (87.5%). Most (85%) had completed at least a high school education and 75% were employed on a fulltime, part-time or self-employed basis at the time of the study. About a third of the caregivers in the study were in receipt of a social assistance grant from the government—this could be any of the eight social grants available to those meeting eligibility criteria such as the older persons grant for those over the age of 60 (equivalent to \$119 monthly), or the child support grant for primary caregivers of children under the age of 18 (equivalent to \$43 monthly), all of which are means-tested. The subset of 10 caregivers who took part in the qualitative component consisted of the biological mother ($n = 8$), maternal grandmother ($n = 1$) and biological father ($n = 1$) of a CWID. Four of these participants were Black-African, one was Coloured and five were White. The mean age, in years, of these caregivers was 45.2 (SD = 9.3) and the mean age, in years, of their CWID was 11.6 (SD = 5.3) with an equal number of male and female children. For the participants in both the quantitative and qualitative strands, there was a mix of the use of public and private

sector services—some used exclusively either the former or the latter, while others utilized both for different reasons (e.g., private healthcare but public schooling). The five expert-participants who agreed to participate included two speech-and-language therapists, an occupational therapist, a music therapist and a clinical psychologist. The experts had clinical experience ranging from six years to over a decade working with children diagnosed with intellectual and developmental delays/disabilities and their families. One expert was Black-African, one was Indian, and three were White. Most of the expert-participants had at least some experience (a minimum of one to two years) of working in the public sector although, at the time of the study, four worked in the private sector, and one worked exclusively in the public sector.

Procedure

Questionnaires were administered by either the first author or a trained fieldworker. Caregivers were requested—verbally, and in writing—to complete the questionnaires in relation to their CWID and to do so reflecting on when their child was an infant/toddler. When scheduling appointments for the questionnaire administration, participants were invited to also take part in a semi-structured interview. All qualitative interviews were conducted by the first author, lasted 60 minutes, on average, and were audio-recorded, with consent, using a digital voice recorder for later transcription and analysis. Ethics approval was granted by the Health Research Ethics Committee at North-West University (NWU-00012-18-A1), and both written and verbal informed consent was obtained from all participants prior to data collection.

Measures

Parenting Stress Index 4th Edition, Short Form (PSI-SF)

The PSI-SF (Abidin, 2012) is a 36-item caregiver-report questionnaire which measures the overall stress associated with parenting. Items are scored on a 5-point Likert scale ranging from “*strongly agree*” to “*strongly disagree*” and include, for example, “I find myself giving up more of my life to meet my children’s needs than I ever expected” and “I feel trapped by my responsibilities as a parent”. The PSI-SF produces three subscales—Parental Distress, Parent-Child Dysfunctional Interaction, and Difficult Child—which are summed to produce a Total Stress score as an overall indicator of the level of stress experienced in the parenting role. The PSI-SF has been used in previous studies in South Africa and has demonstrated good reliability ($\alpha = .89$; Rochat et al., 2019). The internal consistency (α) for Total Stress in the current study was .92. Interpretation of scores was done according to the norms published in the PSI manual (Abidin, 2012).

Self-Efficacy in the Nurturing Role Questionnaire (SENR)

The SENR (Pedersen et al., 1989) is a 16-item caregiver-report questionnaire. Items are rated on a 7-point Likert scale ranging from “*not at all applicable to me*” to “*totally applicable to me*”. The SENR captures caregivers’ perceptions of their competence in basic skills required in their caregiving role and includes items such as “I feel confident in my role as a parent”. A total score is derived from summing the individual items. Internal consistency (α) was .67 in the current study, which falls below that reported elsewhere (e.g., Platje et al., 2018; Verhage et al., 2013).

Social Validity Scale (SVS)

The original version of the SVS (Seys, 1987) is a caregiver-report instrument developed to describe the desirability, applicability, clarity, efficiency and burden on daily care of services received. In the current study, the original SVS was adapted and used to survey the extent to which caregivers’ service needs have been met by the current healthcare services received for their CWID. Adaptations were made to align the wording of the items with the aims of the study and to streamline items by removing those which were not relevant for the current study. The adapted SVS consisted of 12 items rated on a 5-point scale ranging, for example, from “*very poor*” to “*very good*” (See Table S1 of Supplementary Material for adapted SVS items, available [here](#)).

Analysis of the SVS was conducted at the level of individual items.

Support Interview Guide (SIG)

Participants’ support networks were assessed using the SIG (Llewellyn & McConnell, 1999). The SIG assesses the composition, size, structure and functionality of the participants’ support networks in the form of a brief semi-structured interview, and has been used in previous studies in South Africa (e.g., Spies et al., 2017). During the interview, up to 10 of the participants’ support figures are listed and then categorised in interaction with the interviewer. Each question constitutes a variable and is subsequently quantified in the form of frequency counts which are tabulated for further quantitative analysis. The variables drawn from the SIG for the current study were: (1) the overall size of the support network (number of people within the support network); (2) the source of support (relationship to the caregiver of those within the support network); and (3) the types of support received (e.g. emotional, practical, information). These variables corresponded with the following questions in the SIG:

1. Overall size of the support network, and source of support: “The first thing we need to do is list the names of people who support/help you...just those people who support/help you most (no more than 10 people)...We are going to write their names in the segments of this pie (segmented into professionals, household, family, neighbours, and friends)”.

2. Types of support received: “For each of the support people we have talked about, what kind of support do they provide (each person can provide more than one type of support)?”.

The four measures outlined above were each selected to address an aspect of the study aim: parenting challenges (PSI and SENR), perceptions of current care services (SVS), and support networks (SIG). Parenting stress and domain-specific parenting self-efficacy have been identified in the literature as related but distinct challenges among parents of children with ID. Hence, the PSI and SENR, respectively, were adopted as indicators of these constructs. Next, given that the study was also focused on current care services and support, the SVS was used to measure service-related experiences and the SIG to quantify support networks. The SVS addressed issues of satisfaction with formal services, while the SIG quantified support networks, in general. While the SIG potentially included formal services, the focus was not on satisfaction as with the SVS, but on extent, avoiding overlap.

Qualitative Interviews

Semi-structured interviews were conducted with the caregiver- and expert-participants. Interviews were guided by an interview schedule developed collaboratively by the first (ARM) and second (PS) authors to facilitate the exploration of the parenting experiences of primary caregivers of children with ID. This included exploring caregivers’ parenting-related challenges, wishes/needs, as well as existing supports. ARM first developed an initial list of open-ended questions based on the aims of the study. Subsequently, the initial questions were refined and revised in consultation with PS to consolidate a preliminary interview schedule (see Tables S2 and S3 of Supplementary Material available at [here](#)) prior to the commencement of the interviews. The interview schedule ensured that the interview remained within the scope of the study aims while still allowing for flexibility—through prompting and probing, where required—in eliciting the nuances of participants’ experiences and perceptions (DeJonckheere & Vaughn, 2019). Questions to caregivers included, for example, “Can you tell me about the difficulties you may have in understanding your child’s needs, if any?”; and “What kind of support do you feel is necessary for you to have the kind of relationship with <name of child> that you would like to have?”. Questions to experts included, for example, “Can you tell me about some of the relational difficulties you have noticed between caregivers and their child with ID?”; and “What do you think caregivers of children with ID might need with regards to their relationship with their child?”.

Data Analyses

Quantitative Analysis

Descriptive statistics, including means and standard deviations, as well as frequencies and percentages were computed using *SPSS* (version 27 for Windows) to describe the degree of parenting stress and parenting-related self-efficacy as well as the size and composition of participants' support networks and their perceptions of current care services.

Qualitative Analysis

Qualitative data were analysed inductively, using thematic analysis (Braun & Clarke, 2022), via *Atlas.ti* (version 8 for Windows). First, the interview transcripts were read and re-read to become familiar with the data. This allowed for immersion in the worlds of the participants, facilitating the search for patterns within their narratives. Thereafter, codes were generated from words and phrases in the transcripts that were relevant to the research aims, and were subsequently arranged into themes and subthemes. To facilitate trustworthiness, the coding was conducted separately by the first author and an independent master's-level research assistant according to the steps described by Braun and Clarke (2022). Once codes were identified, the coders conducted a consensus review prior to the development of preliminary themes following which a second consensus review was conducted to inform the revision of themes, where necessary. Where there was disagreement, the transcripts were revisited to facilitate inter-coder agreement and the finalisation of themes (see Figure 1 for an overview). In addition, member checks were carried out with the participants (Candela, 2019).

Results

Quantitative Results

Table 1 displays the results for parenting stress (PSI-SF), parenting-self-efficacy (SENR) and support networks (SIG). The mean PSI Total Stress raw score was 102.1 (SD = 25.06) with the average percentile falling within the typical range ($M = 75.3$; $SD = 20.26$). Scores fell within the typical to high range for 71.5% of the sample, while 27.5% scored in the clinically significant range. With regards to caregiving self-efficacy, the observed average total score on the SENR—within a possible range of 16 to 112—was 79.68 ($SD = 13.09$).

<Inset Table 1 here>

The average size of the caregivers' reported support networks was 7.15 people ($SD = 2.58$) and ranged from 1 to 10. As reflected in Table 1, the most frequently listed source of support was from family members ($M = 2.28$; $SD = 1.26$) followed by friends ($M = 1.85$; $SD = 1.53$) and others within the household ($M = 1.5$; $SD = .96$). Support from neighbours and professionals was the least reported. Those who provided support most

regularly provided emotional and practical support to caregivers which was followed, respectively, by companionship and informational support. Professional support was the least frequently reported type of support.

Overall, most of the caregivers in the study reported largely positive perceptions of the general healthcare services they received for their CWID (see Figure S1 of Supplementary Material for SVS item-level responses, available at [here](#)). A majority (80%) reported that these services were adequate to very good and met their needs for their child's treatment. The healthcare professionals who were consulted were perceived by most (85%) caregivers to have an adequate to high degree of understanding of their child's unique needs and acknowledged the challenges experienced in the parent-child relationship. About half of the caregivers evaluated professional assistance as good or very good. This assistance was considered by 60% of the caregivers to have positively changed their own understanding of their child's problems, which subsequently changed, in an almost exclusively positive direction (97%), how they acted towards to their child. About 92% reported somewhat to very positive changes in their child and in how they perceived their relationship with their CWID since consulting with the healthcare professionals. The degree of satisfaction with these services was high among the caregivers in this study, half of whom felt regularly or always supported by the healthcare professionals involved in their child's care. The experience of visiting these health professionals was largely reported as at least somewhat positive (80%) by the caregivers.

Qualitative Results

Four main themes were conceptualised: (1) Experiences of significant stressors; (2) Response to the diagnosis of ID; (3) Experiences of available support and care; and (4) Identification of caregiving needs. These themes were further delineated into subthemes as outlined in Figure 1.

<Insert Figure 1 here>

Experiences of Significant Stressors

Feelings of Guilt and Inadequacy. Many caregivers expressed feeling responsible for their child's diagnosis of ID, precipitating feelings of guilt ("I was thinking it's my fault...I always thought this...and I was so stressed when I was pregnant", Caregiver 8). For some, this was inflamed by experiences of criticism from important figures in their lives which undermined their parenting and impacted on their self-confidence, sowing self-doubt in their caregiving capacities and their identities as caregivers: "You carry that burden...and then the little bit of confidence that you build up they take away again and then your identity goes...Who are you now?" (Caregiver 1). This was experienced as particularly painful because the sources of the criticism were people held

in high regard such as parents or parents-in-law. Experts acknowledged that this lack of support in the form of critical interactions reinforced caregivers' beliefs that "you didn't do it right" (Expert 1), or that "I did something wrong, something is wrong with me" (Expert 1). As such some caregivers expressed having "never [felt] like a good enough parent" (Caregiver 3).

Lack of Assistance from People and Institutions. Caregivers also experienced the unavailability of assistance both from individuals (i.e. close family members), and from government institutions. Caregiver 3, for example, felt abandoned by her siblings because "never once did anybody come to me and say 'how can I help?'. Never once, as close as I am to my sisters". This reflected what Expert 1 referred to as a "fight with society and [the caregivers'] support network" due to the lack of support and acknowledgement, leading to caregivers' feelings of isolation and alienation: "I can't depend on [anyone]...I support myself and help myself" (Caregiver 4).

Some caregivers also experienced a lack of assistance from government institutions. Caregiver 3, for example, perceived the government as being unhelpful in her quest to have her CWID placed in an appropriate school, leading to feelings of helplessness because, in her experience, "government does not cater for special needs at all". This was similarly reflected by Caregiver 10 who felt that the added financial burden of being a single parent to a child with special needs warranted additional support from the government, sparking feelings of injustice:

I know [the government does assist] if the child is...being taken care of by parents who don't earn a certain salary, but for people like me we can't get that which is a bit unfair because he is also a child with special needs (Caregiver 10).

Burden of the Child's Challenges on Caregivers. Caregivers also experienced strain in response to having to take on, or actively monitor, basic functional tasks that a typically developing child is able to perform independently (e.g. toileting): "I'm too tired to even sleep so it takes a toll on a person raising a child with [special] needs..." (Caregiver 3). The child's developmental challenges were associated with caregiver frustration and disappointment which, in their experience, impacted negatively on the caregiver-child relationship in various ways—1) through intrusive and potentially frightening interactions ("I used to be so harsh on her when I especially tried to teach her something. I couldn't understand why you tell her something, two seconds, she can't even remember a simple thing", Caregiver 5); 2) distancing within the relationship ("There's still a sort of barrier that's preventing me from really loving him", Caregiver 3); or 3) difficulties

understanding, and meeting, the child's needs (He can't always express himself, [yeah]. So, it's a challenge...I don't always understand...what he wants...I sometimes get frustrated", Caregiver 2).

Response to the Diagnosis of ID

Difficulty Coming to Terms with the Diagnosis. Shock was among the most common reactions for caregivers at the time of the diagnosis, because they held the expectation of having a typically developing child:

...you just cry. Just cry and cry because...nothing warned you for this. The 3D sonars were done exquisitely in detail...from 21 weeks 'til 28 weeks and nobody picked up anything (Caregiver 1).

This seemingly shattered caregivers' assumptive worlds, setting off a cascade of guilt, grief and disappointment. Caregiver 3's "world crumbled when we found out", which led to disappointment:

There was a stage that I went through that I felt, I'm so disappointed with this child, really.

Like you have so much high hopes and it's very emotional <tearful> (Caregiver 3).

This was associated, for some, with difficulties accepting the diagnosis despite the passage of time and having had positive experiences with their children. Caregiver 8 expressed how "even now, I'm still struggling to accept it...when I see...[a] child of her age, I'll always hope that she's going to do everything".

In addition, experts pointed out that this struggle with acceptance manifested as caregiver avoidance and disengagement in the context of therapies, limiting their active participation:

And then you get your parents that just...try and avoid being here...they want their normal life and [to] 'get my child to therapy and when I get them back they'll be neurotypical and we can go on' (Expert 4).

Experiences of Depression and Sadness. As an expression of grief, caregivers relayed feelings of depression and sadness. For Caregiver 2, this was linked to difficulties accepting the diagnosis: "I was very depressed...because I said to my husband, 'I like the child but I don't want the Down Syndrome'". Caregiver 1 described her experience as a "desert" characterised by self-pity and suicidal ideation to the point of "[not having] energy to attach with my child". Experts analogously commented on how this emotional distancing and withdrawal from the child negatively impacted on the quality of the caregiver-child relationship:

It's a mother who is just so depressed that this child gave and gave and gave, and got nothing back, and so eventually he stops giving. 'Cause that happens with your motivation. You serve and return. The return is important (Expert 3).

Caregivers' Expectations of their CWID. Expert-participants noted that—in response to the diagnosis—fears around the child's fragility and medical discourses focused on the child's disabilities (as opposed to their abilities) shaped caregivers' expectations of the child's competencies and generated trepidation regarding how to interact with their CWID:

They just don't know how to interact or how to stimulate the child or how to bond with that child because this is not typical, if I can put it like that. So that's one, and fear...of handling your child because you might hurt them (Expert 2).

Among the caregivers, this manifested as overprotectiveness—performing even basic tasks for the child—based on the belief that the child lacked the competency to perform the task themselves which, in retrospect, was recognised as limiting opportunities for learning:

I was always overprotective...I was part of the problem because I would, maybe not nurture, but if I see he's battling, I would just quickly do it. I wouldn't give him an opportunity to learn as well (Caregiver 3).

Caregivers and experts also described a tendency for the former to “overcompensate” (Expert 4) by turning interactions into a “learning experience” (Caregiver 9) to ‘force’ the child's development. Caregiver 8, for example, engaged relentlessly in her pursuit to “see the results”:

I'm doing everything that can make her to do things. Everything [health professionals] told me I must...because I want to see her doing everything.

Experiences of Available Support and Care

Access to Informal and Semi-formal Support. Despite the criticism and lack of assistance experienced by caregivers, support was received from other sources. Partners offered emotional support (“we will speak to each other about our worries and concerns”, Caregiver 3) and practical parenting support which was particularly helpful at stressful times. Practical support was also sourced from others in the household (i.e. children and domestic helpers). Occasionally, family outside of the household (e.g. caregivers' siblings) provided practical support, such as temporary childcare, offering some respite (“sometimes my sister comes and [fetches] her”, Caregiver 6). Friends readily provided practical assistance, oftentimes more so than family (“she's got five children of her own...but she's always there and willing to support”, Caregiver 2). Additionally, through sharing a common parenting experience, friends who also had a CWID or, for some, organisations for caregivers of children with ID served as a source of connection though “community support...[and the] feeling that you're not so alone” (Caregiver 9).

Access to Formal Support and Professional Services. Overall, most caregivers did not mention accessing formal support for themselves. Only one caregiver mentioned seeking professional support (i.e. a psychologist) for herself. Professional healthcare services for their CWID (e.g. speech-language therapists, occupational therapists, neurologists, and physiotherapists) were more commonly reported by caregivers. These services were valued because they benefitted their children through targeting basic developmental skills and offered caregivers feedback (“[it was] good for me to hear from [the therapist] that she can see that there is still improvement”, Caregiver 2). Most caregivers, however, did not speak about these professionals as support for themselves, directly. Caregiver 3, for example, experienced these services as purely transactional (“if you can’t pay them, you can’t make your appointment”) and while they provided valuable practical advice, they did not provide support “on an emotional level” for her.

Identification of Caregiving Needs

The Role of the Caregiver and the Caregiver-Child Relationship. Caregivers believed that their availability to their CWID facilitated a “good relationship” (Caregiver 3) with them. This belief underpinned their identification of the need to support caregivers in building and maintaining such ‘good relationships’ with their CWID: “Firstly, you need a good relationship with him so that he can trust you...he must be able to come to me...so I think it just opens that communication” (Caregiver 3). Notably, caregivers believed that ‘availability’ included being attuned and responsive to the child’s emotional needs through being “in their mind” (Caregiver 8): “Even if she’s crying a lot, I must check what is going on. So, I used to do those things...there’s no talking to her, but I know she want[s] this, she don’t want this” (Caregiver 8). As such, taking the time to learn from the child, through close observation, to better understand their nonverbal behaviour and become more attuned was highlighted and foregrounded as particularly important.

Support for the Caregiver-Child Relationship. Predicated on this understanding of the role of the caregiver and the caregiver-child relationship in the child’s feelings of security, caregivers and experts identified the need for caregiver-focused support. This would take the form of direct guidance on building caregivers’ skills and capacities to enhance caregiver-child interactions and facilitate the quality of the caregiver-child relationship. Participants felt that caregiver-focused, skills-based support would be beneficial to find out “what is it I am doing wrong, so that I can [make] a good change” (Caregiver 7). Caregiver 1 believed this caregiver-focused approach “would have helped me to stay confident...because if you feel like you’re...not worth anything why would you want to do anything with your child?”.

In line with this, experts highlighted the importance of providing caregivers with encouragement and focusing on caregiving strengths and capabilities, as opposed to shortcomings. Doing this would build confidence in caregivers which could play a role in facilitating their interactions with their CWID: “Well, I think if you’re feeling more confident and you have a better understanding in terms of guidance now you will *want* to interact with your child” (Expert 2). This was thought by experts to allow the child, in turn, to participate more fully in the relationship and display a greater degree of responsiveness towards their caregiver. This greater responsiveness was believed to enliven and encourage caregivers, offering hope through progress observed via reciprocal, so-called “serve and return” (Expert 3) interactions.

Discussion

This study sought to describe and understand the parenting-related challenges, perceptions of current care, and needs of primary caregivers of children with ID in South Africa. Addressing the first objective, quantitative and qualitative findings converged to link elevated parenting stress and weakened parenting-related self-efficacy in the South African setting to caregivers’ subjective realities (i.e. criticism; guilt; inadequacy; unavailability of assistance from individuals and government; difficulties understanding their child’s needs; challenges with accepting the diagnosis; depression and sadness; as well as overprotectiveness/intrusiveness and overcompensation which impacted caregiver-child interactions). Regarding the second objective, quantitative findings indicated various sources and types of informal or semi-formal support for caregivers. While formal, professional support was least reported, caregivers were largely satisfied with the healthcare services received for their CWID. Qualitative findings showed that cohabiting family members were seen as most supportive, while others in caregivers’ networks were identified as critical or unavailable. Furthermore, although caregivers were satisfied with their healthcare services, these services were not regarded as direct sources of emotional support for themselves or for caregiver-child interactions. Finally, addressing the third objective, despite access to some sources of support, qualitative findings nonetheless identified the need for support in the form of caregiver-focused skills-based guidance targeting caregiver-child interactions and the caregiver-child relationship.

A noteworthy proportion (38%) of caregivers experienced either high or clinically significant parenting stress. On average, the degree of parenting stress in the current study was similar to that observed among other parents of children with developmental disabilities in South Africa (Mbatha & Mokwena, 2023) as well as India (John, 2012), a comparable low-to-middle income context. Parenting stress was, however, higher, on average, in the present sample than that reported in high-income countries (Hassall et al., 2005; Richman et al., 2009;

Zaidman-Zait et al., 2010). A similar trend was observed for parenting-related self-efficacy which was lower in the current study compared to Dutch mothers of a CWID (Platje et al., 2018). Perhaps developing economies provide less efficient systemic support and infrastructure to assist caregivers of children with disabilities to access appropriate education, healthcare and social services (McKenzie et al., 2013). As such, this “benign neglect” (Trafford et al., 2023, p. 9) of the needs of children with disabilities and their families may contribute to caregivers in countries such as South Africa feeling less able to mobilise resources to successfully meet the needs of their CWID. This could lead to perceptions of limited support, helplessness, frustration and isolation (van der Mark et al., 2019), and, therefore, increased parenting stress (Staunton et al., 2020). This highlights the influence of untoward macrosystemic factors (i.e. benign neglect) on caregiving, even when positive exo-, and mesosystemic factors (i.e. access to private healthcare) are available (Bronfenbrenner, 1979). Previous studies have demonstrated how such multi-level factors interact to negatively impact the quality of caregiving among caregivers of children with disabilities (Gerstein et al., 2009; Knestrict & Kuchey, 2009). It is worth noting though that many of the caregivers in this study were recruited via schools for children with special needs. This study may, therefore, underestimate the challenges for caregivers who are not able to access appropriate schooling for their CWID at all, which is noted as a particular risk factor for parenting stress among caregivers of children with developmental disabilities in South Africa (Mbatha & Mokwena, 2023).

Support networks in the current study were slightly larger, on average, than that in a sample of South African mothers with psychosis (Spies et al., 2017). These networks were comprised of largely informal (e.g. spouses) or semi-formal (e.g. organisations) supports. However, the size of individual support networks ranged widely, indicating that some caregivers have very limited support. For instance, organisations may promote social connectedness through counteracting the alienation associated with criticism and blame, and the lack of assistance, and offers an empowering space through activism to manage powerlessness and helplessness (Dew et al., 2019). However, the reality in South Africa is that the reach of such organisations is limited, inconsistent or non-existent, reducing the network of available support and, hence, limiting caregivers’ opportunities for connection and self-empowerment, contributing towards fewer psychological resources such as self-efficacy (Samdan et al., 2022). In addition, some experienced important others in their existing networks as actively critical of their caregiving, or as unwilling to offer assistance with their CWID, which is broadly consistent with existing studies among caregivers of children with ID in South Africa (Modula, 2022). The impact of salient macrosystemic failures in developing contexts may, therefore, be further compounded by exosystemic failures within caregivers’ more proximal networks, reducing parental adaptation (Greeff & Nolting, 2013), increasing

parenting stress (Biswas et al., 2015) and creating barriers to care for children with disabilities (Pretorius & Steadman, 2017). These factors may also play a role in discouraging and undermining caregivers and their caregiving, impacting negatively on parenting-related self-efficacy (Bandura, 1986). This highlights the need to support caregivers in their caregiving role to undercut the negative impact of the lack of support as well as exposure to incendiary communication patterns within their networks. In this vein, parenting interventions have been found to significantly increase levels of parenting-related self-efficacy for parents of children with disabilities (Hohlfeld et al., 2018), making such interventions a potentially important tool as part of a broader support package in developing contexts.

Although parenting programmes enhance parenting self-efficacy, what is less well known is the effect of parenting interventions on caregiver-child interactions and caregiver-child relationship quality when the child has an ID. This may be due to the fact that many existing programmes (e.g. *Incredible Years Parent Training*) adopt a behaviourist, rather than relational, interventive focus (Ragni et al., 2022). Given that caregivers in this study noted the caregiver-child relationship and interactions as an area in need of support and guidance, this is an important avenue for future research. Caregivers in this study, for instance, found it challenging to understand, and to respond to, their child's needs which had a perceived impact on the nature of interactions, which is consistent with findings from previous research showing that caregivers of a CWID believed this to be a barrier in the establishment of a secure caregiver-child relationship (Vandesande et al., 2022). Furthermore, in this study, caregiver-child interactions were shaped by potentially intrusive and caregiver-led caregiving behaviours (e.g. doing tasks for the child) which may be associated with overcompensation in response to feeling otherwise inefficacious, to assuage guilt rooted in others' criticism, or as a response to difficulties coming to terms with the diagnosis of ID. This pattern of intrusive caregiver-child interactions has been associated with poorer adjustment in children (Spiker et al., 2002). This was supported by the experts' recognition in this study of the importance of 'serve-and-return'—as opposed to intrusive—caregiver-child interactions, which are characterised by mutual responsiveness and are fundamental for the establishment of brain architecture, as well as the promotion of physiological, emotion and behavioural regulation in children (Komanchuk et al., 2023). Parenting interventions for caregivers of children with ID may, therefore, need to explicitly incorporate this element into intervention designs. Importantly though, such interventions should take into account the idiosyncratic behavioural expressions of this group, which may interfere with caregivers' ability to identify and understand their child's needs (Mohamed et al., 2023). Promisingly, the *Video-feedback Intervention to Promote Positive Parenting* for children with visual or visual-and-intellectual disability (VIPP-

V), which aims to promote caregiver-child interactions, has shown positive effects both on parenting self-efficacy and parent-child interactions for parents experiencing high levels of stress (Platje et al., 2018). This supports the proposition that relationally-focused parenting interventions, tailored to this population, have a role to play in addressing the caregiving challenges, and needs, identified in the current study.

In this study, formal supports for caregivers were less prevalent than informal or semi-formal supports and these formal supports were often targeted at their CWID rather than at themselves. Although not as commonly reported as other types of support, many caregivers were able to access professional services for their CWID, and there was a high degree of satisfaction with these professional services because they addressed specific developmental deficits and contributed to the child's overall functioning. This contrasts somewhat with a study by Mkabile and Swartz (2020b) which found that the unavailability of, and lack of access to, ID-specific healthcare in South Africa is a significant barrier for primary caregivers in caring for their CWID. However, their sample came from an under-resourced township community reliant on oversubscribed and underfunded public health services. In the current sample, while some were in similar circumstances, many were able to access private healthcare, which may explain the degree of service satisfaction observed in the current study compared to others. This, however, did not extend to formal support for caregivers themselves and, due to its intensive focus on specific developmental competencies for the child, also did not extend to support for enhancing the quality of the caregiver-child relationship directly, which may explain why this was identified as a specific need. Caregiver-focused support may provide an opportunity for acknowledgement, creating a space for engagement and participation as an active agent through learning tangible caregiving and relational skills to reinforce and promote responsive caregiving and caregiver-child interactions (Dozier & Bernard, 2019; Richter, 2022). Consistent with existing research (e.g. Scherer et al., 2019), caregivers experienced depression, sadness and emotional withdrawal resulting from the diagnosis of ID. Thus, the concerted drawing in of caregivers as active agents may be a crucial component to caregiver-focused support and intervention (Mohamed et al., 2023). This could serve to empower caregivers in their caregiving role, enhancing caregiving-related self-efficacy and reducing parenting stress (Platje et al., 2018) to support caregiver psychological wellbeing.

Furthermore, although caregiving may be influenced by factors at various levels of the ecosystem, intervening at the microsystemic level (i.e. caregiving behaviours and caregiver-child interactions) has been found to positively impact caregiving towards greater sensitive responsiveness even in the context of more negative wider systemic factors (Thorpe et al., 2022). This suggests that interventions targeting the caregiver-child relationship may be an important resource in enhancing relational quality when broader systemic stressors

are commonplace, such as in lower-resourced contexts. It is noteworthy, however, that wider systemic factors continue to exert an influence on caregiving (Thorpe et al., 2022). Thus, interventions with a microsystemic focus are likely to have a greater impact when they form part of a multi-pronged, multi-sectoral, approach addressing the need for support at various levels including, amongst others, access to functional and efficient healthcare, educational and social services, community engagement initiatives as well as broader education campaigns targeted at misconceptions around ID that may fuel stigmatisation, criticism and judgement of caregivers.

Future Research Directions

Although parenting stress and parenting-related self-efficacy were noted as potentially at risk in this study, this was a descriptive observation that requires further explication in the South African context. Future studies should, therefore, seek to replicate these findings and expand thereupon through the incorporation of a control group into study designs, allowing for meaningful comparison and robust causal inferences. This will contribute towards ascertaining whether, in the South African population, parenting stress, self-efficacy and support networks are indeed more significantly negatively affected in caregivers of a CWID versus those who do not have a CWID, and also what the relationships between these variables might be.

Experiences of criticism from important figures was related in this study to caregivers' feelings of guilt and inadequacy. Similarly, 'unhealthy relationships' between caregivers of children with ID and their families has been previously reported in South Africa (Mmangaliso & Lupuwana, 2021), and unsupportive, incendiary communication in South African families of children with developmental disabilities has been negatively associated with family resilience (Greeff & Nolting, 2013). However, the nature of these incendiary and critical communication patterns remains to be investigated in future studies through in-depth explorations of caregivers' lived experiences of such criticism from important figures in their lives. Furthermore, despite being a salient experience for some, what remains to be explored is whether the critical communication is exclusive to caring for a CWID, or whether this criticism would have occurred regardless of the child's disability status. This offers an opportunity to explore how criticism may differentially impact caregivers of children with and without ID.

Interestingly, psychologists were rarely mentioned among the professional support services accessed by caregivers whereas psychologists in the fields of attachment and infant mental health may be particularly well-positioned to address the challenges that caregivers of a CWID experience with respect to caregiver-child interactions and the caregiver-child relationship. Future studies should seek, therefore, to investigate the extent

to which psychologists are involved, clinically, with children with ID and their families in South Africa, and the factors facilitating, or inhibiting, this involvement.

Study Limitations

A limitation of this study is its sampling frame as well as its sample size and composition, which may limit the broader applicability and generalisability of the findings. The findings must, therefore, be viewed tentatively. The recruitment of primary caregivers from schools may have introduced bias given that many children with ID do not attend educational services. Hence, the experiences of those caregivers of children who attend school versus those who do not may be quantitatively and qualitatively different. The applicability of the findings of this study may therefore be limited to the former group rather than to caregivers of children with ID more broadly. However, although the findings may refer to a specific group of caregivers, they may hold significance. This is because despite having access to a schooling system which may be a source of support, the participants nonetheless felt that additional support that is focused on the caregiver—as opposed to the child—and the caregiver-child relationship was required. This is a noteworthy finding as it highlights a possible gap in service delivery. Whether this remains the case for other groups of caregivers is a matter for further research involving a larger, more diverse, sample and comparative analyses. However, research in South Africa has shown that health professionals believe that amongst those parents of children with ID who experience significant social adversity, a focus on the parent-child relationship remains necessary (Mohamed et al., 2023). This may suggest that even for those not receiving support, such as those without school placement, providing caregiver-focused support for caregiver-child interactions remains a salient need.

The generalisability of the findings may also be limited by the small sample size as well as the fact that this sample contained a notable proportion of White participants with at least a high school education, which may not be fully representative of the South African population. Additionally, the study did not include participants from rural communities where particular geographic and socioeconomic factors may shape caregiving experiences in unique ways. These limitations suggest, therefore, the need for additional, larger-scale studies with representative samples to further extend insights beyond the current findings. The study also focused exclusively on caregivers of children with mild-to-moderate ID whose experiences may differ from those caregivers of children with severe-to-profound ID. The current findings may, therefore, not be fully transferable to such settings and groups. Furthermore, although the caregivers were asked to reflect on experiences of when their child was an infant/toddler, this retrospective approach may nonetheless have meant

that the passage of time ‘interfered’ with their present recollections and, additionally, the completing of the questionnaires before the interviews may have served to inadvertently prime participants. Future studies may benefit from focusing on participants’ current, or recent, experiences to counteract the possible temporal issues related to memory and the recall of much earlier experiences, and may benefit from a wider time period between questionnaire completion and interviews, or engaging in the interviews prior to the questionnaires. Finally, there are limitations regarding the use of the SENR and PSI. First, the internal consistency of the SENR in this study was notably lower than that previously reported (see Methods), which is likely the result of the study’s small sample; and, second, the unavailability of South African norms for the PSI meant that the interpretation of these results was based on norms developed in the USA. Therefore, the quantitative findings related to parenting-related self-efficacy and parenting stress should be interpreted with some caution.

Conclusion

Parenting stress and self-efficacy may be at risk in South African caregivers compared to those in better-resourced settings. This may be due to the interaction of macrosystemic failures as well as exo- and mesosystemic factors such as lack of assistance from others, criticism, difficulties coming to terms with the diagnosis and challenges understanding their child’s needs. Many of these factors were thought to impact parenting and caregiver-child interactions negatively, underscoring the identification of the need for support and guidance for caregivers in promoting the caregiver-child relationship. Thus, even though caregivers were largely satisfied with the healthcare services received for their child, the lack of focus of these services directly on the caregiver and on the quality of the caregiver-child relationship leaves a gap in the provision of support services. Such services could support caregivers directly while simultaneously augmenting the socioemotional development of their children with ID through supporting responsive caregiving, allowing them to thrive within nurturing relational contexts.

Acknowledgements

The financial assistance of the South African National Research Foundation (NRF) towards this research is hereby acknowledged (Grant UID: 105603). Opinions expressed and conclusions arrived at, are those of the authors and are not necessarily to be attributed to the NRF. This study was made possible by the Vrije Universiteit Amsterdam-NRF Desmond Tutu Doctoral Programme which is coordinated by the South Africa-Vrije Universiteit Strategic Alliance (SAVUSA). The authors wish to thank the small team of fieldworkers for their assistance with questionnaire administration, as well as Lily Scharmer, Vernandi Dyzel,

Chloe Moodley and Anesu Kuhudzai for their assistance as independent co-analysts of the qualitative data, and for statistical support.

Author Contributions

ARM coordinated the study as the PI, conducted the interviews as well as the analyses, drafted the first version, and revised subsequent versions, of the manuscript. PS was involved in the initial development of the interview schedules. PS, CS and EvR contributed to all parts of latter versions of the manuscript.

References

- Abidin, R. R. (2012). *Parenting stress index, fourth edition (PSI-4)*. Psychological Assessment Resources.
- Al-Kandari, H. Y., & Al-Qashan, H. (2009). Maternal self-efficacy of mothers of children with intellectual developmental disabilities, Down syndrome, and autism in Kuwait. *Child and Adolescent Social Work Journal*, 27(1), 21-39. <https://doi.org/10.1007/s10560-009-0189-6>
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215. <https://doi.org/10.1037/0033-295X.84.2.191>
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall
- Bernard, K., Nissim, G., Vaccaro, S., Harris, J. L., & Lindhiem, O. (2018). Association between maternal depression and maternal sensitivity from birth to 12 months: A meta-analysis. *Attachment & Human Development*, 20(6), 578-599. <https://doi.org/10.1080/14616734.2018.1430839>
- Biswas, S., Moghaddam, N., & Tickle, A. (2015). What are the factors that influence parental stress when caring for a child with an intellectual disability? A critical literature review. *International Journal of Developmental Disabilities*, 61(3), 127-146. <https://doi.org/10.1179/2047387714y.0000000043>
- Booth, A. T., Macdonald, J. A., & Youssef, G. J. (2018). Contextual stress and maternal sensitivity: A meta-analytic review of stress associations with the Maternal Behavior Q-Sort in observational studies. *Developmental Review*, 48, 145-177. <https://doi.org/10.1016/j.dr.2018.02.002>
- Braun, V., & Clarke, V. (2022). *Thematic analysis: A practical guide*. Sage.
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Harvard University Press.
- Candela, A. (2019). Exploring the function of member checking. *The Qualitative Report*, 24(3), 619-628. <https://doi.org/10.46743/2160-3715/2019.3726>
- Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). Sage.

- Daniel, J. (2012). *Sampling essentials: Practical guidelines for making sampling choices*. Sage.
- DeJonckheere, M., & Vaughn, L. M. (2019). Semistructured interviewing in primary care research: A balance of relationship and rigour. *Family Medicine and Community Health*, 7(2), Article e000057. <https://doi.org/10.1136/fmch-2018-000057>
- Department of Education. (2001). *Education white paper 6: Special needs education--building an inclusive education and training system*. DoE. https://www.gov.za/sites/default/files/gcis_document/201409/educ61.pdf
- Dew, A., Collings, S., Dowse, L., Meltzer, A., & Smith, L. (2019). 'I don't feel like I'm in this on my own': Peer support for mothers of children with intellectual disability and challenging behaviour. *Journal of Intellectual Disabilities*, 23(3), 344-358. <https://doi.org/10.1177/1744629519843012>
- Dozier, M., & Bernard, K. (2019). *Coaching parents of vulnerable infants: The Attachment and Biobehavioral Catch-up approach*. Guilford Press.
- Farmer, A. Y., & Lee, S. K. (2011). The effects of parenting stress, perceived mastery, and maternal depression on parent-child interaction. *Journal of Social Service Research*, 37(5), 516-525. <https://doi.org/10.1080/01488376.2011.607367>
- Gerlach, J., Fossel, J. M., Vierhaus, M., Sann, A., Eickhorst, A., Zimmermann, P., & Spangler, G. (2022). Family risk and early attachment development: The differential role of parental sensitivity. *Infant Mental Health Journal*, 43(2), 340-356. <https://doi.org/10.1002/imhj.21964>
- Gerstein, E. D., Crnic, K. A., Blacher, J., & Baker, B. L. (2009). Resilience and the course of daily parenting stress in families of young children with intellectual disabilities. *Journal of Intellectual Disability Research*, 53(12), 981-997. <https://doi.org/10.1111/j.1365-2788.2009.01220.x>
- Greeff, A. P., & Nolting, C. (2013). Resilience in families of children with developmental disabilities. *Family Systems & Health*, 31(4), 396-405. <https://doi.org/10.1037/a0035059>
- Hadebe, N. N. (2024). Caregivers' experiences of raising children with intellectual disability in Umgeni municipality, Kwazulu-Natal, South Africa. *African Journal for Physical Activity and Health Sciences*, 30(2), 232-253. <https://doi.org/10.37597/ajphes.2024.30.2.5>
- Haller, K., Stolfi, A., & Duby, J. (2022). Comparison of unmet health care needs in children with intellectual disability, autism spectrum disorder and both disorders combined. *Journal of Intellectual Disability Research*, 66(7), 617-627. <https://doi.org/10.1111/jir.12932>

- Hassall, R., Rose, J., & McDonald, J. (2005). Parenting stress in mothers of children with an intellectual disability: The effects of parental cognitions in relation to child characteristics and family support. *Journal of Intellectual Disability Research*, 49(6), 405-418. <https://doi.org/10.1111/j.1365-2788.2005.00673.x>
- Hohlfeld, A. S. J., Harty, M., & Engel, M. E. (2018). Parents of children with disabilities: A systematic review of parenting interventions and self-efficacy. *African Journal of Disability*, 70, Article a437. <https://doi.org/10.4102/ajod.v7i0.437>
- John, A. (2012). Stress among mothers of children with intellectual disabilities in urban India: Role of gender and maternal coping. *Journal of Applied Research in Intellectual Disabilities*, 25(4), 372-382. <https://doi.org/10.1111/j.1468-3148.2011.00672.x>
- Khan, G., Isaacs, D., Makoe, M. G., Fluks, L. L., Mokhele, T., & Mokomane, Z. (2020). Service providers' perceptions of families caring for children with disabilities in resource-poor settings in South Africa. *Child & Family Social Work*, 25(4), 823-831. <https://doi.org/10.1111/cfs.12761>
- Kiru, E., & Cooc, N. (2018). A comparative analysis of access to education for students with disabilities in Brazil, Canada, and South Africa. *Journal of International Special Needs Education*, 21(2), 34-44. <https://doi.org/10.9782/16-00024R4>
- Knestrick, T., & Kuchey, D. (2009). Welcome to Holland: Characteristics of resilient families raising children with severe disabilities. *Journal of Family Studies*, 15(3), 227-244. <https://doi.org/10.5172/jfs.15.3.227>
- Komanchuk, J., Letourneau, N., Duffett-Leger, L., & Cameron, J. L. (2023). History of “serve and return” and a synthesis of the literature on its impacts on children’s health and development. *Issues in Mental Health Nursing*, Advance online publication. <https://doi.org/10.1080/01612840.2023.2192794>
- Llewellyn, G., & McConnell, D. (1999, July 8-9). *Sharing the care: The Support Interview Guide* [Conference presentation]. 11th Australasian Human Development Conference, Sydney, Australia.
- Madigan, S., Fearon, R. M. P., van IJzendoorn, M. H., Duschinsky, R., Schuengel, C., Bakermans-Kranenburg, M. J., Ly, A., Cooke, J. E., Deneault, A.-A., Oosterman, M., & Verhage, M. L. (2023). The first 20,000 strange situation procedures: A meta-analytic review. *Psychological Bulletin*, 149(1-2), 99-132. <https://doi.org/10.1037/bul0000388>

- Malatji, K. S., & Ndebele, C. (2018). Challenges experienced by women in raising children with intellectual disabilities. *African Journal for Physical Activity and Health Sciences*, 24(Supplement 1), 129-141. <https://doi.org/doi:10.10520/EJC-13283544ce>
- Martinez, V. C., & Turnage, D. (2022). Social support and parenting stress in hispanic parents of children with autism spectrum disorder. *Issues in Mental Health Nursing*, 43(11), 1030-1040. <https://doi.org/10.1080/01612840.2022.2100949>
- Mbatha, N. L., & Mokwena, K. E. (2023). Parental stress in raising a child with developmental disabilities in a rural community in South Africa. *International Journal of Environmental Research and Public Health*, 20(5), Article 3969. <https://doi.org/10.3390/ijerph20053969>
- McKenzie, J. A., McConkey, R., & Adnams, C. (2013). Intellectual disability in Africa: Implications for research and service development. *Disability and Rehabilitation*, 35(20), 1750-1755. <https://doi.org/10.3109/09638288.2012.751461>
- Mkabile, S., & Swartz, L. (2020a). Caregivers' and parents' explanatory models of intellectual disability in Khayelitsha, Cape Town, South Africa. *Journal of Applied Research in Intellectual Disabilities*. <https://doi.org/10.1111/jar.12725>
- Mkabile, S., & Swartz, L. (2020b). 'I waited for it until forever': Community barriers to accessing intellectual disability services for children and their families in Cape Town, South Africa. *International Journal of Environmental Research and Public Health*, 17(22), Article 8504. <https://doi.org/10.3390/ijerph17228504>
- Mmangaliso, A., & Lupuwana, V. P. P. (2021). Psychosocial experiences of family caregivers of children with intellectual disabilities in Alice, Eastern Cape, South Africa. *Southern African Journal of Social Work and Social Development*, 33(3), Article 7052. <https://doi.org/doi:10.25159/2415-5829/7052>
- Modula, M. J. (2022). The support needs of families raising children with intellectual disability. *African Journal of Disability*, 11, Article 952. <https://doi.org/10.4102/ajod.v11i0.952>
- Mohamed, A. R., Sterkenburg, P., van Rensburg, E., & Schuengel, C. (2023). Adapting Attachment and Biobehavioral Catch-up for infants and young children with intellectual disabilities and developmental delays in South Africa: Reflections and recommendations from local stakeholders. *Infant Mental Health Journal*, 44(1), 54-75. <https://doi.org/10.1002/imhj.22027>
- Nel, M., & Grosser, M. M. (2016). An appreciation of learning disabilities in the South African context. *Learning Disabilities: A Contemporary Journal*, 14(1), 79-92.

- Pedersen, F. A., Bryan, Y., Huffman, L., & Del Carmen, R. (1989). *Construction of self and offspring in the pregnancy and early infancy periods* [Conference presentation]. Meetings of the Society for Research in Child Development (SRCD), Kansas City, MO, United States.
- Platje, E., Sterkenburg, P., Overbeek, M., Kef, S., & Schuengel, C. (2018). The efficacy of VIPP-V parenting training for parents of young children with a visual or visual-and-intellectual disability: A randomized controlled trial. *Attachment & Human Development*, 20(5), 455-472.
<https://doi.org/10.1080/14616734.2018.1428997>
- Pretorius, C., & Steadman, J. (2017). Barriers and facilitators to caring for a child with cerebral palsy in rural communities of the Western Cape, South Africa. *Child Care in Practice*, 24(4), 413-430.
<https://doi.org/10.1080/13575279.2017.1347146>
- Ragni, B., Boldrini, F., Mangialavori, S., Cacioppo, M., Capurso, M., & De Stasio, S. (2022). The efficacy of parent training interventions with parents of children with developmental disabilities. *International Journal of Environmental Research and Public Health*, 19(15), Article 9685.
<https://doi.org/10.3390/ijerph19159685>
- Richman, D. M., Belmont, J. M., Kim, M., Slavin, C. B., & Hayner, A. K. (2009). Parenting stress in families of children with cornelia de lange syndrome and Down syndrome. *Journal of Developmental and Physical Disabilities*, 21(6), 537-553. <https://doi.org/10.1007/s10882-009-9156-6>
- Richter, L. (2022). The power of simple behaviours for human connection: Promoting intuitive parent–child interactions for healthy development. *Early Childhood Matters*, 131, 20-23.
<https://earlychildhoodmatters.online/2022/the-power-of-simple-behaviours-for-human-connection/>
- Riemersma, I., van Santvoort, F., van Doesum, K. T. M., Hosman, C. M. H., Janssens, J. M. A. M., Weeland, M., & Otten, R. (2022). Social-emotional problems of children with mild intellectual disabilities having parents with mental health concerns: A quantitative comparison study. *Journal of Intellectual Disabilities*, 26(4), 811-823. <https://doi.org/10.1177/17446295211030092>
- Rochat, T. J., Houle, B., Stein, A., Mitchell, J., & Bland, R. M. (2019). Maternal alcohol use and children's emotional and cognitive outcomes in rural South Africa. *South African Medical Journal*, 109(7), 526-534. <https://doi.org/doi:10.7196/SAMJ.2019.v109i6.13120>
- Rydzewska, E., Dunn, K., Cooper, S. A., & Kinnear, D. (2021). Mental ill-health in mothers of people with intellectual disabilities compared with mothers of typically developing people: A systematic review and

- meta-analysis. *Journal of Intellectual Disability Research*, 65(6), 501-534.
<https://doi.org/10.1111/jir.12827>
- Sakwape, K., Machailo, R., & Koen, M. P. (2023). Exploring role strain and experiences of caregivers of children living with disabilities. *Nursing Open*, 10(5), 2886-2894. <https://doi.org/10.1002/nop2.1530>
- Saloojee, G., Phohole, M., Saloojee, H., & IJsselmuiden, C. (2007). Unmet health, welfare and educational needs of disabled children in an impoverished South African peri-urban township. *Child: Care, Health and Development*, 33(3), 230-235. <https://doi.org/10.1111/j.1365-2214.2006.00645.x>
- Samdan, G., Reinelt, T., Kiel, N., Mathes, B., & Pauen, S. (2022). Maternal self-efficacy development from pregnancy to 3 months after birth. *Infant Mental Health Journal*, 43(6), 864-877.
<https://doi.org/10.1002/imhj.22018>
- Scherer, N., Verhey, I., & Kuper, H. (2019). Depression and anxiety in parents of children with intellectual and developmental disabilities: A systematic review and meta-analysis. *PLoS One*, 14(7), Article e0219888. <https://doi.org/10.1371/journal.pone.0219888>
- Seys, D. (1987). *Kwaliteit van zorg: Zorg voor kwaliteit (Quality of care: Caring for quality)* [Unpublished doctoral dissertation]. University of Nijmegen.
- Smart, L. K. (2016). *Parenting self-efficacy in parents of children with autism spectrum disorders* [Doctoral dissertation, Brigham Young University]. BYU Scholars Archive.
<https://scholarsarchive.byu.edu/etd/5842>
- Sorsdahl, K., Petersen, I., Myers, B., Zingela, Z., Lund, C., & van der Westhuizen, C. (2023). A reflection of the current status of the mental healthcare system in South Africa. *SSM - Mental Health*, 4, Article 100247. <https://doi.org/10.1016/j.ssmmh.2023.100247>
- Spies, R., Sterkenburg, P. S., van Rensburg, E., & Schuengel, C. (2017). HIV/AIDS and psychosis: Needs, challenges, and support of affected mothers. *Journal of Child and Family Studies*, 26(1), 183-193. <https://doi.org/10.1007/s10826-016-0543-1>
- Spiker, D., Boyce, G. C., & Boyce, L. K. (2002). Parent-child interactions when young children have disabilities. *International Review of Research in Mental Retardation*, 25, 35-70.
[https://doi.org/https://doi.org/10.1016/S0074-7750\(02\)80005-2](https://doi.org/https://doi.org/10.1016/S0074-7750(02)80005-2)
- Statistics South Africa. (2023). *Census 2022: Statistical release*. SSA.
https://census.statssa.gov.za/assets/documents/2022/P03014_Census_2022_Statistical_Release.pdf

- Staunton, E., Kehoe, C., & Sharkey, L. (2020). Families under pressure: Stress and quality of life in parents of children with an intellectual disability. *Irish Journal of Psychological Medicine*, Advance Online Publication. <https://doi.org/10.1017/ipm.2020.4>
- Thorpe, D., Silver, J., Perrone, L., DeSantis, N., Dash, A., Rodriguez, M., Beras-Monticciolo, E., & Bernard, K. (2022). Ecological predictors of parental beliefs about infant crying in a randomized clinical trial of ABC. *Journal of Clinical Child and Adolescent Psychology*, 51(5), 780-795. <https://doi.org/10.1080/15374416.2021.1916939>
- Trafford, Z. (2023). ‘People don’t understand what we go through!’: Caregiver views on South Africa’s Care Dependency Grant. *African Journal of Disability*, 12, Article a1114. <https://doi.org/10.4102/ajod.v12i0.1114>
- van der Mark, E. J., Conradie, I., Dedding, C. W. M., & Broerse, J. E. W. (2019). ‘We create our own small world’: Daily realities of mothers of disabled children in a South African urban settlement. *Disability & Society*, 34(1), 95-120. <https://doi.org/10.1080/09687599.2018.1511415>
- van der Mescht, P., Geertsema, S., Le Roux, M., Graham, M. A., & Johnson, E. (2023). The potential burden experienced by South African caregivers of children with severe intellectual disability. *South African Journal of Childhood Education*, 13(1), Article a1219. <https://doi.org/10.4102/sajce.v13i1.1219>
- Vandesande, S., Steegmans, D., & Maes, B. (2022). Parents’ views on facilitating and inhibiting factors in the development of attachment relationships with their children with severe disabilities. *Journal of Social and Personal Relationships*, Advance Online Publication. <https://doi.org/10.1177/02654075221122717>
- Vergunst, R., Swartz, L., Hem, K. G., Eide, A. H., Mannan, H., MacLachlan, M., Mji, G., Braathen, S. H., & Schneider, M. (2017). Access to health care for persons with disabilities in rural South Africa. *BMC Health Services Research*, 17, Article 741. <https://doi.org/10.1186/s12913-017-2674-5>
- Verhage, M. L., Oosterman, M., & Schuengel, C. (2013). Parenting self-efficacy predicts perceptions of infant negative temperament characteristics, not vice versa. *Journal of Family Psychology*, 27(5), 844-849. <https://doi.org/10.1037/a0034263>
- Wertlieb, D. (2018). Inclusive early childhood development: Ensuring the rights and well-being of infants and toddlers with disabilities and their families. *Zero to Three Journal*, 38(4), 22-30.
- World Health Organisation, United Nations Children’s Fund, & World Bank Group. (2018). *Nurturing care for early childhood development: A framework for helping children survive and thrive to transform health*

and human potential. WHO. <https://apps.who.int/iris/bitstream/handle/10665/272603/9789241514064-eng.pdf>

Zaidman-Zait, A., Mirenda, P., Zumbo, B. D., Wellington, S., Dua, V., & Kalynchuk, K. (2010). An item response theory analysis of the Parenting Stress Index-Short Form with parents of children with autism spectrum disorders. *Journal of Child Psychology and Psychiatry*, 51(11), 1269-1277.
<https://doi.org/10.1111/j.1469-7610.2010.02266.x>

Table 1

Profile of PSI, SENR and SIG Results

	Raw Score	Percentile	Clinical Range ^a		
	M (SD)	M (SD)	Normal	High	CS ^b
PSI-Total Stress	102.1 (25.06)	75.3 (20.26)	62.5%	10%	27.5%
SENR Total	79.68 (13.09)	-	-	-	-
SIG	M (SD)	Range			
<i>Size of Support</i>					
<i>Network</i>					
Total Support	7.15 (2.58)	1-10			
<i>Source of Support</i>					
Friends	1.85 (1.53)	0-5			
Neighbours	.38 (.63)	0-2			
Family	2.28 (1.26)	0-4			
Household	1.5 (.96)	0-4			
Professionals	1.15 (1.23)	0-5			
<i>Type of Support</i>					
Professional	1.15 (1.23)	0-5			
Companionship	2.45 (1.8)	1-9			
Emotional	3.45 (2.09)	0-9			
Information	2.28 (1.38)	0-6			
Practical	2.78 (2.22)	0-8			

^aPSI Clinical Range values are presented as percentages to represent the proportion of the sample categorised within each range specification.

^bCS = Clinically Significant: Scores falling at or above the 90th percentile (Abidin, 2012).

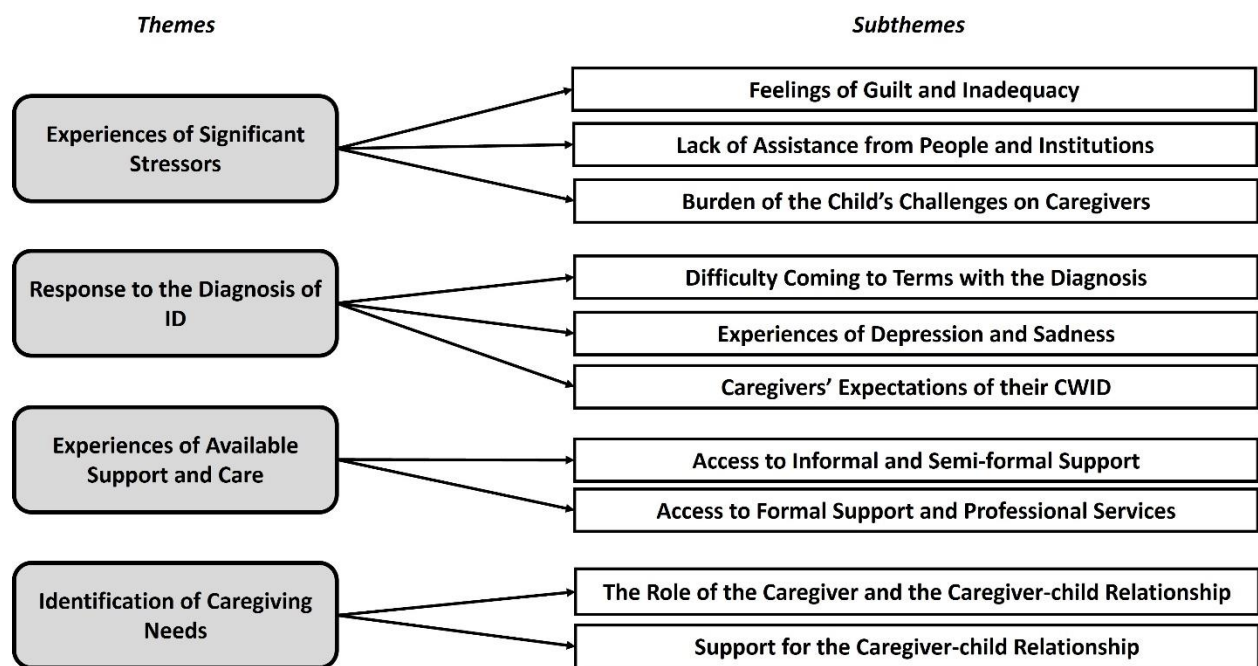


Figure 1
Outline of Themes and Subthemes

SUPPLEMENTARY MATERIAL: ARTICLE 2

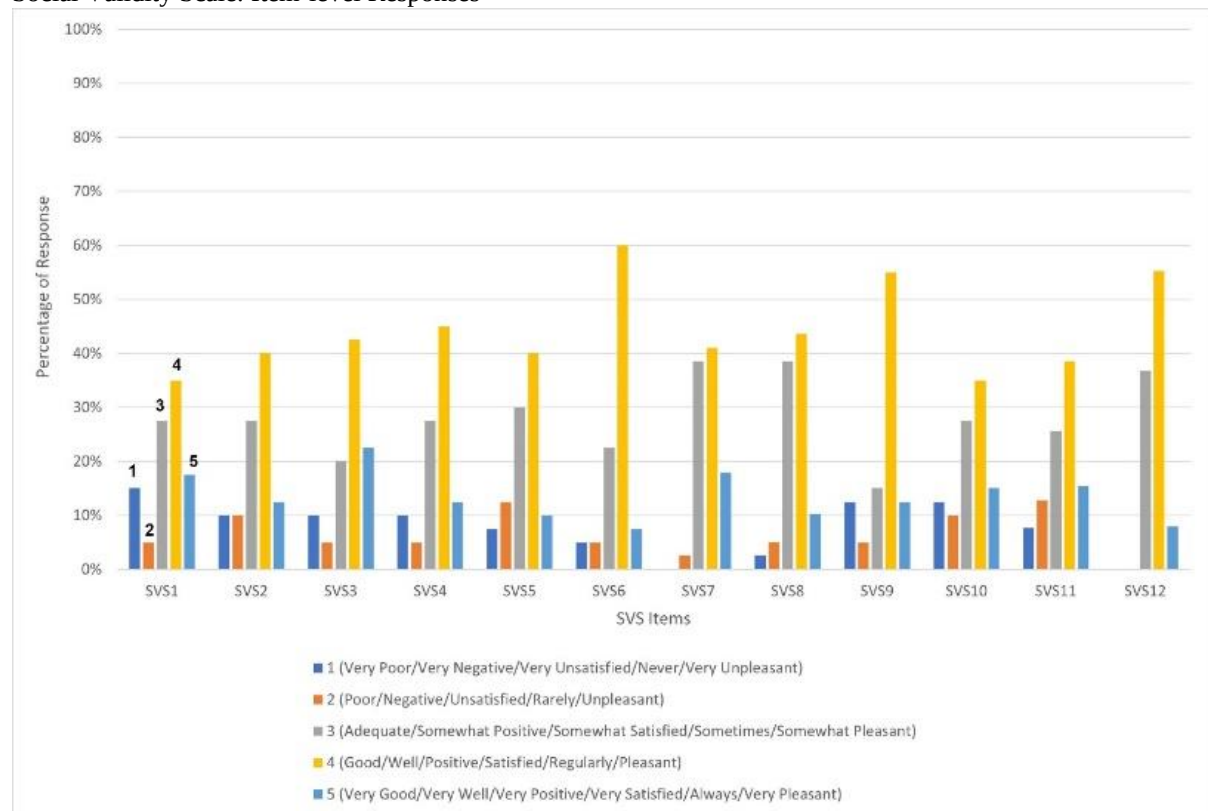
Table S1

Social Validity Scale: Adapted Item Content

	Item Content
SVS1	I find that the healthcare services I currently receive for my child are_____.
SVS2	The healthcare services I receive for my child meet my needs as a caregiver _____.
SVS3	The health professionals my child and I consult with understand the unique needs of my child _____.
SVS4	The health professionals that my child and I consult with take into consideration the challenges that are experienced in the relationship between my child and I _____.
SVS5	I feel as though my child and I receive help from healthcare professionals that is _____.
SVS6	The understanding I have of my child has changed in a _____ sense because of my consultations with health professionals.
SVS7	The manner in which I act towards my child has changed in a _____ sense because I better understand my child as a result of consulting with health professionals.
SVS8	My relationship with my child has changed in a _____ sense because I understand and act differently towards them as a result of consulting with health professionals.
SVS9	I am _____ with the services my child and I currently receive from health professionals.
SVS10	I have felt supported by health professionals who are involved in treating my child, _____.
SVS11	I find my experience of visiting health professionals to consult about my child _____.
SVS12	I have noticed a _____ change in my child since we have started seeing health professionals on a regular basis.

Figure S1

Social Validity Scale: Item-level Responses



Note: Participants responded to items on the SVS using a 5-point Likert scale. Response options, indicated in the legend above, were tailored to fit the wording of each item-stem (see Supplementary Material).

Table S2

Preliminary Interview Schedule: Caregivers

-
1. I would like to begin by getting a sense of the kind of person <name of child> is. Can you briefly tell me what <name of child> is like?
 2. Tell me about your experiences of being a parent/caregiver to <name of child>.
 3. Can you tell me about your relationship with <name of child>? What do you do when you are together?
 4. Do you think your relationship with <name of child> affects how he/she is as a person? (if yes, but does not elaborate, ask in what ways this happens. If no, ask what the parent thinks is affecting how the child is as a person).
 5. Do you think that how you respond to your child has an impact on them? Can you give examples of where this worked, and where this didn't work?
 6. Thinking of when this didn't work, what would you need at this point in time—what kind of feedback would be helpful to you?
 7. What are some of the factors you face that affect the way you relate to your child with ID? (Start off broad—then prompt and probe for challenges more specific to parenting their child with ID).
 8. What makes it easier for you to be in relationship with <name of child>? Can you give some examples of these experiences when your child was not distressed?
 9. How regularly do you have these positive interactions?
 10. In the last few weeks, can you think of when it was difficult for you to be a parent/caregiver to <name of child>? (prompt and probe to flesh out the details and examples).
 11. Can you tell me about the difficulties you may have in understanding your child's needs when <name of child> is upset? (prompt for specific challenges e.g. with communication etc).
 12. What would you need in order to help you understand your child's needs in moments such as these?
 13. What kind of support do you feel is necessary for you to have the kind of relationship with <name of child> that you would like to have?
 14. Is there anyone in your life who provides this kind of support? If there is, can you tell me about how they do this?
 15. What other kinds of support do you have available to you?
-

Table S3

Preliminary Interview Schedule: Experts

-
1. Can you tell me about some of the specifically *relational* difficulties you have noticed between caregivers and their child with ID?
 2. What is currently available with regards to facilitating or remediating parent-child relationship difficulties for children with ID?
 3. Based on this experience, what do you think caregivers of children with ID might need with regards to their relationships with their child?
-

2.3 Article 3

Article Title: Using Attachment and Biobehavioral Catch-up with young children with developmental delays: A multiple-baseline trial of attachment, sensitivity, and cortisol.

Journal: *Journal of Intellectual Disabilities*

Submission Status: Published

Article citation: Mohamed, A.R., Sterkenburg, P., Yeatman, J.G., van Rensburg, E., & Schuengel, C. (2023). Using Attachment and Biobehavioral Catch-up with young children with developmental delays: A multiple-baseline trial of attachment, sensitivity, and cortisol. *Journal of Intellectual Disabilities*, 27(4), 847–870. <https://doi.org/10.1177/17446295221104614>

Required Length: Submissions should not exceed 6 000 – 8 000 words.

Current Length: 7 865 words (Main Text)



2.3.1 Author Submission Guidelines: *Journal of Intellectual Disabilities*

The author submission guidelines were retrieved from the journal's [website](#).

2.3.1.1 What do we Publish?

2.3.1.1.1 Aims & Scope

Before submitting your manuscript to *Journal of Intellectual Disabilities*, please ensure you have read the [Aims & Scope](#).

2.3.1.1.2 Article Types

Your manuscript should ideally be between 6000 and 8000 words long, and double spaced. Please also supply an abstract of 100-150 words, and up to five keywords, arranged in alphabetical order.

Books for review should be sent to: Dr Roja D. Sooben, Senior Lecturer Learning Disability Nursing Research Lead, Room 1F300, University of Hertfordshire, College Lane, Hatfield, Herts AL10 9AB.

2.3.1.1.3 Writing your paper

The Sage Author Gateway has some general advice and on how to get published, plus links to further resources.

Make your article discoverable

When writing up your paper, think about how you can make it discoverable. The title, keywords and abstract are key to ensuring readers find your article through search engines such as Google. For information and guidance on how best to title your article, write your abstract and select your keywords, have a look at this page on the Gateway: [How to Help Readers Find Your Article Online](#).

2.3.1.2 Editorial Policies

2.3.1.2.1 Peer Review Policy

Each paper submitted, if considered suitable by the Editor, will be refereed by at least two anonymous referees, and the Editor may recommend revision and re-submission.

2.3.1.2.2 Authorship

All parties who have made a substantive contribution to the article should be listed as authors. Principal authorship, authorship order, and other publication credits should be based on the relative scientific or

professional contributions of the individuals involved, regardless of their status. A student is usually listed as principal author on any multiple-authored publication that substantially derives from the student's dissertation or thesis.

Please note that AI chatbots, for example ChatGPT, should not be listed as authors. For more [information see the policy on Use of ChatGPT and generative AI tools](#).

2.3.1.2.3 Acknowledgements

All contributors who do not meet the criteria for authorship should be listed in an Acknowledgements section. Examples of those who might be acknowledged include a person who provided purely technical help, or a department chair who provided only general support.

Third Party Submissions

Where an individual who is not listed as an author submits a manuscript on behalf of the author(s), a statement must be included in the Acknowledgements section of the manuscript and in the accompanying cover letter. The statements must:

- Disclose this type of editorial assistance – including the individual's name, company and level of input
- Identify any entities that paid for this assistance
- Confirm that the listed authors have authorized the submission of their manuscript via third party and approved any statements or declarations, e.g. conflicting interests, funding, etc.

Where appropriate, Sage reserves the right to deny consideration to manuscripts submitted by a third party rather than by the authors themselves.

2.3.1.2.4 Funding

Journal of Intellectual Disabilities requires all authors to acknowledge their funding in a consistent fashion under a separate heading. Please visit the [Funding Acknowledgements](#) page on the Sage Journal Author Gateway to confirm the format of the acknowledgment text in the event of funding, or state that: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

2.3.1.2.5 Declaration of Competing Interests

It is the policy of *Journal of Intellectual Disabilities* to require a declaration of conflicting interests from all authors enabling a statement to be carried within the paginated pages of all published articles.

Please ensure that a ‘Declaration of Conflicting Interests’ statement is included at the end of your manuscript, after any acknowledgements and prior to the references. If no conflict exists, please state that ‘The Author(s) declare(s) that there is no conflict of interest’.

For guidance on conflict of interest statements, please see the [ICMJE recommendations](#).

2.3.1.2.6 Research Ethics and Patient Consent

Medical research involving human subjects must be conducted according to the [World Medical Association Declaration of Helsinki](#).

Submitted manuscripts should conform to the ICMJE Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals, and all papers reporting animal and/or human studies must state in the methods section that the relevant Ethics Committee or Institutional Review Board provided (or waived) approval. Please ensure that you have provided the full name and institution of the review committee, in addition to the approval number.

For research articles, authors are also required to state in the methods section whether participants provided informed consent and whether the consent was written or verbal.

Information on informed consent to report individual cases or case series should be included in the manuscript text. A statement is required regarding whether written informed consent for patient information and images to be published was provided by the patient(s) or a legally authorized representative.

Please also refer to the [ICMJE Recommendations for the Protection of Research Participants](#).

2.3.1.2.7 Data

Sage acknowledges the importance of research data availability as an integral part of the research and verification process for academic journal articles.

Journal of Intellectual Disabilities requests all authors submitting any primary data used in their research articles alongside their article submissions to be published in the online version of the journal, or provide detailed information in their articles on how the data can be obtained. This information should include links to third-party data repositories or detailed contact information for third-party data sources. Data available only on an author-maintained website will need to be loaded onto either the journal’s platform or a third-party platform to ensure continuing accessibility. Examples of data types include but are not limited to statistical data files, replication code, text files, audio files, images, videos,

appendices, and additional charts and graphs necessary to understand the original research. The editor can also grant exceptions for data that cannot legally or ethically be released. All data submitted should comply with Institutional or Ethical Review Board requirements and applicable government regulations. For further information, please contact the editorial office.

2.3.1.3 Publication Policies

2.3.1.3.1 Publication Ethics

Sage is committed to upholding the integrity of the academic record. We encourage authors to refer to the Committee on Publication Ethics' [International Standards for Authors](#) and view the Publication Ethics page on the [Sage Author Gateway](#).

Plagiarism

Journal of Intellectual Disabilities and Sage take issues of copyright infringement, plagiarism or other breaches of best practice in publication very seriously. We seek to protect the rights of our authors and we always investigate claims of plagiarism or misuse of published articles. Equally, we seek to protect the reputation of the journal against malpractice. Submitted articles may be checked with duplication-checking software. Where an article, for example, is found to have plagiarised other work or included third-party copyright material without permission or with insufficient acknowledgement, or where the authorship of the article is contested, we reserve the right to take action including, but not limited to: publishing an erratum or corrigendum (correction); retracting the article; taking up the matter with the head of department or dean of the author's institution and/or relevant academic bodies or societies; or taking appropriate legal action.

Prior Publication

If material has been previously published it is not generally acceptable for publication in a Sage journal. However, there are certain circumstances where previously published material can be considered for publication. Please refer to the guidance on the [Sage Author Gateway](#) or if in doubt, contact the Editor at the address given below.

2.3.1.3.2 Contributor's Publishing Agreement

Before publication, Sage requires the author as the rights holder to sign a Journal Contributor's Publishing Agreement. Sage's Journal Contributor's Publishing Agreement is an exclusive licence agreement which means that the author retains copyright in the work but grants Sage the sole and exclusive right and licence to publish for the full legal term of copyright. Exceptions may exist where an assignment of copyright is required or preferred by a proprietor other than Sage. In this case

copyright in the work will be assigned from the author to the society. For more information please visit the [Sage Author Gateway](#).

2.3.1.3.3 Open Access and Author Archiving

Journal of Intellectual Disabilities offers optional open access publishing via the Sage Choice programme and Open Access agreements, where authors can publish open access either discounted or free of charge depending on the agreement with Sage. Find out if your institution is participating by [visiting Open Access Agreements at Sage](#). For more information on Open Access publishing options at Sage please [visit Sage Open Access](#). For information on funding body compliance, and depositing your article in repositories, please [visit Sage's Author Archiving and Re-Use Guidelines](#) and [Publishing Policies](#).

2.3.1.4 Preparing your Manuscript for Submission

2.3.1.4.1 Formatting

The preferred format for your manuscript is Word. LaTeX files are also accepted. Word and (La)Tex templates are available on the [Manuscript Submission Guideline](#) page of our Author Gateway.

2.3.1.4.2 Artwork, Figures and Other Graphics

For guidance on the preparation of illustrations, pictures and graphs in electronic format, please visit Sage's [Manuscript Submission Guidelines](#).

Figures supplied in colour will appear in colour online regardless of whether or not these illustrations are reproduced in colour in the printed version. For specifically requested colour reproduction in print, you will receive information regarding the costs from Sage after receipt of your accepted article.

2.3.1.4.3 Supplementary Material

This journal is able to host additional materials online (e.g. datasets, podcasts, videos, images etc) alongside the full-text of the article. For more information please refer to our [guidelines on submitting supplementary files](#).

2.3.1.4.4 Reference Style and Language Conventions

Journal of Intellectual Disabilities does not accept the abbreviations such as ID for “intellectual disability” or NDD for “neurodevelopmental disability”. This needs to be written in full throughout the manuscript and not abbreviated.

Journal of Intellectual Disabilities adheres to the Sage Harvard reference style. View the [Sage Harvard](#) guidelines to ensure your manuscript conforms to this reference style.

If you use EndNote to manage references, you can download the Sage Harvard EndNote output file.

2.3.1.4.5 English Language Editing Services

Authors seeking assistance with English language editing, translation, or figure and manuscript formatting to fit the journal's specifications should consider using [Sage Language Services](#). Visit Sage Language Services on our Journal Author Gateway for further information.

2.3.1.5 Submitting Your Manuscript

Journal of Intellectual Disabilities is hosted on Sage Track, a web based online submission and peer review system powered by ScholarOne™ Manuscripts. Visit <http://mc.manuscriptcentral.com/jnlid> to login and submit your article online.

IMPORTANT: Please check whether you already have an account in the system before trying to create a new one. If you have reviewed or authored for the journal in the past year it is likely that you will have had an account created. For further guidance on submitting your manuscript online please visit [ScholarOne Online Help](#).

2.3.1.5.1 ORCID

As part of our commitment to ensuring an ethical, transparent and fair peer review process Sage is a supporting member of [ORCID](#), the Open Researcher and Contributor ID. ORCID provides a persistent digital identifier that distinguishes researchers from every other researcher and, through integration in key research workflows such as manuscript and grant submission, supports automated linkages between researchers and their professional activities ensuring that their work is recognised.

The collection of ORCID IDs from corresponding authors is now part of the submission process of this journal. If you already have an ORCID ID you will be asked to associate that to your submission during the online submission process. We also strongly encourage all co-authors to link their ORCID ID to their accounts in our online peer review platforms. It takes seconds to do: click the link when prompted, sign into your ORCID account and our systems are automatically updated. Your ORCID ID will become part of your accepted publication's metadata, making your work attributable to you and only you. Your ORCID ID is published with your article so that fellow researchers reading your work can link to your ORCID profile and from there link to your other publications.

If you do not already have an ORCID ID please follow this [link](#) to create one or visit our [ORCID homepage](#) to learn more.

2.3.1.5.2 Information Required for Completing your Submission

You will be asked to provide contact details and academic affiliations for all co-authors via the submission system and identify who is to be the corresponding author. These details must match what appears on your manuscript. At this stage please ensure you have included all the required statements and declarations and uploaded any additional supplementary files (including reporting guidelines where relevant).

2.3.1.5.3 Permissions

Please also ensure that you have obtained any necessary permission from copyright holders for reproducing any illustrations, tables, figures or lengthy quotations previously published elsewhere. For further information including guidance on fair dealing for criticism and review, please see the Copyright and Permissions page on the [Sage Author Gateway](#).

2.3.1.6 On Acceptance and Publication

2.3.1.6.1 Sage Production

Your Sage Production Editor will keep you informed as to your article's progress throughout the production process. Proofs will be sent by PDF to the corresponding author and should be returned promptly. Authors are reminded to check their proofs carefully to confirm that all author information, including names, affiliations, sequence and contact details are correct, and that Funding and Conflict of Interest statements, if any, are accurate.

2.3.1.6.2 Online First Publication

Online First allows final articles (completed and approved articles awaiting assignment to a future issue) to be published online prior to their inclusion in a journal issue, which significantly reduces the lead time between submission and publication. Visit the [Sage Journals help page](#) for more details, including how to cite Online First articles.

2.3.1.6.3 Access to your Published Article

Sage provides authors with online access to their final article.

2.3.1.6.4 Promoting your Article

Publication is not the end of the process! You can help disseminate your paper and ensure it is as widely read and cited as possible. The Sage Author Gateway has numerous resources to help you promote your work. Visit the [Promote Your Article](#) page on the Gateway for tips and advice.

2.3.1.7 Further Information

Any correspondence, queries or additional requests for information on the manuscript submission process should be sent to the *Journal of Intellectual Disabilities* editorial office as follows: fintan.sheerin@tcd.ie.

2.3.2 Article 3 Manuscript

Using Attachment and Biobehavioral Catch-up with young children with developmental delays: A multiple-baseline trial of attachment, sensitivity, and cortisol

Ahmed Riaz Mohamed^{1,2,4}, Paula Sterkenburg^{1,3}, Joshua Gregory Yeatman⁴, Esmé van Rensburg² & Carlo Schuengel¹

¹Department of Clinical Child and Family Studies, and Amsterdam Public Health Research Institute, Vrije Universiteit, Amsterdam, Netherlands, ²Department of Psychology, North-West University, Potchefstroom, South Africa, ³Department of Assessment and Treatment, Bartiméus, Doorn, Netherlands, ⁴Department of Psychology, University of Pretoria, Pretoria, South Africa

Corresponding author: Ahmed Riaz Mohamed, Department of Psychology, University of Pretoria, Private Bag X20, Hatfield, 0028, Pretoria, South Africa. Email: ahmed.mohamed@up.ac.za

Abstract

The Attachment and Biobehavioral Catchup intervention potentially offsets psychosocial risks facing dyads in which children have intellectual disability or developmental delays. In this single-case multiple-baseline study the efficacy of this intervention was tested across three such South African families. Maternal sensitivity, attachment security, and child affect regulation were measured weekly during a baseline and intervention period, using the Ainsworth Maternal Sensitivity Scales, Attachment Q-sort and salivary cortisol, respectively. Furthermore, post-intervention interviews invited parents' and intervenors' evaluations of the intervention. Visual analysis broadly indicated improvement in maternal sensitivity and attachment security across subjects over time following the introduction of the intervention, although randomisation tests were not statistically significant. Effects on affect regulation were not clearly observed and may have been influenced by case-specific variables. Parent-participants and intervenors also identified particularly helpful contributions from the intervention. Findings underscore the importance of individual-level effects evaluation, especially when implementing interventions outside the original population.

Keywords: Attachment and Biobehavioral Catchup; attachment-based intervention; developmental delays; intellectual disabilities; multiple-baseline single-case design

Using Attachment and Biobehavioral Catch-up with young children with developmental delays: A multiple-baseline trial of attachment, sensitivity, and cortisol

The prevalence of intellectual disabilities in developing contexts such as Asia and Africa exceeds that in the developed world (Olusanya et al., 2020). Yet, publicly-funded screening, assessment and care for people with intellectual disabilities in South Africa is limited and specific training for health professionals remains inadequate (McKenzie et al., 2013). There is a need, therefore, for accessible, efficacious and sustainable interventions targeted at the mental wellbeing of people with intellectual disabilities that do not further burden already stretched public resources. Attachment-based interventions have been advanced as important avenues for time-limited and resource-light interventions for children's difficulties (Bakermans-Kranenburg et al., 2005). This is particularly relevant given the links that have been identified between attachment problems and poorer social competence as well as behavioural and emotional challenges across the developmental spectrum (Groh et al., 2012, 2017). This is of concern when considering that children with intellectual disabilities may be at greater risk of developing insecure attachment relationships (Feniger-Schaal and Joels, 2018; Ganiban et al., 2000). Janssen et al.'s (2002) stress-attachment model posits that this may place them at an elevated risk of poorer mental health given the role of problematic attachment in the development of affect dysregulation and its relation to the development of psychopathology. Following from this, the present study sought to explore the efficacy of the Attachment and Biobehavioral Catchup (ABC; Dozier and Bernard, 2019) intervention in three South African dyads in which the child had an intellectual disability or developmental delays.

Sensitive responsiveness may be particularly impeded in parents of children with intellectual disabilities due to the anomalous and often idiosyncratic signal repertoire of these

children and syndrome-specific manifestations of affect regulation and social information processing (Atkinson et al., 1999; Cicchetti and Serafica, 1981; Feniger-Schaal et al., 2019). This may explain the higher risk of attachment insecurity in children with intellectual disabilities and emphasises the importance of such interventions for this population. Meta-analytic evidence has shown that relatively brief interventions that target caregiver sensitivity have been particularly impactful in enhancing attachment security in children (Bakermans-Kranenburg et al., 2003). Such interventions may, therefore, serve to remediate the underdeveloped affect regulatory processes embedded within less secure caregiver-child relationships (Schuengel et al., 2009) by enhancing the caregiver's capacities as both a secure base and safe haven for the child. However, despite the clinically-relevant potential of attachment-based interventions, there has been only limited investigation in this area for children with intellectual disabilities and developmental delays (see Mohamed and Mkabile, 2015; Platje et al., 2018; Sterkenburg et al., 2008b).

The ABC intervention is an attachment-based parenting programme carried out over 10 home visits. The programme was originally designed for the caregivers of infants and young children at risk of developing disorganised attachments such as those who have been maltreated or neglected. Drawing on attachment theory and stress neurobiology, its targets are: to foster improved nurturing behaviours towards the child when distressed, to reduce intrusive and frightening parenting behaviours, and to increase affective synchrony at times when the child is not distressed. These targets are intended to facilitate caregiver sensitivity and—by extension—child attachment security and affect regulation (Dozier and Bernard, 2017, 2019). Each session is guided by a theme that aligns directly with the intervention targets and includes in-vivo commenting and video-feedback to reinforce positive, and reduce negative, parent-child interactions. In-session learning is augmented with applied homework exercises which are discussed during subsequent sessions. Strengths and existing parenting

capacities take the foreground in ABC, rather than shortfalls. Multiple randomised controlled trials have demonstrated the role of the ABC in improving caregiver sensitivity (Berlin et al., 2018; Hepworth et al., 2020; Yarger et al., 2020), attachment security (Bernard et al., 2012; Zajac et al., 2020), as well as cortisol regulation (Bernard et al., 2015; Dozier et al., 2008; Garnett et al., 2020) among those who received the ABC versus a control intervention.

The ABC has to date, however, not been tested in the context of children with intellectual disabilities or developmental delays, whose parents may especially seek in-the-moment feedback to encode their child's anomalous signals (Janssen et al., 2002). This study aimed to assist with understanding how the intervention may work in these dyads and how clinically relevant change may manifest itself. In doing so, the outcomes in the current study—caregiver sensitivity, attachment security and cortisol regulation—were continuously assessed, over time, during a baseline and intervention period. The following hypotheses were tested:

1. Caregiver sensitivity will show an increase over time, and across dyads, following the introduction of the ABC intervention.
2. Attachment security will show an increase over time, and across dyads, following the introduction of the ABC intervention.
3. Hypercortisolism (persistently elevated diurnal cortisol levels) will reduce over time, and across dyads, following the introduction of the ABC intervention to show a more normative diurnal cortisol rhythm.

Furthermore, the study sought to understand the social validity of the intervention programme as perceived by the parents and intervenors.

Design

The study followed a mixed methods single case research approach (Onghena et al., 2018). A concurrent, multiple-baseline single-case design was applied across three mother-child dyads, followed by in-depth interviews with parents and intervenors. The combination of experimental control, randomisation, and blinding in this design allows conclusions about effects among subjects to be drawn with high internal validity (Kratochwill and Levin, 2010). Applying Koehler and Levin's (1998) regulated randomisation procedure, each dyad was randomly assigned—by an independent assistant—to a set of two non-overlapping *a priori* intervention starting points. In a further step, the specific starting point within each set was also randomly assigned resulting in the final allocation of a five-, eight- or nine-week baseline to each dyad, respectively. Repeated measures of the dependent variables occurred on a weekly basis during the pre-intervention baseline phase (A1), intervention phase (B) and brief post-intervention phase (A2), with some exceptions due to practical constraints (illness, work commitments, or vacation). During Phase B, the ABC intervention was introduced once-weekly for a set ten sessions per dyad. The observer, dyads and intervenors could not be blinded to phase. All raters, however, were fully independent and blinded to the study phase associated with each observation by randomising the chronological order and anonymising the labelling of video-recordings.

Participants

Mother-child Dyads

The average age, in years, of the mothers at the commencement of the study was 37 (SD: 1.73). Two were first-time mothers and all were the biological mothers of the participating child and were married to the child's father. All had completed a Bachelor's-level university degree and were employed on a permanent, full-time basis. Two of the mothers were Black-African, and one was White. The average chronological age, in months, of the children was 25.67 (SD: 11.02), and the average estimated developmental age, in

months, was 14.9 (SD: 10.27). All three children were female and obtained Adaptive Behavior Composites on the Vineland Adaptive Behavior Scales ranging between 35 and 71 (Mean: 57.33; SD: 19.5) and had confirmed developmental delays. Two of the children were taking medication at the time of the study—one for seizure control (Carbamazepine, Phenobarbital and Levetiracetam), and the other for the management of challenging behaviours (Risperdal).

Eligible dyads were referred to the study primarily via a centre providing allied health services to infants up to 36 months of age diagnosed with developmental delays and disabilities. This was supplemented by referrals via a private Facebook group for local mental health professionals. The principal investigator (PI) made telephonic contact with the referred dyads to provide further information and schedule the initial screening for developmental age. Dyads were informed that their further participation in the study was contingent on the outcome of the screening assessment.

Adult familial and non-familial caregivers were eligible for inclusion in the study if they lived with, and were the primary caregiver of, the referred child. Children were eligible if they had an estimated developmental age of up to 36 months with an established diagnosis, by a trained health/mental health professional, of either developmental delays or intellectual disability. Dyads were ineligible for participation if either caregiver or child required extended hospitalisation/institutionalisation, if the child had an estimated developmental age significantly outside the range of 6-36 months, or if the child was formally diagnosed with a known genetic syndrome (e.g. Fragile X) in order to ensure that their behavioural phenotypes would not interfere with the assessment of attachment.

Intervenor Selection

Two intervenors were randomly selected by the PI from a pool of six candidates screened by the developers of the ABC. Both were experienced psychologists with master's-

level qualifications and post-master's in-service training, and one was pursuing a PhD in Psychology. Training in the ABC protocol, conducted by the Attachment and Biobehavioral Catch-Up Laboratory (University of Delaware, USA), took place in South Africa over two days for the intervenors and research team.

Context and Setting

The study was conducted in Johannesburg and Pretoria, South Africa, and procedures took place in the homes of the dyads. Observation-based procedures were focused on naturalistic interactions, hence no special arrangements or equipment—other than video-recording equipment—were required. The observer (the PI) remained in the room during observations to re-angle and pan the camera, when necessary, due to the activity of the dyad.

Approvals and Consent Procedures

Ethical clearance for the study was obtained from the Health Research Ethics Committee at North-West University, South Africa (NWU-00012-18-A1). Written and verbal consent was obtained from the parent-participants for their own and, separately, their child's participation.

Measures

Screening

Children's developmental age was screened using the Vineland Adaptive Behavior Scales, 3rd edition (VABS-3; Sparrow et al., 2016). The VABS-3 produces a standardised total Adaptive Behavior Composite as well as age equivalence estimations for its three functional subdomains—communication, daily living skills and socialisation—and is regularly used to support diagnoses of intellectual disabilities.

Maternal Sensitivity

Maternal sensitivity was assessed using the Ainsworth Maternal Sensitivity Scale (AMSS; Ainsworth et al., 1991), which rates the mother's ability to perceive the child's

signals accurately, and to respond to these appropriately and timeously. A total of 52 home-based naturalistic observations, conducted weekly over a six-month period and lasting one hour each, were video-recorded during all study phases across dyads. The recordings were later independently rated on a nine-point scale ranging from *highly insensitive* (1) to *highly sensitive* (9). Dyads were instructed to interact with one another as they normally would and to disregard the observer and equipment. An independent consultant trained in the AMSS watched the one-hour recordings and selected a 10- to 20-minute segment from each that was suitable for rating sensitivity. Two independent raters (master's-level students at North-West University, South Africa) were trained, and certified reliable, by an expert in the AMSS (M.J. Bakermans-Kranenburg, Vrije Universiteit Amsterdam, the Netherlands) and subsequently carried out the rating. All 52 video segments were double-coded, showing moderate inter-rater reliability (intraclass correlation coefficient [ICC]: .63; Koo & Li, 2016). Analyses were performed on the mean of both raters' sensitivity scores at each measurement point.

Attachment Security

Attachment security was assessed using the Attachment Q-sort (AQS, version 3; Waters, 1987), a continuous measure of attachment, which contains 90 items describing secure base behaviours of children up to five years of age applied to naturalistic observations of parent-child interactions. These items were sorted by two trained, independent raters into nine piles of 10 items each ranging from *very much unlike the child* (Pile 1) to *very much like the child* (Pile 9), and assigned a score between 1 and 9, accordingly. The observer rating was subsequently correlated with the rating, by experts, of an ideally secure child, producing a score between -1.0 (a child least resembling security) and +1.0 (a child most resembling security). AQS scores above .3 have been proposed as cut-off for secure attachment (Solomon and George, 2016). The same recordings were used to rate maternal sensitivity and attachment security although the full hour was used for rating the AQS. The first rater (a

master's-level research assistant with experience in AQS rating), based at the Vrije Universiteit Amsterdam, the Netherlands, rated 41% of the total videos and trained the second rater (a PhD student at the University of the Witwatersrand, South Africa). The second rater sorted all 52 videos and moderate to good inter-rater reliability (ICC: .75) was established on the 41% of double-coded videos. Analyses were performed on the scores of the second rater.

Affect Regulation

Affect regulation was assessed by means of measuring the diurnal rhythm of cortisol production in the child-participants through saliva sampling. Parents were trained by the PI to collect saliva samples from their child at three equally-spaced time points during the day (Gunnar and White, 2001)—morning (07:30), afternoon (13:30) and evening (19:30)—on one day per week for the full duration of the study. Parents were instructed not to take samples within 30 minutes of the child having been fed or having brushed their teeth, and to delay sampling by a day or two if the child was ill.

Parents were instructed to place a *SalivaBio* Children's Swab (Salimetrics, LLC) into their child's mouth for 60-90 seconds, until saturated, before depositing it in a pre-labelled storage tube and storing it in their home freezer. The PI collected frozen samples weekly to bi-weekly and delivered these to a private commercial laboratory where they were stored at -20°C before being thawed, centrifuged and analysed using Liquid Chromatography-tandem Mass Spectrometry (LC-MS). Samples were analysed in smaller batches due to limited laboratory storage. Ten of the 165 samples collected yielded insufficient saliva, resulting in 155 valid samples across dyads. Inter- and intra-assay coefficients of variance were not available from the laboratory.

Cortisol Data Preparation. The three raw nmol/L values at each measurement point were reduced using Area Under the Curve (AUC) formulae proposed by Pruessner et al.

(2003): AUC with respect to Ground (AUC_G)—overall magnitude of cortisol—and AUC with respect to Increase (AUC_I)—change in cortisol over the course of the day with reference to the morning value. Decreasing values on these indices are indicative of improvement, with decreasing AUC_G values reflecting a lowering of the overall magnitude of cortisol and negative AUC_I values suggestive of lower cortisol levels later in the day compared to the morning (i.e. downward diurnal slope). Values for eight of the 10 invalid samples were imputed by linear interpolation using the *imputeTS* package (version 3.1) for R. The two remaining values occurred at the same measurement point for a single participant, precluding imputation. Furthermore, AUC_G and AUC_I outliers for all cases were identified using Tukey's Fence Method (Jones, 2019), resulting in the removal of three AUC_G and eight AUC_I data points across cases.

Social Validity

An adapted version of the Social Validity Scale (SVS; Seys, 1987) asked parents to evaluate the social and practical significance of the intervention upon its completion. The scale consisted of 21 questions pertaining to the intervenor, the number of sessions, the perceived changes due to the intervention, and the techniques used in sessions, amongst others, rated along a five-point scale.

Individual Interviews

Individual semi-structured interviews were conducted with the parents prior to, and upon conclusion of, the intervention phase of the study. The first interview—a brief clinical interview—was conducted by the PI, a registered clinical psychologist, at the commencement of the study to gather pertinent historical information on the dyad. The second interview was conducted by an independent master's-level research assistant at post-intervention with parents and intervenors and ranged from 30 to 60 minutes. In addition to social validation (e.g. Can you tell me what, for you, was most beneficial about the ABC?; Can you tell me

about what you did not find useful about the ABC?; What was your experience of the parent coach?), the parent interviews explored their perceptions of changes in their child and themselves due to the intervention and the intervenor interviews explored their perceptions of how the dyads responded to the intervention. Interviews were audio-recorded with a digital recorder and subsequently transcribed, verbatim, for the purposes of analysis conducted by the PI and an independent second coder (a master's-level research assistant based at the Vrije Universiteit Amsterdam, the Netherlands).

Intervention

The Attachment and Biobehavioral Catchup intervention was originally developed for infants who have experienced neglect and maltreatment but deemed potentially valuable for parents of children with ID or developmental delays. The intervention consists of a fixed set of ten sessions implemented in the home of the dyad on a weekly basis, for one hour, by a 'parent coach'. Although the intervention is manualized (Dozier et al., 2016), each session is tailored to the circumstances of the specific dyad.

The first two sessions highlight the importance of nurturing behaviours. Here, parent coaches assist parents in recognising that their children need them even in the absence of a clearly identifiable signal of distress. Sessions three and four foreground synchrony which is facilitated through helping parents recognise and understand the importance of following the child's lead. Sessions five and six focus on helping parents interact in nonintrusive and nonfrightening ways. Sessions seven and eight turn towards the concept of 'voices from the past' in which parents consider how their own issues from the past can affect their parental behaviour. The last two sessions serve as opportunities to consolidate the lessons learned over the previous sessions and to celebrate changes that have occurred.

Although the primary caregiver and child are both required to be present during the intervention session, the intervention is parent-focused with the parent coach avoiding direct

engagement with the child. During sessions, parent coaches deliver session content (such as research evidence) relevant to the session theme while simultaneously responding to the real-time interactions between the parent and child using ‘in-the-moment’ commenting. This is supplemented by video-feedback using moments of parent-child interaction video-recorded during the previous session as well as homework tasks aimed at reinforcing skills. During sessions, parent coaches pay close attention to encouraging parents’ sensitivity by spotlighting even subtle instances of target parenting behaviours. During later sessions, parents’ attention is gently directed to the child’s signals that go unnoticed by the parent. In the current study, all dyads completed the full ten sessions over a period ranging 16-17 weeks with an average session duration of 48.43 minutes (SD: 5.15).

Treatment Fidelity

ABC is a fully manualised intervention, in which intervenors received training. Case supervision—using video-recorded sessions—occurred weekly over an eight-month period. The supervisor randomly selected a five-minute segment of the recording which was coded for on-target in-the-moment comments. Intervenors were expected to make an average of one on-target in-the-moment comment per minute to meet adherence criteria (Caron et al., 2016). To qualify for certification, at least 80% of in-the-moment comments had to be on-target, and at least one information component included in the comment, on average (Caron et al., 2016). Both intervenors in the current study demonstrated adherence to fidelity criteria (see Supplementary Material—Table S1).

Data Analysis

Visual Analysis

Visual analysis was conducted using the SCVA package (version 1.3.1; Bulté and Onghena, 2012) for *R* (version 4.0.2) to assess the performance of the dyads. Data were inspected for mean level shift, split-middle trend, variability and immediacy or latency of

change (Gast and Spriggs, 2010). Change in level was assessed by comparing the mean performance on the dependent variables between phases. Relative change between the baseline and intervention phase ($Mdn_{Intervention[1st\ half]} - Mdn_{Baseline[2nd\ half]}$) was assessed to determine the immediacy or latency of intervention effect. Trend was used to evaluate the direction of change within each phase over time. Change in trend was then determined by comparing trend lines between adjacent phases. Change in the upward direction was deemed improvement for maternal sensitivity and attachment security, while change in the downward direction was deemed improvement on the cortisol indices.

Statistical Analyses

Randomisation Testing. Additionally, randomisation tests for multiple-baseline designs were performed using the *SCRT* package (version 1.3.1) for *R* to assess the difference in mean performance between phases on the outcome variables across subjects (Bulté and Onghena, 2009). Phases B and A2 were expected to be superior to Phase A in terms of the dependent variables. Randomisation testing was performed on the raw data for both maternal sensitivity and attachment security, and on the two derived summary statistics (AUC_G and AUC_I) for the cortisol data. Statistical significance was determined at $p < .05$.

Trend Estimation. Exploratory statistical estimation of the trend within each phase was carried out using the non-parametric Theil-Sen estimator (Wang and Yu, 2005). Insensitive to outliers, the Theil-Sen estimator represents the median of all regression slopes for all pairs of data points within each phase, offering a statistical estimation of the trend within the respective phases. This was done using a web-based Theil-Sen Calculator (version 2.0) via the www.singlecaseresearch.com website (Vannest et al., 2016).

Slope and Level Change. The Slope and Level Change (SLC) procedure outlined by Manolov et al. (2016) was applied, using the *SLC* package (version 0.3) for *R*, in instances of

notable pre-intervention improvement, to control for the influence of improving baseline trend on the detection of an intervention effect during Phase B.

Overlap. Furthermore, to measure the size of intervention effect, the Nonoverlap of All Pairs (NAP) was calculated using the web-based application of the *SingleCaseES* package (version 0.5; Pustejovsky and Swan, 2018) for R. The NAP provides an indicator of performance differences for each case between phases and provides insight into the extent to which data in the baseline versus intervention phases do not overlap. It is “the probability that a score drawn at random from [the] treatment phase will exceed (overlap) that of a score drawn at random from [the] baseline phase” (Parker and Vannest, 2009: 359). A greater degree of nonoverlap is an indicator of greater performance change and hence a stronger effect. NAP values range between 0 and 1, with values 0.5 and over indicative of improvement. The NAP is an accepted indicator of the magnitude of performance change in single-case designs, offering a superior index of effect size compared to other overlap indices (Parker and Vannest, 2009).

Qualitative Analysis

Post-intervention interviews were analysed qualitatively—via *Atlas.ti* (version 8 for Windows)—using inductive thematic analysis to identify themes (Braun and Clarke, 2006). Two coders separately organised their respective codes into preliminary themes and subthemes which were then discussed to reach broad agreement on the coding scheme and preliminary themes. Based on this discussion, revisions were made to the coding and thematic organisation followed by a final meeting between the coders to confirm and finalise the thematic areas.

Results

Effects on Maternal Sensitivity

Mean maternal sensitivity (see Figure 1) improved from baseline to post-intervention across all cases (see Supplementary Material—Table S2, for mean level and mean change values). Case 2 was the only case in which mean maternal sensitivity decreased from baseline to intervention, although there was comparatively greater variability for Case 2 during the intervention phase. In addition, Cases 1 and 3 demonstrated immediacy of effect while Case 2 showed latency. Cases 1 and 3 showed a change in trend towards acceleration from baseline to intervention, suggesting improving maternal sensitivity over time following the introduction of the ABC. Although for Cases 1 and 3 there was a slight deceleration post-intervention, the overall post-intervention mean exceeded mean baseline sensitivity. In contrast, Case 2 demonstrated a slight decelerating, contra-therapeutic trend following the introduction of the intervention, although the variability in the data for this case precludes a confident determination of trend in the intervention phase.

[Insert Figure 1 here]

The greatest nonoverlap was evident across phases and dyads for maternal sensitivity (See Table 1 for NAP indices). Although only Case 1 showed a medium effect from baseline to intervention (compared to weaker effects in Cases 2 and 3), the remaining two cases showed a medium effect from baseline to post-intervention. Table 2 presents results from the randomisation testing which showed that the phase effect was not statistically significant across the three cases on maternal sensitivity ($p = .21$), and no additional statistically significant changes in slope were identified from the exploratory Theil-Sen estimations (see Supplementary Material—Table S3).

Table 1

Nonoverlap of All Pairs (NAP) across study phases for maternal sensitivity, attachment security and cortisol indicators

	A1-B				A1-A2				B-A2			
	NAP	SE	95% CI		NAP	SE	95% CI		NAP	SE	95% CI	
			Lower	Upper			Lower	Upper			Lower	Upper
<i>Sensitivity</i>												
Case 1	.86	.10	.53	.97	1.00	0	1.00	1.00	.59	.21	.22	.88
Case 2	.32	.15	.13	.61	.86	NA	.29	.99	.81	NA	.26	.98
Case 3	.65	.13	.38	.84	.89	.11	.43	.99	.67	.17	.27	.91
<i>Security</i>												
Case 1	.86	.09	.54	.97	1.00	0	1.00	1.00	.69	.31	.28	.92
Case 2	.52	.16	.26	.77	.43	NA	.09	.86	.38	NA	.07	.83
Case 3	.62	.14	.36	.82	.61	.16	.23	.89	.39	.16	.11	.77
<i>Cortisol Magnitude (AUC_G)</i>												
Case 1	.36	.15	.14	.66	.20	.20	.03	.67	.39	.20	.11	.77
Case 2	.38	.19	.16	.67	.50	.22	.15	.85	.55	.16	.20	.85
Case 3	.69	.13	.42	.87	.50	.50	.17	.83	.35	.35	.10	.74
<i>Cortisol Change (AUC_I)</i>												
Case 1	.72	.17	.41	.90	.40	.24	.10	.80	.05	.05	0	.51
Case 2	.29	.20	.09	.64	.75	.25	.28	.96	1.00	0	1.00	1.00
Case 3	.44	.15	.22	.69	.13	NA	.01	.70	.30	NA	.05	.79

Note: 0-.65 = weak effects; .66-.92 = medium effects; .93-1 = strong effects (Parker & Vannest, 2009). NA = No available SE due to only one data point at post-intervention (A2).

Table 2

Results of randomisation testing for maternal sensitivity, attachment security and cortisol indicators

	Including A2		Excluding A2	
	Observed Statistic ^a	p	Observed Statistic ^a	p
Sensitivity	.28	.17	.19	.21
Security	.14	.15	.14	.23
Cortisol Magnitude (AUC _G)	-.8	.46	-2.03	.46
Cortisol Change (AUC _I)	.09	.42	-.23	.44

Note: Randomisation tests for multiple baseline designs conducted in *R* are only possible with two-phase AB studies. As such, due to the addition of an A2 phase, the randomisation tests in the present study were conducted twice—including and excluding A2 phase data points as part of the B-phase data—in order to assess the impact of the A2 data on the overall significance of the results.

^aTest statistic for security and sensitivity = B-A; test statistic for cortisol variables = A-B.

Effects on Attachment Security

Mean attachment security (Figure 2) improved across all three cases from baseline to intervention, with Case 1 showing the largest change in average security across phases, and Case 2 the smallest. Relative change showed an immediate intervention effect in all cases, although smaller in Case 2 and 3 compared to Case 1. The improvement in mean security was maintained at post-intervention for all three cases, despite negligible declines from intervention to post-intervention for Cases 2 and 3. Both Cases 1 and 3 showed an improving trend during the intervention phase following the introduction of the intervention, even after controlling for initial baseline improvement in Case 1. Trends in Case 2 were negligible across all phases with no clear improvement or decline in attachment security over time.

[Insert Figure 2 here]

Case 1 demonstrated medium to strong effects across phases for attachment security with the remaining two cases showing consistently weak effects (Table 1). The phase effect was not statistically significant on the randomisation test across the three cases on attachment security ($p = .23$) and exploratory Theil-Sen estimations revealed no additional statistically significant changes in slope on this variable.

Effects on Cortisol Regulation

Data on cortisol regulation (Figures 3 [AUC_G] and 4 [AUC_I]) did not clearly demonstrate a consistent pattern of change across cases. Each case showed a distinct intra-case pattern across all phases on both indicators along with notable variability, precluding reliable estimations of level and trend. However, Case 1 demonstrated a discernible shift in AUC_I level and trend in the expected direction during the intervention phase, but not in AUC_G. This improvement in AUC_I was, however, not sustained at post-intervention and did not replicate in the other cases. Case 2 showed relatively large overall cortisol elevations and significant periodic spikes, demonstrated in the comparatively and notably larger and more variable AUC_G, and positive AUC_I, values across phases. Although Case 3 showed no notable average change in AUC_I during the intervention phase, data indicated an early improvement, and later decline, reflected in the accelerating trend. The inverse pattern was observed in AUC_G values for Case 3—early increase, and later decrease, with decelerating intervention phase trend. It is noteworthy, however, that the average AUC_I for both Cases 1 and 3 were in the negative range across phases.

[Insert Figure 3 here]

[Insert Figure 4 here]

Overall, there was a small degree of nonoverlap on the cortisol indicators, suggesting a weak effect of the intervention on cortisol production. Furthermore, randomisation testing showed that the phase effect was not statistically significant for either cortisol indicator (AUC_G: $p = .46$; AUC_I: $p = .44$) and no additional statistically significant changes in slope were identified.

Parents' and Intervenors' Evaluations of the Intervention

All three parents reported changes in their children over the course of the intervention. Themes that were distilled from the interviews included greater initiative-taking and confidence in the children, which parents attributed to them allowing the child to take the lead. Parents also noted more positive parent-child interactions and greater engagement and openness to interaction on the part of their children, including more concerted attempts at seeking physical closeness. This was exemplified by one parent who commented on how “[my child] became more open...[she would] come more often to [me]...because [she] know[s], okay, mommy will respond” (Parent, Case 1).

Themes regarding changes in the parents themselves were focused around the three core intervention targets. Parents reported having learned how to better align with their child. One parent commented, in relation to her daughter, that “even though I am attentive of her...I’ve sort of let her be herself as well. I let her to be herself instead of trying to push too hard to get her to what I want her to do” (Parent, Case 2), which is indicative of having learned how to follow the child’s lead. Parents also commented on having learned the importance of behaving in ways that make their children feel better when they are distressed even when this did not—at first—necessarily come naturally, as exemplified by a parent who commented on how “[when she’s upset] I’m not just leaving her to get on with it. I’m bringing the love back there. I’m sitting there saying ‘I’m still here for you’” (Parent, Case 3), suggesting the adoption of more nurturing responses when the child was upset. Parents also took note of increasingly coming to notice and understand the necessity of reducing frightening behaviours. One of the parents, reflecting on what she had learned about herself, stated that “being scary is one of them. And I’ve noticed how that affects [my child]...if I raise my voice for anything, she will just sit there and she looks at me deer-in-headlights...and goes and has a good cry. So I’ve really got to get to the point where it’s not shouting [anymore]...” (Parent, Case 3).

In addition to changes in relation to the three core intervention targets, parents also noted changes with regards to another session theme—coming to recognise voices from the past. One mother noted how she often would use a serious and irritated tone in response to her child crying, instead of a more gentle, nurturing and curious tone but “after a while when we were doing our [ABC] sessions, I actually realised I respond based on...voices from the past” (Parent, Case 2). Lastly, parents highlighted the manner in which they had, over the course of the intervention, improved in their observation, understanding and responsiveness regarding their children’s cues as reflected in the following extract:

...she’s [premature], so it was very difficult for me to understand her...she’s this quiet child, sometimes...she’s not happy about something, [but] she’ll be quiet and I think you know she’s fine, but then now I can observe her and then I’ll take her and then hold her and then she becomes like ‘okay, mommy’s here’, then she becomes happy (Parent, Case 1).

All three parents experienced the intervention as beneficial and relevant, and felt that it could be of benefit to others who have a child with developmental delays. On the SVS, parents also rated the intervention favourably. Parents rated positively the impact of the intervention on changes in their parenting behaviours and in their children, as well as on their feelings of competence as a parent and parenting stress. All parents rated the intervention as “Very Good” and would recommend it as such to others because, in their opinion, it was effective at improving their relationships with their children.

Intervenors highlighted change in child behaviour and change in the child’s expectations of the parent. Themes in the interviews regarded increased initiation of behaviours (“it was as if [the child] came alive”—Intervenor, Case 1), greater intentionality in seeking proximity on the child’s part (“you could see...the difference in the kid, the way that she was responding to mom and leaning into her”—Intervenor, Case 3), and increasingly positive parent-child interactions (“she was safe where in the beginning it was...it really looked like a

child that was just totally lost”—Intervenor, Case 2). Particularly noteworthy were the intervenors’ observations related to changing expectations of care from the child based on shifting parenting behaviours such as following the lead or responding to signals (“she was eventually having an expectation of seeing her mom respond”—Intervenor, Case 1).

Both intervenors also highlighted notable changes in the parents related to particular core intervention targets. One such change pertained to enhanced parent-child synchrony that emerged as the result of improvements in parents following the child’s lead, which served to encourage parents when they observed positive responses from the child. One intervenor commented on how the parent with whom she was working “was beginning to initiate less and allowing [the child] to initiate more...mom was encouraged to follow more, which then also encouraged [her child] to lead more and then mom follows more” (Intervenor, Case 1). Nurturance was the second core target highlighted by intervenors. They observed that the parents increasingly came to understand the importance of prompt, nurturing responses and were able to put this understanding in practice, resulting in observable changes in child behaviours, as noted in the following reflection:

Mom went from ‘...I don’t know what she wants’...[to] ‘ah, you want some food. Ah, your tummy’s full’. It’s [like] day [and] night...and you could see...the difference in the kid, the way that she was responding to mom and leaning into her...(Intervenor, Case 2).

Although the intervenors had some early reservations related to the applicability of the intervention for children who were lower functioning, after noting improvements in the dyads over time intervenors echoed parents’ support for the intervention’s benefit and relevance to families with a child who has development delays or intellectual disability.

Discussion

Overall, visual analysis supported the feasibility, use and utility of the ABC in shifting maternal sensitivity (Hypothesis 1) and attachment security (Hypothesis 2) in individual families with children with intellectual disabilities and developmental delays. This was complemented by the experiences of the parents and intervenors who noted positive changes in parent and child behaviours over the course of the intervention. Visual analysis also provided a first implementation of observer-rated sensitivity and attachment security to track changes from baseline to intervention and post-intervention. However, statistical tests of the time series were inconclusive. The findings related to affect regulation (Hypothesis 3) also showed no clearly replicable evidence of an intervention effect.

Patterns of change in maternal sensitivity were observed across all three dyads. Two cases demonstrated improvements in maternal sensitivity following the introduction of the ABC while the third case showed an improvement later, at post-intervention. The improvement in sensitivity was as expected given that the ABC is parent-focused and is aimed, ultimately, as enhancing sensitive responsiveness in the parent. The current findings on sensitivity are encouraging and correspond with previous studies which have found significant intervention effects on sensitivity in groups of parents who received the ABC versus a control condition (Berlin et al., 2018; Bick and Dozier, 2013; Hepworth et al., 2020; Yarger et al., 2020). Mean sensitivity levels in the present study also meet or exceed the mean AMSS-determined sensitivity recently reported in a sample of South African mothers with typically developing children (Dawson et al., 2021). The parents in the current study were, on average, never—even at baseline—within the insensitive (1-4) range, which also corresponds with the findings of a study by Feniger-Schaal and Joels (2018) among parents of children with intellectual disabilities. Zevalkink and Riksen-Walraven (2001) found that sensitivity was higher in Indonesian mothers who had a higher household income, higher

level of education and husbands who had similar, much like parents in the current study. It is possible, therefore, that the study may not be fully representative of the sociodemographic profile of parents in greatest need in South Africa.

It is encouraging, however, that despite already sensitive baseline levels, the parents in the present study continued to improve in their sensitive responsiveness. In the case that did not show initial improvement (Case 2), the variability in the intervention phase data clouds reliable estimation of changes in level and trend. Despite a mean decline in sensitivity of over 1 scale point, the sensitivity rating remained within the sensitive range (5-9). Although there was seemingly a downward trend in sensitivity at post-intervention, mean sensitivity remained above baseline levels. This downward trend may be accounted for by the cessation for parents of intensive, weekly feedback on their interactions with their child, resulting in the drop-off. This suggests that periodic follow-up sessions may be required as a refresher for parents. However, given that the A2 phase was constituted of only two measurement points, additional data is required to confirm a sustained downward trend.

Observed changes in sensitivity were echoed in parents' and intervenors' subjective reports of the development and mastery of parenting capacities as a mother of a child with significant developmental challenges, resulting from the intervention. This shift may be related to the learning and personal mastery of parenting challenges that took place during the intervention procedures (Bandura, 1977). This is consistent with Platje et al.'s (2018) findings that the VIPP-V intervention enhanced parenting self-efficacy among parents of children with visual and visual-and-intellectual disabilities, even in the absence of observed improvements in parent-child interactions.

The improvements in mean attachment security in Cases 1 and 3 aligned with the improvement in sensitivity (Fearon and Belsky, 2016; Feniger-Schaal and Joels, 2018). The change in Case 3 was more muted possibly due to a ceiling effect (Bakermans-Kranenburg et

al., 2003). This muted pattern was also reflected in Case 2 although with mean AQS scores in the insecure range retained across phases. The broad shift towards greater security over time is roughly consistent with previous studies of the ABC which have found positive effects on attachment (Bernard et al., 2012; Dozier et al., 2009) among children who received the ABC versus controls. Group trials have on average reported modest effect sizes (Bakermans-Kranenburg et al., 2003; Letourneau et al., 2015), and the current data suggest that modest shifts in attachment security may also be observed when tracking individual dyads over the course of intervention.

Parents' and intervenors' subjective accounts underscored changes in attachment behaviour, such as increasing proximity-seeking behaviours and greater confidence and initiative-taking in exploring their immediate environments. This points to the practical relevance and social validity of the intervention. These subjective reports also point towards the potential value of monitoring discrete attachment behaviours as potential precursors of shifts in the organisation of attachment behaviour that might be detected with research instruments such as the AQS. Furthermore, parents' intimate familiarity with their children may enable them to perceive subtle shifts in behaviour that are difficult to detect for raters who are not familiar with the child's particular signal repertoire (Kruithof et al., 2020; Tessier et al., 2002; Vandesande et al., 2019a). For Case 2, the child's seizure disorder and relatively lower adaptive functioning may have affected the level and intensity of her proximity- and contact-seeking as well as contact-maintaining behaviours (Vandesande et al., 2019b). It is plausible that the mother may have adapted, over time, to her child's uniquely expressed signals, hence her suitable level of sensitivity whereas AQS raters—in the absence of this adaptation—may have incorrectly interpreted the fewer and less intense typical attachment behaviours as insecurity. To investigate therapeutic changes in attachment quality over the course of intervention, measures may therefore not only need to be taken repeatedly but also allow for

fine-grained analysis of idiosyncratic ways in which children, specifically those with intellectual disabilities or developmental delays, may express their needs and expectations towards their attachment figure.

Little indication was found for an impact of the intervention on affect regulation. Cases 1 and 3 did not demonstrate notable baseline dysregulation in the form of hypercortisolism, instead showing evidence of a normative diurnal pattern (Baumler et al., 2013). Effects of the ABC on cortisol production may be expected, in particular, when affect is dysregulated (Dozier et al., 2008). Parents in the current study were not maltreating parents—in contrast to prior ABC research—and were consistently sensitive even at baseline, and may therefore have already been serving a regulating function (Perry et al., 2014). Although this ceiling effect obscures intervention effects, changes were observable within cases, albeit in divergent ways.

The changes observed in Case 1 reflected a steepening of the diurnal cortisol slope due to increasing morning concentrations (see Supplementary Material—Figure S1) in accordance with hypothesized expectations. This suggests that the child developed improved regulatory capacities (Bradley, 2000; Sterkenburg et al., 2008a), corresponding with concomitant improvements in maternal sensitivity and attachment security. Although Case 3 shows a similar initial effect, there was a later decline, contrary both to expectations and to improvements in maternal sensitivity and attachment security. The flattening of the diurnal slope due to lowering morning concentrations corresponds with the suspension of Risperdal use roughly towards the midway point of the intervention. It is possible that the disruption to the antipsychotic medication regimen resulted in a withdrawal response such as disturbances in sleep hygiene (Ruths et al., 2004), which has been associated with low morning salivary cortisol concentrations (Backhaus et al., 2004). Medication could also have played a role in Case 2 whose unusually elevated cortisol levels may be attributed to her use of Carbamazepine, in

particular, which has been found to result in cortisol elevations (Cano-Lopez and Gonzalez-Bono, 2019). Furthermore, the erratic spiking above already elevated cortisol could potentially be the result of intermittent, undetected, seizures which have also been associated with cortisol elevations independently from medication (Galimberti et al., 2005). The potential effects of medication in Cases 2 and 3 along with the added effect of undetected seizure activity in the former prevent reliable determination of an intervention effect on cortisol regulation, precluding cross-case replication.

The intervention was also highly regarded and rated by the parents in the study who commented, qualitatively, on the usefulness, value and relevance of the intervention. Fidelity estimations pointed to a high degree of treatment integrity, indicating that the intervention was implemented as intended and consistently over time and across cases. The absence, however, of consistent replication as well as the lack of statistically conclusive tests of the observed effects warrants caution in drawing firm conclusions. The findings of this first study to explore the effects of the ABC in dyads where the child has an intellectual disability or developmental delays does, however, warrant further testing of the benefit at the level of this population.

The current study has a number of limitations. Statistical analysis was limited by the randomisation scheme and the *a priori* determination of baseline lengths, minimising the number and combinations of possible intervention starting points. This, combined with the inclusion of the minimum recommended number of cases, resulted in a limitation in the size of the randomisation distribution, therefore reducing statistical power. Additional cases would also increase replications of possible intervention effects, improving internal validity. In addition, only middle-class families participated in the study. This may have contributed towards the observed ceiling effects given that these families' social positioning may have served to mitigate against the impact of socioeconomic and other contextual stressors on

maternal sensitivity, for example (De Falco et al., 2014). Unlike the families in the current study, many South African families-in-need live in untoward socioeconomic conditions with limited access to support for parents caring for a child with intellectual disability which may compound an already stressful living environment. It is possible that these conditions may produce differential intervention effects and should therefore be factored into future studies of the ABC in South Africa. Mothers were recruited into the study via private practitioners who did not specifically focus on supporting families with children with disabilities who also experience poverty and deprivation. Due to the lack of an integrated system of public health services for young people with intellectual disabilities in South Africa, their dispersed distribution in the population, and barriers such as stigma (Mkabile and Swartz, 2020), future work is needed to find ways of reaching families facing multiple risks.

Another possible limitation relates to the use of the AQS which has not been validated for populations of children with intellectual disabilities (Vandesande et al., 2019a). Microanalytic studies akin to that by Beebe et al. (2010) may be enlightening in this regard. Alternatively, or additionally, to avoid raters' unfamiliarity with the child and to capitalise on parental knowledge of the child's idiosyncratic expressions, an alternative approach may be to utilise parent-rated instruments, adopting a simplified AQS to make the rating process easier and less cumbersome, such as the 62-item Attachment Q-List (John et al., 2012). Once-weekly, single-day, saliva sampling is another possible limitation preventing the day-to-day variability in cortisol being accounted for, especially when testing the AUC (Rotenberg et al., 2012; Segerstrom et al., 2014). Future studies may also consider the use of alternative psychophysiological measures to augment or supplement cortisol sampling to manage the potential pitfalls in salivary cortisol measurement such as day-to-day variation or the impact of medication (e.g., Vandesande et al., 2020).

This was the first study to test the ABC in dyads with a child with significant developmental delays or an intellectual disability and to do so at the level of individual dyads over time using observer-rated measures of sensitivity and security. It was also the first such trial to implement the ABC in an African context. The study demonstrated improvements in both maternal sensitivity as well as attachment security over the course of the intervention. Moreover, the intervention was experienced as relevant, useful, and having impacted positively on parent and child behaviours. The study provides the first evidence for the feasibility, use, and utility of the ABC in this population and underscores the relevance of attachment-based interventions, more generally, for this cohort. The findings provide the building blocks for further study of the ABC for those with intellectual disabilities that may facilitate broader community-based implementation in contexts such as South Africa in order to increase access to evidence-based interventions.

Acknowledgements

The authors convey their gratitude to the participating dyads as well as the parent coaches—Frances Kaplan and Amanda Edge—for their contributions. Further, thanks are extended Prof dr Mary Dozier for sharing the ABC intervention, as well as Stevie Schein and Bo-Ram Kim for the ABC training and supervision. Finally, appreciation is expressed to Lucia Willems, Nicki Dawson, Irini Agathagelou, Lizé van Graan, Vernandi Dyzel and Maham Hassan for their generous assistance with rating videos as well as conducting and coding post-intervention interviews. Finally, our gratitude is extended to Prof dr Marianne Bakermans-Kranenburg for conducting the AMSS training and reliability certification of the AMSS raters.

Declaration of Conflicting Interests

The authors declare that there is no conflict of interest.

Funding

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: The financial assistance of the South African National Research Foundation (NRF) towards this research is hereby acknowledged (Grant UID: 105603). Opinions expressed and conclusions arrived at, are those of the authors and are not necessarily to be attributed to the NRF. This study was made possible by the Vrije Universiteit Amsterdam-NRF Desmond Tutu Doctoral Programme which is coordinated by the South Africa-Vrije Universiteit Strategic Alliance (SAVUSA). Additional financial support was provided by the University Capacity Development Program (UCDP) of the Department of Higher Education and Training, South Africa.

Author Contributions

ARM coordinated the study as the PI, collected the observational data, conducted the analyses, wrote the first version, and revised subsequent versions, of the manuscript. JGY contributed to the introduction. PS, EvR and CS reviewed drafts and contributed to all parts of latter versions the manuscript and CS supervised the analyses.

References

- Ainsworth MDS, Bell SM and Stayton DJ (1991) Infant-mother attachment and social development: 'Socialisation' as a product of reciprocal responsiveness to signals. In: Woodhead M, Carr R and Light P (eds) *Child Development in Social Context: Becoming a Person*. London: Routledge, pp. 30-55.
- Atkinson L, Chisholm VC, Scott B, et al. (1999) Maternal sensitivity, child functional level, and attachment in Down Syndrome. *Monographs of the Society for Research in Child Development* 64(3): 45-66.

- Backhaus J, Junghanns K and Hohagen F (2004) Sleep disturbances are correlated with decreased morning awakening salivary cortisol. *Psychoneuroendocrinology* 29(9): 1184-1191.
- Bakermans-Kranenburg MJ, van IJzendoorn MH and Juffer F (2003) Less is more: Meta-analyses of sensitivity and attachment interventions in early childhood. *Psychological Bulletin* 129(2): 195-215.
- Bakermans-Kranenburg MJ, van IJzendoorn MH and Juffer F (2005) Disorganized infant attachment and preventive interventions: A review and meta-analysis. *Infant Mental Health Journal* 26(3): 191-216.
- Bandura A (1977) Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review* 84(2): 191-215.
- Baumler D, Kirschbaum C, Kliegel M, et al. (2013) The cortisol awakening response in toddlers and young children. *Psychoneuroendocrinology* 38(11): 2485-2492.
- Beebe B, Jaffe J, Markese S, et al. (2010) The origins of 12-month attachment: A microanalysis of 4-month mother-infant interaction. *Attachment & Human Development* 12(1-2): 3-141.
- Berlin LJ, Martoccio TL and Jones Harden B (2018) Improving Early Head Start's impacts on parenting through attachment-based intervention: A randomized controlled trial. *Developmental Psychology* 54(12): 2316-2327.
- Bernard K, Dozier M, Bick J, et al. (2015) Intervening to enhance cortisol regulation among children at risk for neglect: Results of a randomized clinical trial. *Development and Psychopathology* 27(3): 829-841.

- Bernard K, Dozier M, Bick J, et al. (2012) Enhancing attachment organization among maltreated children: Results of a randomized clinical trial. *Child Development* 83(2): 623-636.
- Bick J and Dozier M (2013) The effectiveness of an attachment-based intervention in promoting foster mothers' sensitivity toward foster infants. *Infant Mental Health Journal* 34(2): 95-103.
- Braun V and Clarke V (2006) Using thematic analysis in psychology. *Qualitative Research in Psychology* 3(2): 77-101.
- Bulté I and Onghena P (2009) Randomization tests for multiple-baseline designs: An extension of the SCRT-R package. *Behavioral Research Methods* 41(2): 477-485.
- Bulté I and Onghena P (2012) When the truth hits you between the eyes. *Methodology: European Journal of Research Methods for the Behavioral and Social Sciences* 8(3): 104-114.
- Cano-Lopez I and Gonzalez-Bono E (2019) Cortisol levels and seizures in adults with epilepsy: A systematic review. *Neuroscience and Biobehavioral Reviews* 103: 216-229.
- Caron EB, Weston-Lee P, Haggerty D, et al. (2016) Community implementation outcomes of Attachment and Biobehavioral Catch-up. *Child Abuse & Neglect* 53: 128-137.
- Cicchetti D and Serafica FC (1981) Interplay among behavioral systems: Illustrations from the study of attachment, affiliation, and wariness in young-children with Downs-syndrome. *Developmental Psychology* 17(1): 36-49.

- De Falco S, Emer A, Martini L, et al. (2014) Predictors of mother-child interaction quality and child attachment security in at-risk families. *Frontiers in Psychology* 5: Article 898. DOI: 10.3389/fpsyg.2014.00898.
- Dozier M and Bernard K (2017) Attachment and Biobehavioral Catch-up: Addressing the needs of infants and toddlers exposed to inadequate or problematic caregiving. *Current Opinion in Psychology* 15: 111-117.
- Dozier M and Bernard K (2019) *Coaching Parents of Vulnerable Infants: The Attachment and Biobehavioral Catch-Up Approach*. New York: Guilford Press.
- Dozier M, Bernard K, Stovall-McClough KC, et al. (2016) *Attachment and Biobehavioral Catch-up for Infants Who Have Experienced Early Adversity (ABC-i): Intervention Manual*. Newark: Authors.
- Dozier M, Lindheim O, Lewis E, et al. (2009) Effects of a foster parent training program on young children's attachment behaviors: Preliminary evidence from a randomized clinical trial. *Child and Adolescent Social Work Journal* 26(4): 321-332.
- Dozier M, Peloso E, Lewis E, et al. (2008) Effects of an attachment-based intervention on the cortisol production of infants and toddlers in foster care. *Development and Psychopathology* 20(3): 845-859.
- Fearon RMP and Belsky J (2016) Precursors of attachment security. In: Cassidy J and Shaver PR (eds) *Handbook of Attachment: Theory, Research, and Clinical Applications (3rd edition)*. New York: Guilford Press, pp. 291-313.

- Feniger-Schaal R and Joels T (2018) Attachment quality of children with ID and its link to maternal sensitivity and structuring. *Research in Developmental Disabilities* 76: 56-64.
- Feniger-Schaal R, Oppenheim D and Koren-Karie N (2019) Parenting children with intellectual disability: linking maternal insightfulness to sensitivity. *Journal of Intellectual Disability Research* 63(10): 1285-1289.
- Galimberti CA, Magri F, Copello F, et al. (2005) Seizure frequency and cortisol and dehydroepiandrosterone sulfate (DHEAS) levels in women with epilepsy receiving antiepileptic drug treatment. *Epilepsia* 46(4): 517-523.
- Ganiban J, Barnett D and Cicchetti D (2000) Negative reactivity and attachment: Down syndrome's contribution to the attachment–temperament debate. *Development and Psychopathology* 12(1): 1-21.
- Garnett M, Bernard K, Hoyer J, et al. (2020) Parental sensitivity mediates the sustained effect of Attachment and Biobehavioral Catch-up on cortisol in middle childhood: A randomized clinical trial. *Psychoneuroendocrinology* 121: Article 104809. DOI: 10.1016/j.psyneuen.2020.104809.
- Gast DL and Spriggs AD (2010) Visual analysis of graphical data. In: Gast DL (ed) *Single Subject Research Methodology in Behavioral Sciences*. New York: Routledge, pp. 199-233.
- Groh AM, Fearon RMP, van IJzendoorn MH, et al. (2017) Attachment in the early life course: Meta-analytic evidence for its role in socioemotional development. *Child Development Perspectives* 11(1): 70-76.

- Groh AM, Roisman GI, van IJzendoorn MH, et al. (2012) The significance of insecure and disorganized attachment for children's internalizing symptoms: A meta-analytic study. *Child Development* 83(2): 591-610.
- Gunnar MR and White BP (2001) Salivary cortisol measures in infant and child assessment. In: Singer LT and Zeskind PS (eds) *Biobehavioral Assessment of the Infant*. New York: Guilford Press, pp. 167-189.
- Hepworth AD, Berlin LJ, Salas K, et al. (2020) Increasing maternal sensitivity to infant distress through attachment-based intervention: A randomized controlled trial. *Attachment & Human Development*. Epub ahead of print 29 October 2020. DOI: 10.1080/14616734.2020.1834592.
- Janssen C, Schuengel C and Stolk J (2002) Understanding challenging behaviour in people with severe and profound intellectual disability: A stress-attachment model. *Journal of Intellectual Disability Research* 46(6): 445-453.
- John A, Morris A and Halliburton A (2012) Looking beyond maternal sensitivity: Mother-child correlates of attachment security among children with intellectual disabilities in urban India. *Journal of Autism & Developmental Disorders* 42(11): 2335-2345.
- Jones PR (2019) A note on detecting statistical outliers in psychophysical data. *Attention, Perception, & Psychophysics* 81(5): 1189-1196.
- Koehler MJ and Levin JR (1998) Regulated randomization: A potentially sharper analytical tool for the multiple-baseline design. *Psychological Methods* 3(2): 206-217.
- Koo TK and Li MY (2016) A guideline of selecting and reporting intraclass correlation coefficients for reliability research. *Journal of Chiropractic Medicine* 15(2): 155-163.

- Kratochwill TR and Levin JR (2010) Enhancing the scientific credibility of single-case intervention research: Randomization to the rescue. *Psychological Methods* 15(2): 124-144.
- Kruithof K, Willems D, van Etten-Jamaludin F, et al. (2020) Parents' knowledge of their child with profound intellectual and multiple disabilities: An interpretative synthesis. *Journal of Applied Research in Intellectual Disabilities* 33(6): 1141-1150.
- Letourneau N, Tryphonopoulos P, Giesbrecht G, et al. (2015) Narrative and meta-analytic review of interventions aiming to improve maternal-child attachment security. *Infant Mental Health Journal* 36(4): 366-387.
- Manolov R, Losada JL, Chacon-Moscoso S, et al. (2016) Analyzing two-phase single-case data with non-overlap and mean difference indices: Illustration, software tools, and alternatives. *Frontiers in Psychology* 7: Article 32. DOI: 10.3389/fpsyg.2016.00032.
- McKenzie JA, McConkey R and Adnams C (2013) Intellectual disability in Africa: Implications for research and service development. *Disability and Rehabilitation* 35(20): 1750-1755.
- Mkabile S and Swartz L (2020) 'I waited for it until forever': Community barriers to accessing intellectual disability services for children and their families in Cape Town, South Africa. *International Journal of Environmental Research and Public Health* 17(22): Article 8504. DOI: 10.3390/ijerph17228504.
- Mohamed AR and Mkabile S (2015) An attachment-focused parent-child intervention for biting behaviour in a child with intellectual disability: A clinical case study. *Journal of Intellectual Disabilities* 19(3): 251-265.

- Olusanya BO, Wright SM, Nair MKC, et al. (2020) Global burden of childhood epilepsy, intellectual disability, and sensory impairments. *Pediatrics* 146(1): Article e20192623. DOI: 10.1542/peds.2019-2623.
- Onghena P, Maes B and Heyvaert M (2018) Mixed methods single case research: State of the art and future directions. *Journal of Mixed Methods Research* 13(4): 461-480.
- Parker RI and Vannest K (2009) An improved effect size for single-case research: Nonoverlap of all pairs. *Behaviour Therapy* 40: 357-367.
- Perry NB, Mackler JS, Calkins SD, et al. (2014) A transactional analysis of the relation between maternal sensitivity and child vagal regulation. *Developmental Psychology* 50(3): 784-793.
- Platje E, Sterkenburg P, Overbeek M, et al. (2018) The efficacy of VIPP-V parenting training for parents of young children with a visual or visual-and-intellectual disability: A randomized controlled trial. *Attachment & Human Development* 20(5): 455-472.
- Pustejovsky JE and Swan DM (2018) Single-case Effect Size Calculator (Version 0.5) Web application. Available at: jepusto.shinyapps.io/SCD-effect-sizes (accessed 5 December 2020).
- Rotenberg S, McGrath JJ, Roy-Gagnon MH, et al. (2012) Stability of the diurnal cortisol profile in children and adolescents. *Psychoneuroendocrinology* 37(12): 1981-1989.
- Ruths S, Straand J, Nygaard HA, et al. (2004) Effect of antipsychotic withdrawal on behavior and sleep/wake activity in nursing home residents with dementia: A randomized, placebo-controlled, double-blinded study—The Bergen district nursing home study. *Journal of the American Geriatrics Society* 52(10): 1737-1743.

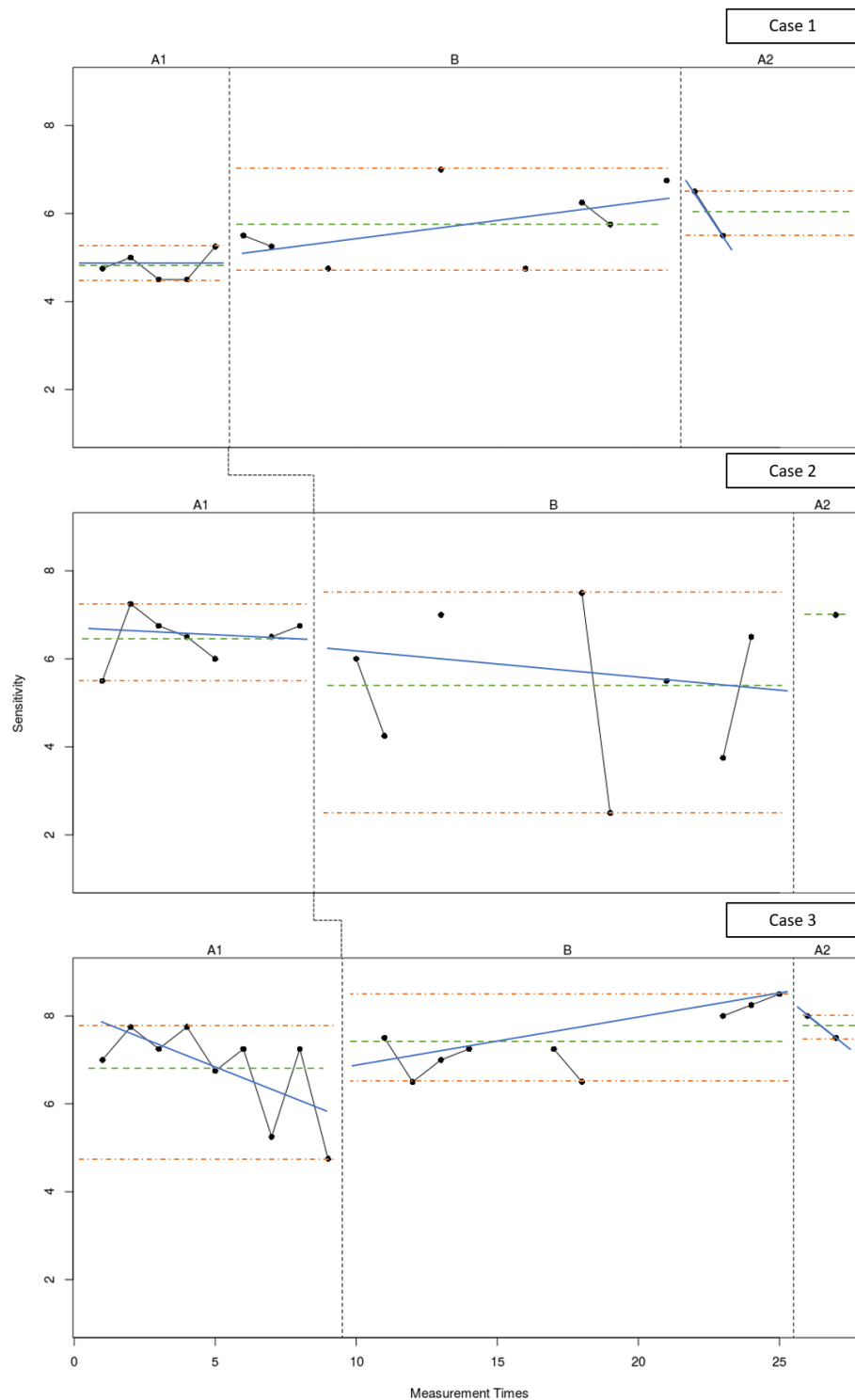
- Schuengel C, Sterkenburg PS, Jeczynski P, et al. (2009) Supporting affect regulation in children with multiple disabilities during psychotherapy: A multiple case design study of therapeutic attachment. *Journal of Consulting and Clinical Psychology* 77(2): 291-301.
- Segerstrom SC, Boggero IA, Smith GT, et al. (2014) Variability and reliability of diurnal cortisol in younger and older adults: Implications for design decisions. *Psychoneuroendocrinology* 49: 299-309.
- Seys D (1987) *Kwaliteit van zorg: Zorg voor kwaliteit (Quality of care: Caring for quality)*. PhD Thesis, University of Nijmegen, The Netherlands.
- Solomon J and George C (2016) The measurement of attachment security and related constructs in infancy and early childhood. In: Cassidy J and Shaver PR (eds) *Handbook of Attachment: Theory, Research, and Clinical Applications (3rd Edition)*. New York: Guilford Press, pp. 366-396.
- Sparrow SS, Cicchetti DV and Saulnier CA (2016) *Vineland Adaptive Behavior Scales, Third Edition (Vineland-3)*, San Antonio: Pearson.
- Sterkenburg PS, Janssen CGC, Blankenstein R, et al. (2008a) Cortisol changes during psychotherapy in adolescents with a visual and intellectual disability and challenging behavior [Unpublished manuscript].
- Sterkenburg PS, Janssen CGC and Schuengel C (2008b) The effect of an attachment-based behaviour therapy for children with visual and severe intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities* 21(2): 126-135.

- Tessier R, Tarabulsky GM, Larin S, et al. (2002) A home-based description of attachment in physically disabled infants. *Social Development* 11(2): 147-165.
- Vandesande S, Bosmans G and Maes B (2019a) Can I be your safe haven and secure base? A parental perspective on parent-child attachment in young children with a severe or profound intellectual disability. *Research in Developmental Disabilities* 93: Article 103452. DOI: 10.1016/j.ridd.2019.103452.
- Vandesande S, Bosmans G, Schuengel C, et al. (2019b) Young children with significant developmental delay differentiate home observed attachment behaviour towards their parents. *Journal of Applied Research in Intellectual Disabilities* 32(1): 106-120.
- Vandesande S, Bosmans G, Sterkenburg P, et al. (2020) Comfort provided by parents versus strangers after eliciting stress in children with severe or profound intellectual disabilities: Does it make a difference? *Attachment & Human Development* 22(4): 425-447.
- Vannest KJ, Parker RI, Gonen O, et al. (2016) Single Case Research: Web Based Calculators for SCR Analysis (version 2.0). Available at: www.singlecaseresearch.org/calculators/theil-sen (accessed 24 November 2020).
- Wang X and Yu Q (2005) Unbiasedness of the Theil–Sen estimator. *Journal of Nonparametric Statistics* 17(6): 685-695.
- Waters E (1987) Attachment Q-set (Version 3). Available at: psychology.psy.sunysb.edu/attachment (accessed 25 April 2017).

- Yarger HA, Bernard K, Caron EB, et al. (2020) Enhancing parenting quality for young children adopted internationally: Results of a randomized controlled trial. *Journal of Clinical Child & Adolescent Psychology* 49(3): 378-390.
- Zajac L, Raby KL and Dozier M (2020) Sustained effects on attachment security in middle childhood: Results from a randomized clinical trial of the Attachment and Biobehavioral Catch-up (ABC) intervention. *Journal of Child Psychology and Psychiatry* 61(4): 417-424.
- Zevalkink J and Riksen-Walraven JM (2001) Parenting in Indonesia: Inter- and intracultural differences in mothers' interactions with their young children. *International Journal of Behavioral Development* 25(2): 167-175.

Figure 1

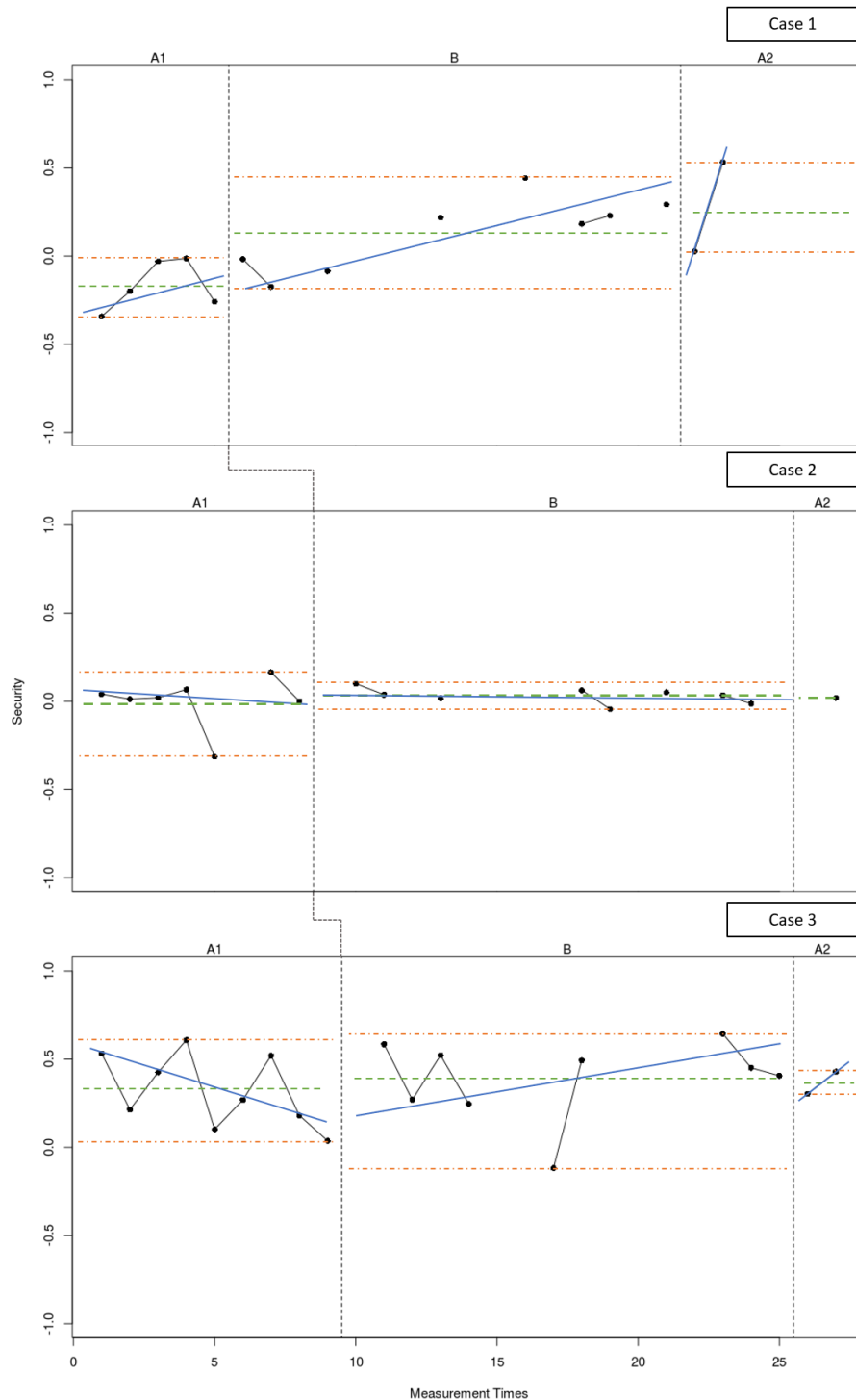
Weekly measurements of maternal sensitivity across phases indicating level and trend estimates



Note. For the baseline (A1), intervention (B) and post-intervention (A2) phases, the horizontal parallel dash-dot lines (orange) denote the range as an indicator of variability, the singular dashed horizontal line (green) indicates the mean level, and the solid angled line (blue) indicates the split middle trend estimate. Scores on the Ainsworth Maternal Sensitivity Scales range from 1 (highly insensitive) to 9 (highly sensitive). Data points not connected with solid black lines are due to missing measurements that occurred during the course of data collection.

Figure 2

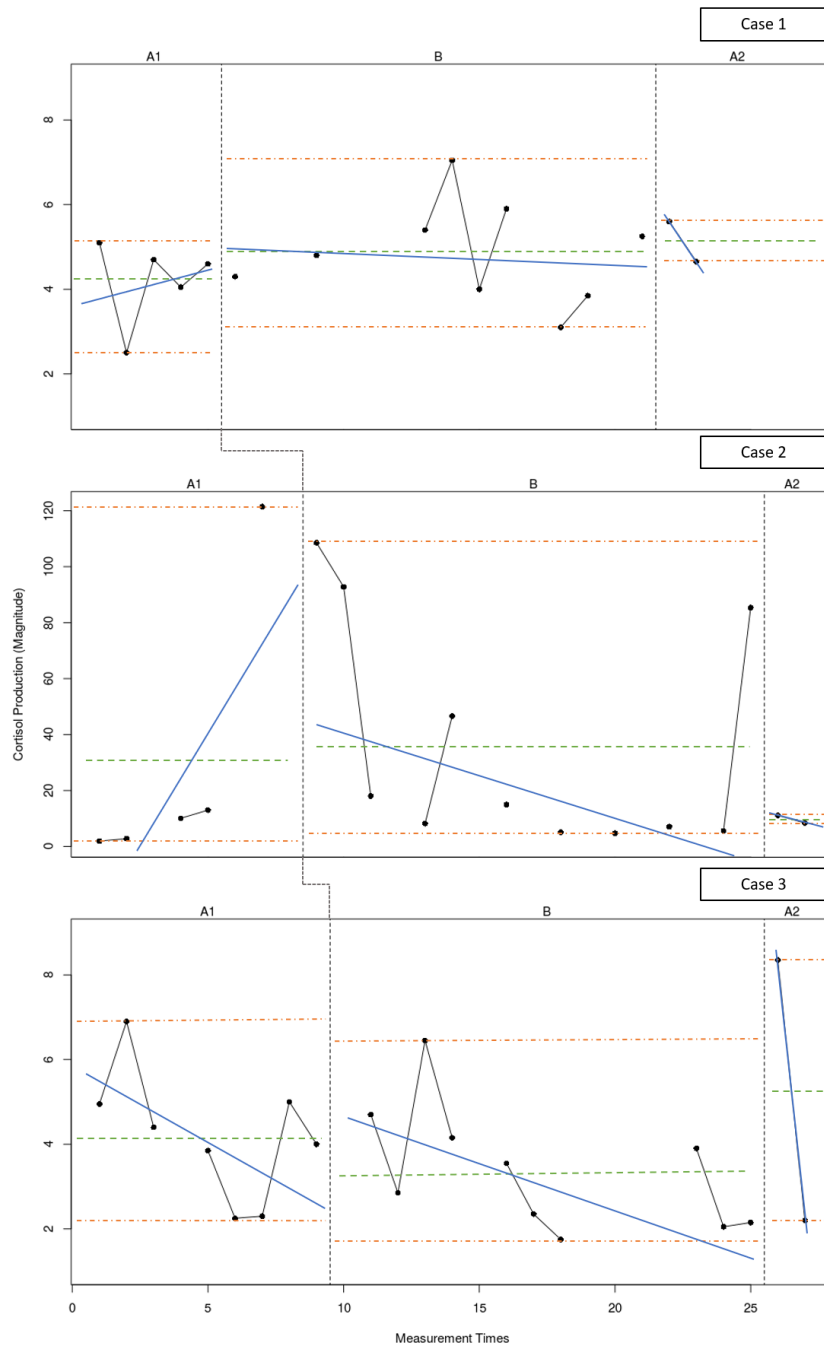
Weekly measurements of attachment security across phases indicating level and trend estimates



Note. For the baseline (A1), intervention (B) and post-intervention (A2) phases, the horizontal parallel dash-dot lines (orange) denote the range as an indicator of variability, the singular dashed horizontal line (green) indicates the mean level, and the solid angled line (blue) indicates the split middle trend estimate. Scores on the Attachment Q-Sort take the form of a correlation co-efficient, ranging from -1 to 1; with 1 representing a child highly similar to a prototypically secure child and -1 representing a child highly dissimilar to a prototypically secure child. Scores above .3 are indicative of secure attachment. Data points not connected with solid black lines are due to missing measurements that occurred during the course of data collection.

Figure 3

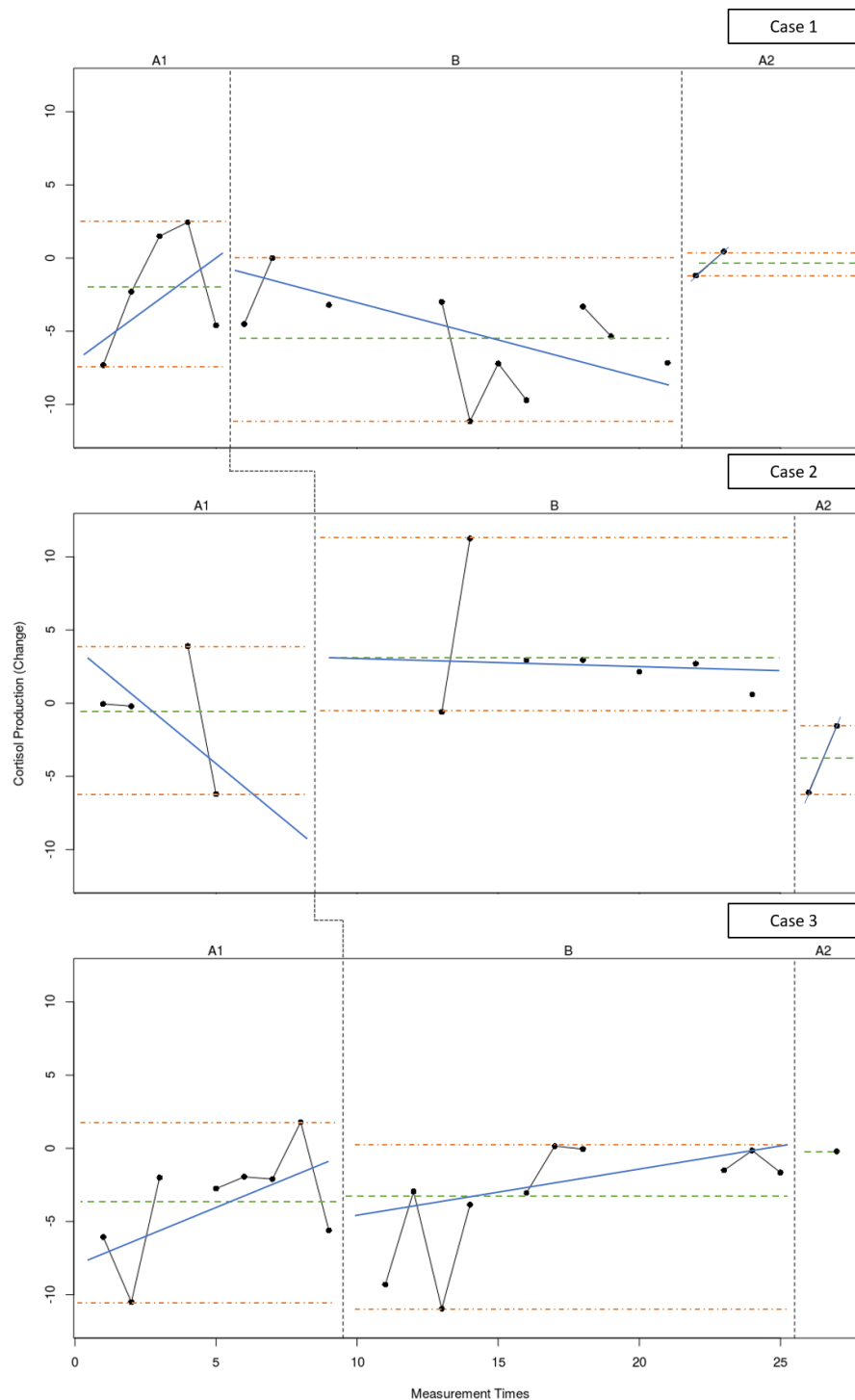
Weekly measurements of the overall magnitude of cortisol production over the day across phases indicating level and trend estimates



Note. Magnitude is measured over the course of 12 hours (7:30-19:30). For the baseline (A1), intervention (B) and post-intervention (A2) phases, the horizontal parallel dash-dot lines (orange) denote the range as an indicator of variability, the singular dashed horizontal line (green) indicates the mean level, and the solid angled line (blue) indicates the split middle trend estimate. Data points represent the AUC_G values calculated for each measurement point using the three cortisol daily readings (7:30, 13:30 and 19:30). Data points not connected with solid black lines are due to missing measurements that occurred during the course of data collection. Due to the large variability in the individual data series for Case 2 with regards to the AUC_G, the y-axes were not standardised across cases in order to facilitate visual inspection and analysis.

Figure 4

Weekly measurements of the change in cortisol production over the day across phases indicating level and trend estimates

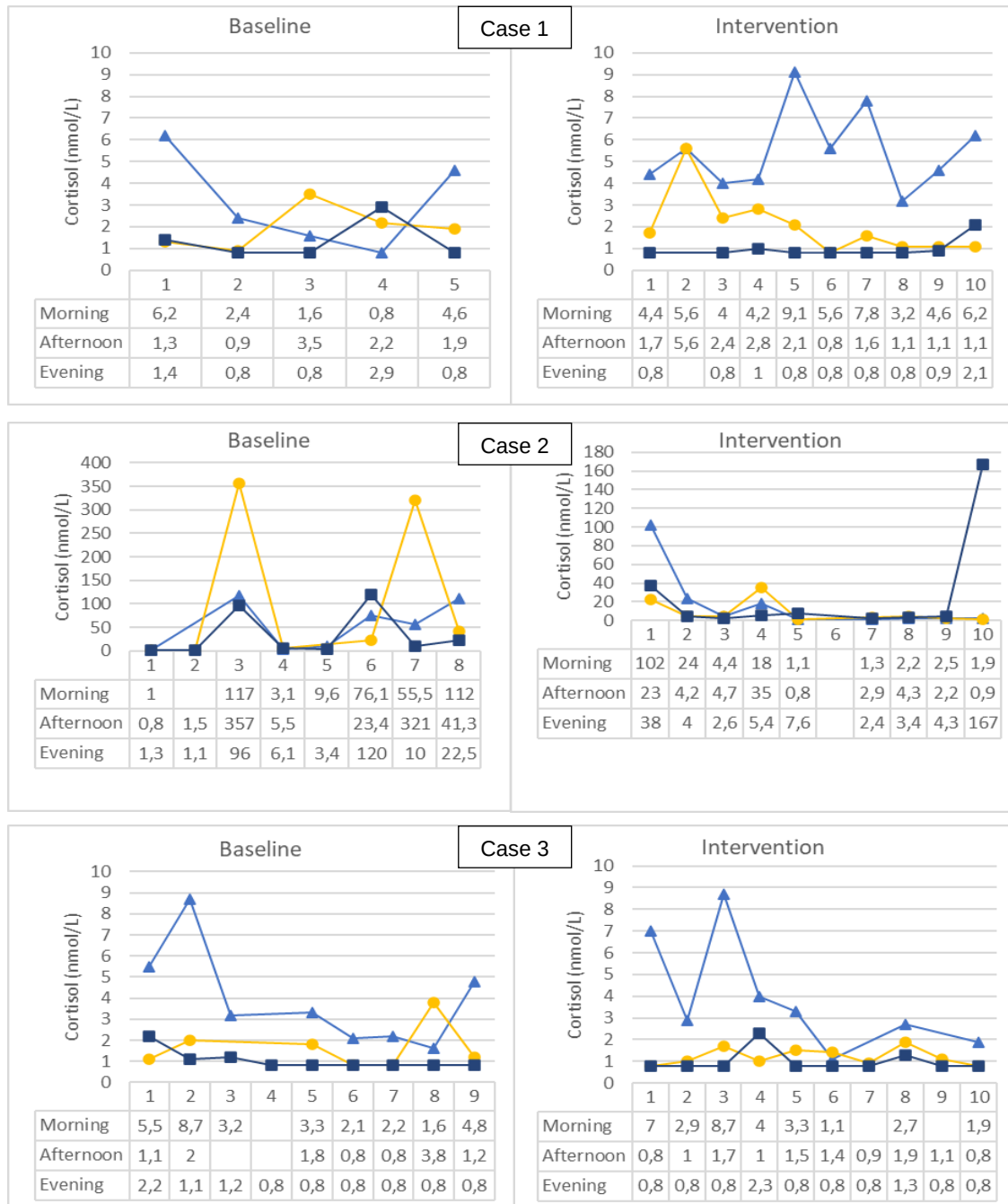


Note. Change is measured over the course of 12 hours (7:30-19:30). For the baseline (A1), intervention (B) and post-intervention (A2) phases, the horizontal parallel dash-dot lines (orange) denote the range as an indicator of variability, the singular dashed horizontal line (green) indicates the mean level, and the solid angled line (blue) indicates the split middle trend estimate. Data points represent the AUC_I values calculated for each measurement point using the three cortisol daily readings (7:30, 13:30 and 19:30). Data points not connected with solid black lines are due to missing measurements that occurred during the course of data collection.

SUPPLEMENTARY MATERIAL: ARTICLE 3

Supplementary Figure S1

Morning, Afternoon and Evening Raw Score Cortisol Concentrations for Baseline and Intervention



Note: x-axis = measurement occasions; y-axis=cortisol concentration in nmol/L. Imputed values used for the purposes of calculating AUC indicators have not been included. Therefore, blank cells below the graphs indicate missing samples due to insufficient saliva, or the sample not being collected by the parent on that day. Due to the large variability in Case 2, the scale on the y-axis was not standardised with Cases 1 and 3, in order to suitably visualise the raw data. Lines with triangular markers denote morning concentrations (blue); lines with circular markers denote afternoon concentrations (yellow); lines with square markers denote evening concentrations (black). The two post-intervention data points have also been omitted for ease of visualisation of baseline-to-intervention effect.

Supplementary Table S1

Indicators of treatment fidelity for all cases.

	Case 1 ^a	Case 2 ^b	Case 3 ^c
	M (SD)	M (SD)	M (SD)
Comments	1.9 (.64)	1.03 (.43)	1.08 (.45)
per minute.			
Average number of components.	2.04 (.29)	1.24 (.28)	1.6 (.45)
Percentage on-target.	92.04 (11.88)	91.25 (16.1)	95.49 (9.14)

^an = 10 (100%)

^bn = 6 (60%)

^cn = 8 (80%)

Supplementary Table S2

Mean level and level change for maternal sensitivity, attachment security and cortisol indicators

	Phase Mean (SD)			Mean Change		
	A1	B	A2	A1/B	B/A2	A1/A2
<i>Sensitivity</i>						
Case 1	4.8 (.33)	5.75 (.86)	6 (.71)	.95	.25	1.2
Case 2	6.46 (.57)	5.38 (1.73)	7 ^a	-1.09	1.63	.54
Case 3	6.78 (1.06)	7.42 (.72)	7.75 (.35)	.64	.33	.97
<i>Security</i>						
Case 1	-.17 (0.14)	.14 (.21)	.28 (.36)	.3	.14	.45
Case 2	-.001 (.15)	.03 (.04)	.02 ^a	.03	-.01	.02
Case 3	.32 (.21)	.39 (.23)	.37 (.09)	.07	-.02	.05
<i>Cortisol Magnitude (AUC_G)</i>						
Case 1	4.19 (1.02)	4.85 (1.2)	5.13 (.67)	.66	.28	.94
Case 2	29.86 (51.42)	36.1 (40.33)	9.78 (1.87)	6.24	-26.32	-20.08
Case 3	4.21 (1.52)	3.39 (1.47)	5.28 (4.35)	-.82	1.89	1.07
<i>Cortisol Change (AUC_I)</i>						
Case 1	-2.05 (4.09)	-5.46 (3.38)	-.38 (1.17)	-3.41	5.08	1.68
Case 2	-.64 (4.17)	3.14 (3.82)	-3.83 (3.22)	3.78	-6.97	-3.19
Case 3	-3.64 (3.68)	-3.33 (3.85)	-.2 ^a	.31	3.13	3.44

Note: A1 = baseline phase; B = intervention phase; A2 = post-intervention phase.

^aRaw score due to only one available data point

Supplementary Table S3

Exploratory Theil-Sen Trend estimations for sensitivity, security and cortisol indicators

	Theil-Sen	SE	Z	P	90% CI
<i>Sensitivity</i>					
Case 1					
A1	0.04	0.17	0.24	0.81	-0.24 / 0.32
B	0.16	0.19	0.87	0.39	-0.15 / 0.48
A2	-1	1	-1	0.32	-2.65 / 0.65
Case 2					
A1	0	0	0.15	0.88	0.00 / 0.00
B	-0.1	0.4	-0.25	0.8	-0.75 / 0.57
A2 ^a	-	-	-	-	-
Case 3					
A1	-0.25	0.17	-1.46	0.14	-0.53 / 0.03
B	0.25	0.13	1.88	0.06	0.03 / 0.47
A2	-0.5	0.5	-1	0.32	-1.32 / 0.32
<i>Security</i>					
Case 1					
A1	0.06	0.06	0.99	0.33	-0.04 / 0.15
B	0.07	0.04	1.98	0.05	0.01 / 0.13
A2	0.51	0.51	1	0.32	-0.33 / 1.34
Case 2					
A1	-0.002	0.02	-0.15	0.88	-0.03 / 0.02
B	-0.01	0.01	-1.48	0.14	-0.02 / 0.001
A2 ^a	-	-	-	-	-
Case 3					
A1	-0.05	0.03	-1.46	0.14	-0.1 / 0.006
B	-0.01	0.03	-0.42	0.68	-0.06 / 0.04
A2	0.13	0.13	1	0.32	-0.08 / 0.33
<i>Cortisol Magnitude (AUC_G)</i>					
Case 1					
A1	-0.09	0.18	-0.49	0.62	-0.38 / 0.21
B	-0.06	0.14	-0.42	0.68	-0.28 / 0.17
A2	-0.95	0.95	-1	0.32	-2.51 / 0.61
Case 2					
A1	6.2	2.53	2.45	0.01	2.04 / 10.36
B	-2.62	1.34	-1.95	0.05	-4.83 / -0.41
A2	-2.65	2.65	-1	0.32	-7.01 / 1.71
Case 3					
A1	-0.37	0.38	-0.99	0.32	-0.99 / 0.25
B	-0.29	0.14	-2.06	0.04	-0.52 / -0.06
A2	-6.15	6.15	-1	0.32	-16.27 / 3.97
<i>Cortisol Change (AUC_I)</i>					
Case 1					
A1	1.66	1.7	0.98	0.33	-1.13 / 4.45
B	-0.54	0.46	-1.16	0.24	-1.3 / 0.22
A2	1.65	1.65	1	0.32	-1.06 / 4.36
Case 2					
A1	-1.1	1.62	-0.68	0.5	-3.76 / 1.56
B	-0.4	0.44	-0.9	0.37	-1.13 / 0.33
A2	4.55	4.55	1	0.32	-2.94 / 12.04
Case 3					
A1	0.81	0.65	1.24	0.22	-0.27 / 1.88
B	0.74	0.44	1.7	0.09	0.02 / 1.46
A2 ^a	-	-	-	-	-

Note: $p \leq .05$; ^aOnly one data point available

2.4 Article 4

Article Title: Adapting Attachment and Biobehavioral Catch-up for infants and young children with intellectual disabilities and developmental delays in South Africa: Reflections and recommendations from local stakeholders.

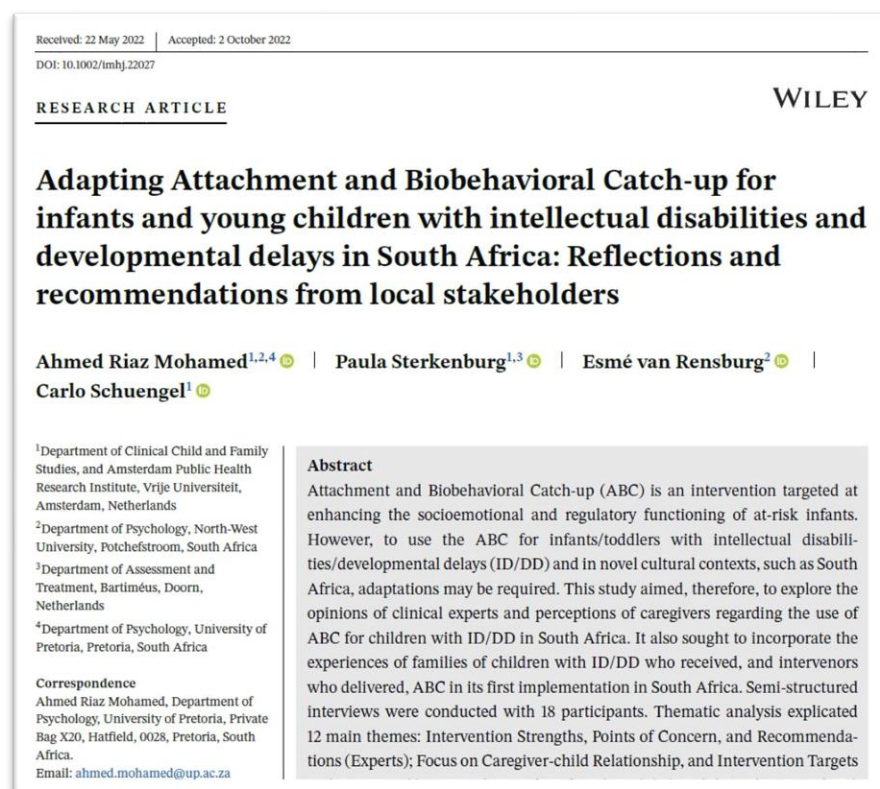
Journal: *Infant Mental Health Journal*

Submission Status: Published

Article citation: Mohamed, A.R., Sterkenburg, P., van Rensburg, E., & Schuengel, C. (2023). Adapting Attachment and Biobehavioral Catch-up for infants and young children with intellectual disabilities and developmental delays in South Africa: Reflections and recommendations from local stakeholders. *Infant Mental Health Journal*, 44(1), 54-75. <https://doi.org/10.1002/imhj.22027>

Required Length: Submissions should not exceed 10 000 words (excluding references)

Current Length: Version accepted for publication: 11 843 words (excluding references)



2.4.1 Author Submission Guidelines: *Infant Mental Health Journal*

The author submission guidelines were retrieved from the journal's [website](#).

2.4.1.1 Aims and Scope

The *Infant Mental Health Journal* (IMHJ) is the official publication of the World Association for Infant Mental Health (WAIMH) and the Michigan Association for Infant Mental Health (MI-AIMH) and is copyrighted by MI-AIMH.

Infant and early childhood mental health refers to the optimal social and emotional development of infants, toddlers and very young children in early relational contexts such as attachment relationships, early relationship development, parenting and family systems, caregiving/early childhood environments, communities and cultures. The journal also places an emphasis on the ways in which applied research informs practice, policy, and the field of infant and early childhood mental health. While IMHJ leans heavily toward work in infancy and toddlerhood, the journal also publishes research examining preschoolers' social-emotional development in relational contexts, such as work involving early childhood mental health consultation. All work published in IMHJ reflects the robust use of infant and early childhood mental health perspectives.

The *Infant Mental Health Journal* publishes peer-reviewed research articles, literature reviews, program descriptions/evaluations, theoretical/conceptual papers and brief reports (clinical case studies and novel pilot studies) that focus on early social and emotional development and characteristics that influence social-emotional development from relationship-based perspectives. Examples of such influences include attachment relationships, early relationship development, caregiver-infant interactions, infant and early childhood mental health services, contextual and cultural influences on infant/toddler/child and family development, including parental/caregiver psychosocial characteristics and attachment history, prenatal experiences, and biological characteristics in interaction with relational environments that promote optimal social-emotional development or place it at higher risk. Research published in IMHJ focuses on the prenatal-age 5 period and employs relationship-based perspectives in key research questions and interpretation and implications of findings.

IMHJ is dedicated to an interdisciplinary approach to the optimal development of infants, toddlers, very young children, their families, caregivers and teachers; therefore, IMHJ welcomes submissions from all disciplinary perspectives. Journal articles attract scholars and practitioners from many disciplines including child development, early childhood education, early childcare, early intervention, human development, family studies, nursing, pediatrics, psychology, and social work.

2.4.1.2 Article Types

Original Papers are reports of new research, empirical findings or conceptual analyses that make a significant contribution to knowledge, to the extant literature, and to the science of infant and early childhood mental health. Manuscripts should not exceed 10,000 words, inclusive of references but not tables or figures. Abstracts are unstructured and no more than 200 words. Please list the country in which the research was conducted in the abstract. All manuscripts must include a data availability statement, an ethics statement, key findings, and statement of relevance of the work for infant and early childhood mental health. Place the key findings and statement of relevant on the page under the abstract. Place the key findings and statement of relevant on the page under the abstract.

Brief Reports are no more than 5,000 words, inclusive of references but not tables or figures, and are appropriate for preliminary findings of cutting-edge pilot studies. Case reports reflecting novel or highly significant clinical approaches may be considered as well. Abstracts are unstructured and no more than 200 words. Please list the country in which the research was conducted in the abstract. All brief reports must include a data availability statement, an ethics statement, key findings, and statement of relevance of the work for infant and early childhood mental health. Place the key findings and statement of relevant on the page under the abstract.

Review Articles reflect critical, thorough literature reviews or theoretical/conceptual articles that synthesize and critique the research literature to date or offer new theoretical and conceptual frameworks that are highly relevant to the field of infant and early childhood mental health. Manuscripts should not exceed 10,000 words, inclusive of references but not tables or figures. All manuscripts must include a data availability statement (if applicable), an ethics statement (if applicable), key findings, and statement of relevance of the work for infant and early childhood mental health. Abstracts should be no more than 200 words. Place the key findings and statement of relevant on the page under the abstract.

Special Collections/Special Sections are collections of three to five manuscripts on a topic highly relevant to the field of infant and early childhood mental health. Authors interested in submitting special sections should contact the editor. The editor will require a brief proposal include the proposed focus of the collection/section, working titles/foci of the manuscripts, rationale for the collection/special section. If the collection/special section is approved by the editor, each manuscript will go through the standard review process.

2.4.1.3 Submission and Peer Review Process

Once the submission materials have been prepared in accordance with the Author Guidelines, manuscripts should be submitted online at <https://mc.manuscriptcentral.com/imhj>.

For help with article preparation, Wiley Editing Services offers expert help with English Language Editing, as well as translation, manuscript formatting, and figure preparation.

2.4.1.3.1 Free-format Submission

Infant Mental Health Journal now offers free-format submission for a simplified and streamlined submission process. Although authors are not required to format their manuscript according to specific style guidelines, references should be formatted according to APA Publication Manual: 7th Edition. Formatting changes needed in manuscripts to comply with APA 7th edition guidelines will be made by the Wiley production team after a manuscript is accepted for publication. This applies to all article types.

(Important: this journal operates a double-blind peer review policy. Please anonymize your manuscript and prepare a separate title page containing author details.)

Infant Mental Health Journal operates a double-blind peer review process, so please ensure that all identifying information such as author names and affiliations, acknowledgements, or explicit mentions of authors' institutions in the text are on a separate page.

Your manuscript: This can be a single Word file including text, three key findings and statement of relevance to infant and early childhood mental health, figures, and tables, or separate files—whichever you prefer. All required sections should be contained in your manuscript, including abstract, introduction, methods, results, and conclusions. Figures and tables should have legends. References may be submitted in any style or format, as long as it is consistent throughout the manuscript. If the manuscript, figures or tables are difficult for you to read, they will also be difficult for the editors and reviewers. If your manuscript is difficult to read, the editorial office may send it back to you for revision.

Before you submit, you will need the following:

- A cover letter to the editor confirming the following: 1) the manuscript and its content are not under review or in publication elsewhere; 2) all research protocols were approved by the appropriate research ethics board(s) prior to initiation of the study; 3) all authors have meaningfully contributed to the work and approved the submitted manuscript.
- The title page of the manuscript with author/coauthor information, including statements relating to our ethics and integrity policies as follows:
 - Data sharing and data availability statement
 - Funding statement
 - Conflict of interest disclosure
 - Permission to reproduce material from other sources if applicable
 - Clinical trial registration if applicable

- An ORCID for the corresponding author, freely available at <https://orcid.org>.
- Ethics approval statement (please blind the full name of the approving board to ensure a blind review) in the cover letter and in the methods section of the manuscript.
- Participant consent statement in the methods section of the manuscript

2.4.1.3.2 Title Page

The title page should contain:

1. A brief, informative title containing the major key words. The title should not contain abbreviations (see [Wiley's best practice SEO tips](#));
2. A short running title of less than 40 characters;
3. The full names of the authors;
4. The author's institutional affiliations where the work was conducted, with a footnote for the author's present address if different from where the work was conducted;
5. Acknowledgements;
6. Conflict of Interest statement.

2.4.1.3.3 Abstract

Abstracts are unstructured and no more than 200 words. Please list the country in which the research was conducted in the abstract.

2.4.1.3.4 Main Text File

Infant Mental Health Journal operates a double-blind peer review process, so please ensure that all identifying information such as author names and affiliations, acknowledgements or explicit mentions of authors' institutions in the text are on a separate page. Please see "Article Types" in item 2 before for manuscript options.

The main text file should be in Word and include the following for all article types:

- A short informative title containing the major key words. The title should not contain abbreviations.
- Abstract (unstructured) No subheadings are required in the abstract but abstracts should include a brief introductory sentence, the research question(s), the sample size, brief demographic characteristics of the sample, including the country in which the research was conducted, a brief summary of the methods, results, and conclusions. Abstracts may be no more than 200 words.
- Up to six keywords appearing below the abstract.
- Relevance and Key Findings

- 3 key findings/practitioner points appearing below the abstract: Authors will need to provide no more than 3 ‘key points’, written with the practitioner in mind, that summarize the key messages of their paper to be published with their article. Each finding should be one sentence in length.
- Diversity and Anti-Racist Scholarship: Please refer to [the following guidelines](#) to address the items below.
 - Fully describe in the abstract, the racial, ethnic, and/or cultural background of the sample and the country in which the study was conducted. We understand that not all research protocols and human research review boards allow for the collection of data on variables such as race and ethnicity. In these cases, please describe the sample in ways permitted.
 - Intentionally use systems-centered language and inclusive language in the abstract, manuscript text, and tables/figures.
 - Intentionally cite the relevant work of diverse scholars, and as far as possible, actively work to collaborate with scholars from the countries in which studies are conducted.
 - Although not required, authors are invited to include a 100-150 word statement explaining how the research undertaken reflects an appreciation for diversity and/or an anti-racist approach. This statement should appear after the abstract. There are many ways this can be addressed. [Please read the guidelines on creating a statement here.](#)
- Main body: formatted as introduction, methods, results, discussion, conclusion and implications for practice and/or further research.
 - In support of fully transparent research, please make sure to fully describe recruitment processes, data collection methods, data analyses, and results. Please include reports of effect sizes, confidence intervals, or other information that provides additional context for the interpretation of findings.
 - Consider making measures and protocols available in an open sources framework, such as [Open Science Framework](#), [Dataverse](#), [Databrary](#), or in another repository that you may find through the [Registry of Research Data Repositories](#).
 - Please be cautious not to overinterpret findings or suggest implications that go beyond the scope of the results.
- References (formatted using the citation style of the APA Publication Manual: 7th Edition;
- Tables (each table complete with title and footnotes);
- Figures: Figure legends must be added beneath each individual image during upload AND as a complete list in the text.

2.4.1.3.5 Reference Style

This journal uses APA 7th Edition reference style. As noted, you are not required to submit the manuscript in APA 7th edition; formatting changes may be made at the time of manuscript acceptance. However, authors wishing to submit manuscripts initially in APA 7th edition style may certainly do so.

2.4.1.3.6 Figures and Supporting Information

Figures, supporting information, and appendices should be supplied as separate files. You should review the [basic figure requirements](#) for manuscripts for peer review, as well as the more detailed post-acceptance figure requirements. View [Wiley's FAQs](#) on supporting information.

2.4.1.3.7 Data Sharing and Availability

Infant Mental Health Journal recognizes the many benefits of archiving data for scientific progress. Archived data provides an indispensable resource for the scientific community, making possible future replications and secondary analyses, in addition to the importance of verifying the dependability of published research findings.

IMHJ expects that, where possible, data supporting the results in the paper will be archived in an appropriate public repository. Authors are required to provide a data availability statement to describe the availability or the absence of shared data. When data have been shared, authors are required to include in their data availability statement a link to the repository they have used, and to cite the data they have shared. Whenever possible, the scripts and other artifacts used to generate the analyses presented in the paper should also be publicly archived. If sharing data compromises ethical standards or legal requirements, then authors are not expected to share it. Review [Wiley's Data Sharing policy](#) where you will be able to see and select the data availability statement that is right for your submission. If the authors cannot or do not intend to make the data publicly available, a statement to this effect, along with the reasons that the data is not shared, must be included in the manuscript. Visit Wiley's [Author Compliance Tool](#) to check the data sharing policy of your funder or institution before submitting your work. Visit re3data.org or fairsharing.org to help identify registered and certified data repositories relevant to your subject area.

2.4.1.3.8 Data Citation

Please review [Wiley's Data Citation policy](#).

2.4.1.3.9 Funding

You should list all funding sources in the Acknowledgments section. You are responsible for the accuracy of their funder designation. If in doubt, please check the [Open Funder Registry](#) for the correct nomenclature.

2.4.1.3.10 Conflict of Interest Statement

On the title page, please define any conflicts of interest that may be present related to the research or dissemination of the research in *IMHJ*.

2.4.1.3.11 Reproduction of Copyright Material

If excerpts from copyrighted works owned by third parties are included, credit must be shown in the contribution. It is your responsibility to also obtain written permission for reproduction from the copyright owners. For more information visit [Wiley's Copyright Terms & Conditions FAQ](#).

The corresponding author is responsible for obtaining written permission to reproduce the material "in print and other media" from the publisher of the original source, and for supplying Wiley with that permission upon submission.

If you are invited to revise your manuscript after peer review, the journal will also request the revised manuscript to be formatted according to journal requirements as described below.

2.4.1.3.12 Authorship/Co-Authorship Details

All listed authors should have contributed to the manuscript substantially and have agreed to the final submitted version. Review [editorial standards](#) and scroll down for a description of authorship criteria.

2.4.1.3.13 ORCID

This journal requires ORCID. Please refer to [Wiley's resources on ORCID](#).

2.4.1.3.14 Preprint policy

Please find the Wiley preprint policy [here](#).

This journal accepts articles previously published on preprint servers.

Infant Mental Health Journal will consider for review articles previously available as preprints. You may also post the submitted version of a manuscript to a preprint server at any time. You are requested to update any pre-publication versions with a link to the final published article.

2.4.1.4 After Acceptance

2.4.1.4.1 Accepted Articles

The journal offers Wiley's Accepted Articles service for all manuscripts. Manuscripts accepted 'in press' are published online shortly after acceptance, prior to copy-editing or typesetting and appear in PDF format only. After the final version article is published (the article of record), the DOI remains valid and can still be used to cite and access the article.

2.4.1.4.2 First Look

After your paper is accepted, your files will be assessed by the editorial office to ensure they are ready for production. Your manuscript will be returned to you and you will receive an email asking you to check the manuscript and make any necessary changes, updates, edits, and to unblind the paper. After the First Look process is complete, the manuscript will be returned to the editorial team and uploaded to the publisher to be published online in Early View.

2.4.1.4.3 Proofs

Authors will receive an e-mail notification with a link and instructions for accessing HTML page proofs online. Authors should also make sure that any renumbered tables, figures, or references match text citations and that figure legends correspond with text citations and actual figures. Proofs must be returned within 48 hours of receipt of the email.

2.4.1.4.4 Wiley Author Services

When an accepted article is received by Wiley's production team, the corresponding author will receive an email asking them to login or register with [Wiley Author Services](#). You will be asked to sign a publication license at this point.

2.4.1.4.5 Author Licensing

You may choose to publish under the terms of the journal's standard copyright agreement, or [Open Access](#) under the terms of a Creative Commons License.

Standard [re-use and licensing rights](#) vary by journal. Review the [Creative Commons License](#) options available to you under Open Access.

Authors based at institutions with an Open Access arrangement with Wiley may be eligible for Open Access funding prior to your article's publication in Early View. Instructions and eligibility requirements can be found at <https://authorservices.wiley.com/author-resources/Journal-Authors/open-access/affiliation-policies-payments/institutional-funder-payments.html>. Please note that many institutional arrangements require Open Access to be purchased (APC) at the time you sign your copyright license, before your accepted manuscript appears in Early View. For more information on this journal's APCs, please see the [Open Access page](#).

Self-Archiving Definitions and Policies: Note that the journal's standard copyright agreement allows for [self-archiving](#) of different versions of the article under specific conditions.

2.4.1.4.6 Author Name Change Policy

In cases where authors wish to change their name following publication, Wiley will update and republish the paper and redeliver the updated metadata to indexing services. Our editorial and production teams will use discretion in recognizing that name changes may be of a sensitive and private nature for various reasons including (but not limited to) alignment with gender identity, or as a result of marriage, divorce, or religious conversion. Accordingly, to protect the author's privacy, we will not publish a correction notice to the paper, and we will not notify co-authors of the change. Authors should contact the journal's Editorial Office with their name change request.

2.4.1.5 Referral of Declined Manuscripts via the Developmental Science Network

2.4.1.5.1 Developmental Science Publishing Network

This journal participates in the Wiley Developmental Science Publishing Network. This exciting collaboration between a number of high-quality journals simplifies and speeds up the publication process, helping authors find a home for their research. At the Editors' judgement, suitable papers not accepted by one journal may be recommended for referral to another journal(s) in the network. Authors decide whether to accept the referral, with the option to transfer their paper with or without revisions. Once the referral is accepted, submission happens automatically, along with any previous reviewer reports, thereby relieving pressure on the peer review process. While a transfer does not guarantee acceptance, it is more likely to lead to a successful outcome for authors by helping them to find a route to publication quickly and easily.

2.4.2 Article 4 Manuscript

Adapting Attachment and Biobehavioral Catch-up for infants and young children with intellectual disabilities and developmental delays in South Africa: Reflections and recommendations from local stakeholders

Ahmed Riaz Mohamed^{1,2,4}, Paula Sterkenburg^{1,3}, Esmé van Rensburg² & Carlo Schuengel¹

¹Department of Clinical Child and Family Studies, and Amsterdam Public Health Research Institute, Vrije Universiteit, Amsterdam, Netherlands; ²Department of Psychology, North-West University, Potchefstroom, South Africa; ³Department of Assessment and Treatment, Bartiméus, Doorn, Netherlands; ⁴Department of Psychology, University of Pretoria, Pretoria, South Africa

Author Note:

Corresponding author: Ahmed Riaz Mohamed, Department of Psychology, University of Pretoria, Private Bag X20, Hatfield, 0028, Pretoria, South Africa. Email: ahmed.mohamed@up.ac.za

Abstract

Attachment and Biobehavioral Catch-up (ABC) is an intervention targeted at enhancing the socioemotional and regulatory functioning of at-risk infants. However, to use the ABC for infants/toddlers with intellectual disabilities/developmental delays (ID/DD) and in novel cultural contexts, such as South Africa, adaptations may be required. This study aimed, therefore, to explore the opinions of clinical experts and perceptions of caregivers regarding the use of ABC for children with ID/DD in South Africa. It also sought to incorporate the experiences of families of children with ID/DD who received, and intervenors who delivered, ABC in its first implementation in South Africa. Semi-structured interviews were conducted with 18 participants. Thematic analysis explicated 12 main themes: Intervention Strengths, Points of Concern, and Recommendations (Experts); Focus on Caregiver-child Relationship, and Intervention Targets and Duration (Caregivers); Benefits of ABC, and Cultural Considerations (ABC Recipients); Focused and Targeted, Value of Feedback, Supportive Supervision, Working Alliance, and Challenges Experienced (ABC Intervenors). Practice and training recommendations include psychoeducation for parents and training for intervenors that is ID/DD-specific, expanding supervision capacity, building intervenors' cultural/linguistic sensitivity and competence, accessing referral networks, including local Community Health Workers as intervenors, and greater flexibility in how the sessions are organised.

Keywords: Attachment and Biobehavioral Catch-up; intellectual disability; developmental delays; sensitive parenting; South Africa.

Three key findings

1. ABC was perceived and experienced as beneficial and relevant for children with ID/DD in South Africa.
2. Integrating local cultural conceptualisations, community-based intervenors and access to adjunct psychosocial support can further facilitate the ABC's applicability in South Africa.
3. ID/DD-themed psychoeducation to address caregiver expectations, adapting activities to the child's capabilities and training intervenors in identifying idiosyncratic signal expressions of children with ID/DD can enhance the ABC's application in this cohort.

Adapting Attachment and Biobehavioral Catch-up for infants and young children with intellectual disabilities and developmental delays in South Africa: Reflections and recommendations from local stakeholders

Attachment and Biobehavioral Catch-up (ABC) is an attachment-based intervention aimed at promoting attachment through enhancing parenting practices by facilitating sensitive and responsive caregiving for at-risk families. Randomised controlled trials have demonstrated the effect of ABC on improving parenting outcomes including, for example, caregiver sensitivity (e.g. Yarger et al., 2020), as well as child outcomes related to attachment (e.g. Zajac et al., 2020) and cortisol regulation (e.g. Berlin et al., 2019). Thus, there is an established, and growing, body of evidence, across a diverse range of outcomes for infants and toddlers, and their (foster) parents, supporting the effectiveness of ABC in contributing to various facets of child development in both laboratory and community-based settings.

During 10 home-visits, in-the-moment feedback on real-time parent-child interactions is used as the primary mechanism to scaffold shifts in parenting behaviours in relation to the ABC's central themes. Addressed first are parents' responses to their child's bids for nurturing. Second, greater synchrony is promoted by encouraging parents to follow their child's lead. Third, the intervention assists parents to avoid intrusive and/or frightening parenting behaviours. In addition, 'voices from the past' are addressed, drawing attention to how parents' own attachment experiences may influence their parenting behaviours. In closing, the gains made during the process are practiced and further consolidated (see Dozier and Bernard [2019] for a more detailed description of the intervention process).

Delays in a child's development are thought to impact parental functioning significantly (Herring et al., 2006). Hence, the ABC's three focal tenets—nurturing, following the lead and reducing intrusive behaviours—could be especially useful for parents of children with ID/DD

who may have difficulty understanding and interpreting their child's signals, and may struggle to notice the child's need for nurturing (Oppenheim et al., 2007). Furthermore, due to the child's developmental lag, parents may feel the need to stimulate learning through turning interactions into an opportunity for teaching thus taking the lead rather than following the child's lead (Dozier & Bernard, 2019). Finally, interactions between parents and their children with ID/DD are often characterised by parenting that is more intrusive (Brown et al., 2011; Floyd et al., 2004), suggesting the ABC's focus on reducing intrusive and frightening behaviours could be beneficial.

While support for parents of children with ID/DD is available in various forms through collectives and organisations in South Africa such as, for example, the Western Cape Forum for Intellectual Disability, the Chaeli Campaign, Shonaquip (Trafford et al., 2021) and the Disabled Children's Action Group (Philpott & Muthukrishna, 2019), none of these organisations adopt a parenting-focused approach based on principles rooted in developmental psychology and attachment theory, which is where the ABC focusses its attention. This focus is rooted in the idea that children with ID/DD can, and do, develop attachment relationships much like typically developing children but that this may take a different course and, therefore, parents and caregivers may need additional support to empower them in their caregiving capacities (Vandesande et al., 2019a). This is to enhance responsive caregiving, a necessary component of nurturing care, which is essential for children to reach their developmental potential (Richter, 2018). This is likely to make a contribution to inclusive early childhood development and, ultimately, greater participation in society for children with ID/DD (Wertlieb, 2018).

The ABC may, therefore, have the potential to offset the psychosocial risks faced by infants and young children diagnosed with ID/DD. Although individual studies have found an increased risk of insecure and disorganised attachments for children with ID (Feniger-Schaal &

Joels, 2018; Ganiban et al., 2000), recent reviews have concluded that the evidence for this risk is inconclusive (Hamadi & Fletcher, 2021; Potter-Dickey et al., 2020). Nonetheless, parent-child interactions continue to be implicated in the emotional and behavioural challenges of children with ID/DD (Fenning et al., 2014; Totsika et al., 2014). Although ABC has been adapted for other populations (Dozier & Bernard, 2019), this has not included children with ID/DD or for those in lower-resourced countries, which may potentially require special consideration.

Although parent training, more broadly, has been investigated for parents of children with developmental disabilities, with success (Hohfeld et al., 2018; McIntyre, 2008), the study of attachment-based interventions, specifically, for this cohort has been limited (see Mohamed & Mkabile, 2015; Platje et al., 2018; Sterkenburg et al., 2008). Weisz et al. (2013) also found reduced relative efficacy when youth interventions are applied outside of their original contexts. Thus, despite its promising evidence base, ABC's applicability in novel cultures and cohorts still needs to be established. To date, this has been investigated in studies exploring the experiences of first-generation Latina mothers who received ABC (Aparicio et al., 2016), and that of intervenors (West et al., 2022) in the USA, as well as in European settings (Costello et al., 2021). The current study, in addition to the experiences of ABC recipients and intervenors, also explores the opinions of clinical experts regarding the implementation of ABC. Thus, the current study sought to explore the opinions, perceptions and experiences of ABC from a range of stakeholders in order to inform broader implementation of the intervention for children with ID/DD in South Africa and similar settings. This was achieved via the following objectives:

1. Exploring the opinions of experts on the strengths, areas for further development and recommendations for adaptations to the ABC for the South African context, and for families with a child with ID/DD.

2. Exploring caregivers' perceptions of the ABC, or similar relationally-focused, interventions for families with a child with ID/DD.
3. Exploring the experiences of the ABC of its first recipients and intervenors among South African families with a child with ID/DD.

Design

An exploratory qualitative research design was utilised given the limited existing exploration into the opinions, perceptions and experiences of the ABC intervention, particularly in novel contexts and populations (Rendle et al., 2019). A two-round Delphi procedure was nested within the broader qualitative design as a mechanism to gather insights on the ABC from clinical experts in the field of infants and young children with ID/DD (Brady, 2016; Fletcher & Marchildon, 2014).

Participants

Participants ($N = 18$) were sampled purposively and included: five experts with clinical expertise in working with children with ID/DD in South Africa; eight primary caregivers of children with ID; three primary caregivers of infants/toddlers with developmental delays who were recipients of ABC; and two trained intervenors who implemented ABC with these recipients (see Table 1 for an overview).

Table 1

Profile of Participants

Participant Group	Participant Description
<i>Experts^a</i>	
Expert 1 (ST)	Speech-Language Therapist. Over 10 years' clinical experience with infants with developmental delays and disabilities.
Expert 2 (OT)	Occupational Therapist. Over 10 years' clinical experience with infants with developmental delays and disabilities.
Expert 3 (ST)	Speech-Language Therapist. Five years' clinical experience with infants with developmental delays and disabilities.
Expert 4 (MT)	Music Therapist. Six years' clinical experience with infants with developmental delays and disabilities.
Expert 5 (CP)	Clinical Psychologist. Over 10 years' clinical experience with adults and children with intellectual disabilities and their caregivers.
<i>Caregivers^a</i>	
Caregiver 1	Biological mother (White, aged 51) to a son (14 years old) with non-specific mild intellectual disability. At the time of the study, she was married and the full-time caregiver to her children.
Caregiver 2	Biological mother (White, aged 50) to a son (14 years old) with mild intellectual disability associated with Down Syndrome. At the time of the study, she was married and employed on a part time-basis.
Caregiver 3	Biological father (Black-African, aged undisclosed) to a daughter (15 years old) with non-specific mild intellectual disability. At the time of the study, he was divorced and remarried, and employed on a fulltime basis.
Caregiver 4	Biological mother (White, aged 47) to a daughter (13 years old) with mild intellectual disability associated with Down Syndrome. At the time of the study she was married and employed on a fulltime basis.
Caregiver 5	Maternal grandmother (Black-African, aged 63) to a granddaughter (14 years old) with non-specific mild intellectual disability. At the time of the study, she was

widowed and employed on a fulltime basis. She had not formally adopted her granddaughter but was the beneficiary of a Foster Child Grant.

Caregiver 6 Biological mother (Black-African, aged 45) to a daughter (2 years old) with Global Developmental Delay. At the time of the study, she was a single mother employed informally on a part-time basis. She was a beneficiary of the Child Support Grant.

Caregiver 7 Biological mother (White, aged 38) to a son (10 years old) with mild intellectual disability associated with Down Syndrome. At the time of the study, she was married and employed on a full-time basis.

Caregiver 8 Biological mother (Black-African, aged 32) to a son (4 years old) with mild intellectual disability and Autism Spectrum Disorder. At the time of the study, she was a single mother employed on a fulltime basis.

ABC Recipients^b

ABC Recipient 1 Biological mother (Black-African, aged 39) of a child with developmental delays and cerebral palsy diagnosed shortly after birth. At the commencement of the ABC, the child's developmental age was estimated to be 14.2 months. The dyad completed all 10 sessions of the ABC over a period of four months.

ABC Recipient 2 Biological mother (Black-African, aged 36) of a child with global developmental delay and epilepsy diagnosed within 6 months post-partum. At the commencement of the ABC, the child's developmental age was estimated to be 5 months. The dyad completed all 10 sessions of the ABC over a period of four months.

ABC Recipient 3 Biological mother (White, aged 36) of a child with developmental delays diagnosed prior to age 2. At the commencement of the ABC, the child's developmental age was approximated to be 25 months. The dyad completed all 10 sessions of the ABC over a period of four months.

ABC Intervenors^b

Coach 1 Clinical psychologist who, at the commencement of the ABC training, had five years of clinical experience. She trained as an ABC parent coach in 2019 and implemented the intervention with ABC Recipient 1, and attended weekly case supervision. Certification could not be pursued as a result of disruptions due to the COVID-19 pandemic in early 2020.

Coach 2	Educational psychologist who, at the commencement of the ABC training, had three years of clinical experience. She trained as an ABC parent coach in 2019 and implemented the intervention with ABC Recipients 2 and 3, and attended weekly case supervision. She has subsequently received certification by the Attachment and Biobehavioral Catch-up Laboratory (University of Delaware, USA).

Note: Within the ABC intervention protocol, intervenors are referred to as the ‘Parent Coach’. For the sake of brevity, they are referred as “coach” in this paper.

^aInformation collected at the time of data collection.

^bInformation collected at the commencement of the ABC

Experts registered with the Health Professions Council of South Africa with at least one year’s clinical experience working with children with ID/DD were eligible. An information leaflet was distributed to a network of health professionals via a gatekeeper. Interested professionals then contacted the principal investigator (PI) directly. The final expert panel consisted of two speech and language therapists (ST), an occupational therapist (OT), a music therapist (MT) and a clinical psychologist (CP).

Eight caregivers were recruited via primary schools for children with special educational needs and a non-governmental organisation (NGO) supporting families of children with Down Syndrome/ID. Adult primary caregivers of a child younger than 18 who had been diagnosed with an ID were eligible. An information leaflet was distributed to caregivers via teachers and the NGO administrator to invite participation.

The three ABC recipients and two intervenors (coaches) participated in a trial of the ABC in families of children with developmental delays (see Mohamed et al., 2022). These recipients had a child with ID/DD, had completed the ABC and were the only South African beneficiaries at the time of the study. The coaches received ABC training, had implemented it with the aforementioned recipients and were the only intervenors in South Africa at the time.

Ethical Considerations

Ethical clearance was obtained from the Health Research Ethics Committee at North-West University, South Africa (NWU-00012-18-A1). Written and verbal informed consent was obtained from all participants prior to the commencement of data collection.

Data Collection

Experts

Individual semi-structured interviews were conducted with each expert. Prior to the interview, experts were provided with a detailed written synopsis of the ABC. Participants were requested to familiarise themselves with the synopsis and prepare any comments for the interview. The interview schedule first covered the participants' overall impressions of the ABC before probing more specifically for their opinions on the intervention's usefulness and strengths, concerns and areas for further development as well as recommendations for adaptations for children with ID/DD in South Africa. In a second round, the initial findings from the interviews were presented to the experts in writing. Participants were requested to review the findings, to comment on their degree of endorsement of the findings and to provide any additional comments or input, in writing. A total of 60% of the experts participated in the second round and endorsed the interview findings with no disagreements or objections. Some additional comments were provided which were incorporated into the final analyses.

Caregivers

Individual semi-structured interviews were conducted with each caregiver in which they were asked to offer their perceptions of the ABC intervention, or similar interventions focused on supporting the parent-child relationship, from their perspective as the primary caregiver of a child with ID. The interview schedule also explored the elements that facilitated their support for, and promotion of, the ABC.

ABC Recipients and Intervenors

Individual semi-structured interviews were conducted with each ABC recipient and coach within one month of having completed the intervention. Based on the participants' first-hand experiences of the ABC, the interviews—conducted by an independent research assistant—opened with a broad open-ended question on how the participants experienced the intervention. The interview further explored experiences of the intervention process, of having used and received key intervention techniques as well as of the relationship between the parent and respective coach.

Interviews lasted on average 66 minutes, were conducted in English and were audio-recorded using a digital voice recorder. Recordings were subsequently transcribed verbatim. Prior to analysis, each interview transcript was checked against the audio file by the first author to ensure its accuracy. Furthermore, member checks were carried out with the caregivers, ABC recipients and coaches to augment the validity of the findings (Candela, 2019).

Data Analysis

Inductive thematic analysis (Braun & Clarke, 2006), using *Atlas.ti* (version 8 for Windows), was conducted by the first author and an independent Master's-level research assistant. First, repeated readings of each interview transcript were carried out to become familiar with the overall contents. Thereafter, open coding was applied to the transcripts for significant segments with relevance to the aim of the study—this was done separately by the two coders who met to discuss the coding once all transcripts had been coded. Coding was then revised before preliminary themes and subthemes were developed separately by each coder. Themes were then discussed in a follow-up meeting after which they were revised (merged, split or discarded), where necessary, and finalised upon reaching consensus (see Table 2 for an overview). This process was conducted separately for each participant group.

Table 2

Overview of Themes and Subthemes

Participant Group	Theme	Subthemes
Experts	1. Intervention Strengths	• Concordance with clinical interventions • Intervention processes • Role-release function
	2. Points of Concern	• Video-recording • Homework • Intervention Timing
	3. Recommendations	• Targeted psychoeducation and coach training • Enhancing the family-specific approach • Engaging outside services • Adapting in-session activities • Session flexibility
Caregivers (non-ABC)	4. Focus on Caregiver-child Relationship	
	5. Intervention Targets and Duration	
ABC Recipients	6. Benefits of ABC	• Significant learnings • Feedback: Homework • Feedback: In-the-moment comments • Feedback: Video-feedback • Working alliance
	7. Cultural Considerations	
ABC Intervenors	8. Focused and Targeted	
	9. Value of Feedback	• Homework • In-the-moment commenting • Video-feedback
	10. Supportive Supervision	• Supervision process • The supervisor
	11. Working Alliance	• Trust, rapport and safety • Caregiver commitment
	12. Challenges Experienced	• Process of intervening • Logistics

Results

Experts

Intervention Strengths

Concordance with Clinical Interventions. For experts, the ABC synergised with the relational focus of their own discipline-specific interventions. First, parallels were drawn between the ABC's practice of supporting caregivers' identification of, and response to, children's signals and the facilitation, in speech-language therapy, of communication as a dyadic process because "you can only have certain return interactions if somebody is giving back to you" (Expert 3). Second, experts' use of approaches that help caregivers to identify and understand child-cued communications converged with the ABC's emphasis on synchronous caregiver-child interactions through following the child's lead. Expert 1, for example, noted her approach with caregivers to "observe, and then wait, and then listen [to] what the child is saying and respond in an appropriate way".

Direct engagement with caregivers as agents of change in recognising and attending to their child's signals was another noted point of convergence. For experts, this assisted caregivers of children with ID/DD directly to identify communications from the child that may be missed due to their idiosyncratic expression. This was also thought to provide an opportunity to draw caregivers—who may be withdrawn due to difficulties resolving the ID/DD diagnosis—more intensively into interactions with their child. Expert 2 noted that "it's hard to also interact with the child when you're not feeling that you're able to. So, I think the grieving plays a big role". For Expert 5, the loss of the 'normal' child could be "very traumatic [for caregivers]...that is really going affect attachments", hence the active drawing in of the parent in the ABC was considered crucial.

Intervention Processes. Home-visiting and the strengths-based coaching approach were highlighted as beneficial process-related aspects. Home-visitation was thought to enhance convenience and reduce commuting time for caregivers of children with ID/DD who may be involved in multiple interventions. Home-visiting was also believed to facilitate accessibility in remote areas so that the sessions could be done “next to the fire or the *kraal* [animal enclosure]...wherever the community or villagers reside” (Expert 5). This would allow access to an intervention that may otherwise have not been available to rural communities in South Africa. An added benefit of home-visitation, according to the experts, was that this would allow for an immersion into the real-world of the dyad in its daily routines, enhancing the relevance and generalisability of learnings.

In addition, the ABC’s supportive, strengths-based approach was highly regarded. Building on what the caregiver is already ‘getting right’ was lauded by the experts because, in their experience, caregivers of children with ID/DD often feel ill-equipped with regards to their caregiving. Hence, spotlighting and building on caregivers’ existing capabilities was regarded as crucially supportive of caregivers in challenging caregiving situations, contributing towards their degree of self-confidence. According to Expert 4, “[caregivers] feel so dissociated from it all, hopeless, or they just want a bit of hope. So, I think, just to have that sense of ‘I’ve got this, even if I had it just today. Next week I’ll try again’. Anything, so again that positive feedback, the confidence”.

Role-release Function. The ABC was also believed to provide a role-release function. Experts felt that its contribution to capacity-building allowed caregivers to rely less on trained professionals, lowering a heavy financial and time burden which is often highly proscriptive for many less privileged South African families. So, a brief intervention such as the ABC that builds caregivers’ capacities was regarded as attractive:

[What] I did like about this intervention and that it was with the primary caregiver that it, I felt you were going to do a lot of role-release...especially in South Africa. Therapy is expensive. If you are able to role-release...and make it practical. Wonderful! What a benefit to everyone (Expert 2).

Points of Concern

Video-recording. Experts expressed concern around caregivers' potential discomfort with being video-recorded. It was proposed that caregivers of children with ID/DD who are already struggling may feel wary of having these difficulties with caregiving, and related insecurities, recorded: "...if a [caregiver] is already struggling to bond with their child...I don't know how comfortable they would feel with the video-recording to start off with" (Expert 2).

Homework. Experts also raised concern about caregivers' adherence to weekly homework tasks. It was felt that homework may be perceived as an added burden to the already overwhelming caregiving environment and busy schedule involved in caring for a child with ID/DD: "[caregivers] don't do homework. So, you know, you have a really difficult child, you have chores, you have all these things...almost a 'Do you know what my day looks like?'. Now you're giving [them] something extra to do" (Expert 3). It was also noted that limited literacy in certain South African settings means that homework assignments involving reading and writing are additionally burdensome.

Intervention Timing. Lastly, the proximity of the intervention to the diagnosis of ID/DD was raised as a possible concern. This was noted in relation to the possibility of caregivers being overwhelmed by the shock of the diagnosis, which may limit their degree of engagement with the ABC:

...at what point [is] this intervention implemented in the child's life?...If it's just after the diagnosis...the shock of the news that my child [has ID], how can I still provide nurturance to my child? (Expert 5).

Recommendations

Targeted Psychoeducation and Coach Training. Experts recommended integrating psychoeducation focused on developmental delays/disabilities into the intervention content. This was to increase caregivers' awareness of alternative developmental trajectories to facilitate more realistic expectations of their child's competencies. For Expert 1, "I would add...developmental milestones so that you don't expect your one-year-old to communicate using words".

Experts proposed that psychoeducation could also be used strategically to address perceived misalignments between the ABC and local culture. According to Expert 5, in many indigenous cultures in South Africa "elders or adults they like to be the ones to lead the way...and sort of learning the signals...from a child, might be tricky for them...but I do think that...our [caregivers] can be psychoeducated on the importance of that...". It was recommended that psychoeducation be used with cultural sensitivity, to promote intervention targets while taking into consideration localised cultural practices and understandings. Expert 5 advised, however, that these culture-specific understandings first be engaged with intentionally to inform psychoeducation because "without giving room for the interacting or for listening...the psychoeducation can be completely blocked".

Experts also recommended that coach training include specific instruction around ID/DD since this cohort may express their signals alternatively. Specific training in non-verbal cues and communication, for example, was suggested could facilitate coaches' ability to assist caregivers

to identify, interpret and respond to their child's idiosyncratic signals, allowing them to 'match' the child more readily and thus follow their lead. According to Expert 3:

...if you have no idea about child development, how are you going to be identifying the signals? And interpreting, 'cause that's essentially what you have to do...I think [coaches] have to have knowledge in childhood development and how it is that you are going to interpret these cues.

Enhancing the Family-specific Approach. Developing an experience-near, ideographic understanding by engaging each family prior to the intervention was recommended to enhance the family-specific nature of the ABC. It was believed this would further sensitise coaches towards cultural frameworks with which they may be unfamiliar but that may influence caregiving. Expert 4 suggested that observing,

how they just engage on a natural day is very key to how you're gonna inform [your intervention], because [no] matter who you are as a coach...your background and your bias and your information on what nurturance is [can interfere]...if you don't [understand] from their world what it means...

Therefore, developing an experience-based understanding of each family could play a role in a culturally sensitive approach to the ABC.

Engaging Outside Services. For the attachment relationship to be addressed adequately, experts believed that the dyad should be approached holistically. It was suggested that coaches receive training in when and how to activate referral networks, allowing caregivers to access adjunct support services when extraneous issues risk interfering with the ABC process. Expert 1 felt that "a possible way is to have connections with doctors...or with other health professionals...[which is] an infrastructure that can support them". The experts also noted the

role of social issues impacting dyads and interfering with intervention processes in South Africa, necessitating that the referral for social assistance be included in holistic case management. In addition to addressing broader psychosocial wellbeing, this was also thought to prevent the misappropriation of ABC sessions by caregivers to address other issues, detracting from its focus. Expert 5 noted that caregivers are:

...overwhelmed and they always want to vent, so any sort of like attention given to them to talk about their difficulties, or how to manage their difficulties, it's always a space used for themselves, sort of like that...I would advise...to consider that.

Adapting In-session Activities. Experts recommended that in-session activities for children with ID/DD account for their neurodevelopmental limitations. Expert 2 pointed out that “should you give an activity that’s too hard they’re going to get frustrated and they’re not going to want to participate in that interaction...”. She continued, explaining that children with developmental challenges may also have some degree of physical limitation (e.g. cerebral palsy) which may limit the kinds of activities they are able to participate in successfully. It was, therefore, recommended that tasks be tailored according to the individual child’s capabilities so that they can benefit fully from the sessions.

Session Flexibility. While the intervention content was considered applicable, experts recommended flexibility in how this content was organised such as when a dyad may be having difficulty with a particular theme and may require more intensive input on this. Experts suggested that additional sessions be considered to provide focused additional input, when needed, for specific families to further support and augment changes in parenting:

I suppose it all depends on the families...looking at each family and seeing in each child and seeing well which session is going to need more than an hour...an extra

session on each topic or whether they are okay with an hour...Being flexible (Expert 2).

Caregivers

Focus on Caregiver-Child Relationship

Caregivers supported the ABC because of its focus on scaffolding the caregiver-child relationship. As caregivers of children with ID, they felt this was particularly necessary because, in their perception, this relationship may be negatively affected by the diagnosis. It was pointed out that the caregiver's struggle—in their loss of the 'normal' child—to accept the diagnosis may interfere with the quality of the caregiver-child relationship:

And I was getting very frustrated with it. So, and very often, I feel that's why he's leaning towards his dad. He loves his dad so much because he can feel, you know, I love him as much as I do, and nobody will know how much I do love him. But I think there's still a sort of barrier that's preventing me from really loving him (Caregiver 3).

Caregivers believed that being overwhelmed and emotionally less available to their child negatively impacted the quality of the relationship, affecting the child's feelings of safety. Additionally, the nature of caring for a child with ID may be experienced by the caregiver as a burden or punishment, further negatively affecting the caregiver-child relationship, thus necessitating intervention:

These kids [with ID] need that relationship and a lot of parents probably struggle to relate to their own kids. Maybe because they're taking too long to understand them or it feels like a burden for them but I feel you know the bond must be so strong that it doesn't feel like a burden, it doesn't feel like a punishment. Even though you accept it you must just remember that your child depends on your well-being as well in order

for them to be who they are and be happy with that. So, it is an important bond to help strengthen (Caregiver 8).

Salient for caregivers was acknowledgement of the importance of, and need for, relational support. This was predicated on the belief that the nature of the caregiver-child relationship provides safety through the caregiver's sensitive responsiveness to the child. Hence, opportunities to support and strengthen this relationship, such as with the ABC, were regarded as necessary.

Participants felt the ABC facilitated the caregiver-child relationship through supporting caregivers of children with ID. The active acknowledgement of their unique caregiving challenges was thought to build connectedness, counteracting the alienating effects of social stigma, thus supporting caregiver wellbeing. One caregiver felt that if she had taken part in the ABC when she first had her child, she "would have felt normal. I would have felt nurtured. I would have felt looked after. I would have felt there's somebody that cares enough to help me find my road" (Caregiver 1). Thus, the ABC, by working closely with the caregiver, was felt could play an important role in empowering them and expanding their support network.

Intervention Targets and Duration

Caregivers perceived the clear delineation of intervention targets as useful because this facilitated identifying specific elements of caregiving that required attention, or were working well, making the learnings more actionable:

...it kind of made me go I could probably be able to identify some trigger point or some points that aren't working or some points that are working...[so that] I can quickly see where I am melting down which isn't working and be able to move out of it to make this interaction with [my daughter] a little bit better... (Caregiver 4).

Furthermore, caregivers felt that the 10-session duration was intensive enough to impact caregiving with the support and guidance of the coach. It was noted, however, that this may depend on individual families' needs and circumstances: "If that parent coach is the only person that mother will see during the week...she might want fifty sessions. Whereas a mother who's more independent in having nurturing from other places...then 10 sessions might be exhausting" (Caregiver 1).

ABC Recipients

Benefits of ABC

Significant Learnings. Generally, the intervention appears to have catalysed, for ABC recipients, improvements in how they understood and communicated with their children. For caregivers who had experienced early difficulties understanding their child's needs and for whom the anxiety involved in having a child with ID/DD distracted from getting to know their child beyond the diagnosis, these changes were experienced as particularly significant.

According to Recipient 1,

If more mothers can get this especially the ones who get premature babies, it helps a lot...because of the stress you get stressed and sometimes...you can't relate to the kid and everything because of you're worried about [them] being sick and everything, so it helps you to be more open and...to be more observant to your child.

Similarly, Recipient 2 felt that the intervention was well-timed because it came at a point when she was particularly overwhelmed which interfered with her ability to communicate with her daughter. So, being part of the ABC "gave me the tools to...communicate better with her...[and] interact better with my little one" (Recipient 2).

Specifically, the recipients highlighted learning to following the lead as particularly salient for them as caregivers of children with ID/DD. Recipient 3, prior to the ABC, would “constantly try to teach my child something while she was playing”, leading most interactions. So, learning to take a step back, observe, and allow their children to lead was a significant learning, especially noting the impact this had on child behaviour, such as increased confidence to explore their surroundings.

Recipients also highlighted learning to identifying voices from the past in relation to both nurturance and their use of frightening caregiving behaviours. One recipient felt that she had learned to listen to her own voice more after coming to realise that voices—from the past—had been influencing how she engaged with providing nurturance to her daughter, which taught her how to respond more sensitively. Recipient 3, similarly, reflected on her tendency towards frightening behaviours and how this had been ingrained in her caregiving due to having been parented in this way herself:

[Coach 2] said to me...as a parent, you can't be scary. So, you can't go round shouting at your child saying 'YOU WILL NOT DO THAT!'...And that has been...the hardest habit that I've had to change, because my mother screamed at me for everything.

Feedback: Homework. Homework provided an opportunity for recipients to reflect on intervention content in relation to their own caregiving, which was consolidated when the homework was reviewed with the coach weekly, “[making] you re-evaluate a situation” (Recipient 3). Although it was sometimes difficult to fit the homework into already busy daily schedules, it was found by the recipients to be beneficial. Homework served to reinforce recipients’ abilities to observe and attune to their child by providing a structure within which to do so which, for Recipient 2, made her “much more aware” of her daughter and her relational

competencies and, for Recipient 3, served as a way of monitoring improvements over time which “re-establishes that new habit that you’re trying to learn”.

Feedback: In-the-moment Comments. In-the-moment commenting from coaches was experienced as particularly useful by the recipients because it allowed them to develop insights into, and refine, their caregiving behaviours as they occurred. It helped Recipient 1 “to observe those things by [the coach] observing us and telling me ‘oh, this is good...doing this is good’”. It also provided encouragement and social reinforcement of target caregiving behaviours that were already in place through ‘spotlighting good’, which Recipient 2 felt “gave me the confidence that I’m doing the right thing”.

Feedback: Video-feedback. Recipients reflected on the reinforcing quality of the video-feedback which was experienced as positive, resulting in recipients learning more about themselves and their strengths and capabilities in relation to caregiving: “...sometimes I didn’t even know that I’m doing that okay, that means okay that at least I’m doing good so I at least I’ve learned more about myself...” (Recipient 1). Recipient 2 felt that seeing herself on video was a critical aspect of her learning: “...sometimes you need somebody [to] tell you but when you see yourself doing it you realise, oh actually I’m not so bad. Maybe I’m just beating myself up unnecessarily”.

Working Alliance. Reflecting on the relationship with their coach, recipients highlighted as significant the coach’s attitude and demeanor as well as their support and guidance throughout the process. Across recipients, coaches were experienced positively, with reference made to coaches’ friendliness, warmth, professionalism and understanding as characteristics that made recipients feel comfortable. Coaches’ non-judgmental approach and attitude was noted for its role in softening more critically-inflected feedback related to areas of development identified in sessions. All recipients experienced feeling supported and being guided by their coach in a

collaborative partnership, in the absence of a top-down approach. The warmth and support were experienced as holding during challenging moments and feelings of insecurity regarding caregiving competency, as well as during feedback, which normalised caregiving challenges and associated feelings.

Cultural Considerations

The recipients were all in agreement that the ABC and its foci were relevant to the South African context. They did, however, raise some thoughts regarding culture and caregiving that they believed were worth considering for the ABC in South Africa. Recipients reflected on learning, through their own childhood experiences, that children are to be controlled and managed by adults, or are to be ‘seen and not heard’. This stands in contrast to the ABC’s notion of following the lead and discourages considering, and taking seriously, children’s feelings, stifling the provision of nurturance, another core ABC target:

...so for me [when I grew up] a child is a child. You just reprimand...you don’t observe like maybe okay how does a child feel and how...is the child hurt or something and if the child is hurt, when I grew up it’s like it’s fine because you were naughty that’s why... (Recipient 1).

Thus, there may be ‘culture shock’ for some families who subscribe to more traditional beliefs that allowing the child to lead or responding to them immediately when they are distressed, will ‘spoil’ them. Based on their experiences of the ABC, all recipients were of the belief that the intervention was applicable, culturally, and for children with ID/DD. They felt that buy-in could be facilitated because “a person who is open-minded would...receive [the ABC] well” (Recipient 2). The framing of the intervention upon introduction to potential beneficiaries—as an approach geared towards enhancing the caregiver-child relationship rather

than as something to rectify poor parenting—was felt could assist in obtaining buy-in despite cultural differences.

ABC Intervenor

Focused and Targeted

For coaches, the ABC's directive and specific nature that targeted clearly defined components facilitated the intervention's focus. In Coach 1's experience, "[this] ensures that the targets get met and you don't get lost in...trying to reach all sorts of other therapeutic goals". Both coaches also commented on how the home-based format of the sessions supported the focused nature of the ABC because the sessions were based on in-vivo interactions as they happened in the natural environments of the families involved, facilitating the applicability and transferability of intervention content. According to Coach 2, "doing it in the home is magic" because "you're right there in the middle of it, clothing lying around...kids taking you upstairs...And so, very quickly it becomes real, it becomes, well, you know what, this is us, deal with it".

Value of Feedback

Homework. Flexibility around the completion of written homework was regarded as crucial for caregivers who are already overwhelmed and may experience this as additionally burdensome. Coach 2 believed that "the homework is important. But... I think the way that it's being sold, where it's not homework that you have to sit and do, but that it really is food for thought. I think it works well". Thus, even when recipients were unable to complete the written component, reflecting with their coach on the task during sessions nonetheless allowed them to benefit from the homework.

In-the-moment Commenting. Although both coaches found the delivery of in-the-moment comments initially challenging, they agreed that these comments were beneficial for recipients and impacted on caregiving behaviours, which was encouraging. The coaches believed that the intensive, repetitive nature of the commenting delivered during naturalistic interactions in the home all, together, worked well to convey and cement the message, contributing towards what, and how, recipients learned:

... I think that repetitive nature helps it set in for the mom because it's kind of practiced in the moment. Then I also think the fact that it's happening within the moment while play is happening, that is also useful because it becomes less teachy... (Coach 1).

Video-feedback. Video-feedback was thought to augment in-the-moment commenting because recipients were able to concretely observe themselves in moments when they were doing well. Coaches felt that this was reinforcing for the recipients who were able to witness their own progress over time. This made recipients increasingly aware of their evolving caregiving capabilities in relation to their child with ID/DD:

...it was very powerful to play moments back to the mom where she was doing more of the target or desirable behaviours that we were trying to work towards, and it actually ended up being more of an encouraging type of experience than I think making mom feel intimidated (Coach 1).

The supportive and encouraging nature of the feedback was foregrounded and valued by the coaches who themselves felt encouraged in the process: "I was genuinely excited with mom when she was getting it. So, there were many moments we were celebrating together" (Coach 1). Coaches also noted that video-feedback may be especially valuable for caregivers of children

with ID/DD in pointing out tendencies to be more ‘teachy’ and lead interactions in attempts to stimulate development.

Supportive Supervision

Supervision Process. Supervision was experienced as indispensable for its guidance on the application of in-the-moment commenting, which was new to both coaches. This was especially useful when working with dyads in which the child had ID/DD because it helped to reframe in-the-moment comments to be more appropriate given the child’s functional limitations:

[The supervisor] was wonderful in that in saying, look, you’re going to alter it slightly so you are going to say that this is going to help her feel safe, this is going to help her feel secure, this is going to let her know that you are there for her...This is going to help her regulate. So, the ones that you feel uncomfortable with, we’ll wait with for a while...But by the end of it I was saying to her, well done mom, this is how you’re building her vocabulary because I felt that comfortable that the programme was actually doing it (Coach 2).

Both coaches commented on the value of watching themselves on video during supervision, which mirrored the video-feedback used in intervention sessions. Supervision played a crucial role in helping to fine tune observations to sometimes smaller and more subtle moments that may otherwise have been missed. Coach 2 elaborated on this further saying that “even the way [the supervisor] does supervision with us, she does in-the-moment commenting with us sometimes...And I’m like, ‘That feels good, do it more’”, mirroring the encouraging and supportive inflection of intervention sessions. So, much like the ABC sessions were experienced by the recipients, supervision was experienced by the coaches as supportive and non-critical.

The Supervisor. The abovementioned support was heavily facilitated by the nature of the supervisor who was experienced as containing, understanding, consistent and reliable. This offered the coaches an experience of being held, which was especially beneficial in the context of families with a child with ID/DD where implementation of the ABC may be more challenging: "... there was an element of not just supervision but almost like a holding space when it got tough" (Coach 2).

Working Alliance

Trust, Rapport and Safety. Trust and rapport were experienced by coaches as particularly significant to their relationships with recipients. The safety of the working alliance was thought by coaches to have buffered against recipients' uncertainties, mistakes, and insecurities, and was augmented by the ABC's strengths-based, encouraging approach: "...it helps mom to feel like it's not her fault...and I think that was a good way to establish a therapeutic relationship" (Coach 1). This built trust and rapport which contributed to recipients feeling supported and joined in the process.

Caregiver Commitment. Coaches also noted recipient openness and commitment to the intervention process as a key factor in facilitating the working alliance. Coach 1 noted how Recipient 1 "was incredibly willing to learn...and a very, very dedicated mother which made my job easier" and, for Coach 2, "...having them, even when they are questioning you and going 'where's the science? This doesn't make sense'. At least they're participating, they want to learn, they want to understand". It was believed that this kind of active engagement and commitment was facilitated by recipients feeling like a collaborative partner in the process, allowing them to act as the agent of change and expert on their own children. Hence, the working alliance was strengthened by the collaborative nature of the partnership that characterised it, allowing recipients to feel like active agents.

Challenges Experienced

Process of Intervening. Due to the coaches' professional training as psychologists, the ABC was a paradigm shift for them. This was challenging because it involved bypassing their prior training and experience. They highlighted that boundaries had to be conceptualised differently to the psychotherapeutic approaches in which they had been trained. This manifested in the home-visiting aspect of the ABC, which is not commonly a feature of traditional psychotherapies: "...the fact that it's taking place in someone else's home, I think this is very different in the South African context, we don't really go to people's homes to do therapy there. So, for myself, that was an adjustment as well" (Coach 1). Another notable challenge for the coaches was in-the-moment commenting. Not only was this highly directive, rather than exploratory, it also involved actively and constantly interrupting the delivery of content to make well-timed in-the-moment comments. Both coaches found this difficult to enact in the beginning, although this eased over time. Coach 1 reflected that,

when the mom is engaging in a target related behaviour you need to shift your focus and comment on that. So, you feel like you're interrupting yourself a lot. So, I found it was difficult at times to come back to the content again...it's just something to get used to.

The child's level of functioning was also a factor that complicated the delivery of in-the-moment commenting. Coach 2 found that the child's functioning affected interactions with their caregiver, limiting—earlier on—the coach's perception of the availability of relational material to comment on. Hence, implementing in-the-moment commenting was less straightforward. However, with the support of supervision, rethinking how the comments were delivered helped to manage this challenge. Supervision assisted in the process of lowering the threshold of which behaviours received in-the-moment comments such as, for instance, when "mom [was]

responding to very slight, small cues...I had to be far more observant and aware...I had to find the things, so it was very hard for me” (Coach 2).

Another challenge raised was the potential for dissonance between the ABC and other therapies that families were accessing (e.g. physiotherapy). For Coach 1, such therapies encouraged caregivers to initiate and lead activities, contrasting with the ABC’s principle of following the child’s lead. For children with ID/DD who are often involved in additional therapies to support different aspects of their development, this may require careful consideration when implementing the ABC. After noticing that Recipient 1 had started increasingly initiating activity, Coach 1 raised this with her and,

realised that this was [an] instruction that was given from physiotherapy...So my recommendation [would be] to take like a whole multidisciplinary approach if you are going to work with children that have developmental delays and incorporate [the ABC], so that there could be certain times for specific types of interventions. So, the mom can have a specific time where she does the physiotherapy where she would then initiate the tasks and then...for the majority of the time you want to create an interaction style where the mom follows the child’s lead.

Logistics. The logistics—including time commitment—involved in being a coach were also challenging. This included travelling to and from families’ homes as well as ancillary activities related to supervision. Commuting to and from families’ homes was raised as time-consuming, particularly where families lived significant distances away. It was also pointed out that although the families with whom the coaches worked lived in easily accessible and safe communities, many South African families do not. So, issues of physical access and safety in rural, peri-urban and township areas must be borne in mind for future implementation in South

Africa: “So, you’re kind of wondering where are you going to and will the area be safe for me to go to” (Coach 1).

While supervision was planned, the preparation for supervision added to the time burden and logistical challenges. Although highly valued, the process of self-coding video segments to monitor fidelity was time-intensive over and above the 90 minutes of supervision. This was complicated by weak internet connectivity which made uploading video-recordings for supervision a laborious process: “...and it was coding, and it was video recording and it was cutting and uploading. Uploading [was the]...number one hassle...that would take sometimes the whole day” (Coach 2). Another logistical challenge was the time difference between Delaware and South Africa, which meant that the scheduling of supervision—at 6pm or 7pm—was not always convenient for the coaches.

Discussion

Findings indicated positive perceptions and experiences of the ABC across participants, who supported the intervention and its implementation for children with ID/DD in South Africa. Framed as strengths, several factors contributed towards this support. The ABC was thought to coalesce with some other therapies because of its focus on the caregiver-child relationship, which was regarded as key to the success of early intervention. With the caregiver-child relationship as the ABC’s inflection point, dovetailing with other therapeutic interventions could serve to facilitate a transdisciplinary approach in assisting families of young children with ID/DD. A transdisciplinary approach has been purported as best practise for early intervention and could, therefore, advance the ABC as a component of an early intervention package to maximise development in children with delays (Guralnick, 2001, 2017). Role release—noted as a strength of the ABC—is regarded as contributing towards transdisciplinarity because this involves the integration of the target families into the team as collaborators (King et al., 2009).

Partnering with, and capacitating, caregivers through early intervention during the first 1,000 days of their child's life is also preventive, improves maternal mental health and reduces the longer-term reliance on professional services, which is beneficial in lower-resourced settings (English et al., 2017; Tomlinson et al., 2022).

This was further highlighted in this study by coaches who were encouraged and motivated by recipients' commitment to the process as collaborative partners rather than as passive observers. This active commitment also contributed to augmenting the working alliance, which was experienced positively by recipients who appreciated the support and warmth conveyed by coaches, feeling as though this support and encouragement contributed to their feelings of competence as caregivers. This is consistent with findings which show that positive interactions between therapist and client improve both the therapeutic alliance and treatment outcomes (Duppong Hurley et al., 2017).

The caregiver-child relationship was regarded, across participant groups, as central to child development and wellbeing. The focus of the ABC on this relationship, therefore, reinforces its perceived relevance, generally, and for caregivers of children with ID/DD, specifically. These caregivers may feel less competent in their caregiving and lacking in caregiving self-efficacy (Spiker et al., 2002). This may be rooted in the caregiver's difficulty identifying or understanding their child's needs during infancy when caregivers have not yet adapted to the potentially anomalous signal repertoire of their child with ID/DD (Vandesande et al., 2019b). By providing concerted and directed opportunities to facilitate—with supportive coaching—the caregiver's capabilities, the ABC may work to scaffold and shape their caregiving competencies. This is reified by the strengths-based approach of the ABC in which caregivers' already-existing capacities are reinforced, which was a feature also highlighted by the mothers in Aparicio et al.'s (2016) study, and mentioned across participant groups in the current study.

Reinforcing caregiving capacities is anchored through the ABC's feedback system involving homework, in-the-moment commenting and video-feedback. In alignment with the mothers in Aparicio et al.'s (2016) study, caregivers may be uncomfortable with being video-recorded, especially parents who may be struggling. However, despite the initial discomfort, Aparicio et al. (2016) reported that the mothers became quickly accustomed to the video-camera. The ABC recipients in the current study, however, did not experience any particular trepidation around being video-recorded which may have been influenced by the benefits experienced in relation to video-feedback such as observing themselves in the context of supportive feedback. This is in line with Balldin et al.'s (2018) conclusion that the use of video material can be an aid to interventions focusing on caregiver-child interaction.

While video-feedback is a notable aspect of the ABC, in-the-moment commenting is considered its 'active ingredient'. Although challenging to implement because it differs from commonly practiced exploratory approaches, its clinical value counterbalanced any initial challenges perceived by coaches in this study. This value was reflected by the ABC recipients who found these comments to be useful in understanding their children's needs and learning how to interact with them differently. These experiences correspond with the emphasis of in-the-moment commenting as the ABC's active ingredient which has been found to predict changes in parenting behaviours such as increases in parental sensitivity (Caron et al., 2018). In addition, the strengths-based and supportive nature of these comments delivered in the context of a safe and containing working alliance may have further contributed towards the learnings experienced by the ABC recipients in this study (Aparicio et al., 2016).

Based on professional experiences of caregiver non-adherence with homework, this component of the feedback system was flagged as a point of concern by experts. This is consistent with others who have found homework to be a difficult component of parenting programmes for caregivers to follow (Christian et al., 2014), and that despite its benefits, the

adherence to homework is suboptimal (Danko et al., 2016). A regularly reported reason for poor homework adherence is a lack of time (Chacko et al., 2013). However, while the ABC recipients did not always complete written tasks, this was not experienced as a barrier in sessions. This is attributed to the fact that the ABC process is not reliant on the written homework and that even in the absence thereof, the skills are reinforced and reflected upon in person. Hence, the engagement with the caregiver is always retained even when the actual written task has not been completed. For coaches, the value of the homework was situated in the reflective engagement with the caregiver rather than the written document. This is consistent with Clarke et al.'s (2015) findings that it is the extent to which caregivers are actively engaged in the process that is most important in predicting intervention response. In this study, the flexibility around the homework appeared to 'free up' caregivers by removing an additional obligation while not sacrificing caregiver engagement, which was further augmented and held by the safety of the working alliance. As an added benefit, the non-reliance of ABC on reading or writing in relation to the homework circumvents literacy inequities in South African communities (Khumalo & Alhassan, 2021).

The issue of caregiver emotional withdrawal in response to the child's diagnosis of ID/DD was raised in the context of the expert and caregiver interviews. Grief and sadness are common caregiver responses to the diagnosis of ID/DD (Van der Weck et al., 2021), and may be persistent longitudinally (Fernandez-Avalos et al., 2021) although, with time, many are able to develop a new perspective characterised by possibilities (Van der Weck et al., 2021). Kielb et al. (2019) reported that depression and posttraumatic stress may be particularly acute early on due to the shock associated with the diagnosis. The timing of the ABC is, therefore, important to consider and was raised as a point of concern by the experts. Concurrently, this also highlighted the significance of the mental and emotional health of caregivers of children with ID/DD and the impact of this on attachment (Alexander et al., 2018). This underscores, again, the importance of

the relational focus of the ABC for this cohort where parental emotional withdrawal may be more prevalent due to the lack of resolution, or non-acceptance, of the child's diagnosis, affecting the degree of caregiver sensitivity. Although there was concern about the timing of the intervention in relation to the child's diagnosis, this was counterbalanced by the experiences of the ABC recipients who felt supported through the intervention under overwhelming and challenging circumstances. The active engagement of the caregiver by the ABC may have contributed towards them feeling supported by their coach—reflected in the positive experiences of the working alliance—and may have built their confidence and competence as they observed changes in their child through having their own capacities reinforced and encouraged. Therefore, rather than disengagement serving as a barrier, the ABC, through its actively engaging processes, supportive coach, strengths-based approach and consistent, multi-pronged feedback, may have worked to counteract withdrawal during a period critical for the establishment of attachment.

The ABC—albeit indirectly—may have a role to play in counteracting the effects of stigma for parents and caregivers of children with ID/DD. Stigmatising experiences in relation to their child's disability are commonly reported among caregivers in South Africa (Malatji & Ndebele, 2018; Mkabile & Swartz, 2021; Mmangaliso & Lapuwana, 2021; Modula, 2022) and other African contexts (Aldersey et al., 2018; Masulani-Mwale et al., 2016; Oti-Boadi, 2017; Tekola et al., 2020; Tilahun et al., 2016; Zuurmond et al., 2020). This may be particularly acute in township and rural communities where a combination of factors such as poor education, poverty, and unemployment may magnify stigmatising experiences related to having a child with ID/DD (Rohwerder, 2018; Zuurmond et al., 2020). In addition, in African contexts, stigma is further fuelled by the culture-bound meaning-making of disability as resulting from demon possession, witchcraft or similar causes (Mkabile et al., 2021; Scior et al., 2020). These experiences of stigma may have an alienating effect on both the person with ID and their

caregivers resulting in isolation from extended family and the wider community and leading to psychological distress (Ali et al., 2012).

In light of this it is important to note that the ABC-programme—in alignment with the social model of disability (Kattari et al., 2017)—takes a strengths-based, supportive and encouraging approach in which coaches convey compassion and understanding, in contrast to the blame and ostracism that families may sometimes meet. Through the unconditional acceptance and acknowledgement of the parent by the coach as well as the facilitation of parents' confidence and self-efficacy, which may encourage them to seek out supportive connections that are similarly accepting, the ABC may contribute towards rebuilding social connectedness for these caregivers and families which may protect and promote their mental health (Kawachi & Berkman, 2001; Saeri et al., 2018). This points to the more interpersonal—as opposed to purely 'professional'—role that coaches may play through creating opportunities for meaningful social connection which McConkey et al. (2016) refer to as a 'professional friend' who contributes to a broader coalition of support for families that have a child with ID/DD (McKenzie & Chataika, 2018). Deitz et al. (2020) found, for example, that the social aspects of a home-visiting community health programme were considered equally as meaningful as the professional, disease management aspects, highlighting its significance. This suggests that the core targets—the clinical aspects—of the ABC as well as its supportive role—the interpersonal connectedness aspects—may be key assets for families of children with ID/DD, especially in communities where stigma, isolation and exclusion remain significant social issues such as in under-resourced communities in South Africa (Mkabile & Swartz, 2021). While South Africa has, to a limited degree, achieved steps towards greater inclusiveness—through attempts at deinstitutionalisation, for example—people with disabilities and their families remain isolated within their communities and rarely participate in community life (Capri et al., 2018). The ABC can, therefore, also—on the one hand—make some contribution towards greater inclusiveness by

helping caregivers provide their child with ID/DD with a secure base from which to explore social interactions with other people, complementing efforts to make local communities more inclusive. On the other hand, it can also facilitate inclusiveness for the family in community life by expanding their network of support.

Practice and Training Recommendations

Based on this study's findings, some pertinent recommendations (see Figure 1) are offered for adapting certain 'surface elements' that would retain the ABC's core intervention identity while facilitating the implementation of the intervention for families that have a child with ID/DD in South Africa, and similar sociocultural contexts (Barrera & Castro, 2006).

[Insert Figure 1 near here]

In the context of working with children with ID/DD, accurate knowledge—through targeted psychoeducation—around delayed development may facilitate more realistic expectations from caregivers of their children's competencies. This allows for improved understanding and caregiving responses that are better aligned to the child's signals and behaviours given their functional limitations. Furthermore, adjusting the threshold for the behaviours that warrant in-the-moment commenting may be necessary to avoid coaches misidentifying, or missing, moments of significance due to the subtle and idiosyncratic expression of signals by children with ID/DD (Vandesande et al., 2019b). Therefore, the integration of knowledge on attachment and ID/DD into coach training is also essential. It may also be necessary to adjust in-session activities to align more appropriately with the functional capacities of the child. This also underscores the importance of supervision in shepherding coaches in adapting in-session activities and in identifying and responding to relevant behaviours that may be less clearly expressed when working with families who have a child with ID/DD.

The use of in-the-moment commenting and video-feedback in supervision allowed for experiential learning that was perceived by coaches as making an invaluable contribution to the implementation of the ABC in families with a child with ID/DD. The supervisory relationship, not unlike the relationship between coach and caregiver, can serve to foster a transformative, confidence building quality in coaches (DeCandia Vitoria, 2021). This may be particularly necessary when implementing a new approach and in novel populations such as children with ID/DD where the application may be less straightforward. In addition to one-on-one supervision, peer and group supervision among local coaches may provide continual, and more widespread, support to coaches in the longer term.

Despite the perceived relevance of the intervention to South Africa, consideration of culture in its implementation is nonetheless recommended. Culturally-informed beliefs about caregiving (e.g. children must be seen and not heard) may misalign with ABC targets, undermining intervention effectiveness (Super & Harkness, 2002). In addition, the manner in which individual families understand and enact target behaviours such as nurturance could be uniquely based on cultural practices (e.g. tying the infant to the mother's back), emphasising the need to first engage and develop an understanding of each family so that the intervention is appropriately tailored (Van Horn et al., 2012). By engaging families on their beliefs about parenting, coaches should actively work towards the development of cultural competence, which has been identified as an important route to improving the outcomes and experiences of beneficiaries that differ in background to the intervenor (Ertl et al., 2019).

Although language was not raised specifically in this study, language and culture are inextricably linked (Jiang, 2000). While the ABC recipients in this study were fully conversant in English, this is not the case for a significant proportion of the South African population. Sattler et al. (2022) have noted challenges in this regard when implementing ABC among Spanish-speaking families in the USA and suggested that intervention materials need to be

translated because in-vivo interpretation of English materials led to inevitable losses in translation. Translation of ABC materials has been successfully achieved in other international contexts in which the intervention has been implemented among rural communities through using words and phrases like those in English but reflective of linguistic differences between languages and making context-specific video material with local ‘actors’ using the local language (Costello et al., 2021). Translation of intervention materials might be most effective if done in collaboration between ABC developers and local partners in South African communities so that linguistic and cultural issues can be considered through bidirectional knowledge-sharing as well as capacity-building (Costello et al., 2021).

In line with other research from developing contexts, the current study’s findings suggest that the emotional health of parents of children with ID/DD (John, 2012) as well as their social realities (Masulani-Mwale et al., 2018) must be accounted for because this could influence parents’ full engagement in, and benefit from, the intervention. This is consistent with Aparicio et al. (2016) whose participants suggested, similarly, that addressing basic needs was important when implementing the ABC among disadvantaged families. Coaches, therefore, require an awareness of psychosocial health. It is recommended that coaches receive training in caregiver mental health and social issues to facilitate an understanding of when to refer and how to access and activate appropriate referral networks. Thus, where the caregiver or infant experiences extraneous medical, psychological or social distress that impacts on the intervention process and success, these can be addressed through referral and appropriate case management. Dozier et al. (2011) stress the importance of adhering to the protocol to avoid the intervention becoming ‘hijacked’ which, as noted in this study, may happen with vulnerable families where larger systemic stressors are at play. Thus, it is important to attend to securing referral networks so that these additional, albeit distal, stressors can be addressed without derailing the focus of the ABC.

While there are important points of convergence with other interventions, there may also be risk of conflict with ABC. Dozier and Bernard (2019) have noted that services such as physiotherapy, for example, may inadvertently discourage caregivers from following the child's lead by turning interactions into learning opportunities. For infants with ID/DD who are regularly beneficiaries of multiple simultaneous treatments (Heiman, 2002), it may be pertinent to consider how the ABC fits into the broader intervention landscape for individual families. Adjunct interventions are often necessary to stimulate developmental competencies for children with ID/DD. Hence, this recommendation is intended to encourage greater integration of services and multidisciplinary collaboration, allowing the ABC to harmonise with other interventions, limiting points of conflict.

It may also be beneficial—in addition to integration with clinical interventions—to partner ABC with existing disability initiatives to provide a holistic approach consistent with the social model of disability while still addressing, specifically, the parent-child relationship. For instance, the partnership between Shonaquip and the Uhambo Foundation—Shonaquip Social Enterprises—in South Africa involves the provision of mobility devices to people with ID in conjunction with empowerment, educational and advocacy initiatives to influence policy as well as enhance access and inclusion for people with ID and their families (see Trafford et al., 2021). To flourish, children with ID/DD must be provided with various kinds of support that act synergistically to protect, uplift and empower (Trafford & Swartz, 2021). Thus, in addition to interventions such as policy development, assistive technologies, social assistance and the like, the ABC could serve as an additional branch in the broader system of available support to children with ID/DD and their families. Philpott and Muthukrishna (2019) also note that parents of children with ID/DD must be included as collaborators and active agents in these support endeavours. The ABC's approach aligns with this—as reflected by the ABC recipients in this

study who experienced the process as a partnership—through its active drawing in of caregivers and capacitating, and empowering, them in their caregiving.

Although logistical issues emerged as a challenge for coaches, this could be minimised by training coaches from within local communities who could subsequently serve as community-based supervisors. This would address issues around travelling time, safety, and access in township and rural communities. In addition, this could assist with navigating the cultural landscape by accessing the emic perspectives of these local coaches to benefit the integration of local cultural knowledges around caregiving, attachment and development with the existing foci of the intervention. South Africa may be well-positioned to do this given its history of using Community Health Workers (CHWs) to improve access, in lower income and rural communities, to health services, in general (Murphy et al., 2021), as well as attachment-based interventions, specifically (Cooper et al., 2009). Furthermore, NGOs in the fields of caregiving and infant mental health may be a valuable resource with well-established relationships in local communities that could be utilised to facilitate contextually-sensitive community implementation of the ABC. It is, therefore, encouraging that the ABC has retained its effectiveness when implemented in community settings (e.g. Roben et al., 2017). However, it is also acknowledged that the adaptation and implementation in South African community settings may come with its own unique challenges and that the apparatus for consultation as well as careful monitoring and evaluation will need to be put in place to further facilitate scaling up of the intervention, locally. Additionally, by partnering with disability-focused initiatives (e.g. Chaeli Campaign) in training local CHWs as ABC coaches, further progress can be made towards promoting and encouraging disability inclusiveness within their communities, removing barriers for families of children with ID/DD to accessing support and services.

Lastly, the issue of the flexibility around sessions was raised in this study in relation to how caregivers may respond to the intervention, suggesting that additional—or fewer—sessions

may be required depending on the strengths and weakness of individual families (Bernard et al., 2013). This is in line with the recognition by Dozier et al. (2018, p. 24) that “[adjusting] dosage according to parent response to treatment seems an important next step” in optimising the ABC for individual families. This could be beneficial for families with a child with ID/DD where there may be unique caregiving experiences that require more, or less, intensive input.

Limitations

First, the study was limited to only five participants who had participated directly in the ABC as these were the only local stakeholders at the time of the study. Future larger group-based studies should seek to explore the accounts of a wider variety of stakeholders across implementation sites to further extend knowledge on the use of the ABC in novel settings and populations rooted in first-hand accounts, which may inform more considerable adaptations than what has been possible with the current sample. Second, having had positive experiences of the ABC may have introduced a selection effect in that the ABC recipients may also have chosen not to participate in this study had their experiences of the ABC been unfavourable. The study may, therefore, not be best positioned to comment on what makes the ABC especially appealing or unappealing to potential beneficiaries. Third, only one participant on the expert panel was of African ethnicity, limiting exploration of indigenous African cultural themes related to the ABC. Future research is encouraged to sample experts from a wider range of indigenous groups to broaden insights into the ABC’s cultural applicability. Lastly, the ABC was also only implemented in families proficient in English which did not permit the exploration of the complexities and challenges of implementation in other local South African languages. Given that a significant proportion of the South African population, and those in lower-resourced settings, may not be English-proficient and may require the ABC in another of South Africa’s 11 official languages to access its full benefit, future research should seek to explore language-related adaptations that are specific to the South African context and its multilingual landscape.

Conclusion

This was the first study to explore the opinions, perceptions and experiences of the ABC for children with ID/DD in South Africa from experts, caregivers as well as ABC recipients and coaches. Overall, there was notable support for the ABC across participant groups who identified with the foci of the ABC and its approach to supporting the caregiver-child relationship, which it was noted was needed for caregivers of children with ID/DD. The strengths-based, supportive and encouraging coaching approach combined with repeated positive, reinforcing and directed feedback within the context of a trusting and holding working alliance was considered to be, and experienced as, a safe environment for caregivers of children with ID/DD who initially found understanding their children's needs challenging. This facilitated significant learnings for those who received the ABC primarily related to interacting with their children differently. Coaches were similarly supported through quality supervision and encouraged by caregiver commitment to the process. Although some concerns were raised and challenges were experienced, these reflections informed pointed recommendations which included, amongst others, training coaches in identifying anomalous communications and in activating referral networks, identifying and training local and community-based coaches and partnering with NGOs to address logistical as well as context- and culture-related factors involved in implementing the ABC in a novel setting.

Acknowledgements

Foremost, the authors wish to thank the experts, caregivers as well as the ABC-recipient parents and intervenors for their participation in this study. Further, our appreciation is extended to Vernandi Dyzel (Vrije Universiteit Amsterdam, the Netherlands) for her assistance as an independent co-analyst of the interview transcripts as well as to Maham Hassan (University of Pretoria, South Africa) for her assistance with conducting the post-intervention interviews with ABC recipients and intervenors.

Funding

The financial assistance of the South African National Research Foundation (NRF) towards this research is hereby acknowledged (Grant UID: 105603). Opinions expressed and conclusions arrived at, are those of the authors and are not necessarily to be attributed to the NRF. This study was made possible by the Vrije Universiteit Amsterdam-NRF Desmond Tutu Doctoral Programme which is coordinated by the South Africa-Vrije Universiteit Strategic Alliance (SAVUSA).

Declaration of Interests

The authors declare that there are no potential conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Author Contributions

ARM coordinated the study as the PI, conducted the expert and caregiver (non-ABC) interviews as well as the analysis, drafted the first version, and revised subsequent versions, of the manuscript. PS was involved in the initial development of the interview schedules and PS, EvR and CS reviewed all drafts and contributed to all parts of latter versions the manuscript.

References

- Aldersey, H., Kavira, S., Kiasimbua, J., Lokako, W., Miaka, P., & Monte, L. (2018). Stigma experienced by families with members with intellectual disabilities in Kinshasa, Democratic Republic of the Congo. *Intervention: Journal of Mental Health and Psychosocial Support in Conflict Affected Areas*, 16(2), 119-128.
https://doi.org/10.4103/intv.Intv_13_18

- Alexander, S. L., Frederico, M., & Long, M. (2018). Attachment and children with disabilities: Knowledge and views of early intervention professionals. *Children Australia*, 43(4), 245-254. <https://doi.org/10.1017/cha.2018.38>
- Ali, A., Hassiotis, A., Strydom, A., & King, M. (2012). Self stigma in people with intellectual disabilities and courtesy stigma in family carers: A systematic review. *Research in Developmental Disabilities*, 33(6), 2122-2140. <https://doi.org/10.1016/j.ridd.2012.06.013>
- Aparicio, E. M., Denmark, N., Berlin, L. J., & Jones Harden, B. (2016). First-generation Latina mothers' experiences of supplementing home-based Early Head Start with the Attachment and Biobehavioral Catch-up program. *Infant Mental Health Journal*, 37(5), 537-548. <https://doi.org/10.1002/imhj.21586>
- Balldin, S., Fisher, P. A., & Wirtberg, I. (2018). Video feedback intervention with children. *Research on Social Work Practice*, 28(6), 682-695. <https://doi.org/10.1177/1049731516671809>
- Barrera, M., & Castro, F. G. (2006). A heuristic framework for the cultural adaptation of interventions. *Clinical Psychology: Science and Practice*, 13(4), 311-316. <https://doi.org/10.1111/j.1468-2850.2006.00043.x>
- Berlin, L. J., Martoccio, T. L., Bryce, C. I., & Jones Harden, B. (2019). Improving infants' stress-induced cortisol regulation through attachment-based intervention: A randomized controlled trial. *Psychoneuroendocrinology*, 103, 225-232. <https://doi.org/10.1016/j.psyneuen.2019.01.005>
- Bernard, K., Meade, E. B., & Dozier, M. (2013). Parental synchrony and nurturance as targets in an attachment based intervention: Building upon Mary Ainsworth's insights about

- mother-infant interaction. *Attachment & Human Development*, 15(5-6), 507-523.
<https://doi.org/10.1080/14616734.2013.820920>
- Brady, S. R. (2016). The delphi method. In L. A. Jason & D. S. Glenwick (Eds.), *Handbook of methodological approaches to community-based research: Qualitative, quantitative, and mixed methods* (pp. 61-67). Oxford University Press.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. <https://doi.org/10.1191/1478088706qp063oa>
- Brown, M. A., McIntyre, L. L., Crnic, K. A., Baker, B. L., & Blacher, J. (2011). Preschool children with and without developmental delay: Risk, parenting, and child demandingness. *Journal of Mental Health Research in Intellectual Disabilities*, 4(3), 206-226.
<https://doi.org/10.1080/19315864.2011.596990>
- Candela, A. (2019). Exploring the function of member checking. *The Qualitative Report*, 24(3), 619-628. <https://doi.org/10.46743/2160-3715/2019.3726>
- Capri, C., Abrahams, L., McKenzie, J., Coetzee, O., Mkabile, S., Saptouw, M., Hooper, A., Smith, P., Adnams, C., & Swartz, L. (2018). Intellectual disability rights and inclusive citizenship in South Africa: What can a scoping review tell us? *African Journal of Disability*, 7, Article 396. <https://doi.org/10.4102/ajod.v7i0.396>
- Caron, E. B., Bernard, K., & Dozier, M. (2018). In vivo feedback predicts parent behavior change in the Attachment and Biobehavioral Catch-up intervention. *Journal of Clinical Child & Adolescent Psychology*, 47(Supplement 1), s35-s46.
<https://doi.org/10.1080/15374416.2016.1141359>

- Chacko, A., Anderson, L., Wymbs, B. T., & Wymbs, F. A. (2013). Parent-endorsed reasons for not completing homework in group-based behavioural parent training for high-risk families of youth with ADHD. *Behaviour Change*, 30(4), 262-272.
<https://doi.org/10.1017/bec.2013.25>
- Christian, A. S., Niec, L. N., Acevedo-Polakovich, I. D., & Kassab, V. A. (2014). Dissemination of an evidence-based parenting program: Clinician perspectives on training and implementation. *Children and Youth Services Review*, 43, 8-17.
<https://doi.org/10.1016/j.childyouth.2014.04.005>
- Clarke, A. T., Marshall, S. A., Mautone, J. A., Soffer, S. L., Jones, H. A., Costigan, T. E., Patterson, A., Jawad, A. F., & Power, T. J. (2015). Parent attendance and homework adherence predict response to a family-school intervention for children with ADHD. *Journal of Clinical Child and Adolescent Psychology*, 44(1), 58-67.
<https://doi.org/10.1080/15374416.2013.794697>
- Cooper, P. J., Tomlinson, M., Swartz, L., Landman, M., Molteno, C., Stein, A., McPherson, K., & Murray, L. (2009). Improving quality of mother-infant relationship and infant attachment in socioeconomically deprived community in South Africa: Randomised controlled trial. *British Medical Journal*, 338, Article b974.
<https://doi.org/10.1136/bmj.b974>
- Costello, A. H., Schein, S. S., Roben, C. K. P., & Dozier, M. (2021). Navigating the international dissemination of an evidence-based intervention: Scaling with fidelity and cultural-specificity. *Children and Youth Services Review*, 131, Article 106281.
<https://doi.org/10.1016/j.childyouth.2021.106281>

- Danko, C. M., Brown, T., Van Schoick, L., & Budd, K. S. (2016). Predictors and correlates of homework completion and treatment outcomes in parent–child interaction therapy. *Child & Youth Care Forum*, 45(3), 467-485. <https://doi.org/10.1007/s10566-015-9339-5>
- DeCandia Vitoria, A. (2021). Experiential supervision: Healing imposter phenomenon from the inside out. *The Clinical Supervisor*, 40(2), 200-217. <https://doi.org/10.1080/07325223.2020.1830215>
- Deitz, R. L., Hellerstein, L. H., St George, S. M., Palazuelos, D., & Schimek, T. E. (2020). A qualitative study of social connectedness and its relationship to community health programs in rural Chiapas, Mexico. *BMC Public Health*, 20(1), Article 852. <https://doi.org/10.1186/s12889-020-09008-6>
- Dozier, M., & Bernard, K. (2019). *Coaching parents of vulnerable infants: The Attachment and Biobehavioral Catch-up approach*. Guilford Press.
- Dozier, M., Bick, J., & Bernard, K. (2011). Attachment-based treatment for young, vulnerable children. In J. D. Osofsky (Ed.), *Clinical work with traumatized young children* (pp. 75-95). Guilford Press.
- Dozier, M., Roben, C. K. P., Caron, E., Hoyer, J., & Bernard, K. (2018). Attachment and Biobehavioral Catch-up: An evidence-based intervention for vulnerable infants and their families. *Psychotherapy Research*, 28(1), 18-29. <https://doi.org/10.1080/10503307.2016.1229873>
- Duppong Hurley, K., Lambert, M. C., Gross, T. J., Thompson, R. W., & Farmer, E. M. Z. (2017). The role of therapeutic alliance and fidelity in predicting youth outcomes during

- therapeutic residential care. *Journal of Emotional and Behavioral Disorders*, 25(1), 37-45. <https://doi.org/10.1177/1063426616686756>
- English, R., Peer, N., Honikman, S., Tugendhaft, A., & Hofman, K. J. (2017). ‘First 1000 days’ health interventions in low- and middle-income countries: Alignment of South African policies with high-quality evidence. *Global Health Action*, 10(1), Article 1340396. <https://doi.org/10.1080/16549716.2017.1340396>
- Ertl, M. M., Mann-Saumier, M., Martin, R. A., Graves, D. F., & Altarriba, J. (2019). The impossibility of client–therapist “match”: Implications and future directions for multicultural competency. *Journal of Mental Health Counseling*, 41(4), 312-326. <https://doi.org/10.17744/mehc.41.4.03>
- Feniger-Schaal, R., & Joels, T. (2018). Attachment quality of children with ID and its link to maternal sensitivity and structuring. *Research in Developmental Disabilities*, 76, 56-64. <https://doi.org/10.1016/j.ridd.2018.03.004>
- Fenning, R. M., Baker, J. K., Baker, B. L., & Crnic, K. A. (2014). Parent-child interaction over time in families of young children with borderline intellectual functioning. *Journal of Family Psychology*, 28(3), 326-335. <https://doi.org/10.1037/a0036537>
- Fernandez-Avalos, M. I., Perez-Marfil, M. N., Ferrer-Cascales, R., Cruz-Quintana, F., & Fernandez-Alcantara, M. (2021). Feeling of grief and loss in parental caregivers of adults diagnosed with intellectual disability. *Journal of Applied Research in Intellectual Disabilities*, 34(3), 712-723. <https://doi.org/10.1111/jar.12842>

- Fletcher, A. J., & Marchildon, G. P. (2014). Using the delphi method for qualitative, participatory action research in health leadership. *International Journal of Qualitative Methods*, 13(1), 1-18. <https://doi.org/10.1177/160940691401300101>
- Floyd, F. J., Harter, K. S. M., & Costigan, C. L. (2004). Family problem-solving with children who have mental retardation. *American Journal on Mental Retardation*, 109(6), 507-524. [https://doi.org/10.1352/0895-8017\(2004\)109<507:Fpwcwh>2.0.Co;2](https://doi.org/10.1352/0895-8017(2004)109<507:Fpwcwh>2.0.Co;2)
- Ganiban, J., Barnett, D., & Cicchetti, D. (2000). Negative reactivity and attachment: Down syndrome's contribution to the attachment-temperament debate. *Development and Psychopathology*, 12(1), 1-21. <https://doi.org/10.1017/s0954579400001012>
- Guralnick, M. J. (2001). A developmental systems model for early intervention. *Infants & Young Children*, 14(2), 1-18. https://journals.lww.com/iyjournal/Fulltext/2001/14020/A_Developmental_Systems_Model_for_Early.4.aspx
- Guralnick, M. J. (2017). Early intervention for children with intellectual disabilities: An update. *Journal of Applied Research in Intellectual Disabilities*, 30(2), 211-229. <https://doi.org/10.1111/jar.12233>
- Hamadi, L., & Fletcher, H. K. (2021). Are people with an intellectual disability at increased risk of attachment difficulties? A critical review. *Journal of Intellectual Disabilities*, 25(1), 114-130. <https://doi.org/10.1177/1744629519864772>
- Heiman, T. (2002). Parents of children with disabilities: Resilience, coping, and future expectations. *Journal of Developmental and Physical Disabilities*, 14(2), 159-171. <https://doi.org/10.1023/A:1015219514621>

- Herring, S., Gray, K., Taffe, J., Tonge, B., Sweeney, D., & Einfeld, S. (2006). Behaviour and emotional problems in toddlers with pervasive developmental disorders and developmental delay: Associations with parental mental health and family functioning. *Journal of Intellectual Disability Research*, 50(12), 874-882.
<https://doi.org/10.1111/j.1365-2788.2006.00904.x>
- Hohlfeld, A. S. J., Harty, M., & Engel, M. E. (2018). Parents of children with disabilities: A systematic review of parenting interventions and self-efficacy. *African Journal of Disability*, 70, Article a437. <https://doi.org/10.4102/ajod.v7i0.437>
- Jiang, W. (2000). The relationship between culture and language. *ELT Journal*, 54(4), 328-334.
<https://doi.org/10.1093/elt/54.4.328>
- John, A. (2012). Stress among mothers of children with intellectual disabilities in urban india: Role of gender and maternal coping. *Journal of Applied Research in Intellectual Disabilities*, 25(4), 372-382. <https://doi.org/10.1111/j.1468-3148.2011.00672.x>
- Kattari, S. K., Lavery, A., & Hasche, L. (2017). Applying a social model of disability across the life span. *Journal of Human Behavior in the Social Environment*, 27(8), 865-880.
<https://doi.org/10.1080/10911359.2017.1344175>
- Kawachi, I., & Berkman, L. F. (2001). Social ties and mental health. *Journal of Urban Health*, 78(3), 458-467. <https://doi.org/10.1093/jurban/78.3.458>
- Khumalo, Z., & Alhassan, A. L. (2021). Read, write, develop: The socio-economic impact of literacy in South Africa. *International Journal of Social Economics*, 48(8), 1105-1120.
<https://doi.org/10.1108/ijse-07-2020-0448>

- Kielb, K., Bargiel-Matusiewicz, K. M., & Pisula, E. (2019). Posttraumatic stress symptoms and posttraumatic growth in mothers of children with intellectual disability - the role of intrusive and deliberate ruminations: A preliminary report. *Frontiers in Psychology, 10*, Article 2011. <https://doi.org/10.3389/fpsyg.2019.02011>
- King, G., Strachan, D., Tucker, M., Duwyn, B., Desserud, S., & Shillington, M. (2009). The application of a transdisciplinary model for early intervention services. *Infants & Young Children, 22*(3), 211-223. <https://doi.org/10.1097/IYC.0b013e3181abe1c3>
- Malatji, K. S., & Ndebele, C. (2018). Challenges experienced by women in raising children with intellectual disabilities. *African Journal for Physical Activity and Health Sciences, 24*(Supplement 1), 129-141. <https://doi.org/doi:10.10520/EJC-13283544ce>
- Masulani-Mwale, C., Kauye, F., Gladstone, M., & Mathanga, D. (2018). Prevalence of psychological distress among parents of children with intellectual disabilities in Malawi. *BMC Psychiatry, 18*, Article 146. <https://doi.org/10.1186/s12888-018-1731-x>
- Masulani-Mwale, C., Mathanga, D., Silungwe, D., Kauye, F., & Gladstone, M. (2016). Parenting children with intellectual disabilities in Malawi: The impact that reaches beyond coping? *Child: Care, Health and Development, 42*(6), 871-880. <https://doi.org/10.1111/cch.12368>
- McConkey, R., Kahonde, C., & McKenzie, J. (2016). Tackling stigma in developing countries: The key role of families. In K. Scior & S. Werner (Eds.), *Intellectual disability and stigma: Stepping out from the margins* (pp. 179-194). Palgrave. https://doi.org/10.1057/978-1-137-52499-7_12
- McKenzie, J., & Chataika, T. (2018). Supporting families in raising disabled children to enhance African child development. In K. Runswick-Cole, T. Curran, & K. Liddiard (Eds.), *The*

- palgrave handbook of disabled children's childhood studies* (pp. 315-332). Palgrave.
https://doi.org/10.1057/978-1-137-54446-9_21
- McIntyre, L. L. (2008). Parent training for young children with developmental disabilities: Randomized controlled trial. *American Journal on Mental Retardation*, 113(5), 356-368.
<https://doi.org/10.1352/2008.113:356-368>
- Mkabile, S., Garrun, K. L., Shelton, M., & Swartz, L. (2021). African families' and caregivers' experiences of raising a child with intellectual disability: A narrative synthesis of qualitative studies. *African Journal of Disability*, 10, Article 827.
<https://doi.org/10.4102/ajod.v10i0.827>
- Mkabile, S., & Swartz, L. (2021). Putting cultural difference in its place: Barriers to access to health services for parents of children with intellectual disability in an urban African setting. *International Journal of Social Psychiatry*, Advance online publication.
<https://doi.org/10.1177/00207640211043150>
- Mmangaliso, A., & Lupuwana, V. P. P. (2021). Psychosocial experiences of family caregivers of children with intellectual disabilities in Alice, Eastern Cape, South Africa. *Southern African Journal of Social Work and Social Development*, 33(3), Article 7052.
<https://doi.org/doi:10.25159/2415-5829/7052>
- Modula, M. J. (2022). The support needs of families raising children with intellectual disability. *African Journal of Disability*, 11, Article 952. <https://doi.org/10.4102/ajod.v11i0.952>
- Mohamed, A. R., & Mkabile, S. (2015). An attachment-focused parent–child intervention for biting behaviour in a child with intellectual disability: A clinical case study. *Journal of Intellectual Disabilities*, 19(3), 251-265. <https://doi.org/10.1177/1744629515572711>

- Mohamed, A. R., Sterkenburg, P., Yeatman, J. G., van Rensburg, E., & Schuengel, C. (2022). Using Attachment and Biobehavioral Catch-up with young children with developmental delays: A multiple-baseline trial of attachment, sensitivity, and cortisol. *Journal of Intellectual Disabilities*. Advance Online Publication.
<https://doi.org/10.1177/17446295221104614>
- Murphy, J. P., Moolla, A., Kgowedi, S., Mongwenyana, C., Mngadi, S., Ngcobo, N., Miot, J., Evans, D., & Pascoe, S. (2021). Community health worker models in South Africa: A qualitative study on policy implementation of the 2018/19 revised framework. *Health Policy and Planning*, 36(4), 384-396. <https://doi.org/10.1093/heapol/czaa172>
- Oppenheim, D., Dolev, S., Koren-Karie, N., Sher-Censor, E., Yirmiya, N., & Salomon, S. (2007). Parental resolution of the child's diagnosis and the parent-child relationship: Insights from the reaction to diagnosis interview. In D. Oppenheim & D. F. Goldsmith (Eds.), *Attachment theory in clinical work with children: Bridging the gap between research and practice* (pp. 109-136). Guilford Press.
- Oti-Boadi, M. (2017). Exploring the lived experiences of mothers of children with intellectual disability in Ghana. *SAGE Open*, 7(4), 1-12 <https://doi.org/10.1177/2158244017745578>
- Philpott, S., & Muthukrishna, N. (2019). The practice of partnerships: A case study of the Disabled Children's Action Group, South Africa. *South African Journal of Childhood Education*, 9(1), Article a729. <https://doi.org/10.4102/sajce.v9i1.729>
- Platje, E., Sterkenburg, P., Overbeek, M., Kef, S., & Schuengel, C. (2018). The efficacy of VIPP-V parenting training for parents of young children with a visual or visual-and-intellectual disability: A randomized controlled trial. *Attachment & Human Development*, 20(5), 455-472. <https://doi.org/10.1080/14616734.2018.1428997>

- Potter-Dickey, A., Letourneau, N., & de Koning, A. P. J. (2020). Associations between neurodevelopmental disorders and attachment patterns in preschool-aged children: Systematic review. *Current Developmental Disorders Reports*, 7(4), 277-289. <https://doi.org/10.1007/s40474-020-00219-5>
- Rendle, K. A., Abramson, C. M., Garrett, S. B., Halley, M. C., & Dohan, D. (2019). Beyond exploratory: A tailored framework for designing and assessing qualitative health research. *British Medical Journal: Open*, 9(8), Article e030123. <https://doi.org/10.1136/bmjopen-2019-030123>
- Richter, L. (2018). Supporting parents to provide nurturing care for young children: The fundamental ingredients for a better world. *Zero to Three Journal*, 38(4), 10-15.
- Roben, C. K. P., Dozier, M., Caron, E. B., & Bernard, K. (2017). Moving an evidence-based parenting program into the community. *Child Development*, 88(5), 1447-1452. <https://doi.org/10.1111/cdev.12898>
- Rohwerder, B. (2018). *K4D helpdesk report: Disability stigma in developing countries*. Institute of Development Studies. https://opendocs.ids.ac.uk/opendocs/bitstream/handle/20.500.12413/13795/Disability_stigma_in_developing_countries.pdf?sequence=1
- Saeri, A. K., Cruwys, T., Barlow, F. K., Stronge, S., & Sibley, C. G. (2018). Social connectedness improves public mental health: Investigating bidirectional relationships in the New Zealand attitudes and values survey. *Australian & New Zealand Journal of Psychiatry*, 52(4), 365-374. <https://doi.org/10.1177/0004867417723990>

- Sattler, P. L., Paceley, M., Byers, K., Mulkey, Z., & Mendenhall, A. (2022). Lost in translation: Bilingual parent coaches' experiences implementing an un-adapted early childhood intervention with non-English speakers. *Global Implementation Research and Applications*, 2(1), 12-21. <https://doi.org/10.1007/s43477-022-00037-4>
- Scior, K., Hamid, A., Hastings, R., Werner, S., Belton, C., Laniyan, A., Patel, M., & Kett, M. (2020). Intellectual disability stigma and initiatives to challenge it and promote inclusion around the globe. *Journal of Policy and Practice in Intellectual Disabilities*, 17(2), 165-175. <https://doi.org/10.1111/jppi.12330>
- Spiker, D., Boyce, G. C., & Boyce, L. K. (2002). Parent-child interactions when young children have disabilities. *International Review of Research in Mental Retardation*, 25, 35-70. [https://doi.org/https://doi.org/10.1016/S0074-7750\(02\)80005-2](https://doi.org/https://doi.org/10.1016/S0074-7750(02)80005-2)
- Sterkenburg, P. S., Janssen, C. G. C., & Schuengel, C. (2008). The effect of an attachment-based behaviour therapy for children with visual and severe intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, 21(2), 126-135. <https://doi.org/10.1111/j.1468-3148.2007.00374.x>
- Super, C. M., & Harkness, S. (2002). Culture structures the environment for development. *Human Development*, 45(4), 270-274. <https://www.proquest.com/scholarly-journals/culture-structures-environment-development/docview/224011679/se-2?accountid=14717>
- Tekola, B., Kinf, M., Girma, F., Hanlon, C., & Hoekstra, R. A. (2020). Perceptions and experiences of stigma among parents of children with developmental disorders in ethiopia: A qualitative study. *Social Science & Medicine*, 256, Article 113034. <https://doi.org/10.1016/j.socscimed.2020.113034>

Tilahun, D., Hanlon, C., Fekadu, A., Tekola, B., Baheretibeb, Y., & Hoekstra, R. A. (2016).

Stigma, explanatory models and unmet needs of caregivers of children with developmental disorders in a low-income African country: A cross-sectional facility-based survey. *BMC Health Services Research*, 16, Article 152.

<https://doi.org/10.1186/s12913-016-1383-9>

Tomlinson, M., Skeen, S., Melendez-Torres, G. J., Hunt, X., Desmond, C., Morgan, B., Murray,

L., Cooper, P. J., Rathod, S. D., Marlow, M., & Fearon, P. (2022). First 1,000 days:

Enough for mothers but not for children? Long-term outcomes of an early intervention on maternal depressed mood and child cognitive development: Follow-up of a randomised controlled trial. *Journal of Child Psychology and Psychiatry*, 63(3), 261-272.

<https://doi.org/10.1111/jcpp.13482>

Totsika, V., Hastings, R. P., Vagenas, D., & Emerson, E. (2014). Parenting and the behavior

problems of young children with an intellectual disability: Concurrent and longitudinal relationships in a population-based study. *American Journal of Intellectual and*

Developmental Disabilities, 119(5), 422-435. <https://doi.org/10.1352/1944-7558-119.5.422>

Trafford, Z., & Swartz, L. (2021). The care dependency grant for children with disabilities in

South Africa: Perspectives from implementation officials. *Development Southern Africa*, Advance online publication. <https://doi.org/10.1080/0376835x.2021.1981250>

Trafford, Z., van der Westhuizen, E., McDonald, S., Linegar, M., & Swartz, L. (2021). More

than just assistive devices: How a South African social enterprise supports an environment of inclusion. *International Journal of Environmental Research and Public Health*, 18(5), Article 2655. <https://doi.org/10.3390/ijerph18052655>

- Van der Weck, S., Sterkenburg, P., & Bos, A. (2021). Mothers of children with a disability and their life experience: A qualitative study [Abstract]. *Journal of Applied Research in Intellectual Disability*, 34(5), 1243. <https://doi.org/10.1111/jar.12917>
- van Horn, P., Osofsky, J. D., Henderson, D., Korfmacher, J., Thomas, K., & Lieberman, A. F. (2012). Replication of child-parent psychotherapy in community settings: Models for training. *Zero to Three*, 33(2), 48-54.
- Vandesande, S., Bosmans, G., & Maes, B. (2019b). Can I be your safe haven and secure base? A parental perspective on parent-child attachment in young children with a severe or profound intellectual disability. *Research in Developmental Disabilities*, 93, Article 103452. <https://doi.org/10.1016/j.ridd.2019.103452>
- Vandesande, S., Bosmans, G., Schuengel, C., & Maes, B. (2019a). Young children with significant developmental delay differentiate home observed attachment behaviour towards their parents. *Journal of Applied Research in Intellectual Disabilities*, 32(1), 106-120. <https://doi.org/10.1111/jar.12513>
- Weisz, J. R., Kuppens, S., Eckshtain, D., Ugueto, A. M., Hawley, K. M., & Jensen-Doss, A. (2013). Performance of evidence-based youth psychotherapies compared with usual clinical care: A multilevel meta-analysis. *JAMA Psychiatry*, 70(7), 750-761. <https://doi.org/10.1001/jamapsychiatry.2013.1176>
- Wertlieb, D. (2018). Inclusive early childhood development: Ensuring the rights and well-being of infants and toddlers with disabilities and their families. *Zero to Three Journal*, 38(4), 22-30.

- West, A.L., Berlin, L.J., Goodman, A., Endy, K., Manzon, C., & Harden, B.J. (2022). Home-Based Early Head Start plus Attachment and Biobehavioral Catch-up: A qualitative study of implementation outcomes. *Journal of Child and Family Studies*. Advanced online publication. <https://doi.org/10.1007/s10826-021-02189-7>
- Yarger, H. A., Bernard, K., Caron, E. B., Wallin, A., & Dozier, M. (2020). Enhancing parenting quality for young children adopted internationally: Results of a randomized controlled trial. *Journal of Clinical Child & Adolescent Psychology*, 49(3), 378-390. <https://doi.org/10.1080/15374416.2018.1547972>
- Zajac, L., Raby, K. L., & Dozier, M. (2020). Sustained effects on attachment security in middle childhood: Results from a randomized clinical trial of the Attachment and Biobehavioral Catch-up (ABC) intervention. *Journal of Child Psychology and Psychiatry*, 61(4), 417-424. <https://doi.org/https://doi.org/10.1111/jcpp.13146>
- Zuurmond, M., Seeley, J., Nyant, G. G., Baltussen, M., Abanga, J., Polack, S., Bernays, S., & Shakespeare, T. (2020). Exploring caregiver experiences of stigma in Ghana: They insult me because of my child. *Disability & Society*, 37(5), 827-848. <https://doi.org/10.1080/09687599.2020.1851172>

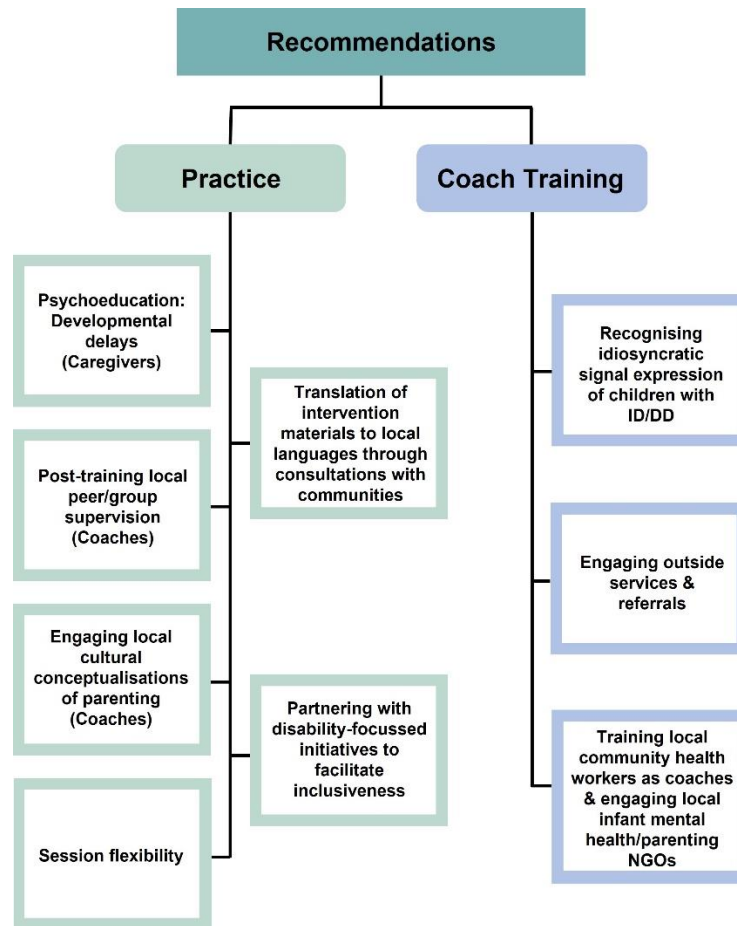


Figure 1: Practice and Training Recommendations

SECTION III: CRITICAL REFLECTIONS, LIMITATIONS AND RECOMMENDATIONS

3.1 Introduction

This third and final section addresses the researcher's reflections on the findings of the studies presented in Section II across four journal article manuscripts, including that related to the practice elements of attachment-based interventions (Article 1), the parenting experiences of primary of children with ID in South Africa (Article 2), as well as the effects of (Article 3), and adaptations to (Article 4), the ABC intervention for this group. Also included are the personal reflections of the researcher on the execution of the study, a discussion of the strengths and limitations of the research, as well as the recommendations for research and practice.

3.2 Reflections on the Practice Elements of Attachment-based Interventions

Aim 1 was to synthesise and determine the practice elements of effective attachment-based interventions, and their application for parenting programmes, using the Distillation and Matching Model. Across 106 articles reporting on 100 studies evaluating attachment-based interventions, 60 evaluated intervention protocols that were effective at improving outcomes related to attachment, sensitivity or parent-child interactions. Presented in Article 1, an analysis of these 'winning' intervention protocols—through applying the Distillation and Matching Model (Chorpita et al., 2005)—found that, across subgroups for child age, ethnicity, risk status and location, these interventions contained many similarities in their practice element frequency patterns. However, there were also some notable distinctions which could inform how attachment-based interventions and parenting programmes can be tailored for specific subgroups. This can be done through emphasising or foregrounding particular groupings of practice elements in clinical practice that appear to cluster more frequently for specific subgroups. As is to be expected in psychologically-based interventions, approaches that seek to establish, augment and maintain the working alliance, or therapeutic relationship, are standard across subgroups (Baier et al., 2020; Tschacher et al., 2015). Similarly, for attachment-based interventions, the vast majority of interventions for children leading up to adolescence are conducted in the home setting to facilitate the ecological validity of the intervention and generalisability of the learnings (Dozier & Bernard, 2019). Interventions for adolescent-age children were, however, found to be more commonly conducted outside of the home in the format of parent groups and rarely involved the adolescent-child directly in sessions. The parent groups, with the direct support and guidance of the intervenors, engaged with interaction-focused feedback in the context of role plays and discussions as tools to adjust how parents interact with their adolescent children. The use of skin-to-skin contact was, in general, poorly represented but featured most frequently in interventions for children younger than 6 months which is when physical contact is the most prominent form of proximity-seeking/proximity-maintaining

(Ettenberger et al., 2021). Practice elements involving direct demonstration or modelling by intervenors was also a noteworthy feature of this age group.

In Article 1, practice elements that involved facilitation of parent-child interactions through feedback mechanisms (e.g., video-feedback), as opposed to direct demonstration/modelling, were more frequent for children aged 7 months to 11 years in developing settings, reflecting the fact that attachment-based interventions focused on building on parents' existing capacities and seek to build on this through positive and supportive feedback on interactive behaviours. For children in this age group in developed settings, there was a distinction in practice element profiles between North American indigenous ethnic groups (e.g., Pacific Islanders) and other ethnic groups, and a further distinction amongst the latter between those exposed to Other Risk (i.e., parent-focused risks such as parental psychopathology, physical ill health, or substance abuse) and those exposed to SES or Abuse Risk (e.g., low income, homelessness, physical abuse, exposure to violence). The findings suggest that indigenous groups in North America benefit from a balance of approaches including those focused on psychoeducation, interactions and reflection. The findings also indicate that this subgroup may require case management more so than other groups, which may reflect their need for a more comprehensive approach to intervention, in general. The distinction of practice element profiles for the remaining ethnic groups was based on risk status. Here, the patterns of practice elements for children exposed to Other Risk distinguished from those exposed to either SES or Abuse Risk, suggesting that the two groups may need slightly different approaches when intervening in the parent-child relationship. The former, perhaps due to a greater degree of parental impairment, may require more direct guidance and demonstration, such as modelling, as well as facilitation of parent-child interactions by an intervenor. The latter on the other hand may be able to engage more with, and benefit from, feedback-based techniques such as video-feedback and in-the-moment commenting which capitalise on existing strengths and capacities. Thus, while there are core similarities across attachment-based interventions in terms of their practice elements, there are also some notable distinctions for subgroups which could guide how intervening in parent-child relationships with these subgroups is organised in the application of parenting programmes.

Reconceptualising attachment-based interventions as sets of individual practice elements—instead of as singular, monolithic intervention protocols—could allow for a modular approach to attachment-based interventions designed based on what the evidence suggests may be the most appropriate combination of practice elements for specific groups (Weisz et al., 2012). Therefore, instead of training in entire intervention protocols, practitioners could be trained in individual practice elements and could design bespoke interventions for specific clients based on what the evidence suggests may be most appropriate given their characteristics. For practitioners in settings where attachment-based interventions and their training is inaccessible, or where access is limited, being trained in practice elements that cut across attachment-based interventions could serve to maximise and enhance access, allowing practitioners to

design interventions made up of practice elements that have been found, empirically (e.g., Article 1), to be most frequent for particular groups. Thus, practitioners could develop and use a ‘toolbox’ of practice elements that could be cross-applied in different combinations to different groups of clients. Therefore, instead of training in multiple different intervention protocols, which could be proscriptive in terms of its costliness, time intensiveness, and geographical location, practitioners could train in a range of practice elements that could be used, repurposed and combined to best suit their clientele. This could allow for a more economical and efficient approach to attachment-based intervention, particularly for clinicians whose access to packaged intervention protocols—e.g., those outside of WEIRD contexts—is constrained.

Notably, the majority of studies screened for Article 1 either did not report on ID within their samples or excluded children with ID, or similar conditions, from eligibility (e.g., Casonato et al., 2017; Pasalich et al., 2021; Schoemaker et al., 2020). In the final sample of studies included in the analysis (i.e., those with winning intervention protocols), none explicitly reported the inclusion of children with ID. Hence, it was not possible to include ID as a variable for analysis to explore how practice elements may cluster for this cohort. Therefore, the study was unable to draw any conclusions about the practice element profiles that are associated with ID, specifically, as reported in the literature on attachment-based interventions. This highlights both the underreporting of ID in, as well as the broader exclusion of children with ID from, research on attachment-based interventions and, therefore, underscores the need for further research in this field for children with ID and their primary caregivers. Given that children with ID may be at risk for problematic attachments and interrupted parent-child relationships, interventions to address these domains that are crucial to child development and wellbeing are of paramount importance and should be considered a critical avenue for research. Hence, this calls for intentionality in the inclusion of children with ID in the research agenda related to attachment-based interventions to facilitate the answering of questions pertinent to the development and wellbeing of this vulnerable group.

3.3 Reflections on the Challenges, Perceptions of Current Care, Support and Needs of Primary Caregivers of Children with ID in South Africa

Aim 2 sought to explore the caregiving needs, challenges/stressors, support structures, roles and perceptions of current care of parents of children with ID in South Africa and, relatedly, Aim 3 sought to gather expert/professional opinion and input on the needs, challenges and wishes of parents of children with ID in South Africa. Culminating in Article 2, this was to the researcher’s knowledge the first mixed-methods study to explore the parenting experiences of primary caregivers of children with ID in South Africa. This allowed for an exploration of both the extent and nature of the caregiving-related challenges, supports, perceptions of current care, and needs amongst this group. In addition, it was the first study, locally, to explore caregiving experiences as they pertained to the caregiver-child relationship and caregiver-child interactions between primary caregivers and their child with ID. This is noted as particularly important

given the WHO's recognition of the role of responsive caregiving as a crucial component of nurturing care in optimal early child development (WHO et al., 2018). Yet, little is known about caregivers' support needs in the domain of responsive caregiving (UNICEF & Countdown to 2030, 2023), particularly among those caregivers who have a child with ID. Thus, how initiatives such as the Nurturing Care Framework apply to children with intellectual and developmental disabilities may require special consideration given what are often unique and challenging caregiving contexts (Wertlieb, 2018). The current study offered some insights into caregivers' and experts' perceptions of how caregivers of a child with ID can be supported in this domain.

The present study was conducted among 40 primary caregivers of children with ID, and five clinical experts working with families of children with ID, in urban communities in Johannesburg and Pretoria, South Africa. Caregivers completed self-report measures of parenting stress, parenting-related self-efficacy and perceptions of current care, as well as an interview-based measure of support networks. In addition, qualitative data were collected through semi-structured interviews conducted with a subset of 10 primary caregivers and the five clinical experts to explore and elucidate the primary caregivers' caregiving experiences. According to the study's findings (see Article 2), parenting stress and parenting-related self-efficacy may be at risk among caregivers of a child with ID in South Africa. The inverse relationship between stress and self-efficacy is established in the literature both in parents of typically developing children (Bloomfield & Kendall, 2012; Farmer & Lee, 2011) and parents of children with ID (Hassall et al., 2005). Hence, parents who feel less efficacious in their role as caregiver are likely to also be more stressed. The study elucidated various factors in the caregivers' experiences that may contribute towards higher parenting stress and lower parenting-related self-efficacy.

These findings, presented in Article 2, parallel many of the other studies of parents of children with disabilities conducted in South Africa in various urban and rural communities in Gauteng, Limpopo, KwaZulu Natal as well as the Western and Eastern Cape provinces. Although, due to the demographic profile of the current sample, issues associated with SES were less prominent (e.g., financial strain, transport issues), other factors were consistent with existing studies such as elevated parenting stress levels (Mbatha & Mokwena, 2023), initial reactions to the diagnosis (Duma et al., 2021), the burden of care on caregivers due to the child's disability (Van der Mescht et al., 2023), inconsistent informal support from family and the community (Chauke et al., 2021), and limited formal support (Mkabile & Swartz, 2020a, 2020b). The reports from caregivers in the study were corroborated by healthcare professionals who worked closely with parents of children with ID. In addition to these findings, the study further added that a number of these factors reported by parents were felt to impact on the nature of caregiver-child interactions and the quality of the caregiver-child relationship. This aspect of the findings is novel and has not previously been explored in the context of parenting experiences of caregivers of a CWID in the South African context. Furthermore, the study added that caregivers believed that the caregiver-child relationship played an

important role in children's wellbeing because it facilitates trust and feelings of safety which are beliefs consistent with the crux of attachment theory—that secure attachment relationships are organised around the child's experience of their attachment figure as a secure base and safe haven (Bowlby, 1969). This underscored the identification by the participants of the need for support specifically focused on assisting caregivers in enhancing their interactions with their CWID and, hence, promoting improvement in the quality of the caregiver-child relationship. Given the potentially elevated risk of attachment-related difficulties in children with ID (see Section I), this is an indispensable site of intervention. Yet, parenting interventions for this cohort have often focused on more generic parenting skills or are hinged on behaviour management, and do not explicitly or directly target the relational quality between caregivers and their CWID (Ragni et al., 2022), although there is some evidence that this trend is shifting (Westlake et al., 2024).

While the parents in this study were able to access some support from their networks, others had very limited networks and/or experienced important figures within these networks as critical of them and their parenting. The parents often did not seek support for themselves, with formal, professional support reserved almost exclusively for their child with ID to promote their developmental competencies and functioning. As such, parents were not able to access direct support for themselves, or direct support for parent-child interactions and, hence, for the parent-child relationship. Yet, this was identified as a need by these caregivers. Indeed, interventions focused on enhancing the caregiving capacities of parents of children with ID have been found to support parenting-related self-efficacy as well as the quality of parent-child interactions (Platje et al., 2018; Westlake et al., 2024). This suggests that responding to parents' needs for interventions that target relational functioning could indeed be a fruitful endeavour. Attachment-based interventions with foci that are supportive, home-based and strength-focused may be well suited to this task.

3.4 Reflections on the Effects of the Attachment and Biobehavioral Catch-up Intervention for Children with ID and Developmental Delays in South Africa

Aim 4 sought to establish the effects of the ABC intervention on caregiver sensitivity, child attachment security, and child affect regulation in South African dyads where the child has an ID. The ABC is an attachment-based intervention centred on enhancing caregiver sensitivity to facilitate child attachment security as well as improved regulatory capacities in at-risk children. The ABC boasts a growing body of high-quality evidence in support of its efficacy in improving a range of child and parenting outcomes (Grube & Liming, 2018; O'Byrne et al., 2023). However, the intervention had—prior to this study—not been implemented in, or tested among, families in which the child has an ID, or in an African context. The ABC's focus on providing nurturing responses to distress, following the child's lead and avoiding intrusive and frightening parenting behaviours were regarded as particularly relevant to caregiving contexts in which

the child has an ID. This is because caregivers may have difficulties recognising and interpreting their child's bids for nurturance due to unusual or idiosyncratic behavioural expressions related to ID (Oppenheim et al., 2007; Vandesande et al., 2019b). In addition, to 'force' development to happen in the context of development delays, caregivers may turn interactions into teaching opportunities defined by caregivers taking the lead, rather than following, limiting opportunities for synchrony (Dozier & Bernard, 2019). Lastly, interactions between parents and their children with ID are often characterised by more intrusive parenting (Brown et al., 2011; Floyd et al., 2004) due to caregivers' frustrations or inappropriate expectations of their child. Indeed, findings presented in Article 2 indicate that many of these factors were embedded within the caregiving experiences of South African caregivers of children with ID. This suggests the ABC's focus on nurturance, following the lead and reducing intrusive and frightening behaviours could be particularly beneficial for caregivers of a child with ID.

The present study, therefore, sought to test the ABC in this cohort, using a mixed-methods single-case multiple-baseline study across three mother-child dyads in which the child had significant developmental delays. The study hypothesised that caregiver sensitivity, child attachment security and child affect/cortisol regulation would improve over time across dyads in response to the ABC intervention following an initial baseline period. Well-established observational measures of caregiver sensitivity and attachment security were used, alongside the analysis of salivary cortisol, to assess changes over time through measurements repeated on a weekly basis across a baseline, intervention and follow-up phase for each mother-child dyad. The findings presented in Article 3 provided promising preliminary evidence of the effectiveness and social validity of the ABC for families in which the child has an ID. Specifically, both caregiver sensitivity and attachment security improved over time following the introduction of the ABC, although findings related to cortisol regulation were inconclusive. This was the first study, to the researcher's knowledge, that assessed attachment in children with ID in the context of an intervention study. This demonstrated the feasibility of doing so and breaks some new ground. The study also observed improvements in maternal sensitivity over time across the dyads. While this requires replication in further studies amongst caregivers of children with ID, it is suggestive that the ABC can successfully adjust the caregiving behaviours in this group, which is promising. This, however, departs from the findings of studies of the VIPP-V (Platje et al., 2018), VIPP-AUTI (Poslowsky et al., 2015) and iBASIS-VIPP (Green et al., 2015) none of which found an effect on caregiver sensitivity for caregivers of children with intellectual and developmental disabilities. However, all these studies made use of variations of the VIPP-SD intervention which adopts an exclusive focus on video-feedback as its 'active ingredient'. Video-feedback in the ABC, on the other hand, is secondary to active in-the-moment feedback on real-time interactions between caregivers and their children in the sessions. This 'live' and immediate feedback may be what is required for parents of children with ID, delivered in the context of a supportive and safe relationship with a coach as opposed to the more 'removed' video-feedback. This is not to suggest that video-feedback is unimportant. Indeed Article 1 found

that video-feedback was common across effective interventions for most subgroups and there is robust evidence supporting the effectiveness of video-based interventions, in general (Bakermans-Kranenburg et al., 2003; Balldin et al., 2018), and also specifically for children with neurodevelopmental disorders (Grumi et al., 2023; Provenzi et al., 2020). However, it may be that parents of children with ID require a particular kind of feedback, in addition to video-feedback, to enhance their sensitive responsiveness, specifically. Hence, the ABC's use of both in-the-moment feedback as well as video-feedback may be particularly beneficial for this group of caregivers.

It is also noteworthy that caregivers' qualitative evaluations after participating in the intervention revealed an appreciation for their direct and intimate involvement in the process. Dempsey et al. (2009) note that while a supportive presence is important, by itself it does not maximise the potential benefits of this support. To do this, active participation must be encouraged in the form of parental decision-making and skills development, amongst others (Dempsey et al., 2009). Furthermore, partnership and actively collaborative approaches to support and intervention are particularly important for caregivers of children with disabilities who may experience significant levels of social exclusion and stigmatisation (Philpott & Muthukrishna, 2019). Hence, the fact that caregivers experienced their involvement in the ABC as collaborative and an active partnership between themselves and their parent coach is highly significant. The acknowledgement, support and observed improvements in both the child and their parent-child interactions may also have served to instil hope in these parents which, in itself, may play a role in caregiver wellbeing (Lloyd & Hastings, 2009) and, by extension, their emotional availability to their child. It must, however, also be acknowledged that the statistical analyses did not confirm the visual analysis of the data. This is likely the result of the inclusion of three cases, limiting the possibility of identifying a significant effect if one existed. The current findings should, therefore, be considered as preliminary. Further research is required to replicate these results and provide statistical confirmation and validation of the effects of the ABC for children with ID.

3.5 Reflections on the Adaptations to the Attachment and Biobehavioral Catch-up Intervention for Children with ID in South Africa

Lastly, Aim 5 sought to obtain expert/professional opinion, and caregiver impressions, on the ABC intervention to inform potential adaptations for children with ID in the South African context. Inasmuch as the ABC was found to have had positive effects in the dyads included in the multiple-baseline trial outlined above, the intervention was nonetheless implemented in a population (children with ID) and setting (South Africa) for which it was not originally developed. As such, this study sought to explore perspectives and opinions from stakeholders that may inform adaptations to the ABC that would result in closer alignment with the population of children with ID and the South African setting. To do this, an exploratory qualitative study was conducted embedding within it a Delphi component. In Article 4, data from four groups were

included to offer their experiences, perceptions and opinions: 1) caregivers of children with ID who had not received the ABC; 2) experts who had clinical experience working with children with ID and their caregivers; 3) ABC-recipient parents; and 4) ABC intervenors.

The study's findings, presented in Article 4, suggested that the ABC is a relevant intervention, both for children with ID and for the South African setting. The home-based nature of the intervention was highlighted, reflecting the prominence of this feature of attachment-based interventions as noted in Article 1. However, in addition to the benefits of being immersed in the world of the participants and promoting generalisation, in the South African context the convenience of home-based intervention was noted. Research conducted in South Africa has often identified travel distances and use of costly public transport as barriers to accessing care and support for caregivers of children with ID (e.g., Mkabile & Swartz, 2020a, 2020b). Hence, taking interventions into the homes of caregivers could make an important difference in enhancing access to interventions that can support the caregiver-child relationship that may otherwise remain elusive. Focusing on this relationship was also regarded as crucial given that the quality of the caregiver-child relationship was believed to be inherent to the success of other interventions such as speech therapy because skills and competencies related to communication were necessarily relational and develop within the context of this caregiving relationship. Furthermore, the encouraging, strengths-based, supportive inflection of the ABC was regarded as indispensable, reflecting the experiences of those parents who took part in the ABC (Article 3). Not only does this align with the general approach within attachment-based interventions (Article 1), it is particularly valuable for parents of children with ID who may be made to feel guilty, shameful, inadequate and inefficacious in relation to their parenting due, for example, to active criticism from others (Article 2), but also noteworthy experiences of stigma in African contexts (Mkabile et al., 2021).

Some concerns were raised in relation to the video-recording of sessions, homework and the timing of the intervention in relation to the diagnosis of ID, although these were not framed as insurmountable or factors that necessarily needed to be removed from the process. Interestingly, the concern around homework tasks not being completed speaks broadly to the findings in Article 1 regarding homework being an infrequent practice element across attachment-based interventions. Indeed, the ABC developers have also recently taken under consideration the removal of homework from the ABC intervention protocol (M. Dozier, personal communication, July 16, 2023), taking account of research findings related to the limited engagement by parents with homework tasks in the context of parenting interventions (Danko et al., 2016). Given that parents of children with ID often have many competing responsibilities including employment, other children in the household, and the many services their child with ID might require, homework may indeed be a challenging additional task to undertake.

In this study, particular recommendations were made regarding practice as well as the training of parent coaches. Notably, however, these recommendations were not related to the fundamental underlying framework or focus of the ABC intervention, highlighting its relevance and applicability. The recommendations were largely focused on how to better align the existing ABC with the population of children with ID and also the local South African context. Such peripheral adaptations are indeed supported and encouraged by the developers of the ABC so as to integrate and account for cultural and contextual factors that reflect the lives and experiences of local beneficiaries of the intervention (Carrera et al., 2022). In the present study, practice-related recommendations included, firstly, integrating psychoeducation for parents into the intervention content, specifically on developmental delays and how this may relate to the child's behaviour and their expression of needs, which may be different to that of typically developing children. Second, the translation into local languages of all intervention materials—through community consultation—was recommended, including the use of locally-produced video-materials to enhance the intervention's ecological validity and accessibility (Costello et al., 2021; Sattler et al., 2022). Third, following the training phase for parent coaches, it was recommended that a system of local peer supervision be established to provide continued monitoring, guidance and support for parent coaches. Also for parent coaches, a fourth practice recommendation was to engage local cultural conceptualisations of parenting to better situate and contextualise the ABC's targets, ensuring their cross-cultural relevance and the cultural competence of parent coaches (Ertl et al., 2019). Fifth, the study recommended that the implementation of the ABC for children with ID be done holistically and in partnership with disability-focused initiatives to enhance inclusiveness, in line with the social model of disability. Children with neurodevelopmental conditions and their families are often subject to stigmatisation, social exclusion and isolation (Currie & Szabo, 2020; Robinson et al., 2020). Hence, integrating the ABC with existing initiatives targeting areas such as, for example, empowerment and advocacy, offers a holistic and all-encompassing approach that acts synergistically to support caregivers of children with ID (Trafford & Swartz, 2023). Given that the parent-child relationship is not routinely a focus of intervention for this group in South Africa, the ABC could make an important, focused contribution to such a comprehensive approach to supporting families of children with ID. Furthermore, the ABC could serve to mitigate against the isolation and alienation experienced by caregivers of children with ID due to stigmatisation and the lack of support from others (Article 2). This aligns with the experiences of caregivers who participated in the ABC intervention who felt acknowledged by parent coaches and as though they were active collaborators in the intervention process (Article 3). The study's sixth practice-oriented recommendation related to the need to increase the flexibility of ABC intervention sessions. The ABC's standard protocol comprises 10 sessions each with a specific thematic focus, and limited flexibility. Parents and caregivers of children with ID may, however, require additional input and support due to the potentially more subtle and/or idiosyncratic behavioural expressions of this cohort of children (Vandesande et al., 2019b). This may necessitate that additional time

is spent on certain intervention targets and, hence, the need for additional sessions in some cases, speaking to the need for flexibility in how intervention sessions are undertaken or organised.

In addition to practice-related recommendations, three recommendations were also made for the training of parent coaches. First, in addition to psychoeducation for caregivers, it was recommended that training for parent coaches include strategies to recognise and identify the more subtle and idiosyncratic behavioural cues of children with ID. This was deemed important so that parent coaches could adequately assist parents in this respect through the use of in-the-moment commenting and video-feedback during intervention sessions. Although case management is a limited feature of attachment-based interventions in general (Article 1), another recommendation was to train parent coaches in how, and when, to engage outside services and referrals when this was deemed necessary in any given case. Since the ABC is clear in its protocol on not deviating from the focus by addressing extraneous issues, this recommendation refers to coaches being sufficiently educated and sensitised so as to identify when and where to refer, rather than addressing these issues themselves. Doing so would retain the intensity on the relational focus of the ABC while ensuring that extraneous concerns can be addressed via the appropriate channels. This may be facilitated by the third training-related recommendation that local Community Health Workers be trained as parent coaches, and that local infant mental health and/or parenting-focused NGOs (e.g., Ububele Educational and Psychotherapy Trust, or The Parent Centre), or state-run child mental health services, be actively engaged in the provision of the ABC due to their knowledge of, and links to, communities and community health services that could serve as referral networks.

3.6 Personal Reflections of the Researcher on the Execution of the Research

The process of conducting the various components of this overall project was both challenging and rewarding, professionally as well as personally. Each component—represented in Section II—involved its own distinct methodology some of which was familiar and others which were not, and required hours of reading, learning and pushing myself sometimes drastically outside of my comfort zone. At the time this was jarring and I was riddled with self-doubt but, upon reflection, these were the moments of greatest growth in my knowledge and skills as a researcher. Each component felt like a doctoral thesis in and of itself, which was overwhelming. At times the endeavour felt like an exercise in project management, juggling balls of all shapes, sizes and colours, simultaneously, none of which I dared drop. Thankfully the project stayed largely on course although not every aspect went according to plan and, while data collection had been completed just prior to the COVID-19 pandemic, the pandemic nonetheless interfered albeit in less concrete, more abstract, ways. The emotional adjustment to the pandemic made making mental space for analysing data and making sense of findings a major challenge during the course of 2020 and 2021, particularly. Combined with being a full-time lecturer which itself required a significant degree of adaptation to the pandemic made for a ‘perfect storm’, which pushed my resilience to its limits.

Furthermore, highly restrictive lockdown conditions and travel restrictions prevented planned collaborations and meetings with my supervisors in the Netherlands to support the research process. Nonetheless, although more slowly, progress continued thanks to Zoom!

Each component of this thesis came with its own challenges. The work that contributed towards Article 1 was convoluted and confusing, and required a meticulousness and repetitiveness that was painstaking. While I am, by nature, attentive to detail, this approach led me to discover even greater depths of attention to detail to ensure the accuracy and veracity of the findings. Although a laborious and time-intensive data extraction and analysis process, it was also exciting to be breaking what felt like new ground in the field of attachment-based interventions—a factor that grounded me and motivated me to keep going when the task felt insurmountable. This was easily the component of this thesis that was most frustrating. However, this was less a function of the convoluted methodology and more due to the lack of human connection that was inherent to the literature-based approach. However, I was anchored in place firmly by the potential clinical relevance of the work that could ultimately make a contribution to clinical practice or, at very least, stimulate further similar research in the field.

Meeting and engaging with the stories and lived experiences of others is part of who I am as a person and is central to my identity as a clinician and psychotherapist. It is, therefore, inherent to my personal and professional identity. Hence, working directly with the stories and lived experiences of others vitalised me during the course of the data collection for the remaining components. Particularly for Article 2 for which I conducted the semi-structured interviews myself, immersing myself in the experiences of the participants. My experience as a clinician and psychotherapist, generally, and also specifically in the context of intellectual disabilities afforded me a position that allowed me to empathise meaningfully with the participants, facilitating for them feelings of safety, acknowledgement, recognition and respect for the importance, and indispensability, of their voices. Simultaneously, however, the influence of my clinical experience required an intentionality in my approach to avoid slipping into ‘therapist mode’—my default position—during interviews, potentially deviating from the research agenda and focus. Engaging with myself introspectively and reflexively both during and after interviews, as well as during the analysis process, was a crucial ongoing process keeping my potential biases in check in this respect.

The tension between my ‘therapist mode’ and my ‘researcher mode’ re-emerged during the course of the data collection for Article 3 due to the need to establish scientific rigour. To do this, I needed to step aside and allow others to implement the ABC intervention, to code the video observations and to conduct the post-intervention interviews, all to secure impartiality and guard against the potential bias that could result from my vested interest in the study’s outcome. Although personally challenging to take a step back in this way, the outcome of the study was immensely satisfying as it reinforced the relevance and benefits of relationally-oriented, attachment-based interventions for children with ID, supporting parents and

caregivers in their caregiving capacities and facilitating nurturing care for a vulnerable and oft-invisible group of children and caregivers. Hence, although challenging, the outcome was well worth the sacrifice of stepping back from the process. While I was not involved directly in the intervention, the coding of observations, or conducting the post-intervention interviews, I had regular contact with the three participating families throughout the course of the study—first, for the purposes of recruitment and screening and, subsequently, to conduct the video-recordings and collect the saliva samples for transfer to the laboratory. Due to my inherent pull towards ‘therapist mode’, I was intentional during these contacts to avoid discussing the intervention sessions, or clinically relevant issues, so as to prevent the possible influence of such discussions on the intervention process or on the video-recorded observations. However, although measured, I was also intentional in always maintaining an empathic and compassionate stance with the families which I believe created a so-called ‘holding space’ which played a role in maintaining their continued involvement in, and commitment to, the process which all three families saw through to the end, despite all that was required of them. This all resulted in a scientifically rigorous, but also personally meaningful and clinically relevant process for those involved—the families, the intervenors, and myself.

3.7 Strengths of the Research

There are numerous strengths to the studies that make up this thesis. On the whole, these studies make a contribution to the more limited literature on attachment and attachment-based interventions in developing contexts, and for children with ID. The study described in Article 1 was the first to perform an aggregation of attachment-based interventions at the level of practice elements by applying the Distillation and Matching Model. Established systematic review methodology guided the approach to the study, which involved systematic literature searches, identification of records and screening procedures using clear inclusion criteria to select the most appropriate studies. Data extraction was performed by two raters independently from one another, achieving acceptable initial interrater agreements (Graham et al., 2012). To further enhance the veracity of the data, all coding was discussed between the two raters to resolve any disagreements and achieve consensus before subjecting the final data to analysis, augmenting the validity of the results. Furthermore, the successful application of the Distillation and Matching Model indicates its feasibility in relation to attachment-based interventions, making it a potentially valuable approach in reconceptualising how attachment-based interventions are applied, clinically, and for application to future research in the field.

Article 2 reported on a study that used a mixed-methods design to explore the parenting experiences of primary caregivers of children with ID in the South African context. Some quantitative studies and a host of qualitative investigations have been conducted locally, explicating the challenges and needs of caregivers of children with ID across urban township and rural communities. This study, although bearing some similarities to this previous research, integrated qualitative and quantitative methods to explore both the

extent and nature of parenting-related challenges, needs, and perceptions of current care and supports. Hence, the qualitative results corroborated, expanded upon, and deepened the quantitative results. Furthermore, the focus was specifically on parenting experiences honing in on issues related to the parent-child relationship and parent-child interactions, which had not been previously investigated. All the semi-structured interviews (Article 2, 3 and 4) were analysed by the researcher and, separately, by a second independent coder familiar with thematic analysis. Hence the analysis—open coding, as well as theme development and theme conceptualisation—was conducted until there was broad agreement, through consensus discussions, between coders on the coding and thematic framework, supporting the trustworthiness of the results. This further guarded against researcher biases potentially skewing the qualitative results. Furthermore, the interview-based findings across studies were strengthened by the use of triangulation through seeking perspectives and experiences from multiple data sources: Article 2 involved caregivers of children with ID and healthcare professionals working with children with ID, Article 3 involved ABC recipients and ABC intervenors, and Article 4 involved all four of these sources.

Article 3 adopted a single-case experimental design in which each case served as its own control to assess changes over time in relation to the primary outcomes of the study. This was further augmented by the use of a concurrent multiple-baseline approach across cases which allowed for observations of between-phase improvements only when the intervention was introduced at different points in time for each case—an indication of experimenter control over the independent variable. There were numerous additional methodological strengths such as the use of trained and reliable coders who were fully blinded to any information about the dyads involved in the study or the phase of study associated with each video-recorded observation. The chronological ordering of the observations that was provided to coders was also randomised. The researcher was also not directly involved in the ABC intervention sessions, the coding of the observation videos, or the post-intervention interviews. This served as an additional layer of bias prevention. The two intervenors who volunteered for the study were trained by the developers of the ABC in conducting the intervention. The developers also provided weekly clinical supervision as well as close fidelity monitoring for the full duration of the intervention to ensure that this was being implemented as intended, yielding strong metrics on fidelity. Additionally, the study made use of established, well-validated and reliable outcome measures (e.g., AQS and AMSS). Furthermore, by assessing attachment over time, the study provides evidence of emerging intervention effects on the attachment quality of children with ID, which has heretofore received limited attention in the literature on attachment-based interventions.

3.8 Limitations of the Research and Recommendations for Future Research

Notwithstanding the strengths of the studies, there are also a number of limitations to be considered. These are outlined below for each article along with key recommendations for future research.

3.8.1 Article 1

- i. The DMM is best applied to full intervention manuals because these offer the fullest description of the intervention, thus offering the most detailed account of the intervention's component practice elements. However, only roughly half of the 45 intervention protocols tested in the 60 winning studies for Article 1 were obtained for coding. The remaining half were coded based on the descriptions of the interventions published in the respective articles, which are necessarily truncated and less detailed. It is, therefore, likely that these interventions contained additional practice elements that were not explicitly described in the journal articles, leading to underreporting and, hence, underestimation of practice element frequencies.
- ii. Although the adaptations made to the coding system made it possible to conduct analyses of attachment-based interventions at the practice element level, these adaptations may require further revision and refinement. It may, therefore, be of value to subject the adaptations to a Delphi-like process to be vetted and evaluated by a panel of experts in the field of attachment-based interventions to enhance its scientific rigour through further development of the practice element definitions, facilitating interrater reliability.
- iii. While the assumption put forth by Chorpita et al. (2005) is that more frequent practice elements are more useful, questions about the effectiveness of individual practice elements can only be answered experimentally. Hence this current study does not speak to how effective specific elements are. It does, however, lay the groundwork for future research in the form of dismantling/additive studies or microtrials (Leijten et al., 2021) to identify the so-called 'active ingredients' of attachment-based interventions. This avenue of research could also serve to elucidate how different combinations, sequences and dosages of practice elements may impact outcomes.
- iv. Following Chorpita and Daleiden (2009), the ICC was used as the index of pattern similarity. However, it is possible that an alternative approach such as, for example, the Chi Square statistic, may have yielded different results by producing a differently shaped dendrogram.

3.8.2 Article 2

- i. The sample included in Article 2 was limited in numerous respects. First, the sample size of 40 was small, limiting the generalisability of the findings to the larger population of primary caregivers of children with ID in Gauteng. Furthermore, the generalisability was limited by the demographic profile of the sample which may not have been representative, particularly in terms of racial composition and socioeconomic status. It is, therefore, imperative that future studies strive to achieve representativeness that accurately reflects the demographics of the local population. A number of the participants also had access to private healthcare, and most participants were

recruited via schools, which may have biased the data given that many South Africans have limited access to such services. Hence, a specific sample was recruited that should not be generalised to the broader population of parents of children with ID in Gauteng. However, the experience of families who do have access to some support (e.g., school) is still of relevance, because it provides information on needs that may or may not be met through these existing systems. Thus, the findings are of relevance for settings that seek to build services that are not only equitable and inclusive but also effective in meeting needs. Additional research would be required to establish what is additionally needed for families who currently do not access services. Despite the limitations of the sample, the findings of the study are nonetheless instructive—there is a noteworthy area that remains unsupported, regardless of access to other forms/areas of support. Hence, even when support is available, a focus on supporting the parent-child relationship remains something that is required by parents (and has, to date, not been explored in South Africa). Furthermore, while some support for the child is accessible (in this sample), support for parents, and parenting capacities, is not included within this support. So, even those who are able to access some support in general, may feel as though support is limited. This it is believed is a valuable finding because it highlights that targeted support may be necessary, particularly that focused on parents and parenting which is applicable and relevant across demographic lines. Exactly how this applies across these lines may indeed be different, but this is a research question beyond the scope of the current study and is an avenue for future research.

- ii. The quantitative component of the study reported on in Article 2 was also descriptive and cross-sectional. The absence of a control group does not allow for any causal inferences to be drawn based on group differences between parents with, and without, children who have ID. Future research should, therefore, seek to further these results by including a control group of parents of children without ID in order to shed light on the possible differences between groups, confirming that parents of children with ID in South Africa are indeed (or are not) at significantly greater risk for parenting-related stress, lower parenting-related self-efficacy and limited support networks.

3.8.3 Article 3

- i. In Article 3, only three cases were included in the single-case design, which may have limited internal and external validity. This may explain the absence of statistically significant results—the number of cases is likely to have limited the size of the randomisation distribution, making it more difficult for the randomisation tests to detect a statistically significant result if there was one. While visual analysis demonstrated promising intervention effects, future studies should seek to expand the number of cases used so that the visual inspection can be further supported by statistical validation. Given the promising results, future research could also seek to conduct larger group

studies, such as RCTs, to further augment the findings of the current research regarding the effectiveness of the ABC for children with ID.

- ii. Although the use of the AQS and AMSS was possible in this cohort, indicative of their validity for children with ID, it is also possible that these measures may not be sufficiently sensitive to detect very subtle attachment behaviours displayed in this population. This may mean that these measures either require some degree of adaptation, or that there is specific training required for raters applying these tools amongst children with ID with regards to the kinds of subtle and idiosyncratic behavioural expressions that this group of children display. Future research could, therefore, explicate these behavioural expressions and develop operationalised descriptions of the items on the AQS, for example, based on attachment behaviours that are more characteristic of children with ID that could enhance and facilitate the applicability and validity of these measures for use in this population.

3.8.4 Article 4

- i. Although Article 4 sought to inform adaptations to the ABC for children with ID and for the South African context, the latter may have been constrained due to the fact that the study only included one Black-African expert. As such, explorations surrounding culture and cultural adaptations may have been limited as it pertains to the various cultural groups indigenous to South Africa. Hence, future research should seek, intentionally, to sample experts for wider representation to allow for a more nuanced and emic perspective to inform potential culture-related adaptations to the ABC for the local context.

3.9 Implications for Clinical Practice

The findings of the studies that comprise this thesis have numerous implications for clinical practice and the application of attachment-based interventions, in general (Articles 1), as well as for children with ID in South Africa and similar contexts (Articles 2, 3 and 4), more specifically. These implications are considered below:

- i. Article 1 matched differential practice element profiles to categories of child age, ethnicity, risk status and location. Doing so may play a role in making interventions informed by attachment principles more easily accessible to practitioners and, hence, to children and families. Given that many practitioners, especially those in low-income majority world contexts across the globe, have limited—or no—access to training and supervision in packaged, manualised interventions, ‘decentralising’ attachment-based interventions and offering training at the level of practice elements (as opposed to manualised and branded interventions) can allow practitioners to

implement modular approaches by tailoring attachment-based interventions for specific families based on their demographic profile as informed by the findings contained within Article 1.

- ii. Since only one RCT of an attachment-based intervention was conducted with children with ID, it was not possible, in Article 1, to specifically identify practice elements that are best suited to this population. However, in general, as reflected in Articles 2, 3 and 4, attachment-related concepts and interventions are deemed suitable and appropriate, and are a need, for children with ID and their primary caregivers. According to Chorpita et al. (2011, p. 495), “A priori, the investigator contributes the essentials as to what aspects of treatment should be included or how certain procedures should be performed at the time of service delivery. In real time, the clinician then adds the local expertise to adapt process, content, or logic based on the thousands of context variables that the laboratory developer cannot anticipate.” In the context of ID, this approach—of co-designing interventions between researchers and clinicians working in ID—may represent a place where evidence-based practice and clinical judgement meet and may, therefore, assist in breaching a treatment gap reflected currently in the limited literature on attachment-based interventions for this cohort of children.
- iii. Article 2 found that although support was available to these caregivers in the form of informal (e.g., spouses) as well as formal (e.g., healthcare professionals) supports for their child, support specifically centred on caregiver-child interactions and the caregiver-child relationship was identified as a significant need. This was rooted in caregivers’ experiences of challenges understanding their child’s behaviours and needs, the impact of their limited expectations of the child on caregiver-child interactions as well as their understanding of the necessity of developing secure relationships with their child to build a sense of safety for the latter. A noteworthy clinical implication, therefore, relates to supporting caregivers of children with ID in building and strengthening the relationships within caregiving dyads through targeted guidance that scaffolds caregiver-child interactions tailored to families of children with ID whose interactive repertoire may require special attention.
- iv. As such, this points to the clinical significance of findings presented in Article 3 which show that the ABC has clinical potential for families that have a child with ID reflected in its positive effects on maternal sensitivity and child attachment. Furthermore, in addition to these measured effects, the intervention was experienced as socially valid by the participants, suggesting that they also found the ABC to hold practical significance, strengthening its clinical value and responding to a number of challenges identified in Article 2. Additionally, in Article 4, the ABC was also evaluated by stakeholders as relevant and applicable both for children with ID and for the South African context.
- v. However, as noted in Article 4, there are a number of implications and suggestions for its further clinical application and scaling for broader implementation. Flexibility of ABC sessions, for

example, was one suggestion such that those families who require additional input, or repetition of material, can be accommodated. Other considerations included the time-consuming nature of the training phase of the ABC for parent coaches which, in addition to home visits, also involved both clinical and fidelity supervision. This required additional time and preparation, and encountered technical problems due to the transfer of video material which required a stable and reliable internet connection. Although the training phase is temporary, it is a necessary process to complete. As such, it is important that the challenges encountered be accounted for if the intervention is to be expanded in contexts where parent coaches are under pressure with other daily duties and where internet connectivity is less reliable (e.g., rural areas in South Africa).

- vi. Although in this study, the participants were all highly educated and were competent in English, this is not widely the case in South African society especially in under-resourced communities. It is vital, therefore, that consideration for dissemination of the ABC in South Africa considers the cultural and linguistic diversity that is inherent to the social landscape as has been done elsewhere (e.g., West et al., 2022). It is, however, acknowledged that this is a complex undertaking in South Africa where there are 12 official—and approximately 23 unofficial—languages spoken across the country (Statistics South Africa, 2023). This underscores the importance of training parent coaches and supervisors within a wide range of local communities to limit the barriers associated with geographic access as well as linguistic and cultural differences.

3.10 Conclusion

By adopting a common elements approach, the reach of, and access, to attachment-based interventions can be enhanced by allowing individual practitioners to customise and tailor such interventions, where needed, based on the unique characteristics of their clients. In contexts where there is limited coverage of attachment-based interventions and little access—due to location, cost or other barriers—to training for clinicians in specific packaged manualised interventions, this can play an important role in expanding the use of practice elements from interventions known to be effective in a way that best suits the target clientele. Thus, it is feasible that a specific profile of practice elements may be identified in future research, that clusters best for children with intellectual disabilities. This may allow for tailored intervention approaches that can best address the relational challenges evident in these parent-child dyads as was noted in this study where such a need was identified by primary caregivers of children with ID. The present research was not able to identify such a practice element profile due to the regular exclusion of children with disabilities from research studies, and the limited number of RCTs for attachment-based interventions focused specifically on this population. The current study did, however, seek to test an existing manualised intervention—Attachment and Biobehavioral Catch-up—that has accrued a noteworthy evidence base for its effectiveness among vulnerable infants and young children demonstrating positive effects on attachment security/organisation and maternal sensitivity, among other notable child developmental and parenting

outcomes. In order to expand the evidence on the use and effects of such interventions for children on the spectrum of intellectual disabilities, the present study showed that the ABC improved both attachment security and maternal sensitivity in dyads where the child had significant developmental delays. The ABC may therefore be a promising approach to address challenges in the caregiver-child relationship in families where the child's disability status may result in interferences in the caregiver's ability to successfully deliver sensitive and responsive caregiving. Offering focused support and guidance in this domain—which was a need identified by parents of children with ID—for caregivers in turn can enhance attachment security which has the potential to cascade into a wide range of positive developmental outcomes for children, allowing those with already impaired development to reach their potential more fully. It is, therefore, also encouraging that the ABC was deemed in this study to be practically beneficial. Despite recommendations for some adaptations, it was also experienced as applicable and relevant both to children with ID and to the South African population.

In conclusion, building safe and secure caregiving relationships early on is crucial in the socioemotional development and wellbeing of children, in general, but especially for children such as those with ID who may be more vulnerable. This underscores the significance of the findings presented in this thesis. Interventions such as the ABC seek to facilitate such a “good relationship” between parents and their young children in the interests of promoting development and the most optimal long-term outcomes. This is best achieved through supporting and building the capacities of parents and caregivers to embrace and fully realise their role as the secure base and safe haven for their child, promoting nurturing care through responsive caregiving practices that allow children with ID to thrive. This indeed brings to bear the words of one participant—the mother of a child with ID:

Firstly, you need a good relationship with him so that he can trust you...he must be able to come to me...So I think it just opens that communication...So if you have that from a young age, you have this good relationship, [he] will know when to express what emotions, whatever he's feeling to you... (Caregiver 3).

3.11 References

- Baier, A. L., Kline, A. C., & Feeny, N. C. (2020). Therapeutic alliance as a mediator of change: A systematic review and evaluation of research. *Clinical Psychology Review*, 82, Article 101921. <https://doi.org/10.1016/j.cpr.2020.101921>
- Bakermans-Kranenburg, M. J., Van IJzendoorn, M. H., & Juffer, F. (2003). Less is more: Meta-analyses of sensitivity and attachment interventions in early childhood. *Psychological Bulletin*, 129(2), 195-215. <https://doi.org/10.1037/0033-2909.129.2.195>
- Balldin, S., Fisher, P. A., & Wirtberg, I. (2018). Video feedback intervention with children. *Research on Social Work Practice*, 28(6), 682-695. <https://doi.org/10.1177/1049731516671809>
- Bloomfield, L., & Kendall, S. (2012). Parenting self-efficacy, parenting stress and child behaviour before and after a parenting programme. *Primary Health Care Research and Development*, 13(4), 364-372. <https://doi.org/10.1017/S1463423612000060>
- Bowlby, J. (1969). *Attachment and loss: Volume 1. Attachment*. Basic Books.
- Brown, M. A., McIntyre, L. L., Crnic, K. A., Baker, B. L., & Blacher, J. (2011). Preschool children with and without developmental delay: Risk, parenting, and child demandingness. *Journal of Mental Health Research in Intellectual Disabilities*, 4(3), 206-226. <https://doi.org/10.1080/19315864.2011.596990>
- Carrera, P., Benito-Gomez, M., Zablah, F. M., Schein, S. S., Costello, A. H., Roben, C. K. P., & Dozier, M. (2022). Adapting with sense: An update on culturally responsive efforts of the Attachment & Biobehavioral Catch-up intervention with Spanish-speaking, Latinx families. *Global Implementation Research and Applications*, 2(3), 243-248. <https://doi.org/10.1007/s43477-022-00049-0>
- Casonato, M., Nazzari, S., & Frigerio, A. (2017). Feasibility and efficacy of an attachment-based intervention in a maltreatment sample in residential care: A pilot study. *Clinical Child Psychology and Psychiatry*, 22(4), 561-571. <https://doi.org/10.1177/1359104517719115>
- Chauke, T., Poggenpoel, M., Myburgh, C. P. H., & Ntshingila, N. (2021). Experiences of parents of an adolescent with intellectual disability in Giyani, Limpopo province, South Africa. *Health SA*, 26, Article 1538. <https://doi.org/10.4102/hsag.v26i0.1538>
- Chorpita, B. F., & Daleiden, E. L. (2009). Mapping evidence-based treatments for children and adolescents: Application of the distillation and matching model to 615 treatments from 322 randomized trials. *Journal of Consulting and Clinical Psychology*, 77(3), 566-579. <https://doi.org/10.1037/a0014565>

- Chorpita, B. F., Daleiden, E. L., & Weisz, J. R. (2005). Identifying and selecting the common elements of evidence based interventions: A distillation and matching model. *Mental Health Services Research*, 7(1), 5-20. <https://doi.org/10.1007/s11020-005-1962-6>
- Chorpita, B. F., Rotheram-Borus, M. J., Daleiden, E. L., Bernstein, A., Cromley, T., Swendeman, D., & Regan, J. (2011). The old solutions are the new problem: How do we better use what we already know about reducing the burden of mental illness?. *Perspectives on Psychological Science*, 6(5), 493-497. <https://doi.org/10.1177/1745691611418240>
- Costello, A. H., Schein, S. S., Roben, C. K. P., & Dozier, M. (2021). Navigating the international dissemination of an evidence-based intervention: Scaling with fidelity and cultural-specificity. *Children and Youth Services Review*, 131, Article 106281. <https://doi.org/10.1016/j.chidyouth.2021.106281>
- Currie, G., & Szabo, J. (2020). Social isolation and exclusion: The parents' experience of caring for children with rare neurodevelopmental disorders. *International Journal of Qualitative Studies on Health and Well-being*, 15(1), Article 1725362. <https://doi.org/10.1080/17482631.2020.1725362>
- Danko, C. M., Brown, T., Van Schoick, L., & Budd, K. S. (2016). Predictors and correlates of homework completion and treatment outcomes in parent-child interaction therapy. *Child & Youth Care Forum*, 45(3), 467-485. <https://doi.org/10.1007/s10566-015-9339-5>
- Dempsey, I., Keen, D., Pennell, D., O'Reilly, J., & Neilands, J. (2009). Parent stress, parenting competence and family-centered support to young children with an intellectual or developmental disability. *Research in Developmental Disabilities*, 30(3), 558-566. <https://doi.org/10.1016/j.ridd.2008.08.005>
- Dozier, M., & Bernard, K. (2019). *Coaching parents of vulnerable infants: The Attachment and Biobehavioral Catch-up approach*. Guilford Press.
- Duma, V. V., Tshabalala, N., & Mji, G. (2021). The black hole of dealing with a disability diagnosis: Views of South African rural parents. *African Journal of Disability*, 10, Article 951. <https://doi.org/10.4102/ajod.v10i0.951>
- Ertl, M. M., Mann-Saumier, M., Martin, R. A., Graves, D. F., & Altarriba, J. (2019). The impossibility of client-therapist "match": Implications and future directions for multicultural competency. *Journal of Mental Health Counseling*, 41(4), 312-326. <https://doi.org/10.17744/mehc.41.4.03>
- Ettenberger, M., Bieleninik, L., Epstein, S., & Elefant, C. (2021). Defining attachment and bonding: Overlaps, differences and implications for music therapy clinical practice and research in the

- neonatal intensive care unit (NICU). *International Journal of Environmental Research and Public Health*, 18(4), Article 1733. <https://doi.org/10.3390/ijerph18041733>
- Farmer, A. Y., & Lee, S. K. (2011). The effects of parenting stress, perceived mastery, and maternal depression on parent-child interaction. *Journal of Social Service Research*, 37(5), 516-525. <https://doi.org/10.1080/01488376.2011.607367>
- Floyd, F. J., Harter, K. S. M., & Costigan, C. L. (2004). Family problem-solving with children who have mental retardation. *American Journal on Mental Retardation*, 109(6), 507-524. [https://doi.org/10.1352/0895-8017\(2004\)109<507:Fpwewh>2.0.Co;2](https://doi.org/10.1352/0895-8017(2004)109<507:Fpwewh>2.0.Co;2)
- Graham, M., Milanowski, A., & Miller, J. (2012). *Measuring and promoting inter-rater agreement of teacher and principal performance ratings*. Center for Educator Compensation Reform. <https://files.eric.ed.gov/fulltext/ED532068.pdf>
- Green, J., Charman, T., Pickles, A., Wan, M. W., Elsabbagh, M., Slonims, V., Taylor, C., McNally, J., Booth, R., Gliga, T., Jones, E. J. H., Harrop, C., Bedford, R., & Johnson, M. H. (2015). Parent-mediated intervention versus no intervention for infants at high risk of autism: A parallel, single-blind, randomised trial. *The Lancet Psychiatry*, 2(2), 133-140. [https://doi.org/10.1016/s2215-0366\(14\)00091-1](https://doi.org/10.1016/s2215-0366(14)00091-1)
- Grube, W. A., & Liming, K. W. (2018). Attachment and Biobehavioral Catch-up: A systematic review. *Infant Mental Health Journal*, 39(6), 656-673. <https://doi.org/10.1002/imhj.21745>
- Grumi, S., Roberti, E., Parsanejad, S., Borgatti, R., & Provenzi, L. (2023). Video-feedback interventions to support parents of children with neurodevelopmental disabilities. In L. Provenzi, S. Grumi, & R. Borgatti (Eds.), *Family-centered care in childhood disability: Theory, research, practice* (pp. 193-211). Springer. https://doi.org/10.1007/978-3-031-34252-3_9
- Hassall, R., Rose, J., & McDonald, J. (2005). Parenting stress in mothers of children with an intellectual disability: The effects of parental cognitions in relation to child characteristics and family support. *Journal of Intellectual Disability Research*, 49(6), 405-418. <https://doi.org/10.1111/j.1365-2788.2005.00673.x>
- Leijten, P., Weisz, J. R., & Gardner, F. (2021). Research strategies to discern active psychological therapy components: A scoping review. *Clinical Psychological Science*, 9(3), 307-322. <https://doi.org/10.1177/2167702620978615>
- Lloyd, T. J., & Hastings, R. (2009). Hope as a psychological resilience factor in mothers and fathers of children with intellectual disabilities. *Journal of Intellectual Disability Research*, 53(12), 957-968. <https://doi.org/10.1111/j.1365-2788.2009.01206.x>

- Mbatha, N. L., & Mokwena, K. E. (2023). Parental stress in raising a child with developmental disabilities in a rural community in South Africa. *International Journal of Environmental Research and Public Health*, 20(5), Article 3969. <https://doi.org/10.3390/ijerph20053969>
- Mkabile, S., Garrun, K. L., Shelton, M., & Swartz, L. (2021). African families' and caregivers' experiences of raising a child with intellectual disability: A narrative synthesis of qualitative studies. *African Journal of Disability*, 10, Article 827. <https://doi.org/10.4102/ajod.v10i0.827>
- Mkabile, S., & Swartz, L. (2020a). Caregivers' and parents' explanatory models of intellectual disability in Khayelitsha, Cape Town, South Africa. *Journal of Applied Research in Intellectual Disabilities*, 33(5), 1026-1037. <https://doi.org/10.1111/jar.12725>
- Mkabile, S., & Swartz, L. (2020b). 'I waited for it until forever': Community barriers to accessing intellectual disability services for children and their families in Cape Town, South Africa. *International Journal of Environmental Research and Public Health*, 17(22), Article 8504. <https://doi.org/10.3390/ijerph17228504>
- O'Byrne, E., McCusker, C., & McSweeney, S. (2023). The impact of the "Attachment and Biobehavioural Catch-up" program on attachment related parent behavior-A systematic review. *Infant Mental Health Journal*, 44(1), 76-91. <https://doi.org/10.1002/imhj.22025>
- Oppenheim, D., Dolev, S., Koren-Karie, N., Sher-Censor, E., Yirmiya, N., & Salomon, S. (2007). Parental resolution of the child's diagnosis and the parent-child relationship: Insights from the reaction to diagnosis interview. In D. Oppenheim & D. F. Goldsmith (Eds.), *Attachment theory in clinical work with children: Bridging the gap between research and practice* (pp. 109-136). Guilford Press.
- Pasalich, D. S., Moretti, M. M., Hassall, A., & Curcio, A. (2021). Pilot randomized controlled trial of an attachment- and trauma-focused intervention for kinship caregivers. *Child Abuse and Neglect*, 120, Article 105178. <https://doi.org/10.1016/j.chiabu.2021.105178>
- Philpott, S., & Muthukrishna, N. (2019). The practice of partnerships: A case study of the Disabled Children's Action Group, South Africa. *South African Journal of Childhood Education*, 9(1), Article a729. <https://doi.org/10.4102/sajce.v9i1.729>
- Platje, E., Sterkenburg, P., Overbeek, M., Kef, S., & Schuengel, C. (2018). The efficacy of VIPP-V parenting training for parents of young children with a visual or visual-and-intellectual disability: A randomized controlled trial. *Attachment & Human Development*, 20(5), 455-472. <https://doi.org/10.1080/14616734.2018.1428997>
- Poslawsky, I. E., Naber, F. B., Bakermans-Kranenburg, M. J., Van Daalen, E., Van Engeland, H., & Van IJzendoorn, M. H. (2015). Video-feedback intervention to promote positive parenting adapted to

- autism (VIPP-AUTI): A randomized controlled trial. *Autism*, 19(5), 588-603. <https://doi.org/10.1177/1362361314537124>
- Provenzi, L., Giusti, L., Caglia, M., Rosa, E., Mascheroni, E., & Montiroso, R. (2020). Evidence and open questions for the use of video-feedback interventions with parents of children with neurodevelopmental disabilities. *Frontiers in Psychology*, 11, Article 1374. <https://doi.org/10.3389/fpsyg.2020.01374>
- Ragni, B., Boldrini, F., Mangialavori, S., Cacioppo, M., Capurso, M., & De Stasio, S. (2022). The efficacy of parent training interventions with parents of children with developmental disabilities. *International Journal of Environmental Research and Public Health*, 19(15), Article 9685. <https://doi.org/10.3390/ijerph19159685>
- Robinson, S., Hill, M., Fisher, K. R., & Graham, A. (2020). Belonging and exclusion in the lives of young people with intellectual disability in small town communities. *Journal of Intellectual Disabilities*, 24(1), 50-68. <https://doi.org/10.1177/1744629518765830>
- Sattler, P. L., Paceley, M., Byers, K., Mulkey, Z., & Mendenhall, A. (2022). Lost in translation: Bilingual parent coaches' experiences implementing an un-adapted early childhood intervention with non-English speakers. *Global Implementation Research and Applications*, 2(1), 12-21. <https://doi.org/10.1007/s43477-022-00037-4>
- Schoemaker, N. K., Juffer, F., Rippe, R. C. A., Vermeer, H. J., Stoltenborgh, M., Jagersma, G. J., Maras, A., & Alink, L. R. A. (2020). Positive parenting in foster care: Testing the effectiveness of a video-feedback intervention program on foster parents' behavior and attitudes. *Children and Youth Services Review*, 110, Article 104779. <https://doi.org/10.1016/j.chidyouth.2020.104779>
- Statistics South Africa. (2023). *Census 2022: Statistical release*. SSA. https://census.statssa.gov.za/assets/documents/2022/P03014_Census_2022_Statistical_Release.pdf
- Trafford, Z., & Swartz, L. (2023). The Care Dependency Grant for children with disabilities in South Africa: Perspectives from implementation officials. *Development Southern Africa*, 40(2), 259-272. <https://doi.org/10.1080/0376835x.2021.1981250>
- Tschacher, W., Haken, H., & Kyselo, M. (2015). Alliance: A common factor of psychotherapy modeled by structural theory. *Frontiers in Psychology*, 6, Article 421. <https://doi.org/10.3389/fpsyg.2015.00421>
- UNICEF, & Countdown to 2030. (2023). *Country profiles for early childhood development*. Authors. https://nurturing-care.org/wp-content/uploads/2023/10/ECD_Countdown2030_Global.pdf

- Van der Mescht, P., Geertsema, S., Le Roux, M., Graham, M. A., & Johnson, E. (2023). The potential burden experienced by South African caregivers of children with severe intellectual disability. *South African Journal of Childhood Education*, 13(1), Article a1219. <https://doi.org/10.4102/sajce.v13i1.1219>
- Vandesande, S., Bosmans, G., & Maes, B. (2019). Can I be your safe haven and secure base? A parental perspective on parent-child attachment in young children with a severe or profound intellectual disability. *Research in Developmental Disabilities*, 93, Article 103452. <https://doi.org/10.1016/j.ridd.2019.103452>
- Weisz, J. R., Chorpita, B. F., Palinkas, L. A., Schoenwald, S. K., Miranda, J., Bearman, S. K., Daleiden, E. L., Ugueto, A. M., Ho, A., Martin, J., Gray, J., Alleyne, A., Langer, D. A., Southam-Gerow, M. A., Gibbons, R. D., & Research Network on Youth Mental Health. (2012). Testing standard and modular designs for psychotherapy treating depression, anxiety, and conduct problems in youth: A randomized effectiveness trial. *Archives of General Psychiatry*, 69(3), 274-282. <https://doi.org/10.1001/archgenpsychiatry.2011.147>
- Wertlieb, D. (2018). Inclusive early childhood development: Ensuring the rights and well-being of infants and toddlers with disabilities and their families. *Zero to Three Journal*, 38(4), 22-30.
- West, A. L., Berlin, L. J., Goodman, A., Endy, K., Manzon, C., & Harden, B. J. (2022). Home-based Early Head Start plus Attachment and Biobehavioral Catch-up: A qualitative study of implementation outcomes. *Journal of Child and Family Studies*, 31(4), 1057-1068. <https://doi.org/10.1007/s10826-021-02189-7>
- Westlake, F., Westlake, M., & Totsika, V. (2024). A systematic review and meta-analysis of the effectiveness of interventions targeting the parent-child relationship in families of children with an intellectual disability. *Journal of Applied Research in Intellectual Disabilities*, 37(6), Article e13273. <https://doi.org/10.1111/jar.13273>
- World Health Organisation, United Nations Children's Emergency Fund, & World Bank Group. (2018). *Nurturing care for early childhood development: A framework for helping children survive and thrive to transform health and human potential*. WHO. <https://apps.who.int/iris/bitstream/handle/10665/272603/9789241514064-eng.pdf>

COMBINED REFERENCE LIST

- Abidin, R. R. (2012). *Parenting Stress Index, fourth edition (PSI-4)*. Psychological Assessment Resources.
- Adnams, C. (2010). Perspectives of intellectual disability in South Africa: Epidemiology, policy, services for children and adults. *Current Opinion in Psychiatry*, 23, 436-440. <https://doi.org/10.1097/YCO.0b013e32833cfc2d>
- Agha Mohammad Hasani, P., Sheikh Fathollahi, M., Gerami Fard, A., & Mokhtari, M. (2020). Effectiveness of happiness training on the pattern of parent-child relationships and the hope of parents with autistic children. *Iranian Rehabilitation Journal*, 18(3), 309-318. <https://doi.org/10.32598/irj.18.3.946.1>
- Ahmad, S., & Khanam, S. J. (2016). Parenting stress in mothers of children with disabilities: A comparative study. *Pakistan Journal of Psychology*, 47(1), 57-69.
- Ahmed, S. K. (2024). The pillars of trustworthiness in qualitative research. *Journal of Medicine, Surgery, and Public Health*, 2, Article 100051. <https://doi.org/10.1016/j.glmedi.2024.100051>
- Ahnert, L., & Schoppe-Sullivan, S. J. (2020). Fathers from an attachment perspective. *Attachment & Human Development*, 22(1), 1-3. <https://doi.org/10.1080/14616734.2019.1589054>
- Ainsworth, M. D. S. (1969). *Maternal sensitivity scales*. http://www.psychology.sunysb.edu/attachment/measures/content/ainsworth_scales.html
- Ainsworth, M. D. S. (1977). Attachment theory and its utility in cross-cultural research. In P. H. Leiderman, S. R. Tulkin, & A. Rosenfeld (Eds.), *Culture and infancy: Variations in the human experience* (pp. 49-67). Academic Press.
- Ainsworth, M. D. S. (1979). Infant-mother attachment. *American Psychologist*, 34(10), 932-937. <https://doi.org/10.1037/0003-066X.34.10.932>
- Ainsworth, M. D. S., & Bell, S. M. (1970). Attachment, exploration and separation: Illustrated by the behavior of one-year-olds in a strange situation. *Child Development*, 41(1), 49-67. <https://doi.org/10.2307/1127388>
- Ainsworth, M. D. S., & Bell, S. M. (1974). Mother-infant interaction and the development of competence. In K. J. Connolly & J. Bruner (Eds.), *The growth of competence* (pp. 97-118). Academic Press.
- Ainsworth, M. D. S., Bell, S. M. V., & Stayton, D. J. (1971). Individual differences in strange-situation behaviour of one-year-olds. In H. R. Schaffer (Ed.), *The origins of human social relations* (pp. 17-57). Academic Press.

- Ainsworth, M. D. S., Bell, S. M., & Stayton, D. J. (1991). Infant-mother attachment and social development: 'Socialisation' as a product of reciprocal responsiveness to signals. In M. Woodhead, R. Carr, & P. Light (Eds.), *Child development in social context: Becoming a person* (pp. 30-55). Routledge.
- Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Lawrence Erlbaum.
- Ainsworth, M. D. S., & Wittig, B. A. (1969). Attachment and exploratory behavior of one-year-olds in a strange situation. In B. M. Foss (Ed.), *Determinants of infant behavior IV* (pp. 111-136). Methuen & Co LTD.
- Akai, C. E., Guttentag, C. L., Baggett, K. M., Noria, C. C., & The Centers for the Prevention of Child Neglect. (2008). Enhancing parenting practices of at-risk mothers. *Journal of Primary Prevention*, 29(3), 223-242. <https://doi.org/10.1007/s10935-008-0134-z>
- Aktan, O., Orakçı, Ş., & Durnalı, M. (2020). Investigation of the relationship between burnout, life satisfaction and quality of life in parents of children with disabilities. *European Journal of Special Needs Education*, 35(5), 679-695. <https://doi.org/10.1080/08856257.2020.1748429>
- Aldersey, H., Kavira, S., Kiasimbua, J., Lokako, W., Miaka, P., & Monte, L. (2018). Stigma experienced by families with members with intellectual disabilities in Kinshasa, Democratic Republic of the Congo. *Intervention: Journal of Mental Health and Psychosocial Support in Conflict Affected Areas*, 16(2), 119-128. https://doi.org/10.4103/intv.Intv_13_18
- Alexander, S. L., Frederico, M., & Long, M. (2018). Attachment and children with disabilities: Knowledge and views of early intervention professionals. *Children Australia*, 43(4), 245-254. <https://doi.org/10.1017/cha.2018.38>
- Alexander, S. L., Frederico, M., Long, M., & Vicendese, D. (2024). Attachment security in children with disability or developmental delay: Systematic review of quality and interventions. *Journal of Occupational Therapy, Schools, & Early Intervention*, 17(2), 228-258. <https://doi.org/10.1080/19411243.2023.2177237>
- Alhazmi, A., Petersen, R., & Donald, K. A. (2018). Quality of life among parents of South African children with autism spectrum disorder. *Acta Neuropsychiatrica*, 30(4), 226-231. <https://doi.org/10.1017/neu.2018.5>
- Ali, A., Hassiotis, A., Strydom, A., & King, M. (2012). Self stigma in people with intellectual disabilities and courtesy stigma in family carers: A systematic review. *Research in Developmental Disabilities*, 33(6), 2122-2140. <https://doi.org/10.1016/j.ridd.2012.06.013>

- Al-Kandari, H. Y., & Al-Qashan, H. (2009). Maternal self-efficacy of mothers of children with intellectual developmental disabilities, Down syndrome, and autism in Kuwait. *Child and Adolescent Social Work Journal*, 27(1), 21-39. <https://doi.org/10.1007/s10560-009-0189-6>
- Allemang, B., Sitter, K., & Dimitropoulos, G. (2022). Pragmatism as a paradigm for patient-oriented research. *Health Expectations*, 25(1), 38-47. <https://doi.org/10.1111/hex.13384>
- Alsancak-Akbulut, C., Sahin-Acar, B., & Sumer, N. (2021). Effect of video-feedback intervention on Turkish mothers' sensitivity and physical intrusiveness: A randomized control trial. *Attachment & Human Development*, 23(6), 795-813. <https://doi.org/10.1080/14616734.2020.1753085>
- Alsarhi, K. R., Prevoo, M. J. L., Alink, L. R. A., & Mesman, J. (2021b). Sensitive parenting in urban slums in Makassar, Indonesia: The roles of experienced child maltreatment and sociodemographic risk. *Attachment & Human Development*, 23(2), 199-211. <https://doi.org/10.1080/14616734.2020.1828546>
- Alsarhi, K. R., Prevoo, M., Alink, L., & Mesman, J. (2021a). Observing sensitivity in slums in Yemen: The veiled challenge. *Attachment & Human Development*, 23(2), 176-187. <https://doi.org/10.1080/14616734.2020.1828540>
- Alvarenga, P., Cerezo, M. A., Wiese, E., & Piccinini, C. A. (2020). Effects of a short video feedback intervention on enhancing maternal sensitivity and infant development in low-income families. *Attachment & Human Development*, 22(5), 534-554. <https://doi.org/10.1080/14616734.2019.1602660>
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th edition, text revision). APA.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th edition). APA.
- American Psychiatric Association. (2022). *Diagnostic and statistical manual of mental disorders* (5th edition, text revision). APA.
- Ammaniti, M., Speranza, A. M., Tambelli, R., Muscetta, S., Lucarelli, L., Vismara, L., Odorisio, F., & Cimino, S. (2006). A prevention and promotion intervention program in the field of mother-infant relationship. *Infant Mental Health Journal*, 27(1), 70-90. <https://doi.org/10.1002/imhj.20081>
- Ammerman, R. T., Peugh, J. L., Teeters, A. R., Sakuma, K. K., Jones, D. E., Hostetler, M. L., Van Ginkel, J. B., & Feinberg, M. E. (2022). Promoting parenting in home visiting: A CACE analysis of family foundations. *Journal of Family Psychology*, 36(2), 225-235. <https://doi.org/10.1037/fam0000888>

- Aparicio, E. M., Denmark, N., Berlin, L. J., & Jones Harden, B. (2016). First-generation Latina mothers' experiences of supplementing home-based early head start with the Attachment and Biobehavioral Catch-up program. *Infant Mental Health Journal*, 37(5), 537-548. <https://doi.org/10.1002/imhj.21586>
- Armijo-Olivo, S., Stiles, C. R., Hagen, N. A., Biondo, P. D., & Cummings, G. G. (2012). Assessment of study quality for systematic reviews: A comparison of the Cochrane Collaboration Risk of Bias tool and the Effective Public Health Practice Project Quality Assessment tool: Methodological research. *Journal of Evaluation in Clinical Practice*, 18(1), 12-18. <https://doi.org/10.1111/j.1365-2753.2010.01516.x>
- Armstrong, K. L., Fraser, J. A., Dadds, M. R., & Morris, J. (2000). Promoting secure attachment, maternal mood and child health in a vulnerable population, a randomized controlled trial. *Journal of Paediatrics and Child Health*, 36(6), 555-562. <https://doi.org/10.1046/j.1440-1754.2000.00591.x>
- Asanjarani, F., Abadi, F. D., Ghomi, M., Woudstra, M. L., & Mesman, J. (2021). Video observations of maternal sensitivity in urban and rural Iran: An exploratory study. *Attachment & Human Development*, 23(2), 164-175. <https://doi.org/10.1080/14616734.2020.1828532>
- Atkinson, L., Chisholm, V. C., Scott, B., Goldberg, S., Vaughn, B. E., Blackwell, J., Dickens, S., & Tam, F. (1999). Maternal sensitivity, child functional level, and attachment in Down syndrome. *Monographs of the Society for Research in Child Development*, 64(3), 45-66. <https://doi.org/10.1111/1540-5834.00033>
- Atkinson, L., Niccols, A., Paglia, A., Coolbear, J., Parker, K. C. H., Poulton, L., Guger, S., & Sitarenios, G. (2000). A meta-analysis of time between maternal sensitivity and attachment assessments: Implications for internal working models in infancy/toddlerhood. *Journal of Social and Personal Relationships*, 17(6), 791-810. <https://doi.org/10.1177/0265407500176005>
- Aviezer, O., Sagi, A., Joels, T., & Ziv, Y. (1999). Emotional availability and attachment representations in kibbutz infants and their mothers. *Developmental Psychology*, 35(3), 811-821. <https://doi.org/10.1037//0012-1649.35.3.811>
- Backhaus, J., Junghanns, K., & Hohagen, F. (2004). Sleep disturbances are correlated with decreased morning awakening salivary cortisol. *Psychoneuroendocrinology*, 29(9), 1184-1191. <https://doi.org/10.1016/j.psyneuen.2004.01.010>
- Badu, E. (2016). Experiences of parents of children with intellectual disabilities in the Ashanti region of Ghana. *Journal of Social Inclusion*, 7(1), 20-30. <https://doi.org/10.36251/josi100>

- Bae, Y. J., Gaudl, A., Jaeger, S., Stadelmann, S., Hiemisch, A., Kiess, W., Willenberg, A., Schaab, M., von Klitzing, K., Thiery, J., Ceglarek, U., Dohnert, M., & Kratzsch, J. (2016). Immunoassay or LC-MS/MS for the measurement of salivary cortisol in children?. *Clinical Chemistry and Laboratory Medicine*, 54(5), 811-822. <https://doi.org/10.1515/cclm-2015-0412>
- Bagwell-Gray, M. E., Grube, W., Mendenhall, A., Jen, S., Olaleye, O., & Sattler, P. (2023). A qualitative exploration of caregivers' experiences with the Attachment and Biobehavioral Catch-up (ABC) parenting program. *Infant Mental Health Journal*, 44(3), 406-421. <https://doi.org/10.1002/imhj.22057>
- Baier, A. L., Kline, A. C., & Feeny, N. C. (2020). Therapeutic alliance as a mediator of change: A systematic review and evaluation of research. *Clinical Psychology Review*, 82, Article 101921. <https://doi.org/10.1016/j.cpr.2020.101921>
- Bailey, H. N., Moran, G., Pederson, D. R., & Bento, S. (2007). Understanding the transmission of attachment using variable- and relationship-centered approaches. *Development and Psychopathology*, 19(2), 313-343. <https://doi.org/10.1017/S0954579407070162>
- Bain, K. (2014). "New Beginnings" in South African shelters for the homeless: Piloting of a group psychotherapy intervention for high-risk mother-infant dyads. *Infant Mental Health Journal*, 35(6), 591-603. <https://doi.org/10.1002/imhj.21457>
- Baker, B. L., Blacher, J., Crnic, K. A., & Edelbrock, C. (2002). Behavior problems and parenting stress in families of three-year-old children with and without developmental delays. *American Journal on Mental Retardation*, 107(6), 433-444. [https://doi.org/10.1352/0895-8017\(2002\)107<0433:Bpapsi>2.0.Co;2](https://doi.org/10.1352/0895-8017(2002)107<0433:Bpapsi>2.0.Co;2)
- Baker, B. L., McIntyre, L. L., Blacher, J., Crnic, K., Edelbrock, C., & Low, C. (2003). Pre-school children with and without developmental delay: Behaviour problems and parenting stress over time. *Journal of Intellectual Disability Research*, 47(4-5), 217-230. <https://doi.org/https://doi.org/10.1046/j.1365-2788.2003.00484.x>
- Bakermans-Kranenburg, M. J., Juffer, F., & Van IJzendoorn, M. H. (1998). Interventions with video feedback and attachment discussions: Does type of maternal insecurity make a difference?. *Infant Mental Health Journal*, 19(2), 202-219. [https://doi.org/10.1002/\(SICI\)1097-0355\(199822\)19:2<202::AID-IMHJ8>3.0.CO;2-P](https://doi.org/10.1002/(SICI)1097-0355(199822)19:2<202::AID-IMHJ8>3.0.CO;2-P)
- Bakermans-Kranenburg, M. J., Lotz, A., Alyousefi-van Dijk, K., & Van IJzendoorn, M. (2019). Birth of a father: Fathering in the first 1,000 days. *Child Development Perspectives*, 13(4), 247-253. <https://doi.org/10.1111/cdep.12347>

- Bakermans-Kranenburg, M. J., Van IJzendoorn, M. H., & Juffer, F. (2003). Less is more: Meta-analyses of sensitivity and attachment interventions in early childhood. *Psychological Bulletin*, 129(2), 195-215. <https://doi.org/10.1037/0033-2909.129.2.195>
- Bakermans-Kranenburg, M. J., Van IJzendoorn, M. H., & Juffer, F. (2005). Disorganized infant attachment and preventive interventions: A review and meta-analysis. *Infant Mental Health Journal*, 26(3), 191-216. <https://doi.org/10.1002/imhj.20046>
- Balldin, S., Fisher, P. A., & Wirtberg, I. (2018). Video feedback intervention with children. *Research on Social Work Practice*, 28(6), 682-695. <https://doi.org/10.1177/1049731516671809>
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215. <https://doi.org/10.1037/0033-295X.84.2.191>
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall
- Barak-Levy, Y., & Atzaba-Poria, N. (2020). A mediation model of parental stress, parenting, and risk factors in families having children with mild intellectual disability. *Research in Developmental Disabilities*, 98, Article 103577. <https://doi.org/10.1016/j.ridd.2020.103577>
- Barak-Levy, Y., & Paryente, B. (2023). Diving into the resolution process: Parent's reactions to child's diagnosis. *International Journal of Environmental Research and Public Health*, 20(4), Article 3295. <https://doi.org/10.3390/ijerph20043295>
- Barlow, J., Davis, H., McIntosh, E., Jarrett, P., Mockford, C., & Stewart-Brown, S. (2007). Role of home visiting in improving parenting and health in families at risk of abuse and neglect: Results of a multicentre randomised controlled trial and economic evaluation. *Archives of Disease in Childhood*, 92(3), 229-233. <https://doi.org/10.1136/adc.2006.095117>
- Barnes, J., & Theule, J. (2019). Maternal depression and infant attachment security: A meta-analysis. *Infant Mental Health Journal*, 40(6), 817-834. <https://doi.org/10.1002/imhj.21812>
- Barnett, D., Clements, M., Kaplan-Estrin, M., McCaskill, J. W., Hunt, K. H., Butler, C. M., Schram, J. L., & Janisse, H. C. (2006). Maternal resolution of child diagnosis: Stability and relations with child attachment across the toddler to preschooler transition. *Journal of Family Psychology*, 20(1), 100-107. <https://doi.org/10.1037/0893-3200.20.1.100>
- Barone, L., Barone, V., Dellagiulia, A., & Lionetti, F. (2018). Testing an attachment-based parenting intervention-VIPP-FC/A in adoptive families with post-institutionalized children: Do maternal sensitivity and genetic markers count?. *Frontiers in Psychology*, 9, Article 156. <https://doi.org/10.3389/fpsyg.2018.00156>

- Barone, L., Carone, N., Costantino, A., Genschow, J., Merelli, S., Milone, A., Polidori, L., Ruglioni, L., & Moretti, M. M. (2021). Effect of a parenting intervention on decreasing adolescents' behavioral problems via reduction in attachment insecurity: A longitudinal, multicenter, randomized controlled trial. *Journal of Adolescence*, 91, 82-96. <https://doi.org/10.1016/j.adolescence.2021.07.008>
- Barone, L., Carone, N., Salazar-Jimenez, J. G., & Ortiz Munoz, J. A. (2021). Enhancing food habits via sensitivity in rural low-SES mothers of children aged 1-3 living in Colombia: A randomized controlled trial using video-feedback intervention. *Attachment & Human Development*, 23(6), 831-852. <https://doi.org/10.1080/14616734.2020.1784243>
- Barrera, M., & Castro, F. G. (2006). A heuristic framework for the cultural adaptation of interventions. *Clinical Psychology: Science and Practice*, 13(4), 311-316. <https://doi.org/10.1111/j.1468-2850.2006.00043.x>
- Barroso, N. E., Hungerford, G. M., Garcia, D., Graziano, P. A., & Bagner, D. M. (2016). Psychometric properties of the Parenting Stress Index-Short Form (PSI-SF) in a high-risk sample of mothers and their infants. *Psychological Assessment*, 28(10), 1331-1335. <https://doi.org/10.1037/pas0000257>
- Barth, R. P., Kolivoski, K. M., Lindsey, M. A., Lee, B. R., & Collins, K. S. (2014). Translating the common elements approach: Social Work's experiences in education, practice, and research. *Journal of Clinical Child and Adolescent Psychology*, 43(2), 301-311. <https://doi.org/10.1080/15374416.2013.848771>
- Baumler, D., Kirschbaum, C., Kliegel, M., Alexander, N., & Stalder, T. (2013). The cortisol awakening response in toddlers and young children. *Psychoneuroendocrinology*, 38(11), 2485-2492. <https://doi.org/10.1016/j.psyneuen.2013.05.008>
- Beebe, B., Jaffe, J., Markese, S., Buck, K., Chen, H., Cohen, P., Bahrick, L., Andrews, H., & Feldstein, S. (2010). The origins of 12-month attachment: A microanalysis of 4-month mother-infant interaction. *Attachment & Human Development*, 12(1-2), 3-141. <https://doi.org/10.1080/14616730903338985>
- Behrens, K. Y., Parker, A. C., & Haltigan, J. D. (2011). Maternal sensitivity assessed during the Strange Situation Procedure predicts child's attachment quality and reunion behaviors. *Infant Behavior and Development*, 34(2), 378-381. <https://doi.org/10.1016/j.infbeh.2011.02.007>
- Beighton, C., & Wills, J. (2017). Are parents identifying positive aspects to parenting their child with an intellectual disability or are they just coping? A qualitative exploration. *Journal of Intellectual Disabilities*, 21(4), 325-345. <https://doi.org/10.1177/1744629516656073>

- Bergsund, H. B., Drozd, F., & Jacobsen, H. (2024). Implementing Attachment and Biobehavioral Catch-up in Norway: Experiences from CWS parents, clinicians and leaders. *European Journal of Social Work*, 27(1), 69-82. <https://doi.org/10.1080/13691457.2022.2077320>
- Berlin, L. J., Martoccio, T. L., Bryce, C. I., & Jones Harden, B. (2019). Improving infants' stress-induced cortisol regulation through attachment-based intervention: A randomized controlled trial. *Psychoneuroendocrinology*, 103, 225-232. <https://doi.org/10.1016/j.psyneuen.2019.01.005>
- Berlin, L. J., Martoccio, T. L., & Jones Harden, B. (2018). Improving Early Head Start's impacts on parenting through attachment-based intervention: A randomized controlled trial. *Developmental Psychology*, 54(12), 2316-2327. <https://doi.org/10.1037/dev0000592>
- Berlin, L. J., Shanahan, M., & Carmody, K. A. (2014). Promoting supportive parenting in new mothers with substance-use problems: A pilot randomized trial of residential treatment plus an attachment-based parenting program. *Infant Mental Health Journal*, 35(1), 81-85. <https://doi.org/10.1002/imhj.21427>
- Bernard, K., Dozier, M., Bick, J., & Gordon, M. K. (2015). Intervening to enhance cortisol regulation among children at risk for neglect: Results of a randomized clinical trial. *Development and Psychopathology*, 27(3), 829-841. <https://doi.org/10.1017/S095457941400073X>
- Bernard, K., Dozier, M., Bick, J., Lewis-Morrarty, E., Lindhiem, O., & Carlson, E. (2012). Enhancing attachment organization among maltreated children: Results of a randomized clinical trial. *Child Development*, 83(2), 623-636. <https://doi.org/10.1111/j.1467-8624.2011.01712.x>
- Bernard, K., Hostinar, C. E., & Dozier, M. (2015). Intervention effects on diurnal cortisol rhythms of child protective services-referred infants in early childhood: Preschool follow-up results of a randomized clinical trial. *JAMA Pediatrics*, 169(2), 112-119. <https://doi.org/10.1001/jamapediatrics.2014.2369>
- Bernard, K., Lee, A. H., & Dozier, M. (2017). Effects of the ABC intervention on foster children's receptive vocabulary: Follow-up results from a randomized clinical trial. *Child Maltreatment*, 22(2), 174-179. <https://doi.org/10.1177/1077559517691126>
- Bernard, K., Meade, E. B., & Dozier, M. (2013). Parental synchrony and nurturance as targets in an attachment based intervention: Building upon Mary Ainsworth's insights about mother-infant interaction. *Attachment & Human Development*, 15(5-6), 507-523. <https://doi.org/10.1080/14616734.2013.820920>
- Bernard, K., Nissim, G., Vaccaro, S., Harris, J. L., & Lindhiem, O. (2018). Association between maternal depression and maternal sensitivity from birth to 12 months: A meta-analysis. *Attachment & Human Development*, 20(6), 578-599. <https://doi.org/10.1080/14616734.2018.1430839>

- Bernard, K., Simons, R., & Dozier, M. (2015). Effects of an attachment-based intervention on child protective services-referred mothers' event-related potentials to children's emotions. *Child Development, 86*(6), 1673-1684. <https://doi.org/10.1111/cdev.12418>
- Bernard, K., Zwerling, J., & Dozier, M. (2015). Effects of early adversity on young children's diurnal cortisol rhythms and externalizing behavior. *Developmental Psychobiology, 57*(8), 935-947. <https://doi.org/10.1002/dev.21324>
- Bernheimer, L. P., & Keogh, B. K. (1988). Stability of cognitive performance of children with developmental delays. *American Journal on Mental Retardation, 92*(6), 539-542.
- Bick, J., & Dozier, M. (2013). The effectiveness of an attachment-based intervention in promoting foster mothers' sensitivity toward foster infants. *Infant Mental Health Journal, 34*(2), 95-103. <https://doi.org/10.1002/imhj.21373>
- Bick, J., Palmwood, E. N., Zajac, L., Simons, R., & Dozier, M. (2019). Early parenting intervention and adverse family environments affect neural function in middle childhood. *Biological Psychiatry, 85*(4), 326-335. <https://doi.org/10.1016/j.biopsych.2018.09.020>
- Biringen, Z., Robinson, J. L., & Emde, R. N. (2000a). Appendix A: The Emotional Availability Scales (2nd edition; an abridged infancy/early childhood version). *Attachment & Human Development, 2*(2), 251-255. <https://doi.org/10.1080/14616730050085617>
- Biringen, Z., Robinson, J. L., & Emde, R. N. (2000b). Appendix B: The Emotional Availability Scales (3rd edition; an abridged infancy/early childhood version). *Attachment & Human Development, 2*(2), 256-270. <https://doi.org/10.1080/14616730050085626>
- Biswas, S., Moghaddam, N., & Tickle, A. (2015). What are the factors that influence parental stress when caring for a child with an intellectual disability? A critical literature review. *International Journal of Developmental Disabilities, 61*(3), 127-146. <https://doi.org/10.1179/2047387714y.0000000043>
- Blacher, J. (1984). Attachment and severely handicapped children: Implications for intervention. *Journal of Developmental and Behavioral Pediatrics, 5*(4), 178-183.
- Blacher, J., & Baker, B. L. (2007). Positive impact of intellectual disability on families. *American Journal on Mental Retardation, 112*(5), 330-348. [https://doi.org/10.1352/0895-8017\(2007\)112\[0330:PIOIDO\]2.0.CO;2](https://doi.org/10.1352/0895-8017(2007)112[0330:PIOIDO]2.0.CO;2)
- Blizzard, A. M., Barroso, N. E., Ramos, F. G., Graziano, P. A., & Bagner, D. M. (2018). Behavioral parent training in infancy: What about the parent-infant relationship?. *Journal of Clinical Child and Adolescent Psychology, 47*(Supplement 1), S341-S353. <https://doi.org/10.1080/15374416.2017.1310045>

- Bloomfield, L., & Kendall, S. (2012). Parenting self-efficacy, parenting stress and child behaviour before and after a parenting programme. *Primary Health Care Research and Development*, 13(4), 364-372. <https://doi.org/10.1017/S1463423612000060>
- Boland, R., Verduin, M. L., & Ruiz, P. (2021). *Kaplan & Sadock's synopsis of psychiatry: Behavioral sciences/clinical psychiatry* (12th edition). Wolters Kluwer.
- Booth, P. B., & Jernberg, A. M. (2010). *Theraplay: Helping parents and children build better relationships through attachment-based play* (3rd edition). Jossey-Bass.
- Booth, A. T., Macdonald, J. A., & Youssef, G. J. (2018). Contextual stress and maternal sensitivity: A meta-analytic review of stress associations with the Maternal Behavior Q-sort in observational studies. *Developmental Review*, 48, 145-177. <https://doi.org/10.1016/j.dr.2018.02.002>
- Booth-LaForce, C., Oxford, M. L., O'Leary, R., & Buchwald, D. S. (2022). Promoting First Relationships for primary caregivers and toddlers in a native community: A randomized controlled trial. *Prevention Science*, Advance Online Publication. <https://doi.org/10.1007/s11121-022-01415-y>
- Borelli, J. L., Kerr, M. L., Smiley, P. A., Rasmussen, H. F., Hecht, H. K., & Campos, B. (2022). Relational Savoring intervention: Positive impacts for mothers and evidence of cultural compatibility for Latinas. *Emotion*, Advance Online Publication. <https://doi.org/10.1037/emo0001102>
- Bowlby, J. (1952). *Maternal care and mental health: A report prepared on behalf of the World Health Organization as a contribution to the United Nations programme for the welfare of homeless children* (2nd edition). WHO. <https://iris.who.int/handle/10665/40724>
- Bowlby, J. (1969). *Attachment and loss: Volume 1. Attachment*. Basic Books.
- Bowlby, J. (1973). *Attachment and loss: Volume 2. Separation anxiety and anger*. Basic Books.
- Brady, S. R. (2016). The delphi method. In L. A. Jason & D. S. Glenwick (Eds.), *Handbook of methodological approaches to community-based research: Qualitative, quantitative, and mixed methods* (pp. 61-67). Oxford University Press.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. <https://doi.org/10.1191/1478088706qp063oa>
- Braun, V., & Clarke, V. (2013). *Successful qualitative research: A practical guide for beginners*. Sage.
- Braun, V., & Clarke, V. (2022). *Thematic analysis: A practical guide*. Sage.
- Bretherton, I. (1992). The origins of attachment theory: John Bowlby and Mary Ainsworth. *Developmental Psychology*, 28(5), 759-775. <https://doi.org/10.1037/0012-1649.28.5.759>

- Bridges, F. A., & Cicchetti, D. (1982). Mothers' ratings of the temperament characteristics of Down syndrome infants. *Developmental Psychology*, 18(2), 238-244. <https://doi.org/10.1037/0012-1649.18.2.238>
- Broesch, T., Rochat, P., Olah, K., Broesch, J., & Henrich, J. (2016). Similarities and differences in maternal responsiveness in three societies: Evidence from Fiji, Kenya, and the United States. *Child Development*, 87(3), 700-711. <https://doi.org/10.1111/cdev.12501>
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Harvard University Press.
- Brown, F. L., de Graaff, A. M., Annan, J., & Betancourt, T. S. (2017). Annual research review: Breaking cycles of violence - a systematic review and common practice elements analysis of psychosocial interventions for children and youth affected by armed conflict. *Journal of Child Psychology and Psychiatry*, 58(4), 507-524. <https://doi.org/10.1111/jcpp.12671>
- Brown, M. A., McIntyre, L. L., Crnic, K. A., Baker, B. L., & Blacher, J. (2011). Preschool children with and without developmental delay: Risk, parenting, and child demandingness. *Journal of Mental Health Research in Intellectual Disabilities*, 4(3), 206-226. <https://doi.org/10.1080/19315864.2011.596990>
- Bryman, A. (2006). Integrating quantitative and qualitative research: How is it done?. *Qualitative Research*, 6(1), 97-113. <https://doi.org/10.1177/1468794106058877>
- Buckley, N., Glasson, E. J., Chen, W., Epstein, A., Leonard, H., Skoss, R., Jacoby, P., Blackmore, A. M., Srinivasjois, R., Bourke, J., Sanders, R. J., & Downs, J. (2020). Prevalence estimates of mental health problems in children and adolescents with intellectual disability: A systematic review and meta-analysis. *Australian and New Zealand Journal of Psychiatry*, 54(10), 970-984. <https://doi.org/10.1177/0004867420924101>
- Bulté, I., & Onghena, P. (2009). Randomization tests for multiple-baseline designs: An extension of the SCRT-R package. *Behavioral Research Methods*, 41(2), 477-485. <https://doi.org/10.3758/BRM.41.2.477>
- Bulté, I., & Onghena, P. (2012). When the truth hits you between the eyes. *Methodology: European Journal of Research Methods for the Behavioral and Social Sciences*, 8(3), 104-114. <https://doi.org/10.1027/1614-2241/a000042>
- Burke, M. M., & Heller, T. (2017). Disparities in unmet service needs among adults with intellectual and other developmental disabilities. *Journal of Applied Research in Intellectual Disabilities*, 30(5), 898-910. <https://doi.org/10.1111/jar.12282>

- Buthelezi, S., & Mawila, D. (2024). There is always sorrow: Risk factors faced by parents of children presenting with severe intellectual disabilities. *Journal of Intellectual Disability - Diagnosis and Treatment*, 12(1), 12-21. <https://doi.org/10.6000/2292-2598.2024.12.01.2>
- Caballero, A., & Connell, J. E. (2010). Evaluation of the effects of social cue cards for preschool age children with autism spectrum disorders (ASD). *Journal of Behavior Assessment and Intervention in Children*, 1(1), 25-42. <https://doi.org/10.1037/h0100358>
- Cadman, T., Diamond, P. R., & Fearon, P. (2018). Reassessing the validity of the Attachment Q-sort: An updated meta-analysis. *Infant and Child Development*, 27(1), Article e2034. <https://doi.org/10.1002/icd.2034>
- Callus, A.-M., Bonello, I., Mifsud, C., & Fenech, R. (2019). Overprotection in the lives of people with intellectual disability in Malta: Knowing what is control and what is enabling support. *Disability & Society*, 34(3), 345-367. <https://doi.org/10.1080/09687599.2018.1547186>
- Campbell, S. B., Matestic, P., von Stauffenberg, C., Mohan, R., & Kirchner, T. (2007). Trajectories of maternal depressive symptoms, maternal sensitivity, and children's functioning at school entry. *Developmental Psychology*, 43(5), 1202-1215. <https://doi.org/10.1037/0012-1649.43.5.1202>
- Candela, A. (2019). Exploring the function of member checking. *The Qualitative Report*, 24(3), 619-628. <https://doi.org/10.46743/2160-3715/2019.3726>
- Cano-Lopez, I., & Gonzalez-Bono, E. (2019). Cortisol levels and seizures in adults with epilepsy: A systematic review. *Neuroscience and Biobehavioral Reviews*, 103, 216-229. <https://doi.org/10.1016/j.neubiorev.2019.05.023>
- Capri, C., Abrahams, L., McKenzie, J., Coetzee, O., Mkabile, S., Saptouw, M., Hooper, A., Smith, P., Adnams, C., & Swartz, L. (2018). Intellectual disability rights and inclusive citizenship in South Africa: What can a scoping review tell us?. *African Journal of Disability*, 7, Article 396. <https://doi.org/10.4102/ajod.v7i0.396>
- Carmody, K. A., Murray, K. J., Williams, B., Frost, A., Coleman, C., & Sullivan, K. (2023). Enhancing early parenting in the community: Preliminary results from a learning collaborative approach to scale up Attachment and Biobehavioral Catch-up. *Infant Mental Health Journal*, 44(6), 752-766. <https://doi.org/10.1002/imhj.22081>
- Caron, E. B., Bernard, K., & Dozier, M. (2018). In vivo feedback predicts parent behavior change in the Attachment and Biobehavioral Catch-up intervention. *Journal of Clinical Child & Adolescent Psychology*, 47(Supplement 1), s35-s46. <https://doi.org/10.1080/15374416.2016.1141359>

- Caron, E. B., Weston-Lee, P., Haggerty, D., & Dozier, M. (2016). Community implementation outcomes of Attachment and Biobehavioral Catch-up. *Child Abuse & Neglect*, 53, 128-137. <https://doi.org/10.1016/j.chiabu.2015.11.010>
- Carrera, P., Benito-Gomez, M., Zablah, F. M., Schein, S. S., Costello, A. H., Roben, C. K. P., & Dozier, M. (2022). Adapting with sense: An update on culturally responsive efforts of the Attachment & Biobehavioral Catch-up intervention with Spanish-speaking, Latinx families. *Global Implementation Research and Applications*, 2(3), 243-248. <https://doi.org/10.1007/s43477-022-00049-0>
- Carrera, P., Zablah, F. M., de la Rosa, Y., & Benito-Gomez, M. (2024). Scaling up Attachment and Biobehavioral Catch-up with Latine families: Implementation processes and effectiveness. *Infant Mental Health Journal*, Advance online publication. <https://doi.org/10.1002/imhj.22141>
- Carroll, C., Patterson, M., Wood, S., Booth, A., Rick, J., & Balain, S. (2007). A conceptual framework for implementation fidelity. *Implementation Science*, 2, Article 40. <https://doi.org/10.1186/1748-5908-2-40>
- Casonato, M., Nazzari, S., & Frigerio, A. (2017). Feasibility and efficacy of an attachment-based intervention in a maltreatment sample in residential care: A pilot study. *Clinical Child Psychology and Psychiatry*, 22(4), 561-571. <https://doi.org/10.1177/1359104517719115>
- Chacko, A., Anderson, L., Wymbs, B. T., & Wymbs, F. A. (2013). Parent-endorsed reasons for not completing homework in group-based behavioural parent training for high-risk families of youth with ADHD. *Behaviour Change*, 30(4), 262-272. <https://doi.org/10.1017/bec.2013.25>
- Chauke, T., Poggenpoel, M., Myburgh, C. P. H., & Ntshingila, N. (2021). Experiences of parents of an adolescent with intellectual disability in Giyani, Limpopo province, South Africa. *Health SA*, 26, Article 1538. <https://doi.org/10.4102/hsag.v26i0.1538>
- Chorpita, B. F., Becker, K. D., & Daleiden, E. L. (2007). Understanding the common elements of evidence-based practice: Misconceptions and clinical examples. *Journal of the American Academy of Child and Adolescent Psychiatry*, 46(5), 647-652. <https://doi.org/10.1097/chi.0b013e318033ff71>
- Chorpita, B. F., & Daleiden, E. L. (2009). Mapping evidence-based treatments for children and adolescents: Application of the distillation and matching model to 615 treatments from 322 randomized trials. *Journal of Consulting and Clinical Psychology*, 77(3), 566-579. <https://doi.org/10.1037/a0014565>
- Chorpita, B. F., Daleiden, E. L., & Weisz, J. R. (2005). Identifying and selecting the common elements of evidence based interventions: A distillation and matching model. *Mental Health Services Research*, 7(1), 5-20. <https://doi.org/10.1007/s11020-005-1962-6>

- Chorpita, B. F., Rotheram-Borus, M. J., Daleiden, E. L., Bernstein, A., Cromley, T., Swendeman, D., & Regan, J. (2011). The old solutions are the new problem: How do we better use what we already know about reducing the burden of mental illness?. *Perspectives on Psychological Science*, 6(5), 493-497. <https://doi.org/10.1177/1745691611418240>
- Christian, A. S., Niec, L. N., Acevedo-Polakovich, I. D., & Kassab, V. A. (2014). Dissemination of an evidence-based parenting program: Clinician perspectives on training and implementation. *Children and Youth Services Review*, 43, 8-17. <https://doi.org/10.1016/j.childyouth.2014.04.005>
- Christianson, A. L., Zwane, M. E., Manga, P., Rosen, E., Venter, A., Downs, D., & Kromberg, J. G. R. (2002). Children with intellectual disability in rural South Africa: Prevalence and associated disability. *Journal of Intellectual Disability Research*, 46(2), 179-186. <https://doi.org/10.1046/j.1365-2788.2002.00390.x>
- Cicchetti, D., Rogosch, F. A., & Toth, S. L. (2006). Fostering secure attachment in infants in maltreating families through preventive interventions. *Development and Psychopathology*, 18(3), 623-649. <https://doi.org/10.1017/S0954579406060329>
- Cicchetti, D., & Serafica, F. C. (1981). Interplay among behavioral systems: Illustrations from the study of attachment, affiliation, and wariness in young-children with Downs-syndrome. *Developmental Psychology*, 17(1), 36-49. <https://doi.org/10.1037/0012-1649.17.1.36>
- Clarke, A. T., Marshall, S. A., Mautone, J. A., Soffer, S. L., Jones, H. A., Costigan, T. E., Patterson, A., Jawad, A. F., & Power, T. J. (2015). Parent attendance and homework adherence predict response to a family-school intervention for children with ADHD. *Journal of Clinical Child and Adolescent Psychology*, 44(1), 58-67. <https://doi.org/10.1080/15374416.2013.794697>
- Clincy, A. R., & Mills-Koonce, W. R. (2013). Trajectories of intrusive parenting during infancy and toddlerhood as predictors of rural, low-income African American boys' school-related outcomes. *American Journal of Orthopsychiatry*, 83(2-3), 194-206. <https://doi.org/10.1111/ajop.12028>
- Çolak, B., & Kahrman, İ. (2023). Evaluation of family burden and quality of life of parents with children with disability. *The American Journal of Family Therapy*, 51(2), 113-133. <https://doi.org/10.1080/01926187.2021.1941421>
- Colonnaesi, C., Draijer, E. M., Jan, J. M. S. G., Van der Bruggen, C. O., Bogels, S. M., & Noom, M. J. (2011). The relation between insecure attachment and child anxiety: A meta-analytic review. *Journal of Clinical Child and Adolescent Psychology*, 40(4), 630-645. <https://doi.org/10.1080/15374416.2011.581623>

- Cooke, J. E., Deneault, A. A., Devereux, C., Eirich, R., Fearon, R. M. P., & Madigan, S. (2022). Parental sensitivity and child behavioral problems: A meta-analytic review. *Child Development*, 93(5), 1231-1248. <https://doi.org/10.1111/cdev.13764>
- Cooke, J. E., Kochendorfer, L. B., Stuart-Parrigon, K. L., Koehn, A. J., & Kerns, K. A. (2019). Parent-child attachment and children's experience and regulation of emotion: A meta-analytic review. *Emotion*, 19(6), 1103-1126. <https://doi.org/10.1037/emo0000504>
- Cooke, J. E., Stuart-Parrigon, K. L., Movahed-Abtahi, M., Koehn, A. J., & Kerns, K. A. (2016). Children's emotion understanding and mother-child attachment: A meta-analysis. *Emotion*, 16(8), 1102-1106. <https://doi.org/10.1037/emo0000221>
- Cooper, P. J., Landman, M., Tomlinson, M., Molteno, C., Swartz, L., & Murray, L. (2002). Impact of a mother-infant intervention in an indigent peri-urban South African context: Pilot study. *The British Journal of Psychiatry*, 180(1), 76-81. <https://doi.org/http://dx.doi.org/10.1192/bjp.180.1.76>
- Cooper, S., Smiley, E., Morrison, J., Williamson, A., & Allan, L. (2007). Mental ill-health in adults with intellectual disabilities: Prevalence and associated factors. *The British Journal of Psychiatry*, 190(1), 27-35. <https://doi.org/10.1192/bjp.bp.106.022483>
- Cooper, P. J., Tomlinson, M., Swartz, L., Landman, M., Molteno, C., Stein, A., McPherson, K., & Murray, L. (2009). Improving quality of mother-infant relationship and infant attachment in socioeconomically deprived community in South Africa: Randomised controlled trial. *British Medical Journal*, 338, b974. <https://doi.org/10.1136/bmj.b974>
- Cooper, P. J., Tomlinson, M., Swartz, L., Woolgar, M., Murray, L., & Molteno, C. (1999). Post-partum depression and the mother-infant relationship in a South African peri-urban settlement. *The British Journal of Psychiatry*, 175(6), 554-558. <https://doi.org/http://dx.doi.org/10.1192/bjp.175.6.554>
- Costello, A. H., Roben, C. K. P., Schein, S. S., Blake, F., & Dozier, M. (2019). Monitoring provider fidelity of a parenting intervention using observational methods. *Professional Psychology: Research and Practice*, 50(4), 264-271. <https://doi.org/10.1037/pro0000236>
- Costello, A. H., Schein, S. S., Roben, C. K. P., & Dozier, M. (2021). Navigating the international dissemination of an evidence-based intervention: Scaling with fidelity and cultural-specificity. *Children and Youth Services Review*, 131, Article 106281. <https://doi.org/10.1016/j.chidyouth.2021.106281>
- Craig, R. J. (2005). The clinical process of interviewing. In R. J. Craig (Ed.), *Clinical and diagnostic interviewing* (2nd edition, pp. 21-41). Aronson.

- Craig, F., Operto, F. F., De Giacomo, A., Margari, L., Frolli, A., Conson, M., Ivagnes, S., Monaco, M., & Margari, F. (2016). Parenting stress among parents of children with neurodevelopmental disorders. *Psychiatry Research*, 242, 121-129. <https://doi.org/10.1016/j.psychres.2016.05.016>
- Craig, S. G., Dawson, A., Chen, S., Moretti, M. M., & Pepler, D. J. (2024). A systematic review of callous-unemotional traits and attachment in children and adolescents. *Attachment & Human Development*, Advance online publication. <https://doi.org/10.1080/14616734.2024.2349569>
- Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd edition). Sage.
- Currie, G., & Szabo, J. (2020). Social isolation and exclusion: The parents' experience of caring for children with rare neurodevelopmental disorders. *International Journal of Qualitative Studies on Health and Well-being*, 15(1), Article 1725362. <https://doi.org/10.1080/17482631.2020.1725362>
- Cuzzocrea, F., Murdaca, A. M., Costa, S., Filippello, P., & Larcán, R. (2015). Parental stress, coping strategies and social support in families of children with a disability. *Child Care in Practice*, 22(1), 3-19. <https://doi.org/10.1080/13575279.2015.1064357>
- Dagan, O., & Sagi-Schwartz, A. (2021). Early attachment networks to multiple caregivers: History, assessment models, and future research recommendations. *New Directions for Child and Adolescent Development*, 2021(180), 9-19. <https://doi.org/10.1002/cad.20446>
- Dagan, O., Schuengel, C., Verhage, M. L., Madigan, S., Roisman, G. I., Bernard, K., Duschinsky, R., Bakermans-Kranenburg, M., Bureau, J. F., Sagi-Schwartz, A., Eiden, R. D., Wong, M. S., Brown, G. L., Soares, I., Oosterman, M., Fearon, R. M. P., Steele, H., Martins, C., Aviezer, O., & The Collaboration on Attachment to Multiple Parents and Outcomes Synthesis. (2024). Configurations of mother-child and father-child attachment relationships as predictors of child language competence: An individual participant data meta-analysis. *Child Development*, 95(1), 50-69. <https://doi.org/10.1111/cdev.13998>
- Dagan, O., Schuengel, C., Verhage, M. L., Van, IJzendoorn, M. H., Sagi-Schwartz, A., Madigan, S., Duschinsky, R., Roisman, G. I., Bernard, K., Bakermans-Kranenburg, M., Bureau, J. F., Volling, B. L., Wong, M. S., Colonnese, C., Brown, G. L., Eiden, R. D., Fearon, R. M. P., Oosterman, M., Aviezer, O., Cummings, E. M., & The Collaboration on Attachment to Multiple Parents and Outcomes Synthesis. (2021). Configurations of mother-child and father-child attachment as predictors of internalizing and externalizing behavioral problems: An individual participant data (IPD) meta-analysis. *New Directions in Child and Adolescent Development*, 2021(180), 67-94. <https://doi.org/10.1002/cad.20450>

- Damen, S., Kef, S., Worm, M., Janssen, M. J., & Schuengel, C. (2011). Effects of video-feedback interaction training for professional caregivers of children and adults with visual and intellectual disabilities. *Journal of Intellectual Disability Research*, 55(6), 581-595. <https://doi.org/10.1111/j.1365-2788.2011.01414.x>
- Daniel, J. (2012). *Sampling essentials: Practical guidelines for making sampling choices*. Sage.
- Danko, C. M., Brown, T., Van Schoick, L., & Budd, K. S. (2016). Predictors and correlates of homework completion and treatment outcomes in parent-child interaction therapy. *Child & Youth Care Forum*, 45(3), 467-485. <https://doi.org/10.1007/s10566-015-9339-5>
- Dawson, N. (2022). Contextual ghosts in the nursery: Systemic influences on sensitive maternal responsiveness in a low to middle income country. *Psychoanalytic Social Work*, 29(1), 1-26. <https://doi.org/10.1080/15228878.2021.1878044>
- Dawson, N., Bain, K., & Mesman, J. (2018). Comparing two measures of maternal sensitivity: Goodness of fit with a South African cultural context. *Attachment & Human Development*. Advance online publication. <https://doi.org/10.1080/14616734.2018.1454056>
- Dawson, N., Bain, K., & Mesman, J. (2021). Observing maternal sensitivity in a South African township: An exploratory study into behavioral features using different measures. *Attachment & Human Development*, 23(2), 150-163. <https://doi.org/10.1080/14616734.2020.1828531>
- DeCandia Vitoria, A. (2021). Experiential supervision: Healing imposter phenomenon from the inside out. *The Clinical Supervisor*, 40(2), 200-217. <https://doi.org/10.1080/07325223.2020.1830215>
- Deans, C. L. (2020). Maternal sensitivity, its relationship with child outcomes, and interventions that address it: A systematic literature review. *Early Child Development and Care*, 190(2), 252-275. <https://doi.org/10.1080/03004430.2018.1465415>
- DeFalco, S., Emer, A., Martini, L., Rigo, P., Pruner, S., & Venuti, P. (2014). Predictors of mother-child interaction quality and child attachment security in at-risk families. *Frontiers in Psychology*, 5, Article 898. <https://doi.org/10.3389/fpsyg.2014.00898>
- DeGaetano, K., Saviola, D., Brunetti, D., & De Tanti, A. (2022). The importance of assessing parent stress in families with children with severe neuromotor and intellectual disability - a pilot study. *Applied Neuropsychology: Child*, 11(4), 804-810. <https://doi.org/10.1080/21622965.2021.1971525>
- Dehghani, A., Malekpour, M., Abedi, A., & Amiri, S. (2014). The efficacy of Circle of Security on attachment and well-being in preschool children. *Management Science Letters*, 4, 607-612. <https://doi.org/10.5267/j.msl.2013.12.031>

- DeJonckheere, M., & Vaughn, L. M. (2019). Semistructured interviewing in primary care research: A balance of relationship and rigour. *Family Medicine and Community Health*, 7(2), Article e000057. <https://doi.org/10.1136/fmch-2018-000057>
- Dempsey, I., Keen, D., Pennell, D., O'Reilly, J., & Neilands, J. (2009). Parent stress, parenting competence and family-centered support to young children with an intellectual or developmental disability. *Research in Developmental Disabilities*, 30(3), 558-566. <https://doi.org/10.1016/j.ridd.2008.08.005>
- Deitz, R. L., Hellerstein, L. H., St George, S. M., Palazuelos, D., & Schimek, T. E. (2020). A qualitative study of social connectedness and its relationship to community health programs in rural Chiapas, Mexico. *BMC Public Health*, 20(1), Article 852. <https://doi.org/10.1186/s12889-020-09008-6>
- Deneault, A. A., Bakermans-Kranenburg, M. J., Groh, A. M., Fearon, P. R. M., & Madigan, S. (2021). Child-father attachment in early childhood and behavior problems: A meta-analysis. *New Directions for Child and Adolescent Development*, 2021(180), 43-66. <https://doi.org/10.1002/cad.20434>
- Deneault, A. A., Cabrera, N. J., & Bureau, J. F. (2022). A meta-analysis on observed paternal and maternal sensitivity. *Child Development*, 93(6), 1631-1648. <https://doi.org/10.1111/cdev.13832>
- Deneault, A. A., Hammond, S. I., & Madigan, S. (2023). A meta-analysis of child-parent attachment in early childhood and prosociality. *Developmental Psychology*, 59(2), 236-255. <https://doi.org/10.1037/dev0001484>
- Department of Basic Education. (2015). *Report on the implementation of education white paper 6 on inclusive education: An overview for the period: 2013-2015*. DBE. <https://static.pmg.org.za/160308overview.pdf>
- Department of Education. (2001). *Education white paper 6: Special needs education—building an inclusive education and training system*. DoE. https://www.gov.za/sites/default/files/gcis_document/201409/educ61.pdf
- Department of Social Development. (2009). *Integrated national strategy on support services to children with disabilities*. DSD.
- Department of Social Development. (2015). *National integrated early childhood development policy*. DSD. https://www.gov.za/sites/default/files/gcis_document/201610/national-integrated-eecd-policy-web-version-final-01-08-2016a.pdf

- Department of Women, Youth and Persons with Disabilities. (2022). *Annual progress report on implementation of the white paper on the rights of persons with disabilities: 2017-2020*. DWYPD. https://www.gov.za/sites/default/files/gcis_document/202211/47526gon2753.pdf
- De Sas Kropiwnicki, Z. O., Elphick, J., & Elphick, R. (2014). Standing by themselves: Caregivers' strategies to ensure the right to education for children with disabilities in Orange Farm, South Africa. *Childhood*, 21(3), 354-368. <https://doi.org/10.1177/0907568214526263>
- Dew, A., Collings, S., Dowse, L., Meltzer, A., & Smith, L. (2019). 'I don't feel like I'm in this on my own': Peer support for mothers of children with intellectual disability and challenging behaviour. *Journal of Intellectual Disabilities*, 23(3), 344-358. <https://doi.org/10.1177/1744629519843012>
- De Wolff, M. S., & Van IJzendoorn, M. H. (1997). Sensitivity and attachment: A meta-analysis on parental antecedents of infant attachment. *Child Development*, 68(4), 571-591. <https://doi.org/10.1111/j.1467-8624.1997.tb04218.x>
- Di Renzo, M., Guerriero, V., Zavattini, G. C., Petrillo, M., Racinaro, L., & Bianchi di Castelbianco, F. (2020). Parental attunement, insightfulness, and acceptance of child diagnosis in parents of children with autism: Clinical implications. *Frontiers in Psychology*, 11, Article 1849. <https://doi.org/10.3389/fpsyg.2020.01849>
- Diamond, L. M. (2015). Stress and attachment. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and research: New directions and emerging themes* (pp. 97-123). Guilford Press.
- Dickson, R., Cherry, M. G., & Boland, A. (2014). Carrying out a systematic review as a master's thesis. In M. Boland, M. G. Cherry, & R. Dickson (Eds.), *Doing a systematic review: A student's guide* (pp. 1-16). Sage.
- Docrat, S., Besada, D., Cleary, S., Daviaud, E., & Lund, C. (2019). Mental health system costs, resources and constraints in South Africa: A national survey. *Health Policy and Planning*, 34(9), 706-719. <https://doi.org/10.1093/heapol/czz085>
- Dolev, S. (2006). *Insightfulness and the reaction to diagnosis in mothers of children with autism: Associations with maternal sensitivity* [Unpublished doctoral thesis]. University of Haifa.
- Douglas, T., Redley, B., & Ottmann, G. (2016). The first year: The support needs of parents caring for a child with an intellectual disability. *Journal of Advanced Nursing*, 72(11), 2738-2749. <https://doi.org/https://doi.org/10.1111/jan.13056>
- Dozier, M., & Bernard, K. (2017). Attachment and Biobehavioral Catch-up: Addressing the needs of infants and toddlers exposed to inadequate or problematic caregiving. *Current Opinion in Psychology*, 15, 111-117. <https://doi.org/https://doi.org/10.1016/j.copsyc.2017.03.003>

- Dozier, M., & Bernard, K. (2019). *Coaching parents of vulnerable infants: The Attachment and Biobehavioral Catch-up approach*. Guilford Press.
- Dozier, M., & Bernard, K. (2023). Intervening early: Socioemotional interventions targeting the parent-infant relationship. *Annual Review of Developmental Psychology*, 5(1), 3.1-3.21. <https://doi.org/10.1146/annurev-devpsych-120621-043254>
- Dozier, M., Bernard, K., Stovall-McClough, K. C., Albus, K., Bick, J., Caron, E. B., Higley, E., Velez, C., Roben, C., Costello, A., & Schein, S. (2016). *Attachment and Biobehavioral Catch-up for infants who have experienced early adversity (ABC-I): Intervention manual*. Authors.
- Dozier, M., Bick, J., & Bernard, K. (2011). Attachment-based treatment for young, vulnerable children. In J. D. Osofsky (Ed.), *Clinical work with traumatized young children* (pp. 75-95). Guilford Press.
- Dozier, M., Lindheim, O., Lewis, E., Bick, J., Bernard, K., & Peloso, E. (2009). Effects of a foster parent training program on young children's attachment behaviors: Preliminary evidence from a randomized clinical trial. *Child and Adolescent Social Work Journal*, 26(4), 321-332. <https://doi.org/10.1007/s10560-009-0165-1>
- Dozier, M., Manni, M., Gordon, M. K., Peloso, E., Gunnar, M. R., Stovall-McClough, K. C., Eldreth, D., & Levine, S. (2006). Foster children's diurnal production of cortisol: An exploratory study. *Child Maltreatment*, 11(2), 189-197. <https://doi.org/10.1177/1077559505285779>
- Dozier, M., Peloso, E., Lewis, E., Laurenceau, J., & Levine, S. (2008). Effects of an attachment-based intervention on the cortisol production of infants and toddlers in foster care. *Development and Psychopathology*, 20(3), 845-859. <https://doi.org/10.1017/S0954579408000400>
- Dozier, M., Roben, C. K. P., Caron, E., Hoyer, J., & Bernard, K. (2018). Attachment and Biobehavioral Catch-up: An evidence-based intervention for vulnerable infants and their families. *Psychotherapy Research*, 28(1), 18-29. <https://doi.org/10.1080/10503307.2016.1229873>
- du Toit, D., & Mohamed, A. R. (2023). Theraplay for children in South Africa: Therapists' considerations for its use in the local context. In Z. G. Knight (Ed.), *The training and practice of psychotherapy in post-apartheid South Africa: Case studies, controversies and contemplations* (pp. 55-76). Nova Science Publishers.
- Dubois-Comtois, K., Cyr, C., Tarabulsy, G. M., St-Laurent, D., Bernier, A., & Moss, E. (2017). Testing the limits: Extending attachment-based intervention effects to infant cognitive outcome and parental stress. *Development and Psychopathology*, 29(2), 565-574. <https://doi.org/10.1017/s0954579417000189>

- Dugmore, N. (2011). The development of parent-infant/child psychotherapy in South Africa: A review of the history from infancy towards maturity. *Journal of Child and Adolescent Mental Health*, 23(2), 75-90. <https://doi.org/10.2989/17280583.2011.634547>
- Dugmore, N. (2012). The development of psychoanalytic parent-infant/child psychotherapy in South Africa: Adaptive responses to contextual challenges. *Journal of Child and Adolescent Mental Health*, 24(1), 73-88. <https://doi.org/10.2989/17280583.2011.620963>
- Duma, V. V., Tshabalala, N., & Mji, G. (2021). The black hole of dealing with a disability diagnosis: Views of South African rural parents. *African Journal of Disability*, 10, Article 951. <https://doi.org/10.4102/ajod.v10i0.951>
- Duppong Hurley, K., Lambert, M. C., Gross, T. J., Thompson, R. W., & Farmer, E. M. Z. (2017). The role of therapeutic alliance and fidelity in predicting youth outcomes during therapeutic residential care. *Journal of Emotional and Behavioral Disorders*, 25(1), 37-45. <https://doi.org/10.1177/1063426616686756>
- Durà-Vilà, G., Dein, S., & Hodes, M. (2010). Children with intellectual disability: A gain not a loss: Parental beliefs and family life. *Clinical Child Psychology and Psychiatry*, 15(2), 171-184. <https://doi.org/10.1177/1359104509341009>
- Duschinsky, R. (2015). The emergence of the disorganized/disoriented (D) attachment classification, 1979-1982. *History of Psychology*, 18(1), 32-46. <https://doi.org/10.1037/a0038524>
- Dusenbury, L., Brannigan, R., Falco, M., & Hansen, W. B. (2003). A review of research on fidelity of implementation: Implications for drug abuse prevention in school settings. *Health Education Research*, 18(2), 237-256. <https://doi.org/10.1093/her/18.2.237>
- Easterbrooks, M. A., Bureau, J. F., & Lyons-Ruth, K. (2012). Developmental correlates and predictors of emotional availability in mother-child interaction: A longitudinal study from infancy to middle childhood. *Development and Psychopathology*, 24(1), 65-78. <https://doi.org/10.1017/S0954579411000666>
- Edmonds, W., & Kennedy, T. (2017). *An applied guide to research designs*. Sage. <https://doi.org/doi.org/10.4135/9781071802779>
- Edwards, E. P., Eiden, R. D., & Leonard, K. E. (2006). Behavior problems in 18- to 36-month-old children of alcoholic fathers: Secure mother-infant attachment as a protective factor. *Development and Psychopathology*, 18(2), 395-407. <https://doi.org/10.1017/S0954579406060214>

- Egeland, B., Weinfeld, N. S., Bosquet, M., & Cheng, V. K. (2000). Remembering, repeating, and working through: Lessons from attachment-based interventions. In J. D. Osofsky & H. E. Fitzgerald (Eds.), *Handbook of infant mental health: Volume 4* (pp. 35-89). Wiley.
- Einfeld, S. L., Ellis, L. A., & Emerson, E. (2011). Comorbidity of intellectual disability and mental disorder in children and adolescents: A systematic review. *Journal of Intellectual & Developmental Disability, 36*(2), 137-143. <https://doi.org/10.1080/13668250.2011.572548>
- Ekrami, F., Mohammad-Alizadeh Charandabi, S., Babapour Kheiroddin, J., & Mirghafourvand, M. (2020). Effect of counseling on maternal-fetal attachment in women with unplanned pregnancy: A randomized controlled trial. *Journal of Reproductive and Infant Psychology, 38*(2), 151-165. <https://doi.org/10.1080/02646838.2019.1636943>
- Elgeddawy, M., & Abouraia, M. (2024). Pragmatism as a research paradigm. *Proceedings of the 23rd European Conference on Research Methodology for Business and Management Studies, 23*(1), 71-74. <https://doi.org/10.34190/ecrm.23.1.2444>
- Engell, T., Kirkoen, B., Hammerstrom, K. T., Kornor, H., Ludvigsen, K. H., & Hagen, K. A. (2020). Common elements of practice, process and implementation in out-of-school-time academic interventions for at-risk children: A systematic review. *Prevention Science, 21*(4), 545-556. <https://doi.org/10.1007/s11121-020-01091-w>
- English, R., Peer, N., Honikman, S., Tugendhaft, A., & Hofman, K. J. (2017). ‘First 1000 days’ health interventions in low- and middle-income countries: Alignment of South African policies with high-quality evidence. *Global Health Action, 10*(1), Article 1340396. <https://doi.org/10.1080/16549716.2017.1340396>
- Ertl, M. M., Mann-Saumier, M., Martin, R. A., Graves, D. F., & Altarriba, J. (2019). The impossibility of client-therapist “match”: Implications and future directions for multicultural competency. *Journal of Mental Health Counseling, 41*(4), 312-326. <https://doi.org/10.17744/mehc.41.4.03>
- Ettenberger, M., Bieleninik, L., Epstein, S., & Elefant, C. (2021). Defining attachment and bonding: Overlaps, differences and implications for music therapy clinical practice and research in the neonatal intensive care unit (NICU). *International Journal of Environmental Research and Public Health, 18*(4), Article 1733. <https://doi.org/10.3390/ijerph18041733>
- Facompré, C. R., Bernard, K., & Waters, T. E. A. (2018). Effectiveness of interventions in preventing disorganized attachment: A meta-analysis. *Development and Psychopathology, 30*(1), 1-11. <https://doi.org/10.1017/S0954579417000426>

- Farmer, A. Y., & Lee, S. K. (2011). The effects of parenting stress, perceived mastery, and maternal depression on parent-child interaction. *Journal of Social Service Research*, 37(5), 516-525. <https://doi.org/10.1080/01488376.2011.607367>
- Fearon, R. P., Bakermans-Kranenburg, M. J., Van IJzendoorn, M. H., Lapsley, A. M., & Roisman, G. I. (2010). The significance of insecure attachment and disorganization in the development of children's externalizing behavior: A meta-analytic study. *Child Development*, 81(2), 435-456. <https://doi.org/10.1111/j.1467-8624.2009.01405.x>
- Fearon, R. M. P., & Belsky, J. (2016). Precursors of attachment security. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (3rd edition, pp. 291-313). Guilford Press.
- Fekedulegn, D. B., Andrew, M. E., Burchfiel, C. M., Violanti, J. M., Hartley, T. A., Charles, L. E., & Miller, D. B. (2007). Area under the curve and other summary indicators of repeated waking cortisol measurements. *Psychosomatic Medicine*, 69(7), 651-659. <https://doi.org/10.1097/PSY.0b013e31814c405c>
- Feniger-Schaal, R., & Joels, T. (2018). Attachment quality of children with ID and its link to maternal sensitivity and structuring. *Research in Developmental Disabilities*, 76, 56-64. <https://doi.org/10.1016/j.ridd.2018.03.004>
- Feniger-Schaal, R., & Oppenheim, D. (2013). Resolution of the diagnosis and maternal sensitivity among mothers of children with intellectual disability. *Research in Developmental Disabilities*, 34(1), 306-313. <https://doi.org/10.1016/j.ridd.2012.08.007>
- Feniger-Schaal, R., Oppenheim, D., & Koren-Karie, N. (2011, 31 March-2 April). *Maternal insightfulness and security of attachment among children with intellectual disability*. Poster presented at the annual meeting of the Society for Research in Child Development, Montreal, Canada.
- Feniger-Schaal, R., Oppenheim, D., & Koren-Karie, N. (2019). Parenting children with intellectual disability: Linking maternal insightfulness to sensitivity. *Journal of Intellectual Disability Research*, 63(10), 1285-1289. <https://doi.org/10.1111/jir.12614>
- Feniger-Schaal, R., Oppenheim, D., Koren-Karie, N., & Yirmiya, N. (2012). Parenting and intellectual disability: An attachment perspective. In J. A. Burack, R. M. Hodapp, G. Iarocci, & E. Zigler (Eds.), *The Oxford handbook of intellectual disability and development* (pp. 334-348). Oxford University Press.

- Fenning, R. M., Baker, J. K., Baker, B. L., & Crnic, K. A. (2014). Parent-child interaction over time in families of young children with borderline intellectual functioning. *Journal of Family Psychology*, 28(3), 326-335. <https://doi.org/10.1037/a0036537>
- Fernandez-Avalos, M. I., Perez-Marfil, M. N., Ferrer-Cascales, R., Cruz-Quintana, F., & Fernandez-Alcantara, M. (2021). Feeling of grief and loss in parental caregivers of adults diagnosed with intellectual disability. *Journal of Applied Research in Intellectual Disabilities*, 34(3), 712-723. <https://doi.org/10.1111/jar.12842>
- Fidler, D. J., Hodapp, R. M., & Dykens, E. M. (2000). Stress in families of young children with Down syndrome, Williams syndrome, and Smith-Magenis syndrome. *Early Education and Development*, 11(4), 395-406. https://doi.org/10.1207/s15566935eed1104_2
- Fieggen, K. J., Lambie, L. A., & Donald, K. A. (2019). Investigating developmental delay in South Africa: A pragmatic approach. *South African Medical Journal*, 109(4), 210-213. <https://doi.org/10.7196/SAMJ.2019.v109i4.13991>
- Fink, E., & de Rosnay, M. (2023). Examining links between affective empathy, cognitive empathy, and peer relationships at the transition to school. *Social Development*, 32(4), 1208-1226. <https://doi.org/10.1111/sode.12685>
- Flagg, A., Costello, A. H., Roben, C. K. P., & Dozier, M. (2022). Changes in provider fidelity after introducing a new model of intervention. *Current Psychology*, 41(6), 3906-3915. <https://doi.org/10.1007/s12144-020-00910-1>
- Fletcher, A. J., & Marchildon, G. P. (2014). Using the delphi method for qualitative, participatory action research in health leadership. *International Journal of Qualitative Methods*, 13(1), 1-18. <https://doi.org/10.1177/160940691401300101>
- Fletcher, H. K. (2016). Attachment relationships between parents and their children: The impact of ‘the loss of the healthy child’. In H. K. Fletcher, A. Flood, & D. J. Hare (Eds.), *Attachment in intellectual and developmental disability: A clinician’s guide to practice and research* (pp. 33-58). Wiley.
- Flierman, M., Koldewijn, K., Meijssen, D., van Wassenae-Leemhuis, A., Aarnoudse-Moens, C., van Schie, P., & Jeukens-Visser, M. (2016). Feasibility of a preventive parenting intervention for very preterm children at 18 months corrected age: A randomized pilot trial. *Journal of Pediatrics*, 176, 79-85. <https://doi.org/10.1016/j.jpeds.2016.05.071>
- Floyd, F. J., Harter, K. S. M., & Costigan, C. L. (2004). Family problem-solving with children who have mental retardation. *American Journal on Mental Retardation*, 109(6), 507-524. [https://doi.org/10.1352/0895-8017\(2004\)109<507:Fpwcwh>2.0.Co;2](https://doi.org/10.1352/0895-8017(2004)109<507:Fpwcwh>2.0.Co;2)

- Forrer, M. L., de Moor, M. H. M., Schuengel, C., & Oosterman, M. (2024). Early parenting precursors of child developmental outcomes: What counts beyond parental sensitivity?. *Parenting*, 24(2-3), 67-77. <https://doi.org/10.1080/15295192.2024.2310853>
- Fouche, C. B., Strydom, H., & Roestenburg, W. J. H. (2021). *Research at grass roots: For social sciences and human service professions* (5th edition). Van Schaik.
- Fourment, K., Espinoza, C., Ribeiro, A. C. L., & Mesman, J. (2022). Latin American attachment studies: A narrative review. *Infant Mental Health Journal*, 43(4), 653-676. <https://doi.org/10.1002/imhj.21995>
- Fourment, K., Noblega, M., Conde, G., Del Prado, J. N., & Mesman, J. (2021). Maternal sensitivity in rural Andean and Amazonian Peru. *Attachment & Human Development*, 23(2), 134-149. <https://doi.org/10.1080/14616734.2020.1828515>
- Fouts, H. N., & Lamb, M. E. (2005). Weaning emotional patterns among the Bofi foragers of central Africa: The role of maternal availability and sensitivity. In M. E. Lamb & B. S. Hewlett (Eds.), *Hunter-gatherer childhoods: Evolutionary, developmental, and cultural perspectives* (pp. 309-321). Transaction.
- Galimberti, C. A., Magri, F., Copello, F., Arbasino, C., Cravello, L., Casu, M., Patrone, V., & Murialdo, G. (2005). Seizure frequency and cortisol and dehydroepiandrosterone sulfate (DHEAS) levels in women with epilepsy receiving antiepileptic drug treatment. *Epilepsia*, 46(4), 517-523. <https://doi.org/10.1111/j.0013-9580.2005.59704.x>
- Gallo, K. P., Comer, J. S., & Barlow, D. H. (2013). Single-case experimental designs and small pilot trial designs. In J. S. Comer & P. C. Kendall (Eds.), *The Oxford handbook of research strategies for clinical psychology* (pp. 24-39). Oxford University Press.
- Ganiban, J., Barnett, D., & Cicchetti, D. (2000). Negative reactivity and attachment: Down syndrome's contribution to the attachment-temperament debate. *Development and Psychopathology*, 12(1), 1-21. <https://doi.org/10.1017/s0954579400001012>
- Garland, A. F., Hawley, K. M., Brookman-Frazee, L., & Hurlburt, M. S. (2008). Identifying common elements of evidence-based psychosocial treatments for children's disruptive behavior problems. *Journal of the American Academy of Child and Adolescent Psychiatry*, 47(5), 505-514. <https://doi.org/10.1097/CHI.0b013e31816765c2>
- Garnett, M., Bernard, K., Hoye, J., Zajac, L., & Dozier, M. (2020). Parental sensitivity mediates the sustained effect of Attachment and Biobehavioral Catch-up on cortisol in middle childhood: A randomized clinical trial. *Psychoneuroendocrinology*, 121, Article 104809. <https://doi.org/10.1016/j.psyneuen.2020.104809>

- Gast, D. L. (2010). Replication. In D. L. Gast (Ed.), *Single subject research methodology in behavioral sciences* (pp. 110-128). Routledge.
- Gast, D. L., & Spriggs, A. D. (2010). Visual analysis of graphical data. In D. L. Gast (Ed.), *Single subject research methodology in behavioral sciences* (pp. 199-233). Routledge.
- Gaudreau, C., Delgado, A., Confair-Jones, R., Flambaum, S., Hirsh-Pasek, K., Raby, K. L., Dozier, M., & Golinkoff, R. M. (2024). The unanticipated side effects of an attachment intervention: Parents ask higher quality questions. *Developmental Psychology*, 60(3), 456-466. <https://doi.org/10.1037/dev0001707>
- Gebeyehu, F., Sahile, A., & Ayalew, M. (2019). Burden, social support, and life satisfaction among caregivers of children with intellectual disability: The case of Felege Abay and Shembt primary schools, Bahir Dar, Ethiopia. *International Quarterly of Community Health Education*, 39(3), 147-153. <https://doi.org/10.1177/0272684X18819974>
- Gerlach, J., Fossel, J. M., Vierhaus, M., Sann, A., Eickhorst, A., Zimmermann, P., & Spangler, G. (2022). Family risk and early attachment development: The differential role of parental sensitivity. *Infant Mental Health Journal*, 43(2), 340-356. <https://doi.org/10.1002/imhj.21964>
- Gerstein, E. D., Crnic, K. A., Blacher, J., & Baker, B. L. (2009). Resilience and the course of daily parenting stress in families of young children with intellectual disabilities. *Journal of Intellectual Disability Research*, 53(12), 981-997. <https://doi.org/10.1111/j.1365-2788.2009.01220.x>
- Glidden, L. M. (2012). Family well-being and children with intellectual disability. In J. A. Burack, R. M. Hodapp, G. Iarocci, & E. Zigler (Eds.), *The Oxford handbook of intellectual disability and development* (pp. 303-317). Oxford University Press.
- Goldsmith, H. H., & Alansky, J. A. (1987). Maternal and infant temperamental predictors of attachment: A meta-analytic review. *Journal of Consulting & Clinical Psychology*, 55(6), 805-816. <https://doi.org/10.1037/0022-006X.55.6.805>
- Golinkoff, R. M., Can, D. D., Soderstrom, M., & Hirsh-Pasek, K. (2015). (Baby)talk to me. *Current Directions in Psychological Science*, 24(5), 339-344. <https://doi.org/10.1177/0963721415595345>
- Graham, M., Milanowski, A., & Miller, J. (2012). *Measuring and promoting inter-rater agreement of teacher and principal performance ratings*. Center for Educator Compensation Reform. <https://files.eric.ed.gov/fulltext/ED532068.pdf>
- Greeff, A. P., & Nolting, C. (2013). Resilience in families of children with developmental disabilities. *Family Systems & Health*, 31(4), 396-405. <https://doi.org/10.1037/a0035059>

- Green, J., Charman, T., Pickles, A., Wan, M. W., Elsabbagh, M., Slonims, V., Taylor, C., McNally, J., Booth, R., Gliga, T., Jones, E. J. H., Harrop, C., Bedford, R., & Johnson, M. H. (2015). Parent-mediated intervention versus no intervention for infants at high risk of autism: A parallel, single-blind, randomised trial. *The Lancet Psychiatry*, 2(2), 133-140. [https://doi.org/10.1016/s2215-0366\(14\)00091-1](https://doi.org/10.1016/s2215-0366(14)00091-1)
- Groh, A. M., Fearon, R. P., Bakermans-Kranenburg, M. J., Van IJzendoorn, M. H., Steele, R. D., & Roisman, G. I. (2014). The significance of attachment security for children's social competence with peers: A meta-analytic study. *Attachment & Human Development*, 16(2), 103-136. <https://doi.org/10.1080/14616734.2014.883636>
- Groh, A. M., Fearon, R. M. P., Van IJzendoorn, M. H., Bakermans-Kranenburg, M. J., & Roisman, G. I. (2017). Attachment in the early life course: Meta-analytic evidence for its role in socioemotional development. *Child Development Perspectives*, 11(1), 70-76. <https://doi.org/10.1111/cdep.12213>
- Groh, A. M., Roisman, G. I., Van IJzendoorn, M. H., Bakermans-Kranenburg, M. J., & Fearon, R. P. (2012). The significance of insecure and disorganized attachment for children's internalizing symptoms: A meta-analytic study. *Child Development*, 83(2), 591-610. <https://doi.org/10.1111/j.1467-8624.2011.01711.x>
- Grossmann, K. E., & Grossmann, K. (2021). Universal and culturally specific aspects of sensitive responsiveness to young children. *Attachment & Human Development*, 23(2), 231-238. <https://doi.org/10.1080/14616734.2020.1828550>
- Grube, W. A., & Liming, K. W. (2018). Attachment and Biobehavioral Catch-up: A systematic review. *Infant Mental Health Journal*, 39(6), 656-673. <https://doi.org/10.1002/imhj.21745>
- Grumi, S., Roberti, E., Parsanejad, S., Borgatti, R., & Provenzi, L. (2023). Video-feedback interventions to support parents of children with neurodevelopmental disabilities. In L. Provenzi, S. Grumi, & R. Borgatti (Eds.), *Family-centered care in childhood disability: Theory, research, practice* (pp. 193-211). Springer. https://doi.org/10.1007/978-3-031-34252-3_9
- Gunnar, M. R., Brodersen, L., Nachmias, M., Buss, K., & Rigatuso, J. (1996). Stress reactivity and attachment security. *Developmental Psychobiology*, 29(3), 191-204. [https://doi.org/10.1002/\(SICI\)1098-2302\(199604\)29:3<191::AID-DEV1>3.0.CO;2-M](https://doi.org/10.1002/(SICI)1098-2302(199604)29:3<191::AID-DEV1>3.0.CO;2-M)
- Gunnar, M. R., & Donzella, B. (2002). Social regulation of the cortisol levels in early human development. *Psychoneuroendocrinology*, 27(1), 199-220. [https://doi.org/http://dx.doi.org/10.1016/S0306-4530\(01\)00045-2](https://doi.org/http://dx.doi.org/10.1016/S0306-4530(01)00045-2)

- Gunnar, M. R., & White, B. P. (2001). Salivary cortisol measures in infant and child assessment. In L. T. Singer & P. S. Zeskind (Eds.), *Biobehavioral assessment of the infant* (pp. 167-189). Guilford Press.
- Gupta, V. B. (2007). Comparison of parenting stress in different developmental disabilities. *Journal of Developmental and Physical Disabilities*, 19(4), 417-425. <https://doi.org/10.1007/s10882-007-9060-x>
- Gupta, V. B., Mehrotra, P., & Mehrotra, N. (2012). Parental stress in raising a child with disabilities in India. *Disability, CBR & Inclusive Development*, 23(2), 41-52. <https://doi.org/10.5463/dcid.v23i2.119>
- Guralnick, M. J. (2001). A developmental systems model for early intervention. *Infants & Young Children*, 14(2), 1-18. https://journals.lww.com/iyjournal/Fulltext/2001/14020/A_Developmental_Systems_Model_for_Early.4.aspx
- Guralnick, M. J. (2017). Early intervention for children with intellectual disabilities: An update. *Journal of Applied Research in Intellectual Disabilities*, 30(2), 211-229. <https://doi.org/10.1111/jar.12233>
- Hadebe, N. N. (2024). Caregivers' experiences of raising children with intellectual disability in Umgeni municipality, Kwazulu-Natal, South Africa. *African Journal for Physical Activity and Health Sciences*, 30(2), 232-253. <https://doi.org/10.37597/ajphes.2024.30.2.5>
- Haller, K., Stolfi, A., & Duby, J. (2022). Comparison of unmet health care needs in children with intellectual disability, autism spectrum disorder and both disorders combined. *Journal of Intellectual Disability Research*, 66(7), 617-627. <https://doi.org/10.1111/jir.12932>
- Hamadi, L., & Fletcher, H. K. (2021). Are people with an intellectual disability at increased risk of attachment difficulties? A critical review. *Journal of Intellectual Disabilities*, 25(1), 114-130. <https://doi.org/10.1177/1744629519864772>
- Hare, D. J., Fletcher, H. K., & Flood, A. (2016). Introduction. In H. K. Fletcher, A. Flood, & D. J. Hare (Eds.), *Attachment in intellectual and developmental disability: A clinician's guide to practice and research* (pp. 1-7). Wiley.
- Hartley, S. L., Papp, L. M., Mihaila, I., Bussanich, P. M., Goetz, G., & Hickey, E. J. (2017). Couple conflict in parents of children with versus without autism: Self-reported and observed findings. *Journal of Child and Family Studies*, 26(8), 2152-2165. <https://doi.org/10.1007/s10826-017-0737-1>
- Hassall, R., Rose, J., & McDonald, J. (2005). Parenting stress in mothers of children with an intellectual disability: The effects of parental cognitions in relation to child characteristics and family support. *Journal of Intellectual Disability Research*, 49(6), 405-418. <https://doi.org/10.1111/j.1365-2788.2005.00673.x>

- Hastings, R. P. (2016). Do children with intellectual and developmental disabilities have a negative impact on other family members? The case for rejecting a negative narrative. In R. M. Hodapp & D. J. Fidler (Eds.), *International review of research in developmental disabilities: Fifty years of research in intellectual and developmental disabilities* (Volume 50, pp. 165-194). Academic Press. <https://doi.org/10.1016/bs.irrdd.2016.05.002>
- Hayes, S. C. (1981). Single-case experimental designs and empirical clinical practice. *Journal of Consulting and Clinical Psychology*, 49(2), 193-211. <https://doi.org/10.1037/0022-006X.49.2.193>
- Heiman, T. (2002). Parents of children with disabilities: Resilience, coping, and future expectations. *Journal of Developmental and Physical Disabilities*, 14(2), 159-171. <https://doi.org/10.1023/A:1015219514621>
- Heinicke, C. M., Fineman, N. R., Ponce, V. A., & Guthrie, D. (2001). Relation-based intervention with at-risk mothers: Outcome in the second year of life. *Infant Mental Health Journal*, 22(4), 431-462. <https://doi.org/10.1002/imhj.1010>
- Heinicke, C. M., Fineman, N. R., Ruth, G., Recchia, S. L., Guthrie, D., & Rodning, C. (1999). Relationship-based intervention with at-risk mothers: Outcome in the first year of life. *Infant Mental Health Journal*, 20(4), 349-374. [https://doi.org/10.1002/\(SICI\)1097-0355\(199924\)20:4<349::AID-IMHJ1>3.0.CO;2-X](https://doi.org/10.1002/(SICI)1097-0355(199924)20:4<349::AID-IMHJ1>3.0.CO;2-X)
- Hepworth, A. D., Berlin, L. J., Martoccio, T. L., Cannon, E. N., Berger, R. H., & Harden, B. J. (2020). Supporting infant emotion regulation through attachment-based intervention: A randomized controlled trial. *Prevention Science*, 21(5), 702-713. <https://doi.org/10.1007/s11121-020-01127-1>
- Hepworth, A. D., Berlin, L. J., Salas, K., Pardue-Kim, M., Martoccio, T. L., & Jones Harden, B. (2020). Increasing maternal sensitivity to infant distress through attachment-based intervention: A randomized controlled trial. *Attachment & Human Development*, Advance online publication. <https://doi.org/10.1080/14616734.2020.1834592>
- Herring, S., Gray, K., Taffe, J., Tonge, B., Sweeney, D., & Einfeld, S. (2006). Behaviour and emotional problems in toddlers with pervasive developmental disorders and developmental delay: Associations with parental mental health and family functioning. *Journal of Intellectual Disability Research*, 50(12), 874-882. <https://doi.org/10.1111/j.1365-2788.2006.00904.x>
- Hoegler, S., Mills, A. L., Feda, A., & Cummings, E. M. (2022). Randomized preventive intervention for families: Adolescents' emotional insecurity and attachment to fathers. *Journal of Family Psychology*, Advance Online Publication. <https://doi.org/10.1037/fam0001042>

- Hoffenkamp, H. N., Tooten, A., Hall, R. A., Braeken, J., Eliens, M. P., Vingerhoets, A. J., & Van Bakel, H. J. (2015). Effectiveness of hospital-based video interaction guidance on parental interactive behavior, bonding, and stress after preterm birth: A randomized controlled trial. *Journal of Consulting and Clinical Psychology*, 83(2), 416-429. <https://doi.org/10.1037/a0038401>
- Hofstra, E., Kasius, M. C., & Vermeiren, R. R. J. M. (2023). Treating children with disturbed attachment and an intellectual disability: Effectiveness of Theraplay-based treatment. *International Journal of Play Therapy*, 32(4), 230-242. <https://doi.org/10.1037/pla0000204>
- Hohlfeld, A. S. J., Harty, M., & Engel, M. E. (2018). Parents of children with disabilities: A systematic review of parenting interventions and self-efficacy. *African Journal of Disability*, 70, Article a437. <https://doi.org/10.4102/ajod.v7i0.437>
- Horner, R. H., Carr, E. G., Halle, J., McGee, G., Odom, S., & Wolery, M. (2005). The use of single-subject research to identify evidence-based practice in special education. *Exceptional Children*, 71(2), 165-179. <https://doi.org/10.1177/001440290507100203>
- Hoye, J. R., Cheishvili, D., Yarger, H. A., Roth, T. L., Szyf, M., & Dozier, M. (2020). Preliminary indications that the Attachment and Biobehavioral Catch-up intervention alters DNA methylation in maltreated children. *Development and Psychopathology*, 32(4), 1486-1494. <https://doi.org/http://dx.doi.org/10.1017/S0954579419001421>
- Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15(9), 1277-1288. <https://doi.org/10.1177/1049732305276687>
- Hunter, D., McCallum, J., & Howes, D. (2019). Defining exploratory-descriptive qualitative (EDQ) research and considering its application to healthcare. *GSTF Journal of Nursing and Health Care*, 4(1), Advance online publication. <https://eprints.gla.ac.uk/180272/7/180272.pdf>
- Ilifa Labantwana. (2012). *Home visiting for households with children not in formal ECD: Evidence from the Sobambisana Initiative*. Ilifa Labantwana. <https://ilifalabantwana.co.za/wp-content/uploads/2017/06/Home-visiting-for-households-with-children-not-in-formal-ECD.pdf>
- Jangjoo, S., Lotfi, R., Assareh, M., & Kabir, K. (2021). Effect of counselling on maternal-fetal attachment in unwanted pregnancy: A randomised controlled trial. *Journal of Reproductive and Infant Psychology*, 39(3), 225-235. <https://doi.org/10.1080/02646838.2019.1673891>
- Janse van Rensburg, A., Khan, R., Wouters, E., Van Rensburg, D., Fourie, P., & Bracke, P. (2018). At the coalface of collaborative mental health care: A qualitative study of governance and power in district-level service provision in South Africa. *The International Journal of Health Planning and Management*, 33(4), 1121-1135. <https://doi.org/10.1002/hpm.2593>

- Janssen, C., Schuengel, C., & Stolk, J. (2002). Understanding challenging behaviour in people with severe and profound intellectual disability: A stress-attachment model. *Journal of Intellectual Disability Research*, 46(6), 445-453. <https://doi.org/10.1046/j.1365-2788.2002.00430.x>
- Jarrett, M. A., & Ollendick, T. H. (2012). Treatment of comorbid attention-deficit/hyperactivity disorder and anxiety in children: A multiple baseline design analysis. *Journal of Consulting and Clinical Psychology*, 80(2), 239-244. <https://doi.org/10.1037/a0027123>
- Jenaro, C., Flores, N., Gutierrez-Bermejo, B., Vega, V., Perez, C., & Cruz, M. (2020). Parental stress and family quality of life: Surveying family members of persons with intellectual disabilities. *International Journal of Environmental Research and Public Health*, 17(23), Article 9007. <https://doi.org/10.3390/ijerph17239007>
- Jiang, W. (2000). The relationship between culture and language. *ELT Journal*, 54(4), 328-334. <https://doi.org/10.1093/elt/54.4.328>
- John, A. (2012). Stress among mothers of children with intellectual disabilities in urban India: Role of gender and maternal coping. *Journal of Applied Research in Intellectual Disabilities*, 25(4), 372-382. <https://doi.org/10.1111/j.1468-3148.2011.00672.x>
- John, A., Morris, A., & Halliburton, A. (2012). Looking beyond maternal sensitivity: Mother-child correlates of attachment security among children with intellectual disabilities in urban India. *Journal of Autism & Developmental Disorders*, 42(11), 2335-2345. <https://doi.org/10.1007/s10803-012-1479-y>
- Johnson, R. F., O'Reilly, M., & Vostanis, P. (2006). Caring for children with learning disabilities who present problem behaviours: A maternal perspective. *Journal of Child Health Care*, 10(3), 188-198. <https://doi.org/10.1177/13674935060066480>
- Jones, P. R. (2019). A note on detecting statistical outliers in psychophysical data. *Attention, Perception, & Psychophysics*, 81(5), 1189-1196. <https://doi.org/10.3758/s13414-019-01726-3>
- Jonker, D., Sterkenburg, P. S., & Van Rensburg, E. (2015). Caregiver-mediated therapy for an adult with visual and intellectual impairment suffering from separation anxiety. *Research in Developmental Disabilities*, 47, 1-13. <https://doi.org/10.1016/j.ridd.2015.08.005>
- Juffer, F., Bakermans-Kranenburg, M. J., & Van IJzendoorn, M. H. (2008). *Manual: Video-feedback intervention to promote positive parenting and sensitive discipline (VIPP-SD)*. Leiden University, Centre for Child and Family Studies.

- Juffer, F., & Steele, M. (2014). What words cannot say: The telling story of video in attachment-based interventions. *Attachment & Human Development*, 16(4), 307-314. <https://doi.org/10.1080/14616734.2014.912484>
- Kalinauskiene, L., Cekuoliene, D., Van IJzendoorn, M. H., Bakermans-Kranenburg, M. J., Juffer, F., & Kusakovskaja, I. (2009). Supporting insensitive mothers: The Vilnius randomized control trial of video-feedback intervention to promote maternal sensitivity and infant attachment security. *Child: Care, Health and Development*, 35(5), 613-623. <https://doi.org/10.1111/j.1365-2214.2009.00962.x>
- Kaptein, S., Jansen, D. E., Vogels, A. G., & Reijneveld, S. A. (2008). Mental health problems in children with intellectual disability: Use of the Strengths and Difficulties Questionnaire. *Journal of Intellectual Disability Research*, 52(2), 125-131. <https://doi.org/10.1111/j.1365-2788.2007.00978.x>
- Kasari, C., Siller, M., Huynh, L. N., Shih, W., Swanson, M., Hellemann, G. S., & Sugar, C. A. (2014). Randomized controlled trial of parental responsiveness intervention for toddlers at high risk for autism. *Infant Behavior & Development*, 37(4), 711-721. <https://doi.org/10.1016/j.infbeh.2014.08.007>
- Kattari, S. K., Lavery, A., & Hasche, L. (2017). Applying a social model of disability across the life span. *Journal of Human Behavior in the Social Environment*, 27(8), 865-880. <https://doi.org/10.1080/10911359.2017.1344175>
- Kaushik, V., & Walsh, C. A. (2019). Pragmatism as a research paradigm and its implications for social work research. *Social Sciences*, 8(9), Article 255. <https://doi.org/10.3390/socsci8090255>
- Kawachi, I., & Berkman, L. F. (2001). Social ties and mental health. *Journal of Urban Health*, 78(3), 458-467. <https://doi.org/10.1093/jurban/78.3.458>
- Kazdin, A. E. (1982). *Single-case research designs: Methods for clinical and applied settings*. Oxford University Press.
- Keeney, S., Hasson, F., & McKenna, H. (2011). *The delphi technique in nursing and health research*. Wiley-Blackwell.
- Keller, H. (2007). *Cultures of infancy*. Erlbaum.
- Keller, H. (2013). Attachment and culture. *Journal of Cross-Cultural Psychology*, 44(2), 175-194. <https://doi.org/10.1177/0022022112472253>
- Keller, H. (2016). Attachment. A pancultural need but a cultural construct. *Current Opinion in Psychology*, 8, 59-63. <https://doi.org/10.1016/j.copsyc.2015.10.002>

- Keller, H. (2018). Universality claim of attachment theory: Children's socioemotional development across cultures. *Proceedings of the National Academy of Sciences of the United States of America*, 115(45), 11414-11419. <https://doi.org/10.1073/pnas.1720325115>
- Keller, H., Bard, K., Morelli, G., Chaudhary, N., Vicedo, M., Rosabal-Coto, M., Scheidecker, G., Murray, M., & Gottlieb, A. (2018). The myth of universal sensitive responsiveness: Comment on Mesman et al. (2017). *Child Development*, 89(5), 1921-1928. <https://doi.org/10.1111/cdev.13031>
- Kelly, L. M., & Cordeiro, M. (2020). Three principles of pragmatism for research on organizational processes. *Methodological Innovations*, 13(2), 1-10. <https://doi.org/10.1177/2059799120937242>
- Kenkel, W. M., Perkeybile, A. M., & Carter, C. S. (2017). The neurobiological causes and effects of alloparenting. *Developmental Neurobiology*, 77(2), 214-232. <https://doi.org/10.1002/dneu.22465>
- Keogh, B. K., Bernheimer, L. P., & Guthrie, D. (1997). Stability and change over time in cognitive level of children with delays. *American Journal on Mental Retardation*, 101(4), 365-373.
- Kermorian, R., & Leiderman, P. H. (1986). Infant attachment to mother and child caretaker in an East African community. *International Journal of Behavioral Development*, 9(4), 455-469. <https://doi.org/10.1177/016502548600900404>
- Khan, G., Isaacs, D., Makoe, M. G., Fluks, L. L., Mokhele, T., & Mokomane, Z. (2020). Service providers' perceptions of families caring for children with disabilities in resource-poor settings in South Africa. *Child & Family Social Work*, 25(4), 823-831. <https://doi.org/10.1111/cfs.12761>
- Khan, T., Abimbola, S., Kyobutungi, C., & Pai, M. (2022). How we classify countries and people-and why it matters. *BMJ Global Health*, 7(6), Article e009704. <https://doi.org/10.1136/bmjgh-2022-009704>
- Khumalo, Z., & Alhassan, A. L. (2021). Read, write, develop: The socio-economic impact of literacy in South Africa. *International Journal of Social Economics*, 48(8), 1105-1120. <https://doi.org/10.1108/ijse-07-2020-0448>
- Kielb, K., Bargiel-Matusiewicz, K. M., & Pisula, E. (2019). Posttraumatic stress symptoms and posttraumatic growth in mothers of children with intellectual disability - the role of intrusive and deliberate ruminations: A preliminary report. *Frontiers in Psychology*, 10, Article 2011. <https://doi.org/10.3389/fpsyg.2019.02011>
- King, G., Strachan, D., Tucker, M., Duwyn, B., Desserud, S., & Shillington, M. (2009). The application of a transdisciplinary model for early intervention services. *Infants & Young Children*, 22(3), 211-223. <https://doi.org/10.1097/IYC.0b013e3181abelc3>

- Kirschbaum, C., & Hellhammer, D. H. (1994). Salivary cortisol in psychoneuroendocrine research: Recent developments and applications. *Psychoneuroendocrinology*, 19(4), 313-333. [https://doi.org/http://dx.doi.org/10.1016/0306-4530\(94\)90013-2](https://doi.org/http://dx.doi.org/10.1016/0306-4530(94)90013-2)
- Kiru, E., & Cooc, N. (2018). A comparative analysis of access to education for students with disabilities in Brazil, Canada, and South Africa. *Journal of International Special Needs Education*, 21(2), 34-44. <https://doi.org/10.9782/16-00024R4>
- Kleefman, M., Reijneveld, S. A., & Jansen, D. E. M. C. (2015). Prevalence and determinants of need for formal parenting support among parents raising a child with a borderline to mild intellectual disability. *Journal of Intellectual & Developmental Disability*, 40(1), 49-56. <https://doi.org/10.3109/13668250.2014.956659>
- Klein Velderman, M., Bakermans-Kranenburg, M. J., Juffer, F., & van IJzendoorn, M. H. (2006). Effects of attachment-based interventions on maternal sensitivity and infant attachment: Differential susceptibility of highly reactive infants. *Journal of Family Psychology*, 20(2), 266-274. <https://doi.org/10.1037/0893-3200.20.2.266>
- Klein Velderman, M., Bakermans-Kranenburg, M. J., Juffer, F., van IJzendoorn, M. H., Mangelsdorf, S., & Zevalkink, J. (2006). Preventing preschool externalizing behavior problems through video-feedback intervention in infancy. *Infant Mental Health Journal*, 27(5), 466-493. <https://doi.org/10.1002/imhj>
- Kleintjies, S., Flisher, A. J., Fick, M., Railoun, M., Lund, C., Molteno, C., & Robertson, B. A. (2006). The prevalence of mental disorders among children, adolescents and adults in the Western Cape, South Africa. *African Journal of Psychiatry*, 9(3), 157-160. <https://doi.org/10.4314/ajpsy.v9i3.30217>
- Knestrick, T., & Kuchey, D. (2009). Welcome to Holland: Characteristics of resilient families raising children with severe disabilities. *Journal of Family Studies*, 15(3), 227-244. <https://doi.org/10.5172/jfs.15.3.227>
- Knox, J., Arpadi, S. M., Kauchali, S., Craib, M., Kvalsvig, J. D., Taylor, M., Bah, F., Mellins, C., & Davidson, L. L. (2018). Screening for developmental disabilities in HIV positive and HIV negative children in South Africa: Results from the Asenze study. *PLoS One*, 13(7), Article e0199860. <https://doi.org/10.1371/journal.pone.0199860>
- Koehler, M. J., & Levin, J. R. (1998). Regulated randomization: A potentially sharper analytical tool for the multiple-baseline design. *Psychological Methods*, 3(2), 206-217. <https://doi.org/10.1037/1082-989X.3.2.206>

- Komanchuk, J., Letourneau, N., Duffett-Leger, L., & Cameron, J. L. (2023). History of “serve and return” and a synthesis of the literature on its impacts on children’s health and development. *Issues in Mental Health Nursing*, 44(5), 406-417. <https://doi.org/10.1080/01612840.2023.2192794>
- Konner, M. (2005). Hunter-gatherer infancy and childhood: The !Kung and others. In M. E. Lamb & B. S. Hewlett (Eds.), *Hunter-gatherer childhoods: Evolutionary, developmental, and cultural perspectives* (pp. 19-64). Transaction.
- Koo, T. K., & Li, M. Y. (2016). A guideline of selecting and reporting intraclass correlation coefficients for reliability research. *Journal of Chiropractic Medicine*, 15(2), 155-163. <https://doi.org/10.1016/j.jcm.2016.02.012>
- Korom, M., Goldstein, A., Tabachnick, A. R., Palmwood, E. N., Simons, R. F., & Dozier, M. (2021). Early parenting intervention accelerates inhibitory control development among CPS-involved children in middle childhood: A randomized clinical trial. *Developmental Science*, 24(3), Article e13054. <https://doi.org/10.1111/desc.13054>
- Koskentausta, T., Iivanainen, M., & Almqvist, F. (2007). Risk factors for psychiatric disturbance in children with intellectual disability. *Journal of Intellectual Disability Research*, 51(1), 43-53. <https://doi.org/10.1111/j.1365-2788.2006.00871.x>
- Kratochwill, T. R., & Levin, J. R. (2010). Enhancing the scientific credibility of single-case intervention research: Randomization to the rescue. *Psychological Methods*, 15(2), 124-144. <https://doi.org/10.1037/a0017736>
- Kromberg, J., Christianson, A. L., Manga, P., Zwane, M. E., Rosen, E., Venter, A., & Homer, S. (1997). Intellectual disability in rural black children in the Bushbuckridge district of South Africa. *Southern African Journal of Child and Adolescent Mental Health*, 9(1), 2-11. <https://doi.org/10.1080/16826108.1997.9632485>
- Kromberg, J., Zwane, E., Manga, P., Venter, A., Rosen, E., & Christianson, A. (2008). Intellectual disability in the context of a South African population. *Journal of Policy and Practice in Intellectual Disabilities*, 5(2), 89-95. <https://doi.org/10.1111/j.1741-1130.2008.00153.x>
- Kruithof, K., Willems, D., van Etten-Jamaludin, F., & Olsman, E. (2020). Parents’ knowledge of their child with profound intellectual and multiple disabilities: An interpretative synthesis. *Journal of Applied Research in Intellectual Disabilities*, 33(6), 1141-1150. <https://doi.org/10.1111/jar.12740>
- Labella, M. H., Eiden, R. D., Roben, C. K. P., & Dozier, M. (2021). Adapting an evidence-based home visiting intervention for mothers with opioid dependence: Modified Attachment and Biobehavioral Catch-up. *Frontiers in Psychology*, 12, Article 675866. <https://doi.org/10.3389/fpsyg.2021.675866>

- Labella, M. H., Lind, T., Sellers, T., Roben, C. K. P., & Dozier, M. (2020). Emotion regulation among children in foster care versus birth parent care: Differential effects of an early home-visiting intervention. *Journal of Abnormal Child Psychology*, 48(8), 995-1006. <https://doi.org/10.1007/s10802-020-00653-4>
- Labella, M. H., Raby, K. L., Bourne, S. V., Trahan, A. C., Katz, D., & Dozier, M. (2024). Is Attachment and Biobehavioral Catch-up effective for parents with insecure attachment states of mind?. *Child Development*, 95(2), 648-655. <https://doi.org/10.1111/cdev.14002>
- Lane, J. D., & Gast, D. L. (2014). Visual analysis in single case experimental design studies: Brief review and guidelines. *Neuropsychological Rehabilitation*, 24(3-4), 445-463. <https://doi.org/10.1080/09602011.2013.815636>
- le Roux, S. M., Donald, K. A., Brittain, K., Phillips, T. K., Zerbe, A., Nguyen, K. K., Strandvik, A., Kroon, M., Abrams, E. J., & Myer, L. (2018). Neurodevelopment of breastfed HIV-exposed uninfected and HIV-unexposed children in South Africa. *AIDS*, 32(13), 1781-1791. <https://doi.org/10.1097/QAD.0000000000001872>
- Lee, B. R., Ebesutani, C., Kolivoski, K. M., Becker, K. D., Lindsey, M. A., Brandt, N. E., Cammack, N., Strieder, F. H., Chorpita, B. F., & Barth, R. P. (2014). Program and practice elements for placement prevention: A review of interventions and their effectiveness in promoting home-based care. *American Journal of Orthopsychiatry*, 84(3), 244-256. <https://doi.org/10.1037/h0099811>
- Lee, J. (2013). Maternal stress, well-being, and impaired sleep in mothers of children with developmental disabilities: A literature review. *Research in Developmental Disabilities*, 34(11), 4255-4273. <https://doi.org/10.1016/j.ridd.2013.09.008>
- Leijten, P., Weisz, J. R., & Gardner, F. (2021). Research strategies to discern active psychological therapy components: A scoping review. *Clinical Psychological Science*, 9(3), 307-322. <https://doi.org/10.1177/2167702620978615>
- Letourneau, N., Tryphonopoulos, P., Giesbrecht, G., Dennis, C. L., Bhogal, S., & Watson, B. (2015). Narrative and meta-analytic review of interventions aiming to improve maternal-child attachment security. *Infant Mental Health Journal*, 36(4), 366-387. <https://doi.org/10.1002/imhj.21525>
- Levitt, H., Butler, M., & Hill, T. (2006). What clients find helpful in psychotherapy: Developing principles for facilitating moment-to-moment change. *Journal of Counselling*, 53(3), 314-324. <https://doi.org/10.1037/002-0167.53.3.314>
- Lewis-Morrarty, E., Dozier, M., Bernard, K., Terracciano, S. M., & Moore, S. V. (2012). Cognitive flexibility and theory of mind outcomes among foster children: Preschool follow-up results of a

- randomized clinical trial. *Journal of Adolescent Health*, 51(2, Supplement), S17-S22. <https://doi.org/10.1016/j.jadohealth.2012.05.005>
- Li, S., Ran, G., & Chen, X. (2021). Linking attachment to empathy in childhood and adolescence: A multilevel meta-analysis. *Journal of Social and Personal Relationships*, 38(11), 3350-3377. <https://doi.org/10.1177/02654075211031006>
- Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gotzsche, P. C., Ioannidis, J. P., Clarke, M., Devereaux, P. J., Kleijnen, J., & Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: Explanation and elaboration. *PLoS Medicine*, 6(7), Article e1000100. <https://doi.org/10.1371/journal.pmed.1000100>
- Licata-Dandel, M., Wenzel, A. S., Kristen-Antonow, S., & Sodian, B. (2021). Predicting child problem behaviour at school age: The role of maternal sensitivity, child temperament and theory of mind. *Infant and Child Development*, 30(6). <https://doi.org/10.1002/icd.2264>
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage.
- Lind, T., Bernard, K., Ross, E., & Dozier, M. (2014). Intervention effects on negative affect of CPS-referred children: Results of a randomized clinical trial. *Child Abuse & Neglect*, 38, 1459-1467. <https://doi.org/10.1016/j.chiabu.2014.04.004>
- Lind, T., Bernard, K., Yarger, H. A., & Dozier, M. (2020). Promoting compliance in children referred to child protective services: A randomized clinical trial. *Child Development*, 91(2), 563-576. <https://doi.org/10.1111/cdev.13207>
- Lind, T., Lee Raby, K., Caron, E. B., Roben, C. K., & Dozier, M. (2017). Enhancing executive functioning among toddlers in foster care with an attachment-based intervention. *Development and Psychopathology*, 29(2), 575-586. <https://doi.org/10.1017/S0954579417000190>
- Lind, T., Lee Raby, K., Goldstein, A., Bernard, K., Caron, E. B., Yarger, H. A., Wallin, A., & Dozier, M. (2021). Improving social-emotional competence in internationally adopted children with the Attachment and Biobehavioral Catch-up intervention. *Developmental and Psychopathology*, 33(3), 957-969. <https://doi.org/10.1017/s0954579420000255>
- Llewellyn, G., & McConnell, D. (1999, 8-9 July). *Sharing the care: The support interview guide*. 11th Australasian Human Development Conference, Sydney, Australia.
- Lloyd, T. J., & Hastings, R. (2009). Hope as a psychological resilience factor in mothers and fathers of children with intellectual disabilities. *Journal of Intellectual Disability Research*, 53(12), 957-968. <https://doi.org/10.1111/j.1365-2788.2009.01206.x>

- Lovejoy, M. C., Graczyk, P. A., O'Hare, E., & Neuman, G. (2000). Maternal depression and parenting behavior: A meta-analytic review. *Clinical Psychology Review*, 20(5), 561-592. [https://doi.org/10.1016/S0272-7358\(98\)00100-7](https://doi.org/10.1016/S0272-7358(98)00100-7)
- Lucassen, N., Tharner, A., Van IJzendoorn, M. H., Bakermans-Kranenburg, M. J., Volling, B. L., Verhulst, F. C., Lambregtse-Van den Berg, M. P., & Tiemeier, H. (2011). The association between paternal sensitivity and infant-father attachment security: A meta-analysis of three decades of research. *Journal of Family Psychology*, 25(6), 986-992. <https://doi.org/10.1037/a0025855>
- Lukens, E. P., & McFarlane, W. R. (2004). Psychoeducation as evidence-based practice: Considerations for practice, research, and policy. *Brief Treatment and Crisis Intervention*, 4(3), 205-225. <https://doi.org/10.1093/brief-treatment/mhh019>
- Lyons-Ruth, K., Easterbrooks, M. A., & Cibelli, C. D. (1997). Infant attachment strategies, infant mental lag, and maternal depressive symptoms: Predictors of internalizing and externalizing problems at age 7. *Developmental Psychology*, 33(4), 681-692. <https://doi.org/10.1037/0012-1649.33.4.681>
- Madigan, S., Atkinson, L., Laurin, K., & Benoit, D. (2013). Attachment and internalizing behavior in early childhood: A meta-analysis. *Developmental Psychology*, 49(4), 672-689. <https://doi.org/10.1037/a0028793>
- Madigan, S., Brumariu, L. E., Villani, V., Atkinson, L., & Lyons-Ruth, K. (2016). Representational and questionnaire measures of attachment: A meta-analysis of relations to child internalizing and externalizing problems. *Psychological Bulletin*, 142(4), 367-399. <https://doi.org/10.1037/bul0000029>
- Madigan, S., Deneault, A. A., Duschinsky, R., Bakermans-Kranenburg, M. J., Schuengel, C., Van IJzendoorn, M. H., Ly, A., Fearon, R. M. P., Eirich, R., & Verhage, M. L. (2024). Maternal and paternal sensitivity: Key determinants of child attachment security examined through meta-analysis. *Psychological Bulletin*, 150(7), 839-872. <https://doi.org/10.1037/bul0000433>
- Madigan, S., Fearon, R. M. P., Van IJzendoorn, M. H., Duschinsky, R., Schuengel, C., Bakermans-Kranenburg, M. J., Ly, A., Cooke, J. E., Deneault, A.-A., Oosterman, M., & Verhage, M. L. (2023). The first 20,000 Strange Situation Procedures: A meta-analytic review. *Psychological Bulletin*, 149(1-2), 99-132. <https://doi.org/10.1037/bul0000388>
- Magnusson, D., Sweeney, F., & Landry, M. (2019). Provision of rehabilitation services for children with disabilities living in low- and middle-income countries: A scoping review. *Disability and Rehabilitation*, 41(7), 861-868. <https://doi.org/10.1080/09638288.2017.1411982>

- Main, M., & Solomon, J. (1986). Discovery of a new, insecure-disorganized/disoriented attachment pattern. In M. Yogman & T. B. Brazelton (Eds.), *Affective development in infancy* (pp. 95-124). Ablex.
- Main, M., & Solomon, J. (1990). Procedures for identifying infants as disorganized/disoriented during the Ainsworth Strange Situation. In M. T. Greenberg, D. Cicchetti, & E. M. Cummings (Eds.), *Attachment in the preschool years: Theory, research, and intervention* (pp. 121-160). University of Chicago Press.
- Makwela, M. M., Smit, E. I., & Mabvurira, V. (2021). Legislation and service provision for children with disabilities in South Africa: A social work perspective. *Technium Social Sciences Journal*, 22, 741-751.
- Malatji, K. S., & Ndebele, C. (2018). Challenges experienced by women in raising children with intellectual disabilities. *African Journal for Physical Activity and Health Sciences*, 24(Supplement 1), 129-141. <https://doi.org/doi:10.10520/EJC-13283544ce>
- Mamedova, K., Laurenzi, C. A., Gordon, S., Tomlinson, M., & Fearon, P. (2024). Identifying the common elements of early childhood interventions supporting cognitive development in low- and middle-income countries. *Adversity and Resilience Science*, 55(1), 55-79. <https://doi.org/10.1007/s42844-023-00105-0>
- Manolov, R., Losada, J. L., Chacon-Moscoso, S., & Sanduvete-Chaves, S. (2016). Analyzing two-phase single-case data with non-overlap and mean difference indices: Illustration, software tools, and alternatives. *Frontiers in Psychology*, 7, Article 32. <https://doi.org/10.3389/fpsyg.2016.00032>
- Marlowe, F. W. (2005). Who tends Hadza children?. In M. E. Lamb & B. S. Hewlett (Eds.), *Hunter-gatherer childhoods: Evolutionary, developmental, and cultural perspectives* (pp. 177-190). Transaction.
- Martinez, V. C., & Turnage, D. (2022). Social support and parenting stress in Hispanic parents of children with autism spectrum disorder. *Issues in Mental Health Nursing*, 43(11), 1030-1040. <https://doi.org/10.1080/01612840.2022.2100949>
- Marvin, R. S., & Pianta, R. C. (1996). Mothers' reactions to their child's diagnosis: Relations with security of attachment. *Journal of Clinical Child Psychology*, 25(4), 436-445. https://doi.org/10.1207/s15374424jccp2504_8
- Marvin, R. S., Van Devender, T. L., Iwanga, M. I., LeVine, S., & LeVine, R. A. (1977). Infant-caregiver attachment among the Hausa of Nigeria. In H. McGurk (Ed.), *Ecological factors in human development* (pp. 247-259). North-Holland Publishing Co.

- Masefield, S. C., Prady, S. L., Sheldon, T. A., Small, N., Jarvis, S., & Pickett, K. E. (2020). The caregiver health effects of caring for young children with developmental disabilities: A meta-analysis. *Maternal and Child Health Journal*, 24(5), 561-574. <https://doi.org/10.1007/s10995-020-02896-5>
- Masulani-Mwale, C., Kauye, F., Gladstone, M., & Mathanga, D. (2018). Prevalence of psychological distress among parents of children with intellectual disabilities in Malawi. *BMC Psychiatry*, 18, Article 146. <https://doi.org/10.1186/s12888-018-1731-x>
- Masulani-Mwale, C., Mathanga, D., Silungwe, D., Kauye, F., & Gladstone, M. (2016). Parenting children with intellectual disabilities in Malawi: The impact that reaches beyond coping?. *Child: Care, Health and Development*, 42(6), 871-880. <https://doi.org/10.1111/cch.12368>
- Mattie, L. J., Loveall, S. J., Channell, M. M., & Rodgers, D. B. (2023). Perspectives on adaptive functioning and intellectual functioning measures for intellectual disabilities behavioral research. *Frontiers in Psychology*, 14, Article 1084576. <https://doi.org/10.3389/fpsyg.2023.1084576>
- Maulik, P. K., Harbour, C. K., & McCarthy, J. (2014). Epidemiology. In E. Tsakanikos & J. McCarthy (Eds.), *Handbook of psychopathology in intellectual disability: Research, practice, and policy* (pp. 9-21). Springer.
- Maulik, P. K., Mascarenhas, M. N., Mathers, C. D., Dua, T., & Saxena, S. (2011). Prevalence of intellectual disability: A meta-analysis of population-based studies. *Research in Developmental Disabilities*, 32(2), 419-436. <https://doi.org/10.1016/j.ridd.2010.12.018>
- Mazza, M. G., Rossetti, A., Crespi, G., & Clerici, M. (2020). Prevalence of co-occurring psychiatric disorders in adults and adolescents with intellectual disability: A systematic review and meta-analysis. *Journal of Applied Research in Intellectual Disabilities*, 33(2), 126-138. <https://doi.org/10.1111/jar.12654>
- Mbanjwa, S., & Harvey, C. (2023). South African single mothers' experiences of raising a child with a disability. *African Journal of Disability*, 12, Article a1321. <https://doi.org/10.4102/ajod>
- Mbatha, N. L., & Mokwena, K. E. (2023). Parental stress in raising a child with developmental disabilities in a rural community in South Africa. *International Journal of Environmental Research and Public Health*, 20(5), Article 3969. <https://doi.org/10.3390/ijerph20053969>
- McConkey, R., Kahonde, C., & McKenzie, J. (2016). Tackling stigma in developing countries: The key role of families. In K. Scior & S. Werner (Eds.), *Intellectual disability and stigma: Stepping out from the margins* (pp. 179-194). Palgrave. https://doi.org/10.1057/978-1-137-52499-7_12

- McIntyre, L. L. (2008). Parent training for young children with developmental disabilities: Randomized controlled trial. *American Journal on Mental Retardation*, 113(5), 356-368. <https://doi.org/10.1352/2008.113:356-368>
- McKenzie, J., & Chataika, T. (2018). Supporting families in raising disabled children to enhance African child development. In K. Runswick-Cole, T. Curran, & K. Liddiard (Eds.), *The Palgrave handbook of disabled children's childhood studies* (pp. 315-332). Palgrave. https://doi.org/10.1057/978-1-137-54446-9_21
- McKenzie, J. A., McConkey, R., & Adnams, C. (2013). Intellectual disability in Africa: Implications for research and service development. *Disability and Rehabilitation*, 35(20), 1750-1755. <https://doi.org/10.3109/09638288.2012.751461>
- McLeod, J. (2010). *Case study research in counselling and psychotherapy*. Sage.
- Meade, E. B., Dozier, M., & Bernard, K. (2014). Using video feedback as a tool in training parent coaches: Promising results from a single-subject design. *Attachment & Human Development*, 16(4), 356-370. <https://doi.org/10.1080/14616734.2014.912488>
- Meins, E., Fernyhough, C., Fradley, E., & Tuckey, M. (2001). Rethinking maternal sensitivity: Mothers' comments on infants' mental processes predict security of attachment at 12 months. *Journal of Child Psychology and Psychiatry*, 42(5), 637-648. <https://doi.org/10.1111/1469-7610.00759>
- Mengist, W., Soromessa, T., & Legese, G. (2020). Method for conducting systematic literature review and meta-analysis for environmental science research. *MethodsX*, 7, Article 100777. <https://doi.org/10.1016/j.mex.2019.100777>
- Mesman, J. (2018). Sense and sensitivity: A response to the commentary by Keller et al. (2018). *Child Development*, 89(5), 1929-1931. <https://doi.org/10.1111/cdev.13030>
- Mesman, J. (2021). Video observations of sensitivity in context: Integrating insights from seven cultural communities. *Attachment & Human Development*, 23(2), 212-221. <https://doi.org/10.1080/14616734.2020.1828547>
- Mesman, J., Basweti, N., & Misati, J. (2021). Sensitive infant caregiving among the rural Gusii in Kenya. *Attachment & Human Development*, 23(2), 124-133. <https://doi.org/10.1080/14616734.2020.1828512>
- Mesman, J., & Emmen, R. A. G. (2013). Mary Ainsworth's legacy: A systematic review of observational instruments measuring parental sensitivity. *Attachment & Human Development*, 15(5/6), 485-506. <https://doi.org/10.1080/14616734.2013.820900>

- Mesman, J., Minter, T., Angnged, A., Cisse, I. A. H., Salali, G. D., & Migliano, A. B. (2018). Universality without uniformity: A culturally inclusive approach to sensitive responsiveness in infant caregiving. *Child Development*, 89(3), 837-850. <https://doi.org/10.1111/cdev.12795>
- Mesman, J., Van IJzendoorn, M. H., & Sagi-Schwartz, A. (2016). Cross-cultural patterns of attachment: Universal and contextual dimensions. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (3rd edition, pp. 852-877). Guilford Press.
- Mikulincer, M., & Shaver, P. R. (2012). An attachment perspective on psychopathology. *World Psychiatry*, 11(1), 11-15. <https://doi.org/10.1016/j.wpsyc.2012.01.003>
- Miller, K. N., Bourne, S. V., Dahl, C. M., Costello, C., Atinelly, J., Jennings, K., & Dozier, M. (2024). Using randomized controlled trials to ask questions regarding developmental psychopathology: A tribute to Dante Cicchetti. *Development and Psychopathology*, Advance online publication. <https://doi.org/10.1017/S0954579424000245>
- Minde, K., Minde, R., & Vogel, W. (2006). Culturally sensitive assessment of attachment in children aged 18-40 months in a South African township. *Infant Mental Health Journal*, 27(6), 544-558. <https://doi.org/10.1002/imhj.20106>
- Mitter, N., Ali, A., & Scior, K. (2019). Stigma experienced by families of individuals with intellectual disabilities and autism: A systematic review. *Research in Developmental Disabilities*, 89, 10-21. <https://doi.org/10.1016/j.ridd.2019.03.001>
- Mkabile, S., & Swartz, L. (2020). Caregivers' and parents' explanatory models of intellectual disability in Khayelitsha, Cape Town, South Africa. *Journal of Applied Research in Intellectual Disabilities*, 33(5), 1026-1037. <https://doi.org/10.1111/jar.12725>
- Mkabile, S., & Swartz, L. (2020). 'I waited for it until forever': Community barriers to accessing intellectual disability services for children and their families in Cape Town, South Africa. *International Journal of Environmental Research and Public Health*, 17(22), Article 8504. <https://doi.org/10.3390/ijerph17228504>
- Mkabile, S., & Swartz, L. (2021). Putting cultural difference in its place: Barriers to access to health services for parents of children with intellectual disability in an urban African setting. *International Journal of Social Psychiatry*, Advance online publication. <https://doi.org/10.1177/00207640211043150>
- Mkabile, S., & Swartz, L. (2022). Putting cultural difference in its place: Barriers to access to health services for parents of children with intellectual disability in an urban African setting. *International Journal of Social Psychiatry*, 68(8), 1614-1622. <https://doi.org/10.1177/00207640211043150>

- Mkabile, S., Garrun, K. L., Shelton, M., & Swartz, L. (2021). African families' and caregivers' experiences of raising a child with intellectual disability: A narrative synthesis of qualitative studies. *African Journal of Disability*, 10, Article 827. <https://doi.org/10.4102/ajod.v10i0.827>
- Mkhize, M., & Sibanda, M. (2020). A review of selected studies on the factors associated with the nutrition status of children under the age of five years in South Africa. *International Journal of Environmental Research and Public Health*, 17(21), Article 7973. <https://doi.org/10.3390/ijerph17217973>
- Mmangaliso, A., & Lupuwana, V. P. P. (2021). Psychosocial experiences of family caregivers of children with intellectual disabilities in Alice, Eastern Cape, South Africa. *Southern African Journal of Social Work and Social Development*, 33(3), Article 7052. <https://doi.org/doi:10.25159/2415-5829/7052>
- Modula, M. J. (2022). The support needs of families raising children with intellectual disability. *African Journal of Disability*, 11, Article 952. <https://doi.org/10.4102/ajod.v11i0.952>
- Modula, M. J., & Chipu, M. G. (2024). Exploring information needs among family caregivers of children with intellectual disability in a rural area of South Africa: A qualitative study. *BMC Public Health*, 24, Article 1139. <https://doi.org/10.1186/s12889-024-18606-7>
- Mohamed, A. R., & Mkabile, S. (2015). An attachment-focused parent–child intervention for biting behaviour in a child with intellectual disability: A clinical case study. *Journal of Intellectual Disabilities*, 19(3), 251-265. <https://doi.org/10.1177/1744629515572711>
- Mohamed, A. R., Sterkenburg, P. S., Van Rensburg, E., & Schuengel, C. (2021). *The development of a novel supplemental coding system for investigating the practice elements of attachment-based interventions*. [Unpublished manuscript]. <https://doi.org/10.31234/osf.io/bxdyz>
- Mohamed, A. R., Sterkenburg, P., Van Rensburg, E., & Schuengel, C. (2023). Adapting Attachment and Biobehavioral Catch-up for infants and young children with intellectual disabilities and developmental delays in South Africa: Reflections and recommendations from local stakeholders. *Infant Mental Health Journal*, 44(1), 54-75. <https://doi.org/10.1002/imhj.22027>
- Mohamed, A. R., Sterkenburg, P., Yeatman, J. G., Van Rensburg, E., & Schuengel, C. (2022). Using Attachment and Biobehavioral Catch-up with young children with developmental delays: A multiple-baseline trial of attachment, sensitivity, and cortisol. *Journal of Intellectual Disabilities*. Advance Online Publication. <https://doi.org/10.1177/17446295221104614>
- Molteno, G., Molteno, C. D., Finchilescu, G., & Dawes, A. R. L. (2001). Behavioural and emotional problems in children with intellectual disability attending special schools in Cape Town, South

- Africa. *Journal of Intellectual Disability Research*, 45(6), 515-520. <https://doi.org/https://doi.org/10.1046/j.1365-2788.2001.00368.x>
- Montealegre-Ramón, M. d. P., Martínez-Fuentes, M. T., Pérez-López, J., & Sierra-García, P. (2024). Maternal sensitivity, early interactions and infant attachment: A systematic review. *Early Child Development and Care*, Advance online publication. <https://doi.org/10.1080/03004430.2024.2386324>
- Mooya, H., Sichimba, F., & Bakermans-Kranenburg, M. (2016). Infant-mother and infant-sibling attachment in Zambia. *Attachment & Human Development*, 18(6), 618-635. <https://doi.org/10.1080/14616734.2016.1235216>
- Moran, G., Pederson, D. R., & Krupka, A. (2005). Maternal unresolved attachment status impedes the effectiveness of interventions with adolescent mothers. *Infant Mental Health Journal*, 26(3), 231-249. <https://doi.org/10.1002/imhj.20045>
- Morelli, G. A., & Tronick, E. Z. (1991). Efe multiple caretaking and attachment. In J. L. Gerwitz & W. M. Kurtines (Eds.), *Intersections with attachment* (pp. 41-52). Lawrence Erlbaum Associates.
- Moretti, M. M., & Peled, M. (2004). Adolescent-parent attachment: Bonds that support healthy development. *Paediatrics & Child Health*, 9(8), 551–555. <https://doi.org/10.1093/pch/9.8.551>
- Moretti, M. M., & Connect Clinical Team. (2020). *Connect—parents and caregivers: An attachment based and trauma informed program for parents and caregivers* [Unpublished manuscript].
- Morris, L. D., Grimmer, K. A., Twizeyemariya, A., Coetzee, M., Leibbrandt, D. C., & Louw, Q. A. (2021). Health system challenges affecting rehabilitation services in South Africa. *Disability and Rehabilitation*, 43(6), 877-883. <https://doi.org/10.1080/09638288.2019.1641851>
- Mortensen, J. A., & Mastergeorge, A. M. (2014). A meta-analytic review of relationship-based interventions for low-income families with infants and toddlers: Facilitating supportive parent-child interactions. *Infant Mental Health Journal*, 35(4), 336-353. <https://doi.org/10.1002/imhj.21451>
- Morwane, R. E. (2023). Inclusion of individuals with disabilities in vocational training in South Africa?. In S. Halder, S. Dada, & R. Banerjee (Eds.), *The Routledge handbook of inclusive education for teacher educators: Issues, considerations, and strategies* (pp. 638-650). Routledge.
- Moss, E., Dubois-Comtois, K., Cyr, C., Tarabulsky, G. M., St-Laurent, D., & Bernier, A. (2011). Efficacy of a home-visiting intervention aimed at improving maternal sensitivity, child attachment, and behavioral outcomes for maltreated children: A randomized control trial. *Development and Psychopathology*, 23(1), 195-210. <https://doi.org/10.1017/S0954579410000738>

- Mountain, G., Cahill, J., & Thorpe, H. (2017). Sensitivity and attachment interventions in early childhood: A systematic review and meta-analysis. *Infant Behavior and Development*, 46, 14-32. <https://doi.org/10.1016/j.infbeh.2016.10.006>
- Munir, K. M. (2016). The co-occurrence of mental disorders in children and adolescents with intellectual disability/intellectual developmental disorder. *Current Opinion in Psychiatry*, 29(2), 95-102. <https://doi.org/10.1097/YCO.0000000000000236>
- Murphy, J. P., Moolla, A., Kgowedi, S., Mongwenyana, C., Mngadi, S., Ngcobo, N., Miot, J., Evans, D., & Pascoe, S. (2021). Community health worker models in South Africa: A qualitative study on policy implementation of the 2018/19 revised framework. *Health Policy and Planning*, 36(4), 384-396. <https://doi.org/10.1093/heapol/czaa172>
- Murray, L., De Pascalis, L., Tomlinson, M., Vally, Z., Dadomo, H., MacLachlan, B., Woodward, C., & Cooper, P. J. (2016). Randomized controlled trial of a book-sharing intervention in a deprived South African community: Effects on carer-infant interactions, and their relation to infant cognitive and socioemotional outcome. *Journal of Child Psychology and Psychiatry*, 57(12), 1370-1379. <https://doi.org/10.1111/jcpp.12605>
- Naber, F. B. A., Swinkels, S. H. N., Buitelaar, J. K., Bakermans-Kranenburg, M. J., Van IJzendoorn, M. H., Dietz, C., Daalen, E., & Engeland, H. (2006). Attachment in toddlers with autism and other developmental disorders. *Journal of Autism and Developmental Disorders*, 37(6), 1123-1138. <https://doi.org/10.1007/s10803-006-0255-2>
- National Collaborating Centre for Mental Health. (2015). *Children's attachment: Attachment in children and young people who are adopted from care, in care or at risk of going into care*. National Institution for Health and Care Excellence. <https://www.nice.org.uk/guidance/NG26>
- National Home Visiting Resource Center. (2018). 2018 home visiting yearbook. NHVRC. https://nhvrc.org/legacy_yearbook/2018-home-visiting-yearbook/
- National Home Visiting Resource Center. (2019). 2019 home visiting yearbook. NHVRC. <https://nhvrc.org/yearbook/2019-yearbook/>
- National Home Visiting Resource Center. (2020). 2020 home visiting yearbook. NHVRC. <https://nhvrc.org/yearbook/2020-yearbook/>
- National Home Visiting Resource Center. (2021). 2021 home visiting yearbook. NHVRC. <https://nhvrc.org/yearbook/2021-yearbook/>
- National Home Visiting Resource Center. (2022). 2022 home visiting yearbook. NHVRC. <https://nhvrc.org/yearbook/2022-yearbook/>

- National Home Visiting Resource Center. (2023). *2023 home visiting yearbook*. NHVRC. <https://nhvrc.org/yearbook/2023-yearbook/>
- Negrão, M., Pereira, M., Soares, I., & Mesman, J. (2014). Enhancing positive parent-child interactions and family functioning in a poverty sample: A randomized control trial. *Attachment & Human Development, 16*(4), 315-328. <https://doi.org/10.1080/14616734.2014.912485>
- Nel, M., & Grosser, M. M. (2016). An appreciation of learning disabilities in the South African context. *Learning Disabilities: A Contemporary Journal, 14*(1), 79-92.
- Neuhauser, A. (2018). Predictors of maternal sensitivity in at-risk families. *Early Child Development and Care, 188*(2), 126-142. <https://doi.org/10.1080/03004430.2016.1207065>
- Niedbalski, J. (2023). (Extra) ordinary parenting: Parents of children with disabilities in the context of disability stigma and pride. *Journal of Intellectual Disabilities, 27*(3), 648-670. <https://doi.org/10.1177/17446295221100037>
- Norlin, D., & Broberg, M. (2013). Parents of children with and without intellectual disability: Couple relationship and individual well-being. *Journal of Intellectual Disability Research, 57*(6), 552-566. <https://doi.org/10.1111/j.1365-2788.2012.01564.x>
- O’Byrne, E., McCusker, C., & McSweeney, S. (2023). The impact of the “Attachment and Biobehavioural Catch-up” program on attachment related parent behavior—A systematic review. *Infant Mental Health Journal, 44*(1), 76-91. <https://doi.org/10.1002/imhj.22025>
- O’Connor, T. G., Matias, C., Futh, A., Tantam, G., & Scott, S. (2013). Social learning theory parenting intervention promotes attachment-based caregiving in young children: Randomized clinical trial. *Journal of Clinical Child & Adolescent Psychology, 42*(3), 358-370. <https://doi.org/10.1080/15374416.2012.723262>
- Oelofsen, N., & Richardson, P. (2006). Sense of coherence and parenting stress in mothers and fathers of preschool children with developmental disability. *Journal of Intellectual and Developmental Disability, 31*(1), 1-12. <https://doi.org/10.1080/13668250500349367>
- Olivier, L., Curfs, L. M., & Viljoen, D. L. (2016). Fetal alcohol spectrum disorders: Prevalence rates in South Africa. *South African Medical Journal, 106*(6, Supplement 1), S103-S106. <https://doi.org/10.7196/SAMJ.2016.v106i6.11009>
- Olusanya, B. O., Wright, S. M., Nair, M. K. C., Boo, N.-Y., Halpern, R., Kuper, H., Abubakar, A. A., Almasri, N. A., Arabloo, J., Arora, N. K., Backhaus, S., Berman, B. D., Breinbauer, C., Carr, G., de Vries, P. J., del Castillo-Hegyi, C., Eftekhari, A., Gladstone, M. J., Hoekstra, R. A., Kancherla, V., Mulaudzi, M. C., Kakooza-Mwesige, A., Ogbo, F. A., Olsen, H. E., Olusanya, J. O., Pandey, A.,

- Samms-Vaughan, M. E., Servili, C., Shaheen, A., Smythe, T., Wertlieb, D., Williams, A. N., Newton, C. R. J., Davis, A. C., & Kassebaum, N. J. (2020). Global burden of childhood epilepsy, intellectual disability, and sensory impairments. *Pediatrics*, 146(1), Article e20192623. <https://doi.org/10.1542/peds.2019-2623>
- Onghena, P., Maes, B., & Heyvaert, M. (2018). Mixed methods single case research: State of the art and future directions. *Journal of Mixed Methods Research*, 13(4), 461-480. <https://doi.org/10.1177/1558689818789530>
- Onozawa, K., Glover, V., Adams, D., Modi, N., & Kumar, R. C. (2001). Infant massage improves mother-infant interaction for mothers with postnatal depression. *Journal of Affective Disorders*, 63(1-3), 201-207. [https://doi.org/10.1016/S0165-0327\(00\)00198-1](https://doi.org/10.1016/S0165-0327(00)00198-1)
- Oosterman, M., & Schuengel, C. (2008). Attachment in foster children associated with caregivers' sensitivity and behavioral problems. *Infant Mental Health Journal*, 29(6), 609-623. <https://doi.org/10.1002/imhj.20198>
- Oppenheim, D., Dolev, S., Koren-Karie, N., Sher-Censor, E., Yirmiya, N., & Salomon, S. (2007). Parental resolution of the child's diagnosis and the parent-child relationship: Insights from the Reaction to Diagnosis Interview. In D. Oppenheim & D. F. Goldsmith (Eds.), *Attachment theory in clinical work with children: Bridging the gap between research and practice* (pp. 109-136). Guilford Press.
- Oppenheim, D., & Koren-Karie, N. (2002). Mothers' insightfulness regarding their children's internal worlds: The capacity underlying secure child-mother relationships. *Infant Mental Health Journal*, 23(6), 593-605. <https://doi.org/10.1002/imhj.10035>
- Oppenheim, D., Koren-Karie, N., Dolev, S., & Yirmiya, N. (2012). Maternal sensitivity mediates the link between maternal insightfulness/resolution and child-mother attachment: The case of children with autism spectrum disorder. *Attachment & Human Development*, 14(6), 567-584. <https://doi.org/10.1080/14616734.2012.727256>
- Oppenheim, D., Koren-Karie, N., Slonim, M., Mottes-Peleg, M., Sher-Censor, E., Dolev, S., & Yirmiya, N. (2024). Maternal and paternal insightfulness and reaction to the diagnosis in families of preschoolers with autism spectrum disorder: Associations with observed parental sensitivity and inter-parent interaction. *Attachment & Human Development*, Advance online publication. <https://doi.org/10.1080/14616734.2024.2326416>
- Ordway, M. R., Sadler, L. S., Dixon, J., Close, N., Mayes, L., & Slade, A. (2014). Lasting effects of an interdisciplinary home visiting program on child behavior: Preliminary follow-up results of a randomized trial. *Journal of Pediatric Nursing*, 29(1), 3-13. <https://doi.org/10.1016/j.pedn.2013.04.006>

- Oti-Boadi, M. (2017). Exploring the lived experiences of mothers of children with intellectual disability in Ghana. *SAGE Open*, 7(4), 1-12. <https://doi.org/10.1177/2158244017745578>
- Oxford, M. L., Spieker, S. J., Lohr, M. J., & Fleming, C. B. (2016). Promoting First Relationships: Randomized trial of a 10-week home visiting program with families referred to child protective services. *Child Maltreatment*, 21(4), 267-277. <https://doi.org/10.1177/1077559516668274>
- Pallini, S., Baiocco, R., Schneider, B. H., Madigan, S., & Atkinson, L. (2014). Early child-parent attachment and peer relations: A meta-analysis of recent research. *Journal of Family Psychology*, 28(1), 118-123. <https://doi.org/10.1037/a0035736>
- Pallini, S., Chirumbolo, A., Morelli, M., Baiocco, R., Laghi, F., & Eisenberg, N. (2018). The relation of attachment security status to effortful self-regulation: A meta-analysis. *Psychological Bulletin*, 144(5), 501-531. <https://doi.org/10.1037/bul0000134>
- Pallini, S., Morelli, M., Chirumbolo, A., Baiocco, R., Laghi, F., & Eisenberg, N. (2019). Attachment and attention problems: A meta-analysis. *Clinical Psychology Review*, 74, Article 101772. <https://doi.org/10.1016/j.cpr.2019.101772>
- Parker, R. I., & Vannest, K. (2009). An improved effect size for single-case research: Nonoverlap of all pairs. *Behaviour Therapy*, 40, 357-367. [https://doi.org/0005-7894/08/357-367\\$1.00/0](https://doi.org/0005-7894/08/357-367$1.00/0)
- Pasalich, D. S., Moretti, M. M., Hassall, A., & Curcio, A. (2021). Pilot randomized controlled trial of an attachment- and trauma-focused intervention for kinship caregivers. *Child Abuse and Neglect*, 120, Article 105178. <https://doi.org/10.1016/j.chiabu.2021.105178>
- Patton, K. A., Ware, R., McPherson, L., Emerson, E., & Lennox, N. (2018). Parent-related stress of male and female carers of adolescents with intellectual disabilities and carers of children within the general population: A cross-sectional comparison. *Journal of Applied Research in Intellectual Disabilities*, 31(1), 51-61. <https://doi.org/10.1111/jar.12292>
- Patty, N. J. S., Van Meeteren, K. M., Willemen, A. M., Mol, M. A. E., Verdonk, M., Ketelaar, M., & Schuengel, C. (2024). Understanding burnout among parents of children with complex care needs: A scoping review followed by a stakeholder consultation. *Journal of Child and Family Studies*, 33(5), 1378-1392. <https://doi.org/10.1007/s10826-024-02825-y>
- Peacock, S., Konrad, S., Watson, E., Nickel, D., & Muhajarine, N. (2013). Effectiveness of home visiting programs on child outcomes: A systematic review. *BMC Public Health*, 13, Article 17. <https://doi.org/10.1186/1471-2458-13-17>

- Pedersen, F. A., Bryan, Y., Huffman, L., & Del Carmen, R. (1989). *Construction of self and offspring in the pregnancy and early infancy periods*. Meetings of the Society for Research in Child Development (SRCD), Kansas City, MO, United States.
- Pederson, D. R., Bailey, H. N., Tarabulsky, G. M., Bento, S., & Moran, G. (2014). Understanding sensitivity: Lessons learned from the legacy of Mary Ainsworth. *Attachment & Human Development, 16*(3), 261-270. <https://doi.org/10.1080/14616734.2014.900094>
- Pederson, D. R., Gleason, K. E., Moran, G., & Bento, S. (1998). Maternal attachment representations, maternal sensitivity, and the infant-mother attachment relationship. *Developmental Psychology, 34*(5), 925-932. <https://doi.org/10.1037//0012-1649.34.5.925>.
- Pederson, D. R., & Moran, G. (1995). A categorical description of infant-mother relationships in the home and its relation to Q-sort measures of infant-mother interaction. *Monographs of the Society for Research in Child Development, 60*(2/3), 111-132.
- Pederson, D. R., Moran, G., Sitko, C., Campbell, K., Ghesquire, K., & Acton, H. (1990). Maternal sensitivity and the security of infant-mother attachment: A Q-sort study. *Child Development, 61*(6), 1974-1983. <https://doi.org/10.2307/1130851>
- Peer, J. W., & Hillman, S. B. (2014). Stress and resilience for parents of children with intellectual and developmental disabilities: A review of key factors and recommendations for practitioners. *Journal of Policy and Practice in Intellectual Disabilities, 11*(2), 92-98. <https://doi.org/10.1111/jppi.12072>
- Pepperdine, C. R., & McCrimmon, A. W. (2018). Test review: Vineland Adaptive Behavior Scales, third edition (Vineland-3) by Sparrow, S. S., Cicchetti, D. V., & Saulnier, C. A. *Canadian Journal of School Psychology, 33*(2), 157-163. <https://doi.org/10.1177/0829573517733845>
- Perez, E. M., Hendricks, M. K., Beard, J. L., Murray-Kolb, L. E., Berg, A., Tomlinson, M., Irlam, J., Isaacs, W., Njengele, T., Sive, A., & Vernon-Feagans, L. (2005). Mother-infant interactions and infant development are altered by maternal iron deficiency anemia. *Journal of Nutrition, 135*(4), 850-855. <https://doi.org/10.1093/jn/135.4.850>
- Perrone, L., Imrisek, S. D., Dash, A., Rodriguez, M., Monticciolo, E., & Bernard, K. (2021). Changing parental depression and sensitivity: Randomized clinical trial of ABC's effectiveness in the community. *Development and Psychopathology, 33*(3), 1026-1040. <https://doi.org/10.1017/s0954579420000310>
- Perry, N. B., Mackler, J. S., Calkins, S. D., & Keane, S. P. (2014). A transactional analysis of the relation between maternal sensitivity and child vagal regulation. *Developmental Psychology, 50*(3), 784-793. <https://doi.org/10.1037/a0033819>

- Peterson, N. J., Drotar, D., Olness, K., Guay, L., & Kiziri-Mayengo, R. (2001). The relationship of maternal and child HIV infection to security of attachment among Ugandan infants. *Child Psychiatry and Human Development*, 32(1), 3-17. <https://doi.org/http://dx.doi.org/10.1023/A:1017581412328>
- Petticrew, M., & Roberts, H. (2006). *Systematic reviews in the social sciences: A practical guide*. Blackwell.
- Philpott, S., & Muthukrishna, N. (2019). The practice of partnerships: A case study of the Disabled Children's Action Group, South Africa. *South African Journal of Childhood Education*, 9(1), Article a729. <https://doi.org/10.4102/sajce.v9i1.729>
- Pianta, R. C., Marvin, R. S., Britner, P. A., & Borowitz, K. C. (1996). Mothers' resolution of their children's diagnosis: Organized patterns of caregiving representations. *Infant Mental Health Journal*, 17(3), 239-256. [https://doi.org/https://doi.org/10.1002/\(SICI\)1097-0355\(199623\)17:3<239::AID-IMHJ4>3.0.CO;2-J](https://doi.org/https://doi.org/10.1002/(SICI)1097-0355(199623)17:3<239::AID-IMHJ4>3.0.CO;2-J)
- Pinderhughes, E. E., Nix, R., Foster, E. M., Jones, D., & The Conduct Problems Prevention Research Group. (2001). Parenting in context: Impact of neighborhood poverty, residential stability, public services, social networks, and danger on parental behaviors. *Journal of Marriage and Family*, 63(4), 941-953. <https://doi.org/10.1111/j.1741-3737.2001.00941.x>
- Pinquart, M. (2022). Attachment security to mothers and fathers: A meta-analysis on mean-level differences and correlations of behavioural measures. *Infant and Child Development*, 31(6), Article e2364. <https://doi.org/10.1002/icd.2364>
- Pinquart, M. (2023). Attachment security with mothers and fathers: A meta-analysis on mean-level differences and correlations of verbal attachment measures. *Journal of Child and Family Studies*, 32(12), 3848-3859. <https://doi.org/10.1007/s10826-023-02585-1>
- Platje, E., Sterkenburg, P., Overbeek, M., Kef, S., & Schuengel, C. (2018). The efficacy of VIPP-V parenting training for parents of young children with a visual or visual-and-intellectual disability: A randomized controlled trial. *Attachment & Human Development*, 20(5), 455-472. <https://doi.org/10.1080/14616734.2018.1428997>
- Platt, J. M., Keyes, K. M., McLaughlin, K. A., & Kaufman, A. S. (2019). Intellectual disability and mental disorders in a US population representative sample of adolescents. *Psychological Medicine*, 49(6), 952-961. <https://doi.org/10.1017/S0033291718001605>
- Porter, C. L., & Hsu, H. C. (2003). First-time mothers' perceptions of efficacy during the transition to motherhood: Links to infant temperament. *Journal of Family Psychology*, 17(1), 54-64. <https://doi.org/10.1037/0893-3200.17.1.54>

- Poslawsky, I. E., Naber, F. B., Bakermans-Kranenburg, M. J., van Daalen, E., van Engeland, H., & Van IJzendoorn, M. H. (2015). Video-feedback intervention to promote positive parenting adapted to autism (VIPP-AUTI): A randomized controlled trial. *Autism, 19*(5), 588-603. <https://doi.org/10.1177/1362361314537124>
- Potter-Dickey, A., Letourneau, N., & de Koning, A. P. J. (2020). Associations between neurodevelopmental disorders and attachment patterns in preschool-aged children: Systematic review. *Current Developmental Disorders Reports, 7*(4), 277-289. <https://doi.org/10.1007/s40474-020-00219-5>
- Powell, B., Cooper, G., Hoffman, K., & Marvin, B. (2014). *The Circle of Security intervention: Enhancing attachment in early parent-child relationships*. Guilford Press.
- PracticeWise. (2005). *Psychosocial and combined treatments coding manual*. Author.
- Prag, A., Donald, K. A., Weldon, E., Halligan, S. L., Stein, D. J., & Malcolm-Smith, S. (2023). Has maternal sensitivity been comprehensively investigated in Sub-Saharan Africa? A narrative scoping review. *Acta Neuropsychiatrica*, Advance online publication. <https://doi.org/10.1017/neu.2023.20>
- Pretorius, C., & Steadman, J. (2017). Barriers and facilitators to caring for a child with cerebral palsy in rural communities of the Western Cape, South Africa. *Child Care in Practice, 24*(4), 413-430. <https://doi.org/10.1080/13575279.2017.1347146>
- Provenzi, L., Giusti, L., Caglia, M., Rosa, E., Mascheroni, E., & Montirosso, R. (2020). Evidence and open questions for the use of video-feedback interventions with parents of children with neurodevelopmental disabilities. *Frontiers in Psychology, 11*, Article 1374. <https://doi.org/10.3389/fpsyg.2020.01374>
- Pruessner, J. C., Kirschbaum, C., Meinlschmid, G., & Hellhammer, D. H. (2003). Two formulas for computation of the area under the curve represent measures of total hormone concentration versus time-dependent change. *Psychoneuroendocrinology, 28*(7), 916-931. [https://doi.org/10.1016/s0306-4530\(02\)00108-7](https://doi.org/10.1016/s0306-4530(02)00108-7)
- Purswell, K. E., & Ray, D. C. (2014). Research with small samples: Considerations for single case and randomized small group experimental designs. *Counseling Outcome Research and Evaluation, 5*(2), 116-126. <https://doi.org/10.1177/2150137814552474>
- Pustejovsky, J. E., & Swan, D. M. (2018). *Single-case effect size calculator (version 0.5) web application*. <https://jepusto.shinyapps.io/SCD-effect-sizes/>
- Raby, K. L., Freedman, E., Yarger, H. A., Lind, T., & Dozier, M. (2019). Enhancing the language development of toddlers in foster care by promoting foster parents' sensitivity: Results from a

- randomized controlled trial. *Developmental Science*, 22(2), Article e12753. <https://doi.org/10.1111/desc.12753>
- Raby, K. L., Waters, T. E. A., Tabachnick, A. R., Zajac, L., & Dozier, M. (2021). Increasing secure base script knowledge among parents with Attachment and Biobehavioral Catch-up. *Development and Psychopathology*, 33(2), 554-564. <https://doi.org/10.1017/S0954579420001765>
- Ragni, B., Boldrini, F., Mangialavori, S., Cacioppo, M., Capurso, M., & De Stasio, S. (2022). The efficacy of parent training interventions with parents of children with developmental disabilities. *International Journal of Environmental Research and Public Health*, 19(15), Article 9685. <https://doi.org/10.3390/ijerph19159685>
- Ramsden, R., Reeves, E., Whitwell, E., Lane, N., & Fletcher, H. K. (2024). A systematic review of attachment interventions for people with intellectual disability and their caregivers. *Journal of Intellectual Disabilities*, Advance online publication. <https://doi.org/10.1177/17446295241289734>
- Redmond, B., & Richardson, V. (2003). Just getting on with it: Exploring the service needs of mothers who care for young children with severe/profound and life-threatening intellectual disability. *Journal of Applied Research in Intellectual Disabilities*, 16(3), 205-218. <https://doi.org/10.1046/j.1468-3148.2003.00165.x>
- Rendle, K. A., Abramson, C. M., Garrett, S. B., Halley, M. C., & Dohan, D. (2019). Beyond exploratory: A tailored framework for designing and assessing qualitative health research. *British Medical Journal: Open*, 9(8), Article e030123. <https://doi.org/10.1136/bmjopen-2019-030123>
- Republic of South Africa. (2013). *Protection of personal information act 4 of 2013*. RSA. https://www.gov.za/sites/default/files/gcis_document/201409/3706726-11act4of2013popi.pdf
- Ribeiro, A. C. L., Seidl-de-Moura, M. L., Fernandes Mendes, D. M. L., & Mesman, J. (2021). Maternal sensitivity in interactions with their 2-month-old infants in Rio de Janeiro - Brazil. *Attachment & Human Development*, 23(2), 188-198. <https://doi.org/10.1080/14616734.2020.1828543>
- Richman, D. M., Belmont, J. M., Kim, M., Slavin, C. B., & Hayner, A. K. (2009). Parenting stress in families of children with Cornelia de Lange syndrome and Down syndrome. *Journal of Developmental and Physical Disabilities*, 21(6), 537-553. <https://doi.org/10.1007/s10882-009-9156-6>
- Richter, L. (2018). Supporting parents to provide nurturing care for young children: The fundamental ingredients for a better world. *Zero to Three Journal*, 38(4), 10-15.
- Richter, L. (2022). The power of simple behaviours for human connection: Promoting intuitive parent-child interactions for healthy development. *Early Childhood Matters*, 131, 20-23.

<https://earlychildhoodmatters.online/2022/the-power-of-simple-behaviours-for-human-connection/>

- Riemersma, I., Van Santvoort, F., Van Doesum, K. T. M., Hosman, C. M. H., Janssens, J. M. A. M., Weeland, M., & Otten, R. (2022). Social-emotional problems of children with mild intellectual disabilities having parents with mental health concerns: A quantitative comparison study. *Journal of Intellectual Disabilities*, 26(4), 811-823. <https://doi.org/10.1177/17446295211030092>
- Risi, A., Pickard, J. A., & Bird, A. L. (2021). The implications of parent mental health and wellbeing for parent-child attachment: A systematic review. *PLoS One*, 16(12), Article e0260891. <https://doi.org/10.1371/journal.pone.0260891>
- Roben, C. K. P., Dozier, M., Caron, E. B., & Bernard, K. (2017). Moving an evidence-based parenting program into the community. *Child Development*, 88(5), 1447-1452. <https://doi.org/10.1111/cdev.12898>
- Robinson, S., Hill, M., Fisher, K. R., & Graham, A. (2020). Belonging and exclusion in the lives of young people with intellectual disability in small town communities. *Journal of Intellectual Disabilities*, 24(1), 50-68. <https://doi.org/10.1177/1744629518765830>
- Rochat, T. J., Houle, B., Stein, A., Mitchell, J., & Bland, R. M. (2019). Maternal alcohol use and children's emotional and cognitive outcomes in rural South Africa. *South African Medical Journal*, 109(7), 526-534. <https://doi.org/doi:10.7196/SAMJ.2019.v109i6.13120>
- Rodas, N. V., Zeedyk, S. M., & Baker, B. L. (2016). Unsupportive parenting and internalising behaviour problems in children with or without intellectual disability. *Journal of Intellectual Disability Research*, 60(12), 1200-1211. <https://doi.org/10.1111/jir.12332>
- Rodrigues, M., Sokolovic, N., Madigan, S., Luo, Y., Silva, V., Misra, S., & Jenkins, J. (2021). Paternal sensitivity and children's cognitive and socioemotional outcomes: A meta-analytic review. *Child Development*, 92(2), 554-577. <https://doi.org/10.1111/cdev.13545>
- Roggman, L. A., Boyce, L. K., & Cook, G. A. (2009). Keeping kids on track: Impacts of a parenting-focused Early Head Start program on attachment security and cognitive development. *Early Education & Development*, 20(6), 920-941. <https://doi.org/10.1080/10409280903118416>
- Rohwerder, B. (2018). *K4d helpdesk report: Disability stigma in developing countries*. Institute of Development Studies. https://opendocs.ids.ac.uk/opendocs/bitstream/handle/20.500.12413/13795/Disability_stigma_in_developing_countries.pdf?sequence=1

- Rotenberg, S., McGrath, J. J., Roy-Gagnon, M. H., & Tu, M. T. (2012). Stability of the diurnal cortisol profile in children and adolescents. *Psychoneuroendocrinology*, 37(12), 1981-1989. <https://doi.org/10.1016/j.psyneuen.2012.04.014>
- Rutgers, A. H., Bakermans-Kranenburg, M. J., Van IJzendoorn, M. H., & Van Berckelaer-Onnes, I. A. (2004). Autism and attachment: A meta-analytic review. *Journal of Child Psychology and Psychiatry*, 45(6), 1123-1134. <https://doi.org/10.1111/j.1469-7610.2004.t01-1-00305.x>
- Ruths, S., Straand, J., Nygaard, H. A., Bjorvatn, B., & Pallesen, S. (2004). Effect of antipsychotic withdrawal on behavior and sleep/wake activity in nursing home residents with dementia: A randomized, placebo-controlled, double-blinded study the bergen district nursing home study. *Journal of the American Geriatrics Society*, 52(10), 1737-1743. <https://doi.org/https://doi.org/10.1111/j.1532-5415.2004.52470.x>
- Rydzewska, E., Dunn, K., Cooper, S. A., & Kinnear, D. (2021). Mental ill-health in mothers of people with intellectual disabilities compared with mothers of typically developing people: A systematic review and meta-analysis. *Journal of Intellectual Disability Research*, 65(6), 501-534. <https://doi.org/10.1111/jir.12827>
- Sadiki, M. C. (2022). Parenting a child with disability in rural South Africa: Navigating the healthcare system. *African Journal of Disability*, 11, Article 942. <https://doi.org/10.4102/ajod.v11i0.942>
- Sadiki, T. G., & Mashegoane, S. (2019). Caring for children with an intellectual disability: An exploratory qualitative study. *Journal of Psychology in Africa*, 29(2), 191-194. <https://doi.org/10.1080/14330237.2019.1603020>
- Sadler, L. S., Slade, A., Close, N., Webb, D. L., Simpson, T., Fennie, K., & Mayes, L. C. (2013). Minding the Baby: Enhancing reflectiveness to improve early health and relationship outcomes in an interdisciplinary home-visiting program. *Infant Mental Health Journal*, 34(5), 391-405. <https://doi.org/10.1002/imhj.21406>
- Saeri, A. K., Cruwys, T., Barlow, F. K., Stronge, S., & Sibley, C. G. (2018). Social connectedness improves public mental health: Investigating bidirectional relationships in the New Zealand attitudes and values survey. *Australian & New Zealand Journal of Psychiatry*, 52(4), 365-374. <https://doi.org/10.1177/0004867417723990>
- Sajaniemi, N., Makela, J., Salokorpi, T., Von Wendt, L., Hamalainen, T., & Hakamies-Blomqvist, L. (2001). Cognitive performance and attachment patterns at four years of age in extremely low birth weight infants after early intervention. *European Child & Adolescent Psychiatry*, 10(2), 122-129. <https://doi.org/10.1007/s007870170035>

- Sakwape, K., Machailo, R., & Koen, M. P. (2023). Exploring role strain and experiences of caregivers of children living with disabilities. *Nursing Open*, 10(5), 2886-2894. <https://doi.org/10.1002/nop2.1530>
- Saloojee, G., Phohole, M., Saloojee, H., & IJsselmuiden, C. (2007). Unmet health, welfare and educational needs of disabled children in an impoverished South African peri-urban township. *Child: Care, Health and Development*, 33(3), 230-235. <https://doi.org/10.1111/j.1365-2214.2006.00645.x>
- Sambu, W. (2019). Child nutrition. In M. Shung-King, L. Lake, D. Sanders, & M. Hendricks (Eds.), *South African child gauge 2019: Child and adolescent health—Leave no one behind* (pp. 234-239). Children's Institute/University of Cape Town. www.ci.uct.ac.za/sites/default/files/content_migration/health_uct_ac_za/533/files/ChildGauge_2019_final_print%2520%2528sm%2529.pdf
- Samdan, G., Reinelt, T., Kiel, N., Mathes, B., & Pauen, S. (2022). Maternal self-efficacy development from pregnancy to 3 months after birth. *Infant Mental Health Journal*, 43(6), 864-877. <https://doi.org/10.1002/imhj.22018>
- Sameroff, A. J., & Fiese, B. H. (2000). Transactional regulation: The developmental ecology of early intervention. In J. P. Shonkoff & S. J. Meisels (Eds.), *Handbook of early childhood intervention* (pp. 135-159). Cambridge University Press. <https://doi.org/10.1017/cbo9780511529320.009>
- Sattler, P. L., Paceley, M., Byers, K., Mulkey, Z., & Mendenhall, A. (2022). Lost in translation: Bilingual parent coaches' experiences implementing an un-adapted early childhood intervention with non-English speakers. *Global Implementation Research and Applications*, 2(1), 12-21. <https://doi.org/10.1007/s43477-022-00037-4>
- Savari, K., Naseri, M., & Savari, Y. (2023). Evaluating the role of perceived stress, social support, and resilience in predicting the quality of life among the parents of disabled children. *International Journal of Disability, Development and Education*, 70(5), 644-658. <https://doi.org/10.1080/1034912x.2021.1901862>
- Scavarda, A. (2024). The shame-blame complex of parents with cognitively disabled children in Italy. *Sociology of Health & Illness*, 46(5), 966-983. <https://doi.org/10.1111/1467-9566.13742>
- Schalock, R. L., Luckasson, R., & Tassé, M. J. (2021). *Intellectual disability: Definition, diagnosis, classification, and systems of supports* (12th edition). American Association on Intellectual and Developmental Disabilities (AAIDD).

- Scherer, N., Verhey, I., & Kuper, H. (2019). Depression and anxiety in parents of children with intellectual and developmental disabilities: A systematic review and meta-analysis. *PLoS One*, *14*(7), Article e0219888. <https://doi.org/10.1371/journal.pone.0219888>
- Schneider, B. H., Atkinson, L., & Tardif, C. (2001). Child-parent attachment and children's peer relations: A quantitative review. *Developmental Psychology*, *37*(1), 86-100. <https://doi.org/10.1037/0012-1649.37.1.86>
- Schoemaker, N. K., Juffer, F., Rippe, R. C. A., Vermeer, H. J., Stoltenborgh, M., Jagersma, G. J., Maras, A., & Alink, L. R. A. (2020). Positive parenting in foster care: Testing the effectiveness of a video-feedback intervention program on foster parents' behavior and attitudes. *Children and Youth Services Review*, *110*, Article 104779. <https://doi.org/10.1016/j.childyouth.2020.104779>
- Schuengel, C., & Janssen, C. (2006). People with mental retardation and psychopathology: Stress, affect regulation and attachment: A review. *International Review of Research in Mental Retardation*, *32*, 229-260. [https://doi.org/10.1016/S0074-7750\(06\)32008-3](https://doi.org/10.1016/S0074-7750(06)32008-3)
- Schuengel, C., Sterkenburg, P. S., Jeczynski, P., Janssen, C. G., & Jongbloed, G. (2009). Supporting affect regulation in children with multiple disabilities during psychotherapy: A multiple case design study of therapeutic attachment. *Journal of Consulting and Clinical Psychology*, *77*(2), 291-301. <https://doi.org/10.1037/a0014274>
- Schuiringa, H., van Nieuwenhuijzen, M., Orobio de Castro, B., & Matthys, W. (2015). Parenting and the parent-child relationship in families of children with mild to borderline intellectual disabilities and externalizing behavior. *Research in Developmental Disabilities*, *36*, 1-12. <https://doi.org/10.1016/j.ridd.2014.08.018>
- Scior, K., Hamid, A., Hastings, R., Werner, S., Belton, C., Laniyan, A., Patel, M., & Kett, M. (2015). *Intellectual disabilities: Raising awareness and combating stigma—A global review. Executive summary and recommendations*. University College London. <https://www.ucl.ac.uk/intellectual-developmental-disabilities-research/sites/intellectual-developmental-disabilities-research/files/ExecSummary.pdf>
- Scior, K., Hamid, A., Hastings, R., Werner, S., Belton, C., Laniyan, A., Patel, M., & Kett, M. (2020). Intellectual disability stigma and initiatives to challenge it and promote inclusion around the globe. *Journal of Policy and Practice in Intellectual Disabilities*, *17*(2), 165-175. <https://doi.org/10.1111/jppi.12330>
- Segerstrom, S. C., Boggero, I. A., Smith, G. T., & Sephton, S. E. (2014). Variability and reliability of diurnal cortisol in younger and older adults: Implications for design decisions. *Psychoneuroendocrinology*, *49*, 299-309. <https://doi.org/10.1016/j.psyneuen.2014.07.022>

- Seys, D. (1987). *Kwaliteit van zorg: Zorg voor kwaliteit (Quality of care: Caring for quality)* [Unpublished doctoral dissertation]. University of Nijmegen.
- Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, 22(2), 63-75. <https://doi.org/10.3233/EFI-2004-22201>
- Sher-Censor, E., & Shahar-Lahav, R. (2022). Parents' resolution of their child's diagnosis: A scoping review. *Attachment & Human Development*, 24(5), 580-604. <https://doi.org/10.1080/14616734.2022.2034899>
- Shin, H., Park, Y. J., & Kim, M. J. (2006). Predictors of maternal sensitivity during the early postpartum period. *Journal of Advanced Nursing*, 55(4), 425-434. <https://doi.org/10.1111/j.1365-2648.2006.03943.x>
- Shin, J., Nhan, N. V., Crittenden, K. S., Hong, H. T. D., Flory, M., & Ladinsky, J. (2006). Parenting stress of mothers and fathers of young children with cognitive delays in Vietnam. *Journal of Intellectual Disability Research*, 50(10), 748-760. <https://doi.org/10.1111/j.1365-2788.2006.00840.x>
- Shonkoff, J. P. (2015). The neurobiology of early childhood development and the foundation of a sustainable society. In P. T. M. Marope & Y. Kaga (Eds.), *Investing against evidence: The global state of early childhood care and education* (pp. 55-71). UNESCO Publishing. http://www.ibe.unesco.org/sites/default/files/resources/investing_against_evidence_pdf.jpg_.pdf
- Siddaway, A. P., Wood, A. M., & Hedges, L. V. (2019). How to do a systematic review: A best practice guide for conducting and reporting narrative reviews, meta-analyses, and meta-syntheses. *Annual Review of Psychology*, 70, 747-770. <https://doi.org/10.1146/annurev-psych-010418-102803>
- Siller, M., Hutman, T., & Sigman, M. (2013). A parent-mediated intervention to increase responsive parental behaviors and child communication in children with ASD: A randomized clinical trial. *Journal of Autism and Developmental Disorders*, 43(3), 540-555. <https://doi.org/10.1007/s10803-012-1584-y>
- Siller, M., Swanson, M., Gerber, A., Hutman, T., & Sigman, M. (2014). A parent-mediated intervention that targets responsive parental behaviors increases attachment behaviors in children with ASD: Results from a randomized clinical trial. *Journal of Autism and Developmental Disorders*, 44(7), 1720-1732. <https://doi.org/10.1007/s10803-014-2049-2>
- Singer, G. H. S. (2006). Meta-analysis of comparative studies of depression in mothers of children with and without developmental disabilities. *American Journal on Mental Retardation*, 111(3), 155-169. [https://doi.org/10.1352/0895-8017\(2006\)111\[155:Mocsod\]2.0.Co;2](https://doi.org/10.1352/0895-8017(2006)111[155:Mocsod]2.0.Co;2)

- Slade, A., Holland, M. L., Ordway, M. R., Carlson, E. A., Jeon, S., Close, N., Mayes, L. C., & Sadler, L. S. (2020). Minding the Baby: Enhancing parental reflective functioning and infant attachment in an attachment-based, interdisciplinary home visiting program. *Development and Psychopathology*, 32(1), 123-137. <https://doi.org/10.1017/S0954579418001463>
- Slade, A., Sadler, L. S., Webb, D. L., Simpson, T., & Close, N. (2018). *Minding the baby: Treatment manual* (5th edition). Yale University.
- Slone, M., Durrheim, K., Kaminer, D., & Lachman, P. (1999). Issues in the identification of comorbidity of mental retardation and psychopathology in a multicultural context. *Social Psychiatry and Psychiatric Epidemiology*, 34(4), 190-194. <https://doi.org/10.1007/s001270050132>
- Smart, L. K. (2016). *Parenting self-efficacy in parents of children with autism spectrum disorders* [Doctoral dissertation, Brigham Young University]. BYU Scholars Archive. <https://scholarsarchive.byu.edu/etd/5842>
- Solomon, J., & George, C. (2016). The measurement of attachment security and related constructs in infancy and early childhood. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (3rd edition, pp. 366-396). Guilford Press.
- Sorsdahl, K., Petersen, I., Myers, B., Zingela, Z., Lund, C., & van der Westhuizen, C. (2023). A reflection of the current status of the mental healthcare system in South Africa. *SSM - Mental Health*, 4, Article 100247. <https://doi.org/10.1016/j.ssmmh.2023.100247>
- Sparrow, S. S., Cicchetti, D. V., & Saulnier, C. A. (2016). *Vineland adaptive behavior scales, third edition (Vineland-3)*. Pearson.
- Spear, C. F. M. S., Strickland-Cohen, M. K. P., Romer, N. P., & Albin, R. W. P. (2013). An examination of social validity within single-case research with students with emotional and behavioral disorders. *Remedial and Special Education*, 34(6), 357-370. <https://doi.org/10.1177/0741932513490809>
- Spieker, S. J., Oxford, M. L., Kelly, J. F., Nelson, E. M., & Fleming, C. B. (2012). Promoting First Relationships: Randomized trial of a relationship-based intervention for toddlers in child welfare. *Child Maltreatment*, 17(4), 271-286. <https://doi.org/10.1177/1077559512458176>
- Spies, R., Sterkenburg, P. S., van Rensburg, E., & Schuengel, C. (2016). Attachment relationships of preschool-aged children of mothers with HIV and HIV-related psychosis. *Attachment & Human Development*, 18(5), 473-486. <https://doi.org/10.1080/14616734.2016.1184291>
- Spies, R., Sterkenburg, P. S., van Rensburg, E., & Schuengel, C. (2017). HIV/AIDS and psychosis: Needs, challenges, and support of affected mothers. *Journal of Child and Family Studies*, 26(1), 183-193. <https://doi.org/10.1007/s10826-016-0543-1>

- Spiker, D., Boyce, G. C., & Boyce, L. K. (2002). Parent-child interactions when young children have disabilities. *International Review of Research in Mental Retardation*, 25, 35-70. [https://doi.org/https://doi.org/10.1016/S0074-7750\(02\)80005-2](https://doi.org/https://doi.org/10.1016/S0074-7750(02)80005-2)
- Spillane, N. S., Schick, M. R., Kirk-Provencher, K. T., Nalven, T., Goldstein, S. C., Crawford, M. C., & Weiss, N. H. (2023). Trauma and substance use among indigenous peoples of the United States and Canada: A scoping review. *Trauma, Violence, & Abuse*, 24(5), 3297-3312. <https://doi.org/10.1177/15248380221126184>
- Sprang, G. (2009). The efficacy of a relational treatment for maltreated children and their families. *Child and Adolescent Mental Health*, 14(2), 81-88. <https://doi.org/10.1111/j.1475-3588.2008.00499.x>
- Spruit, A., Goos, L., Weenink, N., Rodenburg, R., Niemeyer, H., Stams, G. J., & Colonnaesi, C. (2020). The relation between attachment and depression in children and adolescents: A multilevel meta-analysis. *Clinical Child and Family Psychology Review*, 23(1), 54-69. <https://doi.org/10.1007/s10567-019-00299-9>
- Stansert Katzen, L., Tomlinson, M., Christodoulou, J., Laurenzi, C., le Roux, I., Baker, V., Mbewu, N., le Roux, K. W., & Rotheram Borus, M. J. (2020). Home visits by community health workers in rural South Africa have a limited, but important impact on maternal and child health in the first two years of life. *BMC Health Services Research*, 20(1), Article 594. <https://doi.org/10.1186/s12913-020-05436-7>
- Statistics South Africa. (2023). *Census 2022: Statistical release*. SSA. https://census.statssa.gov.za/assets/documents/2022/P03014_Census_2022_Statistical_Release.pdf
- Staunton, E., Kehoe, C., & Sharkey, L. (2020). Families under pressure: Stress and quality of life in parents of children with an intellectual disability. *Irish Journal of Psychological Medicine*, Advance Online Publication. <https://doi.org/10.1017/ipm.2020.4>
- Staunton, E., Kehoe, C., & Sharkey, L. (2023). Families under pressure: Stress and quality of life in parents of children with an intellectual disability. *Irish Journal of Psychological Medicine*, 40(2), 192-199. <https://doi.org/10.1017/ipm.2020.4>
- Steele, H., & Steele, M. (Eds.) (2018). *Handbook of attachment-based interventions*. Guilford Press.
- Steele, H., Murphy, A., Bonuck, K., Meissner, P., & Steele, M. (2019). Randomized control trial report on the effectiveness of Group Attachment-Based Intervention (GABI): Improvements in the parent-child relationship not seen in the control group. *Developmental Psychopathology*, 31(1), 203-217. <https://doi.org/10.1017/S0954579418001621>

- Steele, M., Steele, H., Bate, J., Knafo, H., Kinsey, M., Bonuck, K., Meisner, P., & Murphy, A. (2014). Looking from the outside in: The use of video in attachment-based interventions. *Attachment & Human Development*, 16(4), 402-415. <https://doi.org/10.1080/14616734.2014.912491>
- Stein, D. J., Sorsdahl, K., & Lund, C. (2018). Intellectual disability in South Africa: Addressing a crisis in mental health services. *South African Medical Journal*, 108(3), 147-148. <https://doi.org/10.7196/SAMJ.2018.v108i3.13171>
- Sterkenburg, P. S. (2008). Intervening in stress, attachment and challenging behavior: Effects in children with multiple disabilities [Doctoral thesis, Vrije Universiteit Amsterdam]. VU Research Portal. <https://research.vu.nl/en/publications/intervening-in-stress-attachment-and-challenging-behaviour-effect>.
- Sterkenburg, P. S., Janssen, C. G. C., Blankenstein, R., & Schuengel, C. (2008). *Cortisol changes during psychotherapy in adolescents with a visual and intellectual disability and challenging behavior* [Unpublished manuscript].
- Sterkenburg, P. S., Janssen, C. G. C., & Schuengel, C. (2008). The effect of an attachment-based behaviour therapy for children with visual and severe intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, 21(2), 126-135. <https://doi.org/10.1111/j.1468-3148.2007.00374.x>
- Sterkenburg, P. S., Schuengel, C., & Janssen, C. (2008). Developing a therapeutic relationship with a blind client with a severe intellectual disability and persistent challenging behaviour. *Disability and Rehabilitation*, 30(17), 1318-1327. <https://doi.org/10.1080/09638280701482597>
- St Pierre, R. G., & Layzer, J. I. (1999). Using home visits for multiple purposes: The Comprehensive Child Development Program. *The Future of Children*, 9(1), 134-151.
- Stronach, E. P., Toth, S. L., Rogosch, F., & Cicchetti, D. (2013). Preventive interventions and sustained attachment security in maltreated children. *Development and Psychopathology*, 25(4, Part 1), 919-930. <https://doi.org/10.1017/S0954579413000278>
- Suchman, N. E. (2016). Mothering from the Inside Out: A mentalization-based therapy for mothers in treatment for drug addiction. *International Journal of Birth and Parent Education*, 3(4), 19-24.
- Suchman, N., Berg, A., Abrahams, L., Abrahams, T., Adams, A., Cowley, B., Decoste, C., Hawa, W., Lachman, A., Mpinda, B., Cader-Mokoa, N., Nama, N., & Voges, J. (2019). Mothering from the Inside Out: Adapting an evidence-based intervention for high-risk mothers in the Western Cape of South Africa. *Development and Psychopathology*, 32(1), 105-122. <https://doi.org/10.1017/S0954579418001451>

- Suchman, N. E., DeCoste, C. L., McMahon, T. J., Dalton, R., Mayes, L. C., & Borelli, J. (2017). Mothering from the Inside Out: Results of a second randomized clinical trial testing a mentalization-based intervention for mothers in addiction treatment. *Development and Psychopathology*, 29(2), 617-636. <https://doi.org/10.1017/S0954579417000220>
- Super, C. M., & Harkness, S. (2002). Culture structures the environment for development. *Human Development*, 45(4), 270-274. <https://www.proquest.com/scholarly-journals/culture-structures-environment-development/docview/224011679/se-2?accountid=14717>
- Swan, D. M., & Pustejovsky, J. E. (2018). *Basic effect sizes calculations using SingleCaseES*. <https://cran.r-project.org/web/packages/SingleCaseES/vignettes/Using-SingleCaseES.html>
- Sweet, M. A., & Appelbaum, M. I. (2004). Is home visiting an effective strategy? A meta-analytic review of home visiting programs for families with young children. *Child Development*, 75(5), 1435-1456. <https://doi.org/10.1111/j.1467-8624.2004.00750.x>
- Tabachnick, A. R., He, Y., Zajac, L., Carlson, E. A., & Dozier, M. (2022). Secure attachment in infancy predicts context-dependent emotion expression in middle childhood. *Emotion*, 22(2), 258-269. <https://doi.org/10.1037/emo0000985>
- Tabachnick, A. R., Raby, K. L., Goldstein, A., Zajac, L., & Dozier, M. (2019). Effects of an attachment-based intervention in infancy on children's autonomic regulation during middle childhood. *Biological Psychology*, 143, 22-31. <https://doi.org/10.1016/j.biopsycho.2019.01.006>
- Tassé, M. J., & Kim, M. (2023). Examining the relationship between adaptive behavior and intelligence. *Behavioral Sciences*, 13(3), Article 252. <https://doi.org/10.3390/bs13030252>
- Tassé, M. J., Luckasson, R., & Schalock, R. L. (2016). The relation between intellectual functioning and adaptive behavior in the diagnosis of intellectual disability. *Intellectual and Developmental Disabilities*, 54(6), 381-390. <https://doi.org/10.1352/1934-9556-54.6.381>
- Tekola, B., Kinfé, M., Girma, F., Hanlon, C., & Hoekstra, R. A. (2020). Perceptions and experiences of stigma among parents of children with developmental disorders in Ethiopia: A qualitative study. *Social Science & Medicine*, 256, Article 113034. <https://doi.org/10.1016/j.socscimed.2020.113034>
- Tereno, S., Madigan, S., Lyons-Ruth, K., Plamondon, A., Atkinson, L., Guedeney, N., Greacen, T., Dugravier, R., Saias, T., & Guedeney, A. (2017). Assessing a change mechanism in a randomized home-visiting trial: Reducing disrupted maternal communication decreases infant disorganization. *Development and Psychopathology*, 29(2), 637-649. <https://doi.org/10.1017/S0954579417000232>

- Tereno, S., Savelon, S. V., & Guedeney, A. (2019). Preventive parent-young child interaction interventions to promote optimal attachment. *Current Opinion in Psychiatry*, 32(6), 542-548. <https://doi.org/10.1097/ycp.0000000000000552>
- Tessier, R., Cristo, M., Velez, S., Giron, M., de Calume, Z. F., Ruiz-Palaez, J. G., Charpak, Y., & Charpak, N. (1998). Kangaroo Mother Care and the bonding hypothesis. *Pediatrics*, 102(2), Article e17. <https://doi.org/10.1542/peds.102.2.e17>
- Tessier, R., Tarabulsy, G. M., Larin, S., Laganière, J., Gagnon, M.-F., & Trahan, J. (2002). A home-based description of attachment in physically disabled infants. *Social Development*, 11(2), 147-165. <https://doi.org/https://doi.org/10.1111/1467-9507.00192>
- Theule, J., Germain, S. M., Cheung, K., Hurl, K. E., & Markel, C. (2016). Conduct disorder/oppositional defiant disorder and attachment: A meta-analysis. *Journal of Developmental and Life-Course Criminology*, 2(2), 232-255. <https://doi.org/10.1007/s40865-016-0031-8>
- Thorpe, D., Silver, J., Perrone, L., DeSantis, N., Dash, A., Rodriguez, M., Beras-Monticciolo, E., & Bernard, K. (2022). Ecological predictors of parental beliefs about infant crying in a randomized clinical trial of ABC. *Journal of Clinical Child and Adolescent Psychology*, 51(5), 780-795. <https://doi.org/10.1080/15374416.2021.1916939>
- Tilahun, D., Hanlon, C., Fekadu, A., Tekola, B., Baheretibeb, Y., & Hoekstra, R. A. (2016). Stigma, explanatory models and unmet needs of caregivers of children with developmental disorders in a low-income African country: A cross-sectional facility-based survey. *BMC Health Services Research*, 16, Article 152. <https://doi.org/10.1186/s12913-016-1383-9>
- Todd, S., & Jones, S. (2003). 'Mum's the word!': Maternal accounts of dealings with the professional world. *Journal of Applied Research in Intellectual Disabilities*, 16(3), 229-244. <https://doi.org/10.1046/j.1468-3148.2003.00163.x>
- Tomlinson, M. (2001). Mother-infant attachment, culture and research: A pilot study. *Southern African Journal of Child and Adolescent Mental Health*, 13(1), 41-54. <https://doi.org/10.1080/16826108.2001.9632391>
- Tomlinson, M., Cooper, P., & Murray, L. (2005). The mother-infant relationship and infant attachment in a South African peri-urban settlement. *Child Development*, 76(5), 1044-1054. <https://doi.org/10.1111/j.1467-8624.2005.00896.x>
- Tomlinson, M., Murray, L., & Cooper, P. J. (2010). Attachment theory, culture, and Africa: Past, present, and future. In P. Erdman & K. M. Ng (Eds.), *Attachment: Expanding the cultural connections* (pp. 181-194). Routledge.

- Tomlinson, M., Rabie, S., Skeen, S., Hunt, X., Murray, L., & Cooper, P. J. (2020). Improving mother-infant interaction during infant feeding: A randomised controlled trial in a low-income community in South Africa. *Infant Mental Health Journal*, 41(6), 850-858. <https://doi.org/10.1002/imhj.21881>
- Tomlinson, M., Skeen, S., Melendez-Torres, G. J., Hunt, X., Desmond, C., Morgan, B., Murray, L., Cooper, P. J., Rathod, S. D., Marlow, M., & Fearon, P. (2022). First 1,000 days: Enough for mothers but not for children? Long-term outcomes of an early intervention on maternal depressed mood and child cognitive development: Follow-up of a randomised controlled trial. *Journal of Child Psychology and Psychiatry*, 63(3), 261-272. <https://doi.org/10.1111/jcpp.13482>
- Tomlinson, M., Yasamy, M. T., Emerson, E., Officer, A., Richler, D., & Saxena, S. (2014). Setting global research priorities for developmental disabilities, including intellectual disabilities and autism. *Journal of Intellectual Disability Research*, 58(12), 1121-1130. <https://doi.org/10.1111/jir.12106>
- Toth, S. L., Rogosch, F. A., Manly, J. T., & Cicchetti, D. (2006). The efficacy of Toddler-Parent Psychotherapy to reorganize attachment in the young offspring of mothers with major depressive disorder: A randomized preventive trial. *Journal of Consulting and Clinical Psychology*, 74(6), 1006-1016. <https://doi.org/10.1037/0022-006X.74.6.1006>
- Totsika, V., Hastings, R. P., Vagenas, D., & Emerson, E. (2014). Parenting and the behavior problems of young children with an intellectual disability: Concurrent and longitudinal relationships in a population-based study. *American Journal of Intellectual and Developmental Disabilities*, 119(5), 422-435. <https://doi.org/10.1352/1944-7558-119.5.422>
- Totsika, V., Liew, A., Absoud, M., Adnams, C., & Emerson, E. (2022). Mental health problems in children with intellectual disability. *The Lancet Child & Adolescent Health*, 6(6), 432-444. [https://doi.org/10.1016/S2352-4642\(22\)00067-0](https://doi.org/10.1016/S2352-4642(22)00067-0)
- Trafford, Z. (2023). 'People don't understand what we go through!': Caregiver views on South Africa's Care Dependency Grant. *African Journal of Disability*, 12, Article a1114. <https://doi.org/10.4102/ajod.v12i0.1114>
- Trafford, Z., & Swartz, L. (2021). The Care Dependency Grant for children with disabilities in South Africa: Perspectives from implementation officials. *Development Southern Africa*, Advance online publication. <https://doi.org/10.1080/0376835x.2021.1981250>
- Trafford, Z., & Swartz, L. (2023). The Care Dependency Grant for children with disabilities in South Africa: Perspectives from implementation officials. *Development Southern Africa*, 40(2), 259-272. <https://doi.org/10.1080/0376835x.2021.1981250>

- Trafford, Z., Van der Westhuizen, E., McDonald, S., Linegar, M., & Swartz, L. (2021). More than just assistive devices: How a South African social enterprise supports an environment of inclusion. *International Journal of Environmental Research and Public Health*, 18(5), Article 2655. <https://doi.org/10.3390/ijerph18052655>
- True, M. M., Pisani, L., & Oumar, F. (2001). Infant-mother attachment among the Dogon of Mali. *Child Development*, 72(5), 1451-1466. <https://doi.org/10.1111/1467-8624.00359>
- Trute, B., Worthington, C., & Hiebert-Murphy, D. (2008). Grandmother support for parents of children with disabilities: Gender differences in parenting stress. *Families, Systems, & Health*, 26(2), 135-146. <https://doi.org/10.1037/1091-7527.26.2.135>
- Tryphonopoulos, P. D., Letourneau, N., & DiTommaso, E. (2016). Caregiver-infant interaction quality: A review of observational assessment tools. *Comprehensive Child and Adolescent Nursing*, 39(2), 107-138. <https://doi.org/10.3109/01460862.2015.1134720>
- Tschacher, W., Haken, H., & Kyselo, M. (2015). Alliance: A common factor of psychotherapy modeled by structural theory. *Frontiers in Psychology*, 6, Article 421. <https://doi.org/10.3389/fpsyg.2015.00421>
- UNICEF, & Countdown to 2030. (2023). *Country profiles for early childhood development*. Authors. https://nurturing-care.org/wp-content/uploads/2023/10/ECD_Countdown2030_Global.pdf
- United Nations Conference on Trade & Development/UNCTAD. (2024). *Classifications: Developing and developed regions*. <https://unctadstat.unctad.org/EN/Classifications.html>
- Valades, J., Murray, L., Bozicevic, L., De Pascalis, L., Barindelli, F., Meglioli, A., & Cooper, P. (2021). The impact of a mother-infant intervention on parenting and infant response to challenge: A pilot randomized controlled trial with adolescent mothers in El Salvador. *Infant Mental Health Journal*, 42(3), 400-412. <https://doi.org/10.1002/imhj.21917>
- Valadez, E. A., Tottenham, N., Korom, M., Tabachnick, A. R., Pine, D. S., & Dozier, M. (2024). A randomized controlled trial of a parenting intervention during infancy alters amygdala-prefrontal circuitry in middle childhood. *Journal of the American Academy of Child and Adolescent Psychiatry*, 63(1), 29-38. <https://doi.org/10.1016/j.jaac.2023.06.015>
- Valadez, E. A., Tottenham, N., Tabachnick, A. R., & Dozier, M. (2020). Early parenting intervention effects on brain responses to maternal cues among high-risk children. *American Journal of Psychiatry*, 177(9), 818-826. <https://doi.org/10.1176/appi.ajp.2020.20010011>
- Van Andel, H., Post, W., Jansen, L., Van der Gaag, R. J., Knorth, E., & Grietens, H. (2016). Optimizing foster family placement for infants and toddlers: A randomized controlled trial on the effect of the

- foster family intervention. *American Journal of Orthopsychiatry*, 86(3), 332-344. <https://doi.org/10.1037/ort0000162>
- Van den Boom, D. C. (1994). The influence of temperament and mothering on attachment and exploration: An experimental manipulation of sensitive responsiveness among lower class mothers with irritable infants. *Child Development*, 65(5), 1457-1477. <https://doi.org/10.2307/1131511>
- Van den Broek, E. G. C., Van Eijden, A. J. P. M., Overbeek, M. M., Kef, S., Sterkenburg, P. S., & Schuengel, C. (2017). A systematic review of the literature on parenting of young children with visual impairments and the adaptations for Video-feedback Intervention to Promote Positive Parenting (VIPP). *Journal of Developmental and Physical Disabilities*, 29(3), 503-545. <https://doi.org/10.1007/s10882-016-9529-6>
- Van der Mark, E. J., Conradie, I., Dedding, C. W. M., & Broerse, J. E. W. (2019). ‘We create our own small world’: Daily realities of mothers of disabled children in a South African urban settlement. *Disability & Society*, 34(1), 95-120. <https://doi.org/10.1080/09687599.2018.1511415>
- Van der Mescht, P., Geertsema, S., Le Roux, M., Graham, M. A., & Johnson, E. (2023). The potential burden experienced by South African caregivers of children with severe intellectual disability. *South African Journal of Childhood Education*, 13(1), Article a1219. <https://doi.org/10.4102/sajce.v13i1.1219>
- Van der Weck, S., Sterkenburg, P., & Bos, A. (2021). Mothers of children with a disability and their life experience: A qualitative study [Abstract]. *Journal of Applied Research in Intellectual Disability*, 34(5), 1243. <https://doi.org/10.1111/jar.12917>
- Van Doesum, K. T. M., Riksen-Walraven, J. M., Hosman, C. M. H., & Hoefnagels, C. (2008). A randomized controlled trial of home-visiting intervention aimed at preventing relationship problems in depressed mothers and their infants. *Child Development*, 79(3), 547-561. <https://doi.org/10.1111/j.1467-8624.2008.01142.x>
- Van Horn, P., Osofsky, J. D., Henderson, D., Korfmacher, J., Thomas, K., & Lieberman, A. F. (2012). Replication of child-parent psychotherapy in community settings: Models for training. *Zero to Three*, 33(2), 48-54.
- Van IJzendoorn, M. H., & De Wolff, M. S. (1997). In search of the absent father—Meta-analyses of infant-father attachment: A rejoinder to our discussants. *Child Development*, 68(4), 604-609. <https://doi.org/10.1111/j.1467-8624.1997.tb04223.x>

- Van IJzendoorn, M. H., & Sagi, A. (1999). Cross-cultural patterns of attachment: Universal and contextual dimensions. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research and clinical applications* (2nd edition, pp. 713-734). Guildford Press.
- Van IJzendoorn, M. H., Goldberg, S., Kroonenberg, P. M., & Frenkel, O. J. (1992). The relative effects of maternal and child problems on the quality of attachment: A meta-analysis of attachment in clinical samples. *Child Development*, 63(4), 840-858.
- Van IJzendoorn, M. H., Juffer, F., & Duyvestyn, M. G. C. (1995). Breaking the intergenerational cycle of insecure attachment: A review of the effects of attachment-based interventions on maternal sensitivity and infant security. *Journal of Child Psychology and Psychiatry*, 36(2), 225-248. <https://doi.org/10.1111/j.1469-7610.1995.tb01822.x>
- Van IJzendoorn, M. H., Schuengel, C., & Bakermans-Kranenburg, M. J. (1999). Disorganized attachment in early childhood: Meta-analysis of precursors, concomitants, and sequelae. *Development and Psychopathology*, 11(2), 225-250. <https://doi.org/10.1017/S0954579499002035>
- Van IJzendoorn, M. H., Schuengel, C., Wang, Q., & Bakermans-Kranenburg, M. J. (2023). Improving parenting, child attachment, and externalizing behaviors: Meta-analysis of the first 25 randomized controlled trials on the effects of Video-feedback Intervention to Promote Positive Parenting and Sensitive Discipline. *Development and Psychopathology*, 35(1), 241-256. <https://doi.org/10.1017/S0954579421001462>
- Van IJzendoorn, M. H., Vereijken, C. M. J. L., Bakermans-Kranenburg, M. J., & Riksen-Walraven, J. M. (2004). Assessing attachment security with the Attachment Q sort: Meta-analytic evidence for the validity of the observer AQS. *Child Development*, 75(4), 1188-1213. <https://doi.org/10.1111/j.1467-8624.2004.00733.x>
- Vandesande, S., Bosmans, G., & Maes, B. (2019). Can I be your safe haven and secure base? A parental perspective on parent-child attachment in young children with a severe or profound intellectual disability. *Research in Developmental Disabilities*, 93, Article 103452. <https://doi.org/10.1016/j.ridd.2019.103452>
- Vandesande, S., Bosmans, G., Schuengel, C., & Maes, B. (2019). Young children with significant developmental delay differentiate home observed attachment behaviour towards their parents. *Journal of Applied Research in Intellectual Disabilities*, 32(1), 106-120. <https://doi.org/10.1111/jar.12513>
- Vandesande, S., Bosmans, G., Sterkenburg, P., Schuengel, C., Van Den Noortgate, W., & Maes, B. (2020). Comfort provided by parents versus strangers after eliciting stress in children with severe or

- profound intellectual disabilities: Does it make a difference?. *Attachment & Human Development*, 22(4), 425-447. <https://doi.org/10.1080/14616734.2019.1659835>
- Vandesande, S., Steegmans, D., & Maes, B. (2022). Parents' views on facilitating and inhibiting factors in the development of attachment relationships with their children with severe disabilities. *Journal of Social and Personal Relationships*, Advance Online Publication. <https://doi.org/10.1177/02654075221122717>
- Vandesande, S., Steegmans, D., & Maes, B. (2023). Parents' views on facilitating and inhibiting factors in the development of attachment relationships with their children with severe disabilities. *Journal of Social and Personal Relationships*, 40(2), 600-623. <https://doi.org/10.1177/02654075221122717>
- Vannest, K. J., Parker, R. I., Gonen, O., & Adiguzel, T. (2016). *Single case research: Web based calculators for SCR analysis (version 2.0)*. Texas A&M University. <http://www.singlecaseresearch.org/calculators/theil-sen>
- Vanwalleghe, S., & Miljkovitch, R. (2023). A systematic review on attachment and Down syndrome. *Journal of Intellectual & Developmental Disability*, 48(4), 409-420. <https://doi.org/10.3109/13668250.2023.2208744>
- Vanwalleghe, S., Miljkovitch, R., & Vinter, A. (2021). Attachment representations among school-age children with intellectual disability. *Research in Developmental Disabilities*, 118, Article 104064. <https://doi.org/10.1016/j.ridd.2021.104064>
- Vaughn, B. E., Goldberg, S., Atkinson, L., Marcovitch, S., MacGregor, D., & Seifer, R. (1994). Quality of toddler-mother attachment in children with Down syndrome: Limits to interpretation of Strange Situation behavior. *Child Development*, 65(1), 95-108. <https://doi.org/10.2307/1131368>
- Vergunst, R., Swartz, L., Hem, K. G., Eide, A. H., Mannan, H., MacLachlan, M., Mji, G., Braathen, S. H., & Schneider, M. (2017). Access to health care for persons with disabilities in rural South Africa. *BMC Health Services Research*, 17, Article 741. <https://doi.org/10.1186/s12913-017-2674-5>
- Verhage, M. L., Oosterman, M., & Schuengel, C. (2013). Parenting self-efficacy predicts perceptions of infant negative temperament characteristics, not vice versa. *Journal of Family Psychology*, 27(5), 844-849. <https://doi.org/10.1037/a0034263>
- Vig, S., Kaminer, R. K., & Jedrysek, E. (1987). A later look at borderline and mildly retarded preschoolers. *Journal of Developmental & Behavioral Pediatrics*, 8(1), 12-17.
- Visscher, L., Evenboer, K. E., Jansen, D. E. M. C., Scholte, R. H. J., Knot-Dickscheit, J., Veerman, J. W., Reijneveld, S. A., & Van Yperen, T. A. (2018). Identifying practice and program elements of

- interventions for families with multiple problems: The development of a taxonomy. *Children and Youth Services Review*, 95, 64-70. <https://doi.org/10.1016/j.chldyouth.2018.10.030>
- Walls, M., Hautala, D., Cole, A., Kosobuski, L., Weiss, N., Hill, K., & Ozhaawashkodewe'iganiikwe Williams, S. (2022). Socio-cultural integration and holistic health among indigenous young adults. *BMC Public Health*, 22(1), Article 1002. <https://doi.org/10.1186/s12889-022-13395-3>
- Walter, I., Landers, S., Quehenberger, J., Carlson, E., & Brisch, K. H. (2019). The efficacy of the attachment-based SAFE prevention program: A randomized control trial including mothers and fathers. *Attachment & Human Development*, 21(5), 510-531. <https://doi.org/10.1080/14616734.2019.1582599>
- Wang, F., Cox, M. J., Mills-Koonce, R., & Snyder, P. (2015). Parental behaviors and beliefs, child temperament, and attachment disorganization. *Family Relations*, 64(2), 191-204. <https://doi.org/10.1111/fare.12120>
- Wang, X., & Yu, Q. (2005). Unbiasedness of the theil–sen estimator. *Journal of Nonparametric Statistics*, 17(6), 685-695. <https://doi.org/10.1080/10485250500039452>
- Waters, E. (1987). *Attachment Q-set (version 3)*. https://psychology.psy.sunysb.edu/attachment/measures/content/aqs_items.pdf
- Watson, P. J., & Workman, E. A. (1981). The non-concurrent multiple baseline across-individuals design: An extension of the traditional multiple baseline design. *Journal of Behavior Therapy and Experimental Psychiatry*, 12(3), 257-259. [https://doi.org/10.1016/0005-7916\(81\)90055-0](https://doi.org/10.1016/0005-7916(81)90055-0)
- Wedderburn, C. J., Yeung, S., Rehman, A. M., Stadler, J. A. M., Nhapi, R. T., Barnett, W., Myer, L., Gibb, D. M., Zar, H. J., Stein, D. J., & Donald, K. A. (2019). Neurodevelopment of HIV-exposed uninfected children in South Africa: Outcomes from an observational birth cohort study. *The Lancet Child & Adolescent Health*, 3(11), 803-813. [https://doi.org/10.1016/S2352-4642\(19\)30250-0](https://doi.org/10.1016/S2352-4642(19)30250-0)
- Weisz, J. R., Chorpita, B. F., Palinkas, L. A., Schoenwald, S. K., Miranda, J., Bearman, S. K., Daleiden, E. L., Ugueto, A. M., Ho, A., Martin, J., Gray, J., Alleyne, A., Langer, D. A., Southam-Gerow, M. A., Gibbons, R. D., & Research Network on Youth Mental Health. (2012). Testing standard and modular designs for psychotherapy treating depression, anxiety, and conduct problems in youth: A randomized effectiveness trial. *Archives of General Psychiatry*, 69(3), 274-282. <https://doi.org/10.1001/archgenpsychiatry.2011.147>
- Weisz, J. R., Kuppens, S., Eckshtain, D., Ugueto, A. M., Hawley, K. M., & Jensen-Doss, A. (2013). Performance of evidence-based youth psychotherapies compared with usual clinical care: A

- multilevel meta-analysis. *JAMA Psychiatry*, 70(7), 750-761.
<https://doi.org/10.1001/jamapsychiatry.2013.1176>
- Wertlieb, D. (2018). Inclusive early childhood development: Ensuring the rights and well-being of infants and toddlers with disabilities and their families. *Zero to Three Journal*, 38(4), 22-30.
- West, A.L., Berlin, L.J., Goodman, A., Endy, K., Manzon, C., & Harden, B.J. (2022). Home-based Early Head Start plus Attachment and Biobehavioral Catch-up: A qualitative study of implementation outcomes. *Journal of Child and Family Studies*, 33(4), 1057-1068. <https://doi.org/10.1007/s10826-021-02189-7>
- Westlake, F., Westlake, M., & Totsika, V. (2024). A systematic review and meta-analysis of the effectiveness of interventions targeting the parent-child relationship in families of children with an intellectual disability. *Journal of Applied Research in Intellectual Disabilities*, 37(6), Article e13273. <https://doi.org/10.1111/jar.13273>
- White, N., & Hastings, R. P. (2004). Social and professional support for parents of adolescents with severe intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, 17(3), 181-190. <https://doi.org/10.1111/j.1468-3148.2004.00197.x>
- Whittle, E. L., Fisher, K. R., Reppermund, S., & Trollor, J. (2019). Access to mental health services: The experiences of people with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, 32(2), 368-379. <https://doi.org/10.1111/jar.12533>
- Willemsen-Swinkels, S. H. N., Bakermans-Kranenburg, M. J., Buitelaar, J. K., Van IJzendoorn, M. H., & Van Engeland, H. (2000). Insecure and disorganised attachment in children with a pervasive developmental disorder: Relationship with social interaction and heart rate. *Journal of Child Psychology and Psychiatry*, 41(6), 759-767. <https://doi.org/10.1111/1469-7610.00663>
- Willingham-Storr, G. L. (2014). Parental experiences of caring for a child with intellectual disabilities: A UK perspective. *Journal of Intellectual Disabilities*, 18(2), 146-158. <https://doi.org/10.1177/1744629514525132>
- Wilmshurst, J. M., Burgess, J., Hartley, P., & Eley, B. (2006). Specific neurologic complications of human immunodeficiency virus type 1 (HIV-1) infection in children. *Journal of Child Neurology*, 21(9), 788-794. <https://doi.org/10.1177/08830738060210091901>
- Wolf, M. M. (1978). Social validity: The case for subjective measurement or how applied behavior analysis is findings its heart. *Journal of Applied Behavior Analysis*, 11(2), 203-214.

- Wong, S. B., Wang, T. S., Tsai, W. H., Tzeng, I. S., & Tsai, L. P. (2021). Parenting stress in families of children with Prader-Willi syndrome. *American Journal of Medical Genetics*, 185(1), 83-89. <https://doi.org/10.1002/ajmg.a.61915>
- Woodgate, R. L., Ateah, C., & Secco, L. (2008). Living in a world of our own: The experience of parents who have a child with autism. *Qualitative Health Research*, 18(8), 1075-1083. <https://doi.org/10.1177/1049732308320112>
- World Health Organisation. (2022). *International classification of diseases, 11th revision*. WHO.
- World Health Organisation, United Nations Children's Emergency Fund, & World Bank Group. (2018). *Nurturing care for early childhood development: A framework for helping children survive and thrive to transform health and human potential*. WHO. <https://apps.who.int/iris/bitstream/handle/10665/272603/9789241514064-eng.pdf>
- World Health Organisation, & World Bank. (2011). *World report on disability*. WHO. <https://www.who.int/publications/i/item/9789241564182>
- Wright, B., & Edginton, E. (2016). Evidence-based parenting interventions to promote secure attachment: Findings from a systematic review and meta-analysis. *Global Pediatric Health*, 3, 1-14. <https://doi.org/10.1177/2333794x16661888>
- Wright, B., Hackney, L., Hughes, E., Barry, M., Glaser, D., Prior, V., Allgar, V., Marshall, D., Barrow, J., Kirby, N., Garside, M., Kaushal, P., Perry, A., & McMillan, D. (2017). Decreasing rates of disorganised attachment in infants and young children, who are at risk of developing, or who already have disorganised attachment. A systematic review and meta-analysis of early parenting interventions. *PLoS One*, 12(7), Article e0180858. <https://doi.org/10.1371/journal.pone.0180858>
- Xu, X., Liu, Z., Gong, S., & Wu, Y. (2022). The relationship between empathy and attachment in children and adolescents: Three-level meta-analyses. *International Journal of Environmental Research and Public Health*, 19(3), Article 1391. <https://doi.org/10.3390/ijerph19031391>
- Yagmur, S., Mesman, J., Malda, M., Bakermans-Kranenburg, M. J., & Ekmekci, H. (2014). Video-feedback intervention increases sensitive parenting in ethnic minority mothers: A randomized control trial. *Attachment & Human Development*, 16(4), 371-386. <https://doi.org/10.1080/14616734.2014.912489>
- Yaholkoski, A., Hurl, K., & Theule, J. (2016). Efficacy of the Circle of Security intervention: A meta-analysis. *Journal of Infant, Child, and Adolescent Psychotherapy*, 15(2), 95-103. <https://doi.org/10.1080/15289168.2016.1163161>

- Yang, P., Lung, F. W., Jong, Y. J., Hsu, H. Y., & Chen, C. C. (2010). Stability and change of cognitive attributes in children with uneven/delayed cognitive development from preschool through childhood. *Research in Developmental Disabilities*, 31(4), 895-902. <https://doi.org/10.1016/j.ridd.2010.02.011>
- Yarger, H. A., Bernard, K., Caron, E. B., Wallin, A., & Dozier, M. (2020). Enhancing parenting quality for young children adopted internationally: Results of a randomized controlled trial. *Journal of Clinical Child & Adolescent Psychology*, 49(3), 378-390. <https://doi.org/10.1080/15374416.2018.1547972>
- Yarger, H. A., Bronfman, E., Carlson, E., & Dozier, M. (2020). Intervening with Attachment and Biobehavioral Catch-up to decrease disrupted parenting behavior and attachment disorganization: The role of parental withdrawal. *Development and Psychopathology*, 32(3), 1139-1148. <https://doi.org/10.1017/S0954579419000786>
- Yarger, H. A., Hoyer, J. R., & Dozier, M. (2016). Trajectories of change in Attachment and Biobehavioral Catch-up among high-risk mothers: A randomized clinical trial. *Infant Mental Health Journal*, 37(5), 525-536. <https://doi.org/10.1002/imhj.21585>
- Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th edition). Sage.
- Zaidman-Zait, A., Mirenda, P., Zumbo, B. D., Wellington, S., Dua, V., & Kalynchuk, K. (2010). An item response theory analysis of the Parenting Stress Index-Short Form with parents of children with autism spectrum disorders. *Journal of Child Psychology and Psychiatry*, 51(11), 1269-1277. <https://doi.org/10.1111/j.1469-7610.2010.02266.x>
- Zajac, L., Raby, K. L., & Dozier, M. (2020). Sustained effects on attachment security in middle childhood: Results from a randomized clinical trial of the Attachment and Biobehavioral Catch-up (ABC) intervention. *Journal of Child Psychology and Psychiatry*, 61(4), 417-424. <https://doi.org/https://doi.org/10.1111/jcpp.13146>
- Zevalkink, J., & Riksen-Walraven, J. M. (2001). Parenting in Indonesia: Inter- and intracultural differences in mothers' interactions with their young children. *International Journal of Behavioral Development*, 25(2), 167-175. <https://doi.org/10.1080/01650250042000113>
- Zhang, J., Zhang, Y., Mao, Y., & Wang, Y. (2024). The relationship between insecure attachment and alexithymia: A meta-analysis. *Current Psychology*, 43(7), 5804-5825. <https://doi.org/10.1007/s12144-023-04749-0>
- Zhao, M., Fu, W., & Ai, J. (2021). The mediating role of social support in the relationship between parenting stress and resilience among Chinese parents of children with disability. *Journal of Autism and Developmental Disorders*, 51(10), 3412-3422. <https://doi.org/10.1007/s10803-020-04806-8>

- Ziguras, S. J., & Stuart, G. W. (2000). A meta-analysis of the effectiveness of mental health case management over 20 years. *Psychiatric Services*, 51(11), 1410-1421. <https://doi.org/10.1176/appi.ps.51.11.1410>
- Zuurmond, M., Seeley, J., Nyant, G. G., Baltussen, M., Abanga, J., Polack, S., Bernays, S., & Shakespeare, T. (2020). Exploring caregiver experiences of stigma in Ghana: They insult me because of my child. *Disability & Society*, 37(5), 827-848. <https://doi.org/10.1080/09687599.2020.1851172>

ADDENDA

Addendum A: Research Proposal Committee Approval



Recommendation of the Research Proposal Committee to the Research Ethics Committee Research Using Human Participants

Scientific Committee	Name	Ahmed Riaz Mohamed	Discipline	Psychology
	Research Entity	COMPRES	Contact Person	Salomé Lubbe
	Faculty	Health Sciences	E-mail	22749969@nwu.ac.za
Title of the study:	The effect of the Attachment and Biobehavioral Catch-up (ABC) parenting intervention for children with intellectual disability in South Africa			
Researchers involved in the study:	Prof Carlo Schuengel (Vrije Universiteit Amsterdam) Prof Esmé van Rensburg Dr Paula Sterkenburg (Vrije Universiteit Amsterdam)			
Potential risk level for human participants:	No risk	☐	Motivate: Click here to enter text.	
	Minimal risk	☒		
	Medium risk	☐		
	High risk	☐		
Potential risk level for children and incapacitated adults:	No risk	☐	Motivate: Click here to enter text.	
	No more than minimal risk of harm	☐		
	Greater than minimal risk with the prospect of direct benefit	☐		
	Greater than minimal risk with no direct benefit	☐		
Recommendation for the ethics committee	Expedited review	☐	Motivate: Click here to enter text.	
	Full review	☒		
	Exempted from review	☐		
Any additional comments	Motivate: Click here to enter text.			
Committee members present during the review	Members present			
	Prof Herman Grobler			
	Prof Karel Botha			
	Dr Elmari Deacon			
	Prof Wim Roestenburg			
	Dr Werner de Klerk			
	Prof Elma Ryke			
Date of review	2017/11/08			



Signature of Chairperson

Date: 2017/11/30



Signature of Research Director

Date: 2017/11/30

Developed by Minnie Greeff, 18 May 2015 (Reviewed: 10 Feb 2017)

Addendum B: Health Research Ethics Committee Approval



Prof E van Rensburg
Psychology
COMPRES

Private Bag X6001, Potchefstroom
South Africa 2520

Tel: 018 299-1111/2222
Web: <http://www.nwu.ac.za>

**Health Sciences Ethics Office for Research,
Training and Support**

Health Research Ethics Committee (HREC)
Tel: 018-285 2291
Email: Wayne.Towers@nwu.ac.za

23 October 2018

Dear Prof van Rensburg

APPROVAL OF YOUR AMENDMENT REQUEST BY THE HEALTH RESEARCH ETHICS COMMITTEE (HREC) OF THE FACULTY OF HEALTH SCIENCES

Ethics number: NWU-00012-18-A1

Kindly use the ethics reference number provided above in all future correspondence or documents submitted to the administrative assistant of the Health Research Ethics Committee (HREC) secretariat.

Study title: The effect of the Attachment and Biobehavioural Catch-up Parenting intervention for children with intellectual disability in South Africa

Study leader/Researcher: Prof E van Rensburg

Student: AR Mohamed-29900689

You are kindly informed that your amendment request (change in data collection instrument to be used to measure maternal sensitivity) to the aforementioned project has been approved. Any future amendments to the proposal or other associated documentation must be submitted to the HREC, Faculty of Health Sciences, North-West University, prior to implementing these changes. These requests should be electronically submitted to Ethics-HRECAppl@nwu.ac.za, for review BEFORE approval can be provided, with a cover letter with a specific subject title indicating, "Amendment request: NWU-XXXXX-XX-XX". The letter should include the title of the approved study, the names of the researchers involved, the nature of the amendment/s being made (indicating what changes have been made as well as where they have been made), which documents have been attached and any further explanation to clarify the amendment request being submitted. The amendments made should be indicated in **yellow highlight** in the amended documents. The *e-mail*, to which you attach the documents that you send, should have a *specific subject line* indicating that it is an amendment request e.g. "Amendment request: NWU-XXXXX-XX-XX". This e-mail should indicate the nature of the amendment. This submission will be handled via the expedited process.

We wish you the best as you conduct your research. If you have any questions or need further assistance, please contact the Faculty of Health Sciences Ethics Office for Research, Training and Support at Ethics-HRECApplied@nwu.ac.za.

Yours sincerely



Prof Wayne Towers
HREC Chairperson

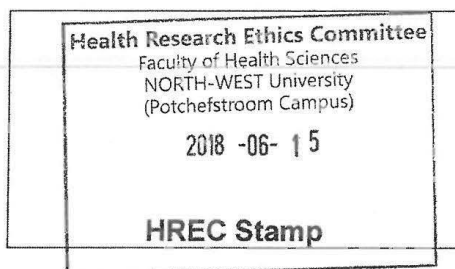


Prof Minnie Greeff
Ethics Office Head

Current details: (23239522) G:\My Drive\9. Research and Postgraduate Education\9.1.5.3 Letters Templates\9.1.5.4.1 Approval Letter Amend Req HREC.docm
30 April 2018

File reference: 9.1.5.4.1

Addendum C: Information Letter for Caregivers (Aims 2 & 5)



INFORMED CONSENT DOCUMENTATION FOR PARENTS/CAREGIVERS (~~Aims 2 & 4~~)

TITLE OF THE RESEARCH STUDY: *The effects of the Attachment and Biobehavioral Catch-up (ABC) parenting intervention for children with intellectual disability in South Africa.*

ETHICS REFERENCE NUMBER: NWU-00012-18-S1

STUDY LEADERS: Prof Esme van Rensburg, Prof Carlo Schuengel & Dr Paula Sterkenburg

PRINCIPLE INVESTIGATOR/POST GRADUATE STUDENT: Ahmed Riaz Mohamed

ADDRESS: Rm 12-30, Humanities Building, Hatfield Campus, University of Pretoria, Lynwood Road, Hatfield, Pretoria.

CONTACT DETAILS (Ahmed Riaz Mohamed): 072 369 9637 (cell)
012 420 4006 (landline)
ahmedriazm@gmail.com (email)

Dear Sir/Madam,

Being a caregiver to a child with intellectual disability can be challenging. It might be difficult sometimes to understand what he/she needs, or how to respond to, or to meet those needs. That can make being a caregiver difficult, which can affect your relationship with your child. We would like to find ways to support parents who have children with intellectual disability to help them respond more effectively to their child's needs, and

Page 1 of 8

Information Leaflet—Caregivers (Needs Study)

therefore to help improve the relationship between them. We hope that this will ultimately have a positive effect on the well-being of the child. Attachment and Biobehavioral Catchup (ABC) is a programme that has been developed to assist parents in this way. Research has shown that the ABC is an effective programme in families with children who have had difficult experiences in their earliest years. We would like to study whether this programme is also effective for families who are caring for a child with intellectual disability in South Africa. We therefore kindly request your participation in this study into the effects of the ABC in families with a young child with intellectual disability. Before you decide whether you would like to participate in the study, or not, it is important to know more about it. More information about the study can be found in this leaflet. If you have any questions after reading this letter you are most welcome to contact the researcher, Ahmed Riaz Mohamed, directly. You will find his details above.

1. What is the purpose of the study?

You are being asked to participate in a portion of a bigger study. The purpose of this part of the study is to explore caregivers' needs, challenges, difficulties, and wishes related to caring for a child with intellectual disability; and to explore caregivers' thoughts and opinions about the ABC intervention. We would like to find this out in order to help us adapt the ABC intervention in a way that responds effectively to the needs of caregivers of children with intellectual disability in South Africa, specifically.

2. How will the study be conducted?

The study involves 2 parts—questionnaires, and individual interviews. You may be asked to participate in only one, or in both, parts. The questionnaires and/or interview will be done at a time that is convenient for you, and will take place in a private venue at your child's school (this venue will be communicated to you by the researcher). If this is not possible or convenient for you, the questionnaires and/or interview can be conducted at a venue that suits you better (such as your home, for example). The questionnaires will take approximately 1 to 1 and a half hours to complete, and the interviews will last approximately 1 hour.

3. What are the possible benefits and risks of participating in the study?

Participation in the study will require some of your time. However, by participating in the study you help us in better understanding the needs, challenges, difficulties, and wishes of caregivers related to caring for a child with intellectual disability in South Africa. This is an important contribution as it will in turn help us in developing and testing the ABC programme, which may help parents in similar circumstances as yourself. However, if during the study you feel distressed as a result of your participation, you are welcome to contact the researcher who will refer you to a psychologist for debriefing where you will be able to discuss this confidentially, and free of charge.

4. What happens if you do not want to participate in the study?

It is your choice whether you want to participate in the study, or not. Participation is **entirely voluntary**. If you do not want to participate, you do not have to do anything or sign any forms. You do not have to disclose to anyone why you do not want to participate. If you choose not to participate, this will not affect you or your child negatively in any way. If you do decide to participate, you can always change your mind

at any point if you would like to stop participating, even after the study has started—this will also not have any negative

consequences for you or your child. If you choose to withdraw from the study, any information you have shared with us up to that point can be destroyed at your request in order to protect your privacy, and in respect of your decision to withdraw. You can also choose to participate in only one part of the study, but not another (e.g. questionnaires, but not an interview, or interview but not questionnaires), and if you choose to participate in both now you can also change your mind at a later stage and withdraw from any part.

5. What happens at the end of the study?

After the completion of the entire study, you will receive a leaflet containing an overall summary of the main results of the study. If you would like a more detailed report, you can request this from the researcher who will be able to send this to you once it has been published. Some of the findings will also be publicly available in media articles which you will be able to access freely, or by requesting this from the researcher using the contact details above.

6. What happens to your personal data?

The data collected for this study will be treated strictly confidentially, and anonymously, at the Vrije University in Amsterdam (The Netherlands), and the North-West University in Potchefstroom (South Africa). The lead researcher will be the only person aware of your identity. All the completed questionnaires and/or interview material (recordings and transcriptions) collected during the study will be labelled with a pseudonym (fake name), and will not contain your actual name, or other information that could be used to identify you. Your identity will therefore be kept private. Only members of the study team will have access to the data. For ethical and legal reasons, all the study data must be saved and stored securely. Therefore, all completed questionnaires will be locked in a secure cabinet at the NWU, along with password-protected electronic versions (on a USB flashdrive) of the interview transcripts, for a period of 15 years. There is also the possibility that this anonymised data can be used for future research.

7. Will you be paid for participating in the study?

No, you will not receive monetary payment for participating in the study. However, you will receive a small gratuity for your time. If you are required to travel to a venue other than your home in order to complete questionnaires and/or participate in an interview you will, however, be fully reimbursed by the researcher for the cost of this travel.

8. Has this study been approved, and by whom?

Yes, this study has been approved by the Health Research Ethics Committee of the Faculty of Health Sciences of the North-West University (Ref: NWU-00012-18-S1) and will be conducted according to the ethical guidelines and principles of Ethics in Health Research: Principles, Processes and Structures (DoH, 2015) and other international ethical guidelines applicable to this study. It might be necessary for the research ethics committee members or other relevant people to inspect the research records. You are

welcome to confirm this with the HREC by contacting Mrs Poncho Molaudzi on 018 299 2089 or poncho.molaudzi@nwu.ac.za during office hours.

9. Do you have any further questions?

We would like to give you some time to consider participation in the study. If you intend to participate we would like you to place your contact details (name, landline and cell phone number) in the box which will be placed at the reception desk at your child's school—you will have up to one week to do so after receiving this letter. The researcher will then make contact with you to allow you to ask any questions you may have, and to discuss with you how the process will work going forward.

If, after reading this letter, or at any point during the study, you have any further questions or would like more information, you are most welcome to contact the researcher, Ahmed Riaz Mohamed, during office hours using the contact details above.

Mr Ahmed Riaz Mohamed

PhD Researcher / Clinical Psychologist

Addendum D: Information Letter for Experts (Aims 3 & 5)



INFORMED CONSENT DOCUMENTATION FOR EXPERTS/PROFESSIONALS (~~Aims 3 & 4~~)

TITLE OF THE RESEARCH STUDY: *The effects of the Attachment and Biobehavioral Catch-up (ABC) parenting intervention for children with intellectual disability in South Africa.*

ETHICS REFERENCE NUMBER: NWU-00012-18-S1

STUDY LEADERS: Prof Esme van Rensburg, Prof Carlo Schuengel & Dr Paula Sterkenburg

PRINCIPLE INVESTIGATOR/POST GRADUATE STUDENT: Ahmed Riaz Mohamed

ADDRESS: Rm 12-30, Humanities Building, Hatfield Campus, University of Pretoria, Lynwood Road, Hatfield, Pretoria.

CONTACT DETAILS (Ahmed Riaz Mohamed): 072 369 9637 (cell)
012 420 4006 (landline)
ahmedriazm@gmail.com (email)

Dear Sir/Madam,

Being a caregiver to a child with intellectual disability can be challenging. It might be difficult sometimes to understand what he/she needs, or how to respond to, or to meet those needs. That can make being a caregiver difficult, impacting on the quality of the relationship between caregiver and child. We would like to find ways to support parents who have children with intellectual disability to help them respond more effectively to their child's

Page 1 of 7

Information Leaflet—Experts/Professionals (Delphi)

needs, and therefore to help improve the relationship between them. We hope that this will ultimately have a positive effect on the well-being of the child. Attachment and Biobehavioral Catchup (ABC) is an intervention that has been developed to assist parents in this way. Research has shown that the ABC is an effective intervention in families with children who have had difficult experiences in their earliest years. We would like to study whether this intervention is also effective for families who are caring for a child with intellectual disability in South Africa. We therefore kindly request your participation in this study into the effects of the ABC in families with a young child with intellectual disability. Before you decide whether you would like to participate in the study, or not, it is important to know more about it. More information about the study can be found in this leaflet. If you have any questions after reading this letter you are most welcome to contact the researcher, Ahmed Riaz Mohamed, directly. You will find his details above.

1. What is the purpose of the study?

You are being asked to participate in a portion of a bigger study. The purpose of this part of the study is to explore the thoughts and opinions of experts and health professionals in the field of intellectual disability in South Africa related to the ABC intervention. We would like to find this out in order to help us adapt the ABC intervention in a way that responds effectively to the needs of caregivers of children with intellectual disability in South Africa, specifically. Given your experience of working with caregivers of children with ID, we believe that you are able to comment meaningfully on the intervention, thereby assisting us in adapting a programme that is responsive and useful to caregivers.

2. How will the study be conducted?

The study involves two stages/rounds—the first is an individual 30- to 60-minute interview that will be conducted at a time and place that is convenient for you. Once the interview has been completed, the information gathered from all interviews will be collated and you will be contacted by the researcher to participate in the second stage in order to review the findings from the interviews and provide further input/comments via email.

3. What are the possible benefits and risks of participating in the study?

Participation in the study will require some time-investment from you. However, by participating in the study you make an important contribution as it will help us in developing a context- and population-specific adaptation to the ABC intervention, which will be tested in a later study and which may help caregivers of children with ID in supporting their child's psychological wellbeing. However, if during the study you feel distressed as a result of your participation, you are welcome to contact the researcher who will refer you to an independent psychologist who is unaffiliated to the research for debriefing where you will be able to discuss this confidentially, and free of charge.

4. What happens if you do not want to participate in the study?

It is your choice whether you want to participate in the study, or not. Participation is **entirely voluntary**. If you do not want to participate, you do not have to do anything or sign any forms. You do not have to disclose to anyone why you do not want to participate. If you choose not to participate, this will not affect you negatively in any way. If you choose to withdraw from the study, any information you have shared

with us up to that point will be destroyed in order to protect your privacy, and in respect of your decision to withdraw.

5. What happens at the end of the study?

After the completion of the entire study, you will receive a leaflet containing an overall summary of the main results of the study. If you would like a more detailed report, you can request this from the researcher who will be able to send this to you once it has been published. Some of the findings will also be publicly available in media articles which you will be able to access freely, or by requesting this from the researcher.

6. What happens to your personal data?

The data collected for this study will be treated strictly confidentially, and anonymously, at the Vrije University in Amsterdam (The Netherlands), and the North-West University in Potchefstroom (South Africa). The lead researcher will be the only person aware of your identity. All the interview-related material (recordings and transcriptions) collected during the study will be labelled with a unique number, and will not contain your name, or other information that could be used to identify you. Your identity will therefore be kept private. Where we refer to specific extracts from interviews in research reports, pseudonyms (fake names) will be used in order to disguise your identity. For ethical and legal reasons, all the study data must be saved and stored securely. Therefore, all data completed questionnaires will be locked in a secure cabinet at the NWU, along with password-protected electronic versions (on a USB flashdrive) of the interview transcripts, for a period of 15 years. There is also the possibility that this data can be used for future research.

7. Will you be paid for participating in the study?

No, you will not receive monetary payment for participating in the study.

8. Has this study been approved, and by whom?

Yes, this study has been approved by the Health Research Ethics Committee of the Faculty of Health Sciences of the North-West University (Ref: NWU-00012-18-S1) and will be conducted according to the ethical guidelines and principles of Ethics in Health Research: Principles, Processes and Structures (DoH, 2015) and other international ethical guidelines applicable to this study. It might be necessary for the research ethics committee members or other relevant people to inspect the research records. You are welcome to confirm this with the HREC by contacting Mrs Poncho Molaudzi on 018 299 2089 or poncho.molaudzi@nwu.ac.za during office hours.

9. Do you have any further questions?

We would like to give you some time to consider participation in the study (up to 1 week after receiving this letter). Within 1 week, you are requested to contact the researcher telephonically, or via email, in order to indicate your decision. The researcher will then make further contact to discuss the way forward with you, and to answer any questions you may have.

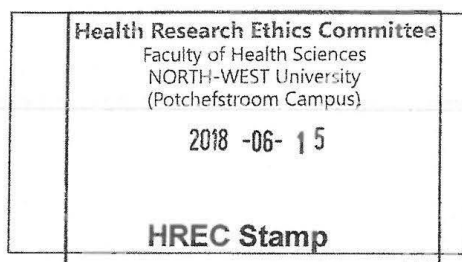
If, after reading this letter, before or during the study, you have any further questions or would like more information, you are most welcome to contact the researcher, Ahmed Riaz Mohamed, during office hours using the contact details above.

Mr Ahmed Riaz Mohamed

PhD Researcher / Clinical Psychologist

Email: Ahmed.Mohamed@up.ac.za

Addendum E: Information Letter for Caregivers (Aim 4)



INFORMED CONSENT DOCUMENTATION FOR PARENTS/LEGAL GUARDIANS/CAREGIVERS (~~Aim 5~~)

TITLE OF THE RESEARCH STUDY: *The effects of the Attachment and Biobehavioral Catch-up (ABC) parenting intervention for children with intellectual disability in South Africa.*

ETHICS REFERENCE NUMBER: NWU-00012-18-S1

STUDY LEADERS: Prof Esme van Rensburg, Prof Carlo Schuengel & Dr Paula Sterkenburg

PRINCIPLE INVESTIGATOR/POST GRADUATE STUDENT: Ahmed Riaz Mohamed

ADDRESS: Rm 12-30, Humanities Building, Hatfield Campus, University of Pretoria, Lynwood Road, Hatfield, Pretoria.

CONTACT DETAILS (Ahmed Riaz Mohamed): 072 369 9637 (cell)
012 420 4006 (landline)
ahmedriazm@gmail.com (email)

Dear Sir/Madam,

Being a caregiver to a child with intellectual disability can be challenging. It might be difficult sometimes to understand what he/she needs, or how to respond to, or to meet those needs. That can make being a caregiver difficult, which can affect your relationship with your child. We would like to find ways to support parents who have children with

intellectual disability to help them respond more effectively to their child's needs, and therefore to help improve the relationship between them. We hope that this will ultimately have a positive effect on the well-being of the child. Attachment and Biobehavioral Catchup (ABC) is a programme that has been developed to assist parents in this way. Research has shown that the ABC is an effective programme in families with children who have had difficult experiences in their earliest years. We would like to study whether this programme is also effective for families who are caring for a child with intellectual disability in South Africa. We therefore kindly request your participation in this study into the effects of the ABC in families with a young child with intellectual disability. Before you decide whether you would like to participate in the study with your child, or not, it is important to know more about it. More information about the study can be found in this leaflet. Please read this carefully and discuss possible participation with others in your family if you wish to do so. If you have any questions after reading this letter you are most welcome to contact the researcher, Ahmed Riaz Mohamed, directly. You will find his details above.

1. What is the purpose of the study?

Children with intellectual disabilities often have different ways of communicating than children who do not have an intellectual disability. These communications can be difficult to understand, which can lead to frustrations and difficulties in the relationship the child develops with their parent or caregiver. This is not the result of 'bad parenting' by the parent/caregiver, it is simply the result of challenging circumstances. Parents/caregivers therefore need to find ways of understanding and responding to these communications from their child with intellectual disability. The purpose of this study is to determine whether the ABC programme can help to support parents in doing this effectively. The programme aims to help parents/caregivers become more sensitive to the needs of their child. When parents/caregivers are more sensitive to these needs and understand them, they are able to respond to these needs in a more appropriate and sensitive way, which will have a positive effect on the mutual bonding and relationship with their child.

2. What does the ABC Intervention involve?

The ABC is a parenting intervention programme that aims to enhance the quality of relationships between parents/caregivers and children in order to improve the well-being and quality of life of children, and their families. The sessions are conducted in your home by trained 'parent coaches' once per week for 10 weeks, with each session lasting approximately 1 hour. Each session has a slightly different focus area, but all relate to you and your child, with the ultimately aim of helping you relate better to him/her. Your child must, therefore, be present during all the sessions because the parent coach will be working with you as you relate to your child 'in the moment'.

3. How will the study be conducted?

Firstly, you will participate in a screening process. The purpose of the screening is to confirm the "developmental age" of your child. This is important because the intervention is only designed for children up to a certain age. If your child is determined by the screening to fall within the appropriate age range, you will be invited to further participate in the study as described below. If your child falls outside of the required age range, you will unfortunately not be eligible to participate. However, you will receive comprehensive feedback from the researcher regarding the outcome of the screening process.

If you and your child are determined by the screening to be eligible to participate, the following process will be followed: the study will be taking place over a period of 5-6 months during the course of 2019. You will be 1 of 4 families taking part in the study, which will be conducted in 3 phases—baseline, intervention, and follow-up. The length of the baseline phase will differ for each family—3, 5, 7 or 9 weeks. The length of the intervention (10 weeks) and follow-up (2 weeks) phases will, however, be identical for each of the families. Each family will, therefore, be starting the intervention at a different point, which will be randomly determined by the researcher.

You will take part in two 30- to 60-minute interviews—one at the start of the study to collect information about you and your child, and one at the end to explore your experiences of the intervention. Additional assessments will be conducted once per week in all 3 phases. These assessments explore the nature and quality of the relationship between you and your child, and your child's ability to manage his or her stress responses. They should not take more than 1 hour per week and will all happen in your home. These assessments involve video-recordings of you and your child playing together; and you taking saliva samples from your child using a swab that looks like an earbud (this is a safe and painless procedure—full instructions will be provided to you by the researcher). In addition to these assessments, during the intervention phase you will receive the ABC intervention by a parent coach for an additional 1 hour per week for 10 weeks—the assessments and intervention will be conducted in one 2-hour session per week for your convenience during this phase (both the assessment and intervention sessions will be video-recorded). You will also be completing a brief questionnaire after each intervention session. After the 10-week intervention has finished, the assessments will continue for an additional 2 weeks during which you will also complete a questionnaire related to the usefulness of the intervention.

4. What will happen with the video recordings of the assessments and ABC sessions?

All videos will be kept strictly private. After the researcher/parent coach has recorded the video each week, it will be transferred into a password-protected folder on a computer and labelled with only an anonymous code and the date of the session. Your names will not appear on the label in order to protect your privacy. The password-protected video files will then be uploaded securely onto a 'cloud' storage server where they will only be accessible to trained individuals who will conduct analyses on the assessments, or the parent coach's supervisor in order to ensure they are conducting the sessions correctly. Each of these individuals will be asked to sign a strict and legally-binding confidentiality agreement which does not allow them to share any information about what they have seen on the videos with anyone other than the principal investigator. This is to protect your privacy and confidentiality. Once the analysis of the videos is complete, the videos will be permanently deleted from the cloud server, and the videos will be stored on a USB flash drive in a secure storage room on the Potchefstroom Campus of NWU for a period of 15 years (until 2035).

5. What will be different compared to the services you usually receive at your local clinic?

Besides the usual services you get at the clinic, you will also receive the intervention as described above. This will be an additional intervention which will not affect your clinic visits in any way.

6. What are the possible benefits and risks of participating in the study?

Participation in the study will require some of your time. However, by participating in the ABC you may find yourself better able to recognise the needs of your child with intellectual disability, to respond to those needs sensitively and effectively, and you may find that this results in improved quality in the relationship with your child. In addition to these personal benefits, by participating in the study you help us in developing and testing an intervention, which may also help other parents in similar circumstances as yourself, who may find it beneficial. However, if during the study you feel distressed as a result of your participation, you are welcome to contact the researcher who will refer you to a psychologist for debriefing where you will be able to discuss this confidentially, and free of charge. No-one on the research team will be involved in this debriefing process in any way.

7. What happens if your child does not want to participate in the study?

It may happen that your child does not want to co-operate during the assessment tasks of the study, or may resist having saliva samples collected. The researcher will then stop the assessment and make a new appointment with you for a more convenient time, or may recommend that you collect saliva samples at a different time, or on a different day. We will not force you or your child to do anything you or they do not want to do. If your child refuses to participate, then this will be respected by the researcher and your participation in the study will be stopped.

8. What happens if you do not want to participate in the study?

It is your choice whether you want to participate in the study, or not. Participation is **entirely voluntary**. If you do not want to participate, you do not have to do anything or sign any forms. You do not have to disclose to anyone why you do not want to participate. If you choose not to participate, this will not result in any negative consequences for you or your child. If you do decide to participate, you can always change your mind at any point if you want to stop participating, even after the study has started—this will also not have any negative consequences for you, or your child. If you choose to withdraw from the study, any information you have shared with us will be destroyed in order to protect your privacy.

9. What happens at the end of the study?

After the completion of the entire study, you will receive a leaflet containing an overall summary of the main results of the study. If you would like a more detailed report, you can request this from the researcher who will be able to send this to you once it has been published. Some of the findings will also be publicly available in media articles which you will be able to access freely.

10. What happens to your personal data?

The data collected for this study will be treated strictly confidentially, and anonymously, at the Vrije University in Amsterdam (The Netherlands), and the North-West University in Potchefstroom (South Africa). Your parent coach and the lead researcher will be the only people aware of your identities. All the questionnaires, interview and video material as well as saliva samples taken during the study will be labelled with a unique number, and will not contain your name. Your identity will therefore be kept private. The video material of the ABC sessions will be viewed by your parent coach and their intervention supervisor to ensure that the sessions are being conducted correctly, for your benefit. The researcher may also view some of the recordings in order to ensure that the research is being conducted as it should be,

and to ensure you are being protected. The video material of the interaction task will only be viewed by the researcher, and by two other people (coders) who are trained to analyse the video material—the coders will not have access to any of your personal information, including your name, but will nonetheless be required to sign a confidentiality agreement to prevent them from sharing anything they see in the videos with anyone outside of the study team. For legal and ethical purposes, all the data—questionnaires, interview and video material as well as saliva sample analysis—must be saved and stored securely for a period of 15 years. Therefore all hard-copy data will be stored in a securely locked location at the NWU, and electronic copies will be stored in password-protected format on an electronic storage device. There is also the possibility that this data can be used for future research. After 15 years, this data will be permanently destroyed.

11. Will you be paid for participating in the study?

No, you will not receive monetary payment for participating in the study. However, you will receive a small gratuity for your time. Participating in the study will also not cost you anything—all tasks will take place in your home so you will not have to travel to any other location. The researchers and parent coach will travel to you.

12. Has this study been approved, and by whom?

Yes, this study has been approved by the Health Research Ethics Committee of the Faculty of Health Sciences of the North-West University (Ref: NWU-00012-18-S1) and will be conducted according to the ethical guidelines and principles of Ethics in Health Research: Principles, Processes and Structures (DoH, 2015) and other international ethical guidelines applicable to this study. It might be necessary for the research ethics committee members or other relevant people to inspect the research records. You are welcome to confirm this with the HREC by contacting Mrs Poncho Molaudzi on 018 299 2089 or poncho.molaudzi@nwu.ac.za during office hours.

13. Do you have any further questions?

We would like to give you some time to consider participation in the study (up to 1 week after receiving this letter). After one week the researcher will contact you in order to answer any questions you might have, and to discuss the way forward with you.

If, after reading this letter, or at any point during the study, you have any further questions or would like more information, you are most welcome to contact the researcher, Ahmed Riaz Mohamed, during office hours using the contact details above.

Mr Ahmed Riaz Mohamed

PhD Researcher / Clinical Psychologist

Addendum F: Consent Form for Caregivers (Aims 2 & 4) and Experts (Aims 3 & 4)

DECLARATION OF INFORMED CONSENT

Declaration by participant

By signing below, I _____, agree to take part in the research study titled: *The Effects of the Attachment and Biobehavioral Catch-up Parenting Intervention for Child with Intellectual Disability in South Africa*.

- I declare that:
- I have read this information leaflet provided to me by the researcher/it was explained to me by a trusted person in a language with which I am fluent and comfortable.
- The research was clearly explained to me.
- I have had a chance to ask questions to both the person getting the consent from me, as well as the researcher and all my questions have been answered.
- I understand that taking part in this study is voluntary and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be handled in a negative way if I do so.
- I may be asked to leave the study before it has finished, if the researcher feels it is in the best interest, or if I do not follow the study plan, as agreed to.

Signed at (*place*) _____ on (*date*) _____ 20__

Signature of participant

Signature of witness

Declaration by person obtaining consent

I (*name*) _____ declare that:

- I clearly and in detail explained the information in the information leaflet document to _____.
- I did/did not use an interpreter.
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- He/she was given time to discuss it with others if he/she wished to do so.

Signed at (*place*) _____ on (*date*) _____ 20__

Signature of person obtaining consent

Signature of witness

Declaration by researcher

I (*name*) _____ declare that:

- I had the content of the information leaflet document explained to _____ by _____ who I trained for this purpose.
- I did/did not use an interpreter
- I was available should he/she want to ask any further questions.
- The informed consent was obtained by an independent person.
- I am satisfied that he/she adequately understands all aspects of the research, as described above.
- I am satisfied that he/she had time to discuss it with others if he/she wished to do so.

Signed at (*place*) _____ on (*date*) _____ 20____

Signature of researcher

Signature of witness

Addendum G: Parental Permission for Child Participation (Aim 4)

PARENTAL/CAREGIVER PERMISSION FOR CHILD SCREENING

TITLE OF THE RESEARCH STUDY: *The effect of the Attachment and Biobehavioral Catch-up (ABC) parenting intervention for children with intellectual disability in South Africa.*

ETHICS REFERENCE NUMBERS:

STUDY LEADERS: Prof Esme van Rensburg, Prof Carlo Schuengel & Dr Paula Sterkenburg

PRINCIPLE

INVESTIGATOR/POST

GRADUATE STUDENT:

ADDRESS:

Ahmed Riaz Mohamed

**Rm 12-30, Humanities Building, Hatfield Campus,
University of Pretoria, Lynwood Road, Hatfield,
Pretoria.**

CONTACT NUMBER:

**072 369 9637 or 012 420 4006 (Ahmed Riaz
Mohamed)**

I have been informed about the study, and have read the information leaflet for parents/caregivers. I understand the risks and benefits involved in my child's participation in this initial screening process. I understand that my child is below the age of consent, and that due to his/her very young age and intellectual disability, is also unable to provide assent for themselves. I therefore accept this responsibility as parent/caregiver and agree that my child may participate in this screening by taking part in the following procedure:

1. The "Vineland Adaptive Behaviour Scales"

I understand that if my child does not meet the criteria, based on the results on the Vineland Adaptive Behaviour Scales (VABS), they will not be eligible for further participation in the study. I understand that participation in the VABS screening process does not automatically mean participation in the main study. I have been informed that I will receive detailed feedback from the researcher on the results and outcome of the screening process regardless of whether my child is eligible to participate in the study, or not.

I hereby give permission for my child's participation in the study, and for the researcher to involve him/her in the abovementioned procedures.

Name of parent/caregiver _____

Name of child: _____ ☐ Boy ☐ Girl

Postal Address: _____

_____ Postal code: _____

Landline number: _____ Cellphone number: _____

Email: _____

Signature: _____ Date: _____/_____/_____

(Day / Month / Year)

PARENTAL/CAREGIVER PERMISSION FOR CHILD PARTICIPATION IN RESEARCH PROCEDURES

TITLE OF THE RESEARCH STUDY: *The effect of the Attachment and Biobehavioral Catch-up (ABC) parenting intervention for children with intellectual disability in South Africa.*

ETHICS REFERENCE NUMBERS:

STUDY LEADERS: Prof Esme van Rensburg, Prof Carlo Schuengel & Dr Paula Sterkenburg

PRINCIPLE

INVESTIGATOR/POST

GRADUATE STUDENT:

ADDRESS:

Ahmed Riaz Mohamed

Rm 12-30, Humanities Building, Hatfield Campus,
University of Pretoria, Lynwood Road, Hatfield,
Pretoria.

CONTACT NUMBER:

072 369 9637 or 012 420 4006 (Ahmed Riaz
Mohamed)

I have been informed about the study, and have read the information leaflet for parents/caregivers. I understand what the study involves, as well as the risks and benefits involved in my child's participation in this study. I understand that my child is below the age of consent, and that due to his/her very young age and intellectual disability, is unable to provide assent for themselves. I therefore accept this responsibility as parent/caregiver and agree that my child may participate in this study by taking part in the following procedures:

1. The "Attachment and Biobehavioural Catchup" (ABC) intervention for 10 weekly sessions (as explained in the information letter)
2. Weekly video-recorded play interactions during all 3 phases of the study as indicated in the information letter.
3. Collection of saliva samples on a weekly basis during all 3 phases of the study.

I hereby give permission for my child's participation in the study, and for the researcher to involve him/her in the abovementioned procedures.

Name of parent/caregiver _____

Name of child: _____ ☐ Boy ☐ Girl

Postal Address: _____

_____ Postal code: _____

Landline number: _____ Cellphone number: _____

Email: _____

Signature: _____ Date: _____/_____/_____

(Day / Month / Year)

Addendum H: Confidentiality Agreement for Research Assistants, Coders and Intervenors

CONFIDENTIALITY AGREEMENT

TITLE OF THE RESEARCH STUDY: *The effect of the Attachment and Biobehavioral Catch-up (ABC) parenting intervention for children with intellectual disability in South Africa.*

ETHICS REFERENCE NUMBERS:

STUDY LEADERS: Prof Esme van Rensburg, Prof Carlo Schuengel & Dr Paula Sterkenburg

PRINCIPLE

INVESTIGATOR/POST

GRADUATE STUDENT:

ADDRESS:

Ahmed Riaz Mohamed

**Rm 12-30, Humanities Building, Hatfield Campus,
University of Pretoria, Lynwood Road, Hatfield,
Pretoria.**

CONTACT NUMBER:

**072 369 9637 or 012 420 4006 (Ahmed Riaz
Mohamed)**

As a member of this research team I understand that I may have access to confidential information about study sites and participants. By signing this statement, I am indicating my understanding of my responsibilities to maintain confidentiality and agree to the following:

- I understand that names and any other identifying information about study sites and participants are completely confidential.
- I agree not to divulge, publish, or otherwise make known to unauthorized persons or to the public any information obtained in the course of this research project that could identify the persons who participated in the study.
- I understand that all information about study sites or participants obtained or accessed by me in the course of my work is confidential. I agree not to divulge or otherwise make known to unauthorized persons any of this information, unless specifically authorized to do so by approved protocol or by the local principal investigator acting in response to applicable law or court order, or public health or clinical need.
- I understand that I am not to read information about study sites or participants, or any other confidential documents, nor ask questions of study participants for my own personal information but only to the extent and for the purpose of performing my assigned duties on this research project.

- I agree to notify the principal investigator (Ahmed Riaz Mohamed) immediately should I become aware of an actual breach of confidentiality or a situation which could potentially result in a breach, whether this be on my part or on the part of another person.
- I agree that I will abide by the procedures put in place by the researchers with regards to the managing of video-recorded material collected as part of the research project. I agree to keep the nature and content of all video material strictly confidential. I agree that all video-recordings will be kept securely by myself until they are delivered to/collected by the principal investigator. I will not hand the video-recordings over to any person other than the principal investigator (except for my clinical supervisor in the case of parent coaches and their session recordings). I understand that I am not permitted—under any circumstances— to make copies of video-recordings, and agree to this unconditionally.

_____	_____	_____
Signature	Date	Printed name

_____	_____	_____
Signature of principal investigator	Date	Printed name

Addendum I: Goodwill Agreement with Counselling Psychologist for Debriefing

<i>Dr Amanda van der Westhuizen</i>	PS 0101478 PR 0286710
Counselling Psychologist	084 301 5269
<i>D. Phil (NMMU) MA Counselling Psychology Cum Laude (NMMU)</i>	Amanda.vanderwesthuizen@up.ac.za
For Attention: Ahmed Riaz Mohamed PhD Candidate Department of Psychology North-West University	
Dear Mr Mohamed,	
I hereby formally agree to the following as it relates to the participants involved in the PhD study entitled The Effects of the Attachment and Biobehavioral Catch-up Parenting Intervention for Children with Intellectual Disability in South Africa:	
• I agree—in my capacity as a counselling psychologist in private practice who is registered with the Health Professions Council of South Africa—to provide psychological debriefing services to anyone who has participated in the abovementioned study and who requests such services. • I agree that my professional contact details may be shared with participants in the abovementioned study who request such services, for the purposes of referral. • I agree to consult with these participants/clients as priority cases. • I agree to provide these psychological services on an exclusively pro bono basis (free of charge). • I also declare that I am an independent party, and that I am in no way involved in any capacity in the research referred to above.	
Sincerely,	
	
Dr Amanda van der Westhuizen MA Counselling Psychology (NMMU), DPhil (NMMU) Counselling Psychologist PS0101478	
7 February 2018	

Addendum J: Interview Schedules (Aims 2 & 3)

Preliminary interview schedule for semi-structured interviews with caregivers

1. I would like to begin by getting a sense of the kind of person <name of child> is. Can you briefly tell me what <name of child> is like?
2. Tell me about your experiences of being a parent/caregiver to <name of child>.
3. Can you tell me about your relationship with <name of child>? What do you do when you are together?
4. Do you think your relationship with <name of child> affects how he/she is as a person? (if yes, but does not elaborate, ask in what ways this happens. If no, ask what the parent things is affecting how the child is as a person).
5. Do you think that how you respond to your child has an impact on them? Can you give example of where this worked, and where this didn't work?
6. When this didn't work, what would you need at this point in time—what kind of feedback would be helpful to you?
7. What are some of the factors you face that affect the way you relate to your child with ID? (Start off broad—then prompts and probe for challenges more specific to parenting their child with ID).
8. What makes it easier for you to be in relationship with <name of child>? Can you give some example of these experiences when your child was no distressed?
9. How regularly do you have these positive interactions?
10. In the last few weeks, can you think of when it was difficult for you to be a parent/caregiver to <name of child>? (prompt and probe to flesh out the details and examples)
11. Can you tell me about the difficulties you may have in understanding your child's needs when <name of child> is upset? (prompt for challenges with communication).
12. What would you need in order to help you understand your child's needs in moments such as these?
13. What kind of support do you feel is necessary for you to have the kind of relationship with <name of child> that you would like to have?
14. Is there anyone in your life who provides this kind of support? If there is, can you tell me about how they do this?
15. What other kinds of support do you have available to you?

Preliminary interview schedule for semi-structured interviews with experts

1. Can you tell me about some of the specifically *relational* difficulties you have noticed between caregivers and their child with ID?
2. What is currently available with regards to facilitating or remediating parent-child relationship difficulties for children with ID?
3. Based on this experience, what do you think caregivers of children with ID might need with regards to their relationships with their child?

Addendum K: Interview Schedules (Aim 4)

Preliminary Interview Schedule—Aim 4 (Caregivers): Post-intervention

<Caregiver Name>, thank you very much for making the time to do one final interview with us. Just to introduce myself again, I am Maham. I am an intern research psychologist at the University of Pretoria, and I will be assisting Ahmed with these interviews for his project on the ABC intervention. With these kinds of projects it's best for an independent person—that's me—to do the post-intervention interviews, which is why Ahmed is not doing them himself. I'd like to remind you that as with everything else this interview will remain completely confidential. Before I came on board, I signed a strict confidentiality agreement so I am not permitted to share information you report to me with anyone other than Ahmed. So other than me, Ahmed will be the only other person who will have access to this interview (not even Amanda/Frances will have access to the interview). I won't even have access to it once I have handed it over to Ahmed. Shall we get started?

1. Let's start off broadly—can you tell me about your experience of the ABC intervention, generally?
2. What, for you, was the most beneficial about the ABC intervention? What, in your experience, made this aspect/these aspects beneficial?
3. What aspects of the ABC intervention did you enjoy most? Can you tell me about what made this enjoyable for you?
4. What about the ABC intervention did you not find useful or beneficial? Can you tell me what about this was not useful/beneficial for you?
5. Can you talk to me about what you learned from the ABC intervention? (this can be treated quite broadly—they can refer to specific learnings as it relates to the foci and content of the intervention itself; or it can be more personal about their relationship with their child...if they don't refer to all of these aspects, probe them about the other aspects they haven't brought up).
6. What have you noticed about your relationship with <child's name> since having taken part in the ABC intervention? (1st follow-up: What do you attribute these changes to? [if there are any]; 2nd follow-up: How do you think those changes are connected to the ABC?—I want to see if they can link the relational shift to the intervention [1st follow-up], and how they think/feel the intervention facilitated these shifts, if any [2nd follow-up]).
7. If the participant doesn't talk to this in response to the previous question, ask: What have you noticed about yourself in your interactions with <child's name> during the course of the intervention, and now that the intervention has concluded? (here the focus is on the parent only, and their observance of their own parenting behaviours and how they've changed/shifted over the course of the intervention). (Follow-up: What do you attribute these changes to?)
8. Specifically for <Caregiver 1> and <Caregiver 2>: As a black South African, your cultural background is different to those of the people who developed the intervention and for whom the intervention was originally developed. Based on your experience of having received the intervention, can you comment on its cultural relevance? For example, could you identify with the content, or was it foreign and contradictory to what you have come to know, culturally? Etc. (Follow-up, if appropriate: Given these differences, do you think the intervention is still relevant and valid? Why?; What do you think we would need to adjust or change to make it fit the cultural context better?)
9. Specifically for <Caregiver 3>: As a South African, our context is quite different to that of the people who developed the intervention, and for whom the intervention was originally developed. Based on your experience of having received the intervention, can you comment on this? For example, could you identify with the content, or was it foreign and at odds with what you've come to know? Etc. (Follow-up, if appropriate: Given these differences, do you think the

intervention is still relevant and valid? Why?; What do you think we would need to adjust or change to make it fit the context better?)

10. What was your experience of <Parent Coach name> during the course of the intervention? (reiterate that what they share here will not be divulged to the coach).
11. What about <Parent Coach name> and their approach either facilitated or hindered your engagement in the intervention?
12. During the intervention sessions, you watched video clips of yourself and <Child's name>. What was that like for you? (they are likely to talk about how comfortable/uncomfortable it was, which is fine...but, ultimately, we want to hear about how observing themselves in this way facilitated their learning/growth, or not!...so probe for this if it doesn't come up).
13. There was some homework that came with most of the sessions. How did you experience the homework activities? (Follow-ups: If it was helpful, then why was it helpful and how did it facilitate their learning; if it was difficult, what made it difficult?).
14. As one of the first recipients of the intervention in SA, you have valuable and important experiences. What are some suggestions or recommendations you could make to help us potentially improve both the content of the intervention, and also the process and structure of how the intervention is done? (*structure* here refers to things like the length of each session, number of sessions, spacing of sessions; and *process* refers to techniques such as use of video-feedback, active in-the-moment commenting by the parent coach, information sharing/psychoeducation etc).

Preliminary Interview Schedule—Aim 4 (Parent Coaches): Post-intervention

<Coach Name>, thank you very much for making the time to do an interview with us. Just to introduce myself again, I am Maham. I am an intern research psychologist at the University of Pretoria, and I will be assisting Ahmed with these interviews for his project on the ABC intervention. With these kinds of projects it's best for an independent person—that's me—to do the post-intervention interviews, which is why Ahmed is not doing them himself. I'd like to reiterate that this interview will remain completely confidential. Before I came on board, I signed a strict confidentiality agreement so I am not permitted to share information you report to me with anyone other than Ahmed. So other than me, Ahmed will be the only other person who will have access to this interview (none of the parents you worked with will have access to any of the information). I won't even have access to it once I have handed it over to Ahmed. Shall we get started?

1. Tell me about your experience as a parent coach.
2. Can you talk about the aspects of the ABC intervention that worked well? (Prompt here for both *content*-related [themes and content of sessions] aspects as well as *process*-related [techniques e.g. in-the-moment comments, video-feedback etc] or *structure*-related [number of sessions, timing of sessions etc] aspects)
3. From your perspective as a parent coach, what was it about these aspects of the ABC intervention that worked well?
4. Which aspects of the ABC intervention were challenging for you to implement? (Prompt here for both *content*-related [themes and content of sessions] aspects as well as *process*-related [techniques e.g. in-the-moment comments, video-feedback etc] or *structure*-related [number of sessions, timing of sessions etc] aspects)
5. What about these aspects was challenging for you? (Probe for examples from actual sessions).
6. Can you comment on what made providing the intervention easier for you?
7. On the flip side, what made it difficult or challenging for you?
8. If we were to make any changes to the ABC intervention to work better, based on your experience of implementing the ABC, what suggestions would you make about what could be

changed, and why? (if they don't bring up anything related to the SA context or culture; and/or if they don't bring up the issue of working with children with developmental delays, probe for this directly).

9. In-the-moment (ITM) commenting is an integral component of the intervention and has become central to how the sessions are conducted. What was your experience of using ITM commentary?
10. Video-feedback is also a prominent element of the ABC. Can you comment on this and what you observed about using the video-feedback in the sessions? (video-feedback refers specifically to video-recorded interactions of the dyads as it happened in the sessions, and not the 'stock' videos that were used for education purposes in certain sessions).
11. Most sessions included some form of homework for the parents. How do you feel parents engaged with the homework exercised? What were some of the challenges involved in this aspect of the intervention?
12. Can you talk about your experience of the weekly clinical supervision you received during the intervention? (Probe: What was beneficial? What did they Expect? What can Improve?)

The following questions relate specifically to the families/dyads with whom each parent coach worked during the intervention:

13. How do you think <Parent and Child Name> experienced the intervention? (Prompt: What led you to this impression? [I'd like to see here if they can identify specific moments/behaviours/attitudes that alerted them to their impression i.e. "evidence"])
14. What are some of the most significant qualitative changes you observed in the relationship and interactions between <Parent and Child Name> over the course of the intervention? (Probe: Is there a moment that you can remember where you thought something along the lines of "Wow, this something is happening here!"? Can you tell me about that?)
15. How do you understand these changes that you observed?
16. How did you experience your relationship with <Parent Name> during the intervention? [Here I am specifically inquiring about the therapist-parent relationship].
17. How do you think <Parent Name> experienced your relationship?
18. Do you think this had an impact on how the process was undertaken? (Follow up with: Can you tell me more about that?)

Addendum L: Interview Schedules (Aim 5)

Preliminary interview schedule for semi-structured interviews with experts—Delphi (1st round)

1. You have been provided with a detailed overview of the ABC intervention. As professionals experience in working with children with ID, what are your first thoughts about the intervention?
2. Do you think this is a useful intervention? Why, or why not?
3. Specifically, what about the intervention do you think is the most useful?
4. What about the intervention is not so useful?
5. What do you think should be included in the intervention that would facilitate your support for the intervention?
6. What do you think can be excluded from the intervention that would facilitate your support for the intervention?
7. In your opinion, do you believe we have made a correct decision in selecting the ABC as an intervention strategy for caregivers of children with ID?

Prompts for written feedback from experts—Delphi (2nd round)

Dear participant,

Thank you for agreeing to participate in Round 2 of the study! You have been sent the summary of the ABC intervention that was provided to you prior to your initial interview. Please read this again to ‘jog’ your memory of the intervention. Once you have done so, you are requested to read the summary/overview of the findings from the Round 1 interviews that were conducted with all the participants, which you have also been sent. Based on your reading of both documents, you are requested to complete the sections below, in writing. Since this round is being undertaken in writing and immediate follow-up questions are not possible, you are requested to provide as much written detail as possible. Please feel free to write as much as you feel is necessary—your responses are not limited to the size of the boxes below; they will expand as you type.

1. In the space below, based on the findings you have been presented with, please comment on your level of agreement with the findings. If there are any points of disagreement, these can be highlighted and elaborated on here. Please be as detailed as possible in your response.
2. In the space below, based on the findings you have been presented with, please provide any additional thoughts or comments you may have regarding what you perceive to be the strengths of the ABC intervention. Please be as detailed as possible in your response.
3. In the space below, based on the findings you have been presented with, please provide any additional thoughts or comments you may have regarding what you perceive to be areas of weakness, or where you have concerns related to the intervention, *specifically in relation to working with children with intellectual and developmental disabilities/delays in South Africa*. Please be as detailed as possible in your response.
4. In the space below, based on the findings you have been presented with, please provide any additional specific suggestions and/or recommendations for how the ABC may be adapted to align better with working with a population of children with intellectual and developmental disabilities/delays in South Africa. Please be as detailed and specific as possible in your response (also include here any additional comments related to *cultural considerations*).

Preliminary interview schedule for semi-structured interviews with caregivers

1. You have been provided with a detailed overview of the ABC intervention. What are your first thoughts about the intervention?
2. Do you think this is a useful intervention? Why, or why not?
3. Specifically, what about the intervention do you think is the most useful?
4. What about the intervention is not that useful?
5. What do you think should be included in the intervention that would make it more appealing to you as a caregiver?
6. What do you think can be excluded from the intervention that would make it more appealing to you as a caregiver?

Addendum M: TurnItIn Report Summaries

Section I

ORIGINALITY REPORT

15 %	11 %	15 %	%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

Article 1

ORIGINALITY REPORT

13 %	11 %	12 %	%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

Article 2

ORIGINALITY REPORT

6 %	5 %	6 %	%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

Article 3 without RL for TII.docx

ORIGINALITY REPORT

84 %	83 %	84 %	%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

Article 4

ORIGINALITY REPORT

79 %	79 %	77 %	%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

Section III

ORIGINALITY REPORT

4 %	0 %	4 %	%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

Note: Articles 3 and 4 have been ***accepted and published*** in the respective journals as indicated in Section II. This accounts for the elevated similarity indices for these two article manuscripts.

Addendum N: Solemn Declaration and Permission to Submit



NWU Higher Degrees Administration

SOLEMN DECLARATION AND PERMISSION TO SUBMIT

1. Solemn declaration by student

I, Ahmed Riaz Mohamed

declare herewith that the thesis/dissertation/mini-dissertation entitled (exact registered/approved title),

The effect of the Attachment and Biobehavioural Catch-up parenting intervention for children with intellectual disabilities in South Africa

which I herewith submit to the North-West University is in compliance/partial compliance with the requirements set for the degree:

Doctor of Philosophy in Psychology

is my own work, has been text-edited in accordance with the requirements and has not already been submitted to any other university.

LATE SUBMISSION: If a thesis/dissertation/mini-dissertation of a student is submitted after the deadline for submission, the period available for examination is limited. No guarantee can therefore be given (should the examiner reports be positive) that the degree will be conferred at the next applicable graduation ceremony. It may also imply that the student would have to re-register for the following academic year.

Ethics number: NWU-00012-18-A1

ORCID:

0	0	0	0

 -

0	0	0	2

 -

2	5	2	4

 -

9	2	5	4

Signature of Student:

Ahmed Riaz Mohamed
Digitally signed by Ahmed Riaz Mohamed
Date: 2024.11.11 15:56:03 +02'00'

University Number:

2	9	9	0	0	6	8	9

Signed on this 11th day of November of 20 24

2. Permission to submit and solemn declaration by supervisor/promoter

The undersigned declares that the thesis/dissertation/mini-dissertation:

- ☒ • Complies with the A-rules and the technical requirements provided for in the Manual for Higher Degree studies and in faculty rules;
- ☒ • Has been checked by me for plagiarism (by making use of TurnItIn software for example) and a satisfactory report has been obtained, and;
- ☒ • That the work was language edited before submission for examination.

Faculty specific requirements as per A-rules: 1.3.2, 4.3.2, 4.3.3, 4.4.2, 4.10.4, 5.3.2, 5.4.2, 5.10.2

- ☒ • Complies with regards to faculty rules on submission or acceptance by an accredited scientific journal;
- ☐ • Complies with regards to faculty rules on peer reviewed conference proceedings;
- ☒ • The student is hereby granted permission to submit his/her mini-dissertation/ dissertation/thesis for examination.

Signatures of supervisor(s) and Promoter(s): (only compulsory in cases where there are co- or assistant- supervisor(s/promoters))

Prof. E van Rensburg
Supervisor
Digitally signed by Prof. E van Rensburg
Date: 2024.11.19 19:42:12 +02'00'

Carlo Schuengel
Supervisor/Co-Promoter

Paula Sterkenburg
Digitally signed by Paula Sterkenburg
Date: 2024.11.19 20:51:05 +01'00'

Original details: (10512187) M:\HDA Toolbox\Forms\Pdf fileable forms\13.Solemn Decl and Permission to submit exam copy.pdf 3 December. File reference: 7.1.11.3.2/3