The relationship between adverse childhood experiences and adult well-being

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Mini-dissertation accepted in fulfilment of the requirements for the degree Master of Social Work in Forensic Practice at the North-West University

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Graduation: June 2021

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Research is conducted under; Community Psychosocial Research (COMPRES) and ethical approved by Health Science Ethics Office for Research (HREC), NWU-00311-20-A1.

PREFACE

I would like to dedicate this study to my supervisor, Prof C. Wessels. I am grateful that she believed in me from the beginning, throughout my journey, and during my Forensic Social Work career.

My fiancé, soon to be husband, Dean Basson, for his unconditional support, understanding, and positivity throughout the challenging times I encounter on this journey.

Acknowledgements

I wish to express my sincere gratitude to the following people:

- The Lord for keeping me safe and giving me the determination and strength to come this far.
- My mother, Teresa Van Den Berg for always believing in me and which I know is proud of me, no matter what happens.
- My sister, Danielle Jacobs, whom I wish, will follow me in the academic endeavours.
- My friends and colleagues for the support and words of encouragement through changing and unforeseen circumstances.
- Prof S Ellis for assistance and guidance with the data analysis.
- The respondents who took part in my study.

FOREWORD

This mini-dissertation is presented in an article format according to the guidelines set out in the Manual for Postgraduate Studies of the North-West University. This article will be submitted to: *Child Abuse and Neglect* – Elsevier (International Journal) for publication. The Child Abuse and Neglect journal publishes articles on child welfare, health, humanitarian aid, justice, mental health, public health, and social service systems. The guidelines for submission of the article to this journal include the following:

Child Abuse and Neglect publishes quantitative, qualitative, and mixed-method research. Particular focus will be placed on thorough and appropriate methods, strong data analysis, and discussion of implications for the field. Language guidelines entail that the article is written in "good English", only America usage is accepted as dictated by American Psychological Association (APA) style. The article must also be submitted online; the online system converts the article file to a single PDF file used in the peer-review process. The journal operates a double-blind (which means the identity of the author is concealed from the reviewers) review process. All contributions will be assessed by the editor for suitability for the journal. Articles deemed suitable are then send to a minimum of two independent expert reviewers to assess the scientific quality of the article. The article must be submitted via *http://ees.elsevier.com/chiabuneg/*.

The title page should include the title, author's names, affiliations, acknowledgements, Declaration of Interest, and a complete address for the corresponding author including an email address. The main body of the paper (including the references, figures, tables, etc.) should not include any identifying information. The use of word processing software are explained as follow; the file must be saved in the native format of the word processor used. The text should be in a single-column format. Do not justify text or hyphenate words. Only use one grid for each individual table, if no grid is used, use tabs to align columns. The full length of the article should not exceed 35 pages in total, double space must be implemented with margins of at least 1 inch on all sides and a standard font (e.g. New Times Roman) of 12 points.

The article must be divided in to three levels of headings, level one and two should appear on its separate line, level three headings should include punctuation and run-in with the first line of the paragraph. References must be cited in the text and in the reference list. The reference style recommended is the American Psychological Association (6th Edition).

DECLARATION OF LANGUAGE CORRECTNESS (CERTIFICATE)

SPELL CHECK
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EDITING CERTIFICATE

20 November 2020

To whom it may concern

DECLARATION OF LANGUAGE EDITING

Re: The relationship between adverse childhood experiences and adult well-being
[Mini-dissertation submitted in fulfilment of the requirements for the degree Master of Social Work in Forensic Practice at the North-West University]

This serves to confirm that I, Tanya-Lee Ruby Stewart, a SATI-registered language editor and translator, undertook the language editing of the above-mentioned document on behalf of Ms Estelle Jacobs, NWU student number 24083933 for the purpose of meeting the submission requirements of a Master's degree in Social Work.

DO NOTE: Changes and corrections were suggested by means of "track changes" and e-mails. However, implementation thereof was left up to the author.

Should you have any queries, please contact me through the email address and telephone number provided by the letterhead.

Yours sincerely

TR Stewart
Member: South African Translators' Institute SATI registration no: 1003470

ETHICAL APPROVAL LETTER

Private Bag X6001, Potchefstroom
South Africa 2520

Tel: 018 299-1111/2222
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Health Sciences Ethics Office for Research, Training and Support

North-West University Health Research Ethics Committee (NWU-HREC)
Tel: 018 299-1206
Email: Ethics-HRECApply@nwu.ac.za

04 May 2020

To whom it may concern

APPROVAL OF THE RESEARCH STUDY FROM THE NORTH-WEST UNIVERSITY HEALTH RESEARCH ETHICS COMMITTEE (NWU-HREC) OF THE FACULTY OF HEALTH SCIENCES

Ethics number: NWU-00311-20-S1

Kindly use the ethics reference number provided above in all future correspondence or documents submitted to the administrative assistant of the North-West University Health Research Ethics Committee (NWU-HREC).

Study title: The relationship between Adverse Childhood Experiences and the cumulative effect on adult mental well-being

Study leader: Prof CC Wessels

Student: E Jacobs - 24083933

Application type: Single study

Risk level: Medium

You are kindly informed that this application was reviewed at the meeting of the North-West University Health Research Ethics Committee (NWU-HREC), Faculty of Health Sciences, North-West University, held on 13/02/2020. Following review of the application, it has been decided that the study is approved. Approval in this letter means that **final ethics approval** was indeed granted for the **research methodology and the ethical aspects** of this study and that the NWU-HREC has **no further ethical concerns** relating to the research ethics process, except for the outstanding documentation indicated below, which must be provided to the NWU-HREC by the researcher. It is important to mention that this letter indicates that there are no further ethical concerns that exist, regarding the execution of the research. A final ethics letter will be issued upon the receipt of the following documentation:

a. A copy of the permission letter from you as Lifeline, indicating that you are willing to act as external counsellors for the research study.

The mentioned document, as indicated above, should be submitted to Ethics-HRECProcess@nwu.ac.za by the researcher, for review before the ethics approval certificate can be provided. This approval is provided *for a year*, after which continuation of the study is dependent on receipt of an annual (or as otherwise stipulated) monitoring report and the concomitant issuing of a letter of continuation for another year.

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-HRECApply@nwu.ac.za.

Yours sincerely

Chairperson: NWU-HREC

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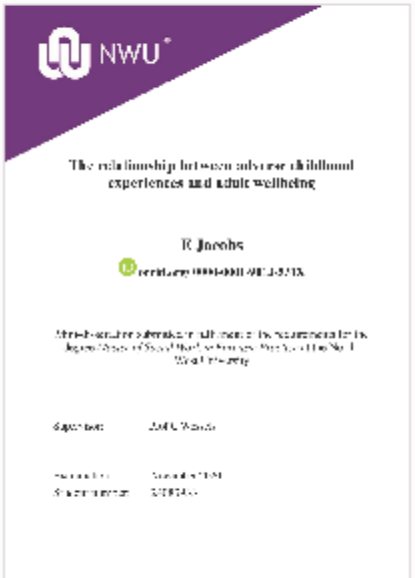

Abstract

Key words: adverse childhood experiences, child abuse, child neglect, and mental wellbeing.

Title: The relationship between adverse childhood experiences and adult wellbeing

The norm in South Africa seems to be that ACEs happen unexpectedly, however, the impact on adult's mental wellbeing can be minimalised, even prevented if the community can be empowered with knowledge about ACEs. Since the 1900s, ACEs are described as developmental and emotional problems in children, health risk behaviours among adolescents and challenging psychological and physical illnesses among adults. The study focuses on ACEs and the snowballing effect it has on adult's mental wellbeing. The study is described as a cross sectional – descriptive correlation study which will be implemented in a South Africa context. The data will be gathered through a quantitative approach; a survey which focuses on demographic factors of a general population (Facebook users), their ACE scores compared with the WEMWBS mental wellbeing scale, to determine if ACEs can affect your adult mental wellbeing.

Opsomming

Titel: Die verhouding tussen nadelige kinderjare ervarings en volwasse geestelike gesondheid.

*Sleutelterme: g*eestelike welstand, kindermishandeling, kinderverwaarlosing en nadelige ervarings in kinderjare.

Dit blyk dat die norm in Suid-Afrika in verband met nadelige kinderjare ervarings onverwags gebeur, maar dat die impak op die geestelike welstand van ’n volwassene tot die minimum beperk kan word, selfs voorkom, as die gemeenskap bemagtig word met kennis oor nadelige kinderjare ervarings. Sedert die 1900's word nadelige kinderjare ervarings beskryf as ontwikkelings- en emosionele probleme by kinders, gesondheidsrisikogedrag onder adolessente en uitdagende sielkundige en fisieke siektes onder volwassenes. Die studie fokus op nadelige kinderjare ervarings en die sneeubal effek wat dit op volwassenes se geestelike welstand het. Die studie word beskryf as 'n deursnee-beskrywende korrelasie studie wat in 'n Suid-Afrikaanse konteks geïmplementeer word. Die data sal deur middel van 'n kwantitatiewe benadering versamel word; 'n opname wat fokus op demografiese faktore van 'n algemene bevolking (Facebook-gebruikers), hul nadelige kinderjare ervarings telling in vergelyking met die WEMWBS geestelike welstand skaal, om vas te stel of nadelige kinderjare ervarings, geestelike welstand by volwassenes kan beïnvloed.

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CHAPTER 1

INTRODUCTION

Key words: adverse childhood experiences, child Abuse, child neglect, and mental wellbeing

Drs Felitti and Anda, specialists in preventative medicine at the Kaiser Permanente Health Management Organisation in San Diego, California, initiated the original study on adverse childhood experiences (ACEs) (Murphy, Fiorillo, & Sullivan, 2014). The study examined the association between a wide range of such experiences and a broad range of adult health risk behaviours. Additionally, it also took note of diseases that may have occurred throughout each individual participant's lifespan (Krienitz, 2008). Ten types of ACEs were identified in the original ACE study, namely: sexual abuse, verbal abuse, physical abuse, an alcoholic or mentally ill parent, a mother who was a victim of domestic violence, a family member who had been incarcerated, loss of a parent through divorce or abandonment, emotional neglect, and, lastly, physical neglect (Steele et al., 2016).

These experiences are linked to many negative health outcomes in adulthood, including "premature death, delinquency, teenage pregnancies, drug and alcohol abuse, and other psychological and social problems" (Ritacco & Suffla, 2012a). "The consequences last a lifetime", according to research by Gonzalez and Wekerle, (2015). Several studies have shown that adults who have had ACEs have a higher risk of several adverse outcomes. These include perpetrating violence or being a victim of violence, depression, obesity, as well as harmful use of tobacco, drugs, and alcohol. They are also at high risk of sexually inappropriate behaviour and unintended pregnancies, as mentioned above (Gonzalez & Wekerle, 2015). Within a South African context, a gap within the research was identified in terms of the cumulative effect ACEs have on adult mental wellbeing.

1.1 Definitions

1.1.1 Adverse childhood experiences (ACEs)

Adverse childhood experiences (ACEs) are defined as "physical battering to failure to receive love and comfort". A further definition was formed by Kalmakis & Chandler (2014), which describes ACEs as "childhood events, varying in severity, and often

chronic, occurring in a family or social environment and causing harm or distress" (Kalmakis & Chandler, 2014a). In other words, they are potentially traumatic events, for example, child abuse and neglect that may have a negative and lasting effect on a person's physical health and mental wellbeing. These events or experiences range from physical, emotional, and sexual abuse to parental divorce, or the incarceration of a parent, etc. (Sacks, Murphey, Moore, Sobre, & Diversidad, 2016).

Bowlby's attachment theory highlights the effect of poor parenting on children. More specifically, it illustrates how poor parenting skills (e.g., the lack of love and security) in early childhood negatively affects children's ability to regulate their emotions. This research was supported by Kalmakis & Chandler (2014a), who emphasised the importance of secure attachment and social support during childhood in order to encourage resilience and ensure the ability to cope with ACEs.

1.1.2 Child abuse

Abuse, in relation to a child, is defined as, any form of harm, deliberately inflicted on a child. This includes: assaulting a child or inflicting any other form of deliberate injury to a child, sexually abusing a child or allowing a child to be sexually abused, and practices that exploit children or expose a child to behaviour that may harm the child's psychologically or emotionally well-being (Makoae et al., 2015).

1.1.3 Child neglect

Neglect, in relation to a child, means a "failure in the exercise of parental responsibilities to provide for the child's basic physical, intellectual, emotional or social needs" (Makoae et al., 2015).

1.1.4 Mental wellbeing

According to Ryan and Deci (2001), mental wellbeing develops from psychological functioning, including the ability to improve and maintain mutually beneficial relationships, and from levels of happiness and contentment, measured as life satisfaction. Psychological functioning also includes the ability to maintain a sense of autonomy, agency, self-acceptance, self-esteem, personal growth, and purpose in life.

1.2 Problem statement

A cross-sectional study done by Bruwer (2014) confirms that high levels of depression, anxiety and distress are reported in adults who had been exposed to sexual and physical abuse during their childhood (Bruwer et al., 2014a). Furthermore, physical abuse, sexual abuse, and parental divorce were also identified as significant risk indicators for suicide attempts later in life (Bruwer et al., 2014b). In reference to Bruwer's study among South Africans, more than a third of the 4351 respondents with suicidal behaviour had experienced at least one ACE with physical abuse, parental death, and parental divorce being the most dominant stressors (Bruwer et al., 2014a, 2014b).

Not only do the above-mentioned stressors cause trauma to the victims of ACEs, but they also affect family members. Unfortunately, trauma is deeply rooted in South Africa, especially when it is left unresolved and untreated. Data from a nationally representative sample reveals that approximately 75% of South Africans experience some kind of traumatic event during their lifetime (Sorsdahl, Stein, Williams, & Nock, 2011). These statistics are relevant since abuse and neglect during early childhood contribute to trauma and affects children's brain development.

Adverse childhood experiences influence cognitive and psychosocial adjustment and result in an increased risk of violent and anti-social behaviour (Jamieson & Mathews, 2016). Furthermore, exposure to childhood violence is associated with aggressive behaviour later in life, particularly rape and intimate partner violence (Mathews, Jewkes, & Abrahams, 2011a).

In a community-based survey focused on physical abuse in Mpumalanga and in the Western Cape, approximately 55% of participating children reported being physically abused by their caregivers, teachers, or relatives (Mathews & Benvenuti, 2014). This is supported by a small-scale study in Gauteng, which confirmed that 15% of children report being neglect by "drunken parents" (Mathews & Benvenuti, 2014). In turn, this supports the concept of children in South Africa, being harshly exposed to more than one ACE.

Furthermore, this particular study indicated that psychological consequences, such as depression, anxiety disorders, substance abuse, suicide, unwanted pregnancy and HIV, are more common in females, who have experienced physical and sexual abuse during

childhood (Mathews & Benvenuti, 2014). In terms of males, exposure to ACEs, which included neglect, physical and sexual abuse, shape violent and risk-taking behaviour such as "truanting, gang involvement and crime" (Mathews & Benvenuti, 2014). Consequently, this behaviour augments the vicious circle, meaning that such ACEs are continued and, as a result, will plague the future generation/s. It is, therefore, clear that such behaviours, or experiences, should be addressed timeously in order to prevent future harm.

The original ACE study found a direct link between such experiences, physical health factors, and psychological behaviour during adulthood (Steele et al., 2016). Consequently, it is crucial to the current study, to first identify each participant's ACE score before attempting to distinguish how their past experiences influence their current mental well-being. To put it more simply, in order to accurately establish the cumulative effect of childhood trauma, one must determine the nature and extent of each individual's experiences to ensure the accuracy and relevancy of the study.

According to the literature, mental wellbeing can be defined as "feeling good and functioning well" (Ryan & Deci, 2001). Moreover, it is divided into two perspectives, namely hedonic (the subjective experience of happiness), and eudemonic (positive psychological functioning) (Taggart, F., Stewart-Brown, S., 2015). The WEMWBS wellbeing questionnaire was implemented in the study to determine participant's mental wellbeing level, in order to test the study's hypothesis. The WEMWBS wellbeing questionnaire was implemented to measure the mental wellbeing level of each respondent, in contrast with their ACE score. The WEMWBS wellbeing questionnaire was evaluated in South Africa and reliable results were received (Hart, 2014).

Official statistics of the South African Police Service in 2018/2019 indicates that the crime rate against children is 45 229 (*Crime Situation in Republic of South Africa Twelve (12) Months (April to March 2018-19)*, 2019), a startling number that highlights the enormous need for, and importance of, effectively run child protection services. Sexual offences against children were indicated as 24 387 for the year 2018/2019 (*Crime Situation in the Republic of South Africa Twelve (12) Months (April to March 2018-19)*, 2019). These statistics further confirm the need for ACE screenings to be pro-actively implemented, within the context of the South African Child Protection Services Department to prevent the cumulative effect of ACEs on adult mental wellbeing.

Since human beings have developed a process of responding to and making sense of threats and adversities, it is important to focus on the multiple effects of ACEs in adulthood, as this will enable an improved assessment, and, possibly prevent physical and psychological health challenges from occurring. A critical review of child maltreatment was conducted by Ritacco and Suffla (2012), in which the ACE questionnaire was used as a tool to determine the efficacy of intervention and prevention programmes related to ACEs (Ritacco & Suffla, 2012a).

Significantly, the review established that when one ACE is reported, there is a tendency to focus solely on it, rather than attempt to address other factors that may have played a role in the abuse. Subsequently, the lack of an effective ACE assessment/screening tool implies that the impact of these factors might wrongly be attributed to single type of ACEs and the cumulative effect of multiple categories of ACEs could go un-assessed (Dong et al., 2004b).

Furthermore, the study speculates that if Child Protection workers implement the ACE monitoring tool in the form of all-new intakes and investigation strategies, the possibilities that these ACEs goes unnoticed and unresolved will be eliminated. The monitoring tool's aim will be to empower the victims of ACEs, in resilience capacity or skills, psychological support, and coping mechanisms.

For example, if a child is sexually abused, other ACEs such as divorced or alcoholic parents are not addressed, only one ACE, namely the sexual abuse is assessed. However, the fact that the parent is passed out due to alcohol abuse, is overlooked. And in some cases, this could have caused the sexual abuse incident to take place, because there were no adult supervision. In such cases, the unaddressed adversities are unconsciously transferred to adulthood, and, according to several studies, may lead to negative physical health and psychological behavioural issues. Levenson (2017), highlighted that these ACEs cause changes in the brain over time and could disrupt emotional regulation, social attachments, impulse control, and cognitive processing.

Moreover, if various ACEs occur simultaneously, they can pose dangerous health risks, not only to the child, but also to the larger community (Steele et al., 2016). In light of this, children who have been identified as being "exposed to abuse, neglect, or household dysfunction" should be screened for other adversities to enable professional persons to

provide them with the appropriate support necessary, resulting in the improved accuracy of psychological and medical diagnoses and effective treatment of victims.

Within the larger community context, research predicts that the elimination of such ACEs catalyse a decrease in several other areas. More specifically, estimates include a decrease of: 55.7% in anxiety, 58.9% in high risk HIV, 21.3 % in heavy drinking (alcohol), 32.9 % in terms of separation and divorce, and 67.2% in life dissatisfaction. Lastly, a decrease of 43.5% hopelessness may also be experienced by community members (Gillespie & Francisco, 2014).

In order to test whether ACEs play a role in the mental health of adults, the WEMWBS wellbeing questionnaire was implemented to determine the participants' mental wellbeing levels. The research question, thus, is: do adverse childhood experiences (ACEs) affect adult mental well-being? The questionnaire was used to specifically measure participants' wellbeing scores in comparison to their individual ACE scores.

1.3 Objective

The study's objective is to determine the relationship between adverse childhood experiences and the cumulative effect on adult mental wellbeing.

1.4 Hypothesis

Adverse childhood experiences will have a negative effect on adult mental wellbeing.

1.5 Quantitative research design

The probability sampling method was implemented in the study because of the use of random procedures to select a sample that can allow the researcher to estimate the expected degree of sampling error in the study and determine or control the likelihood of specific units in the population that is selected for the study (Rubin & Babbie, 2013).

In order to ensure accuracy, all participants of the study were adults aged 18 years and older. The study was identified as a cross-sectional, descriptive correlation study, and refers to the characteristics of a population which can easily be quantified; e.g., age groups, gender, marital status, and employment status.

Questionnaires: The relationship between the two questionnaires, namely the total ACE score and WEMWBS wellbeing score, was determined by utilising a correlation study method (Annexure A).

1.6 Population Sample

As mentioned above, the respondents of the study were part of general population, as relevant to the researcher's hypothesis. Since the study aimed to determine the effect of ACEs on adult mental wellbeing, only adults were allowed to participate in this study. The study was advertised on the social media platform of closed Facebook groups, such as community-related groups related, specifically, to South Africa (Annexure B).

The researcher typed in the word; "community groups" in the 'search' option on the Facebook website, and advertised the study in the first five community-related groups which "popped-up". Initially, the researcher did not receive a minimum of four hundred respondents; therefore, a second "wave" of advertisements was posted on the next five groups. This was repeated until the target number of respondents was reached (namely 372).

A "closed" Facebook group can be defined as a social media group which cannot be easily accessed by an outsider. This means that the administrator(s) of such a group first had to accept the researcher's request to join their particular group; once accepted as a member, the researcher had access to other members and could commence with advertising the study.

Each community-related group consisted of ± 51 200 members each, the estimated numbers being retrieved in 2019. According to statistics, the highest penetration Facebook users are in the age group of 31-40 years, which was relevant to the demographics of the study (Juanita Pienaar, 2018). . These closed Facebook groups were the only data gathering method used in this study.

1.7 Recruitment process

As mentioned above, a random search was utilised by using the word "community groups". The researcher advertised on the several community groups located in South Africa, namely: Potchefstroom, Vanderbijlpark, Magalieskruin Pretoria, Radiokop in Roodepoort/Roodepoort, Durbanville/Plattekloof areas community, Atlasville in Boksburg, Sea Point in Cape Town, Centurion in Pretoria, Krugersdorp, Alberton, and, lastly, Benoni. The second wave of advertising then included groups in other locations, namely: Pierre van Ryneveld, Irene, Centurion, Midstream, George, Upington, Victoria-West, Lichtenburg, Klerksdorp, Durban, Carletonville, Pretoria, Balito, Bloemfontein, Wesrand/Randfontein, Ventersdorp, Sandton, Kempton Park, and Moreleta Park.

In light of the focus of the study, the following applicable rules apply to the groups: Firstly, members are not accepted if they do not respond to the three questions and agree to the rules; secondly, pseudonyms or fake profiles are not allowed and are deleted. This is applicable to the study in instances where someone wishes to fake their real age or to complete the survey twice). Since posting to the group, counts as publishing, it was important to observe the relevant legislation for the researcher's own protection. The type of groups was identified as 'general'. The latter specification is related particularly well to the study's population characteristic. That is: a general population with other means, meaning that anyone could request to join the groups.

1.8 Sampling method

1.8.1 Probability sample

The aim is that each member of the population has the same probability to be selected. Research in recent years has indicated that, within a modern community context, almost 2.41 billion people are active Facebook users (Statista, 2016). Furthermore, the researcher also found that by the end of December 2018, there were more or less 16

000 000 Facebook subscribers in South Africa (Internet World Stats, 2018). Therefore, it was very probable that the researcher would be able to draw a probability sample from such Facebook groups.

1.8.2 Inclusion and exclusion criteria

The researcher established certain inclusion criteria to protect the participants, and herself from possible harm. This included the following: only respondents aged 18 years and older would be allowed to participate in the study. This is due to the study's objective to determine the psychological influences of ACEs adults. The study aimed to test the hypothesis of the results within a South African context; therefore, only South African citizens could participate.

In order to view the advertisement of the study, the respondents had to be a member of one or more of the closed Facebook groups to complete the survey; it was, therefore, essential that they have access to a stable internet connection. The exclusion criteria entailed that non-Facebook users would not be able to take part in the study. All respondents younger than 18 years at the time of participation were disregarded.

1.8.3 Data collection method

No legal authorisation was needed to advertise on the social media platform. Each respondent (the researcher included) was already a voluntary member of the closed groups, and could post advertisements, according to the rules of each particular group. Each respondent had the right to decide whether he/she wanted to take part in the study and there were no consequences involved if they did not.

Goodwill permission was requested from the organisation, Lifeline, a counselling entity, to provide their contact details to respondents where appropriate (Annexure C). Lifeline provided written consent via an email, stating that the researcher could provide the relevant telephone numbers and advertise the study. Consent was also received to use the WEMWBS in accordance with the North-West University's ethical guidelines, (Addendum D).

1.8.4 Process of recruitment

The researcher invited respondents to participate in writing, and followed this up by the advertisement in JPEG format. The post entailed the following information: "Good day. I am Estelle Jacobs, a Master's Student in Forensic Social Work at the North-West University. I am conducting a research study on adverse childhood experiences and the physical and psychological challenges it causes during adulthood. If you are 18 years or older and a South African citizen, please complete the following survey: [specific link]". The undersigned added, for any inquiries please email estellejacobs.mw@gmail.com. After one enquiry, the undersigned added the Ethics Approval Number of the study, to the advertisement: NWU-0031-20-A1 (Annexure A).

An advertisement (Annexure B), designed by the researcher, was posted to the relevant Facebook groups, as mentioned above. The following information was visible on the advertisement (picture): the contact details (email address) of the gatekeeper; the introduction of the study (ACEs and associated psychological challenges); HREC approval (ethics number); inclusion criteria; direct benefits; the approximate time frame of the survey; the importance of consent, and; lastly, the hyperlink to complete the survey.

The respondents were invited to join the study by clicking on this particular link, which automatically redirected them to Google forms, where a survey was available for them to complete. On the survey, instructions on the completion of the survey were available. If any "required questions" were not answered, respondents could not submit the survey. Furthermore, they were asked to provide an email address if they wished to receive the study's findings. This was optional.

1.9 Validity and reliability of the questionnaires

1.9.1 Adverse childhood experience (ACEs) questionnaire

The consistency of the original ACE study was assessed and a test-retest reliability analysis was performed among 644 respondents who visited the clinic during Waves 1 and 2. The study questionnaires were completed twice (Dong et al., 2004a). The results showed that kappa coefficients ranged from 0.56 to 0.72 for questions from the Conflict Tactics Scale (emotional and physical abuse, domestic violence), while ranging from

0.46 to 0.86 for questions coded binary, which demonstrate moderate to substantial agreement.

The American Psychological Association (APA) examined the ACE study and established that it provided good to excellent reliability in the reports of ACE during adulthood. The APA also found the test-retest reliability in the responses to questions about ACE and the resulting E score was good, and moderate to substantial (Krienitz, 2008).

1.9.2 WEMWBS wellbeing scale

According to Stewart-Brown and Janmohamed (2008), validation was performed in the United Kingdom (UK) on persons aged 16 years and above. The scale was originally validated in student samples recruited from the universities of Warwick and Edinburgh in 2006. For validation, the WEMWBS was assessed by testing correlations between WEMWBS and other scales that measure aspects of mental health, as well as scales that measure general health and emotional intelligence (Stewart-Brown & Janmohamed, 2008b).

The results indicated that WEMWBS covers both hedonic and eudemonic aspects of mental well-being. Moreover, earlier research had been done by Tennant et al. (2007) to validate the scale and their results indicated good content validity. This scale was later used to measure the mental well-being of participants in a study by Shani Hart in Pretoria, South Africa in 2014 that related to the contributions of green buildings to more positive outcomes. The reliability of the scale was divided into two time schedules, namely 0.90, and 0.94 (Hart, 2014). The WEMWBS scale was done in South Africa and provided good validity and reliability indices.

1.10 Quantitative data analysis

Data analysis was then performed to check for any discrepancies and/or missing information. The researcher and the Department of Statistics used the SPSS statistical package (Version 26) to apply relevant analysis methods. The retrieved data were analysed by correlation, a bivariate analysis that measures the strength of association between two variables (wellbeing and ACE score) and the direction of the relationship.

Secondly, the significant difference was identified in the means scores for the following groups: male/female, marital status, employment vs. unemployment, suffering from a psychological condition (Yes/No), or respondents who experienced any traumatic event within the past six months. The (Yes/No) is determined by using T-test of independent samples. A T-test is implemented when there is only two groups or two time-points (Pallant, 2011).

The researcher attempted to determine relevant aspects, such as how many male/female respondents were exposed to ACEs, how many male/female respondents suffered from low mental well-being, and, lastly how many respondents' function on a good level of well-being. A two-way ANOVA was implemented to compare two different groups: for example, age groups, and ACE score groups.

The researcher analysed the cumulative effect through implementing a regression model, in terms of Total ACEs score, adult's well-being level, as well as the difference in male/female, respondents who receive psychological support/medication, unemployed participants, respondents who experienced a traumatic event within the past six months compared with respondents who were exposed to the following groups: 1-4, 5-7, 8-10 ACEs.

1.11 Ethical aspects

Ethical permission was granted from HREC: NWU-00311-20-A1 (Addendum E)

1.11.1 Medium risk

Psychological harm is defined as an adverse event that affects the wellbeing of an individual. The information required in the survey is personal; in terms of psychological experiences from the past as well as the participant's current mental wellbeing status. The researcher informed the respondents that there is a potential psychological risk linked to the study, this information formed part of the consent form, which was given to them, before they participated in the study.

No direct harm came to any respondent; however, respondents were confronted with harm from their childhood experiences and, therefore, the researcher made provision for free counselling services from an independent organisation (Lifeline SA), if needed.

Furthermore, the researcher provided the contact details of Lifeline on the advertisement, which enabled the respondents to approach a counsellor if they chose to. The researcher could not report relevant incidents since Lifeline runs a direct contact line, which was available to respondents. The researcher was not informed, or aware of any psychological harm to any participant.

1.11.2 Risks and benefits ratio

The study did not target any vulnerable groups; however, it is possible that within the general population, there would be persons who experienced trauma. This included respondents that may have experienced ACEs, and were suffering from the cumulative effect(s) thereof. Participants were human beings.

Since the study's main focus is the effects of ACEs in later life, the subject matter could have proved sensitive to participants/victims as a result of their previous trauma Therefore, the researcher identified the study's risk level as medium. However, precautions were in place to minimise the secondary trauma exposure of each participant. Lifeline is a 24-hour, national counselling line that provides counselling that addresses a variety of various adversity aspects. Counselling is done telephonically or in person and available options include two helplines, namely 'Stop Gender Violence' helpline and the 'Aids' helpline, as well as face-to-face counselling sessions.

Should respondents experience any secondary trauma or feel the need for counselling, Lifelines contact numbers were visible on the advertisement, should the need arise. The ratio of risk-of-harm to the likelihood of benefit was favourable. The likelihood of benefits outweighed the risk of harm to the respondents as well as the community. It was concluded that the benefits of the study outweighed the risks, while possible psychological harm (as mentioned above) was minimised by preventing it as far as possible, and providing participants with Lifeline's details.

Furthermore, the researcher minimised the risks by means of a valid study design, and suitable precautions to decrease the likelihood of harm, time to deal with harm through counselling appointment, qualified and competent researcher and study leader available, privacy, and confidentiality of respondents were protected through confidential agreements. The seven factors that could influence the magnitude of harms was studied and the researcher could identify the levels of psychological harm (low

likelihood of harm), which could have caused temporary discomfort, such as anxiety or fear.

1.11.3 Confidentiality, privacy and anonymity

The South African Constitution states that "everyone has the right to privacy" (Prinsloo, 2010), which includes the right not to have their person or home searched, their property searched, or their possessions seized, or the privacy of their communication infringed". The researcher pledged that, after completion of the survey, the respondents' information would be handled confidentially and that their email addresses would be deleted after the article is submitted to relevant journal.

1.11.4 Incentives/reimbursement

The respondents did not experience any economic harm when taking part in the study; therefore, no incentives of reimbursements were offered. Since it took the respondents approximately 10 minutes to complete the survey, participation was seen as minimum time consuming. The researcher emphasised that respondents would not receive reimbursement or incentives; however, respondents gained important knowledge about their ACEs (including their ACE score) and levels of mental well-being to prevent psychological challenges which could end in death.

1.11.5 Storage

The email addresses of the respondents were kept safe by the researcher, gatekeeper, and study leader to ensure that contact information was handled confidentially. The information was kept safe through a password protected profile on Google forms and on the USB, upon which the results were kept. Passwords were changed monthly to further ensure protection of their information. After the submission of this article, the data will be given to COMPRES for safekeeping and deleted after a period of five years. The COMPRES department is located on the North-West University campus in the E9 Building, on the first floor.

1.12 Dissemination of results

Respondents had the opportunity to complete the survey anonymously and those who requested feedback were instructed to provide their email addresses, through which the

findings would be provided. The gatekeeper's email address was also provided in the advertisement since this role which entailed the responsibility to answer any questions the participants may have had. The gatekeeper signed a confidentiality agreement with the researcher to protect both the identifying as well as contact details of the respondents. The email addresses were kept confidential by the researcher and being deleted after feedback. The researcher posted a notice of publication of the research article to the same Facebook groups; furthermore, the final research article saved as a PDF document was sent via email to interested participants.

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CHAPTER 2

LITERATURE REVIEW

Key words: adverse childhood experiences, child Abuse, child neglect, and mental wellbeing

2.1 Introduction

The original ACE study began in 1995 and was a public health study that examined the association between a range of ACEs and adult health risk behaviours, as well as the chronic diseases throughout participants' lifespans (Krienitz, 2008). This study is an ongoing collaboration between the Centres for Disease Control and Prevention (CDC) and Kaiser Permanente's Health Appraisal Clinic. The CDC found information about risk factors for diseases and this was presented to the public for prevention programmes.

"The consequences last a lifetime" was a statement made by researchers (Gonzalez & Wekerle, 2015). This is supported by data indicating that adults who experience ACEs during childhood run a higher risk of perpetrating violence or being a victim of violence. Furthermore, they are more prone to depression, obesity, and harmful substance abuse behaviours, which include the use of tobacco, drugs, and alcohol. They are also at increased risk of sexually inappropriate behaviour and unintended pregnancies (Gonzalez & Wekerle, 2015). Within a South African context, a gap within the research was identified in terms of the cumulative effect that ACEs have on adult mental wellbeing.

2.2 Definition of ACEs and mental wellbeing.

Adverse childhood experiences are defined as potentially traumatic events, such as child abuse and neglect, which can have a negative and lasting effect on a person's physical health and psychological/ mental wellbeing. These adversities range from physical, emotional, and sexual abuse to parental divorce, and incarceration of a parent (Sacks et al., 2016). Bowlby's attachment theory highlights the effect of poor parenting on children.

More specifically, it illustrates how poor parenting skills (e.g., the lack of love and security) in early childhood negatively affects children's ability to regulate their emotions. However, secure attachments and social support can enhance children's resilience and ability to cope with ACEs (Kalmakis & Chandler, 2014b). Research has shown that psychological consequences like depression, anxiety disorders, substance abuse, suicide as well as unwanted pregnancies and HIV are more common in females who experience physical and sexual abuse, while, in males, the level of exposure to such events such as neglect, or physical and sexual abuse is an important factor in shaping future violent behaviour (Mathews & Benvenuti, 2014).

The ACEs that were measured in this study are identified as follows: sexual abuse, verbal abuse, physical abuse, an alcoholic, or mentally ill parent, a mother who was a victim of domestic violence, an incarcerated family member, loss of a parent through divorce, or abandonment, emotional neglect, and, lastly, physical neglect (Krienitz, 2008). Research as shown that these types of experiences influence a person's mental wellbeing level. According to Ryan and Deci (2001), mental wellbeing develops from psychological functioning, which includes the ability to improve and maintain mutually beneficial relationships, and forms levels of happiness and contentment with life. Psychological functioning also includes the ability to support a sense of autonomy, agency, self-acceptance, self-esteem, personal growth, and purpose in life.

2.3 Statistics

Official statistics of the South African Police Service indicate 43 540 crimes were committed against children in the year 2017/2018. Of these reports, 23 488 were sexual offences (South African Police Service, 2018). These statistics highlight the high rate of physical and sexual abuse in South Africa, which was supported by the results of a community-based survey done in Mpumalanga and the Western Cape that related to physical abuse. Approximately 55% of the children interviews reported lifetime physical abuse by their caregivers, teachers, or relatives (Mathews & Benvenuti, 2014). Another small-scale study in Gauteng province further confirmed an increased occurrence of sexual abuse and neglect among children with disabilities. This research indicated that 15% of children report being neglect by "drunken parents", which supports the hypotheses of children being exposed to more than one ACE during childhood (Mathews & Benvenuti, 2014).

A South African, Stress and Health study indicated that adults who are exposed to childhood sexual and physical abuse, experience high levels of depression, anxiety and distress (Bruwer et al., 2014a). Moreover, physical abuse, sexual abuse, and parental divorce were identified as significant risk indicators of lifetime suicide attempts. More than a third of the above-mentioned study's respondents with suicidal behaviour, experienced at least one ACE.

Neurological changes related to ACEs can also have an impact on cognitive function, affecting learning, memory and school performance (Hughes et al., 2017). A study by Pieterse (2009) in South Africa, estimated the association between childhood maltreatment and educational outcomes and concluded that children who experience ACEs suffer severe adverse consequences in terms of their numeracy test scores and probability of school dropout. For example, 6 in every 10 young adults who were 'hit hard' (in other words, physically abused) do not complete secondary school (Pieterse, 2009). This type of situation, in turn, results in an increase in the unemployment rate in SA and social services assistance consults.

Sexual abuse and risky behaviour is known to increase the number of HIV infections. This is particularly alarming when one considers that the highest number of deaths in South Africa is caused by this specific infection. In 2016, 320 000 children (aged between 0-14 years) were living with HIV in South Africa, while, in the same year, up to 110 000 South Africans died from AIDS-related illnesses (Shyama, 2018). Additionally, the literature suggests that ACEs may result in HIV infections in teenage pregnancies, resulting from sexual abuse.

The above-mentioned statistics show that ACEs can significantly affect adult mental well-being. A study by Jacob and Coetzee (2018) supports this research, and further indicates that s that the 12-month occurrence of common mental disorders among South African adults was 16.5% and that the lifetime occurrence for any disorder was 30.3%. The same article mentions the death of 94 mental healthcare users in Gauteng (Jacob & Coetzee, 2018). Consequently, there is an urgent need to prevent ACEs from affecting individuals later in life.

2.4 The importance of adult mental wellbeing

The WEMWBS wellbeing scale covers subjective wellbeing and psychological functioning, in which all items are worded positively and address specific aspects of positive mental health. Mental wellbeing is divided into two perspectives; hedonic (the subjective experience of happiness) and eudemonic (positive psychological functioning),(Taggart & Stewart-Brown, 2015). The literature describes positive mental health as "feeling good and functioning well" (Ryan & Deci, 2001). Due to its relevance, the WEMWBS wellbeing questionnaire was used in the study to determine participant's mental wellbeing level, and to access whether a person who suffers from a low mental wellbeing level, will obtained an ACE score of one or more due to maltreatment during childhood. Additionally, the WEMWBS questionnaire was also utilised to measure the mental wellbeing status of the respondents in comparison to their ACE scores.

2.5 ACEs prevention/screening tool

The study speculates that if Child Protection Workers implement an ACE monitoring tool in the form of all-new intakes, they are able to eliminate the possibility that any ACEs will go unnoticed. Thus, there will be a positive resolution in such cases. A monitoring tool will aim to empower the victims of ACEs in the following areas: resilience, support, and coping mechanisms.

According to Williams, as cited in Sorsdahl et al. (2011a), data from a nationally representative sample reveals that approximately 75% of South Africans experience some traumatic event during their lives. While a traumatic event is viewed as child abuse, and neglect, it is important to remember that trauma can be experienced differently by different people; and, as such, is divided by Sorsdahl et al. (2011a) into the following groups; having someone close experience trauma (43%); witnessing trauma (27.9%); criminal victimisation (25.1%); partner violence victimisation (24.3%); having one's life threatened (24.9%), and; lastly, the perpetuation of trauma (18%). Therefore, trauma seems to be the root of ACEs, especially when it is left unnoticed and unresolved. Dr Brenner, founder and executive director of the Camden Coalition of Healthcare Providers, states that he was told "not to pull up the lid of something you do not have the time and training to deal with, like early life trauma" (Murphy et al., 2014).

In terms of Social Work and Aces; when a child is referred to a social worker due to alleged sexual abuse, the worker tends to focus primarily on the specified, alleged abuse therefore, the possibility exists that the social worker could miss any other present ACEs while conducting the forensic (sexual abuse) assessment, which will have a negative impact on the person's physical health or psychological wellbeing, because the other present ACEs are left untreated.

These other experiences are unconsciously transferred to adulthood and, according to several studies, can cause negative physical health and psychological behaviour issues. Research has further (Levenson, 2017) highlighted that these ACEs cause changes in the brain over time and can disrupt emotional regulation, social attachments, impulse control, and cognitive processing (Levenson, 2017).

2.6 Guidelines for implementation in practice

The implementation of the ACE screening tool in practice includes a questionnaire attached to each intake form. Along with the ACE questionnaire, a referral letter is attached to another professional person/organisation. The social worker first focus on the high priority ACE, causing primary trauma to the victim at that stage, thereafter, referring the client to the needed service to focus on the other ACEs identified or join prevention programmes. For example, in the case of a child who was alleged sexually abused, but also exposed to a "drunk parent", and/or whose parents are divorced. After the forensic assessment is done in terms of the alleged sexual abuse, the social worker must refer the victim to child protection service organization for an investigation in terms of Section 155 of the Children's Act, Act 38 of 2005. This is done to protect the child from further exposure to circumstances which may seriously harm the child's physical, mental or social well-being (Makoae et al., 2015).

2.7 Conclusion

The control of exposure to other ACEs is advisable for professional people such as social workers, assessing the cumulative impact of multiple childhood adverse experiences on a child. It is vital to consider such co-occurrences when identifying and treating children who have been exposed to any maltreatment or family dysfunction. Therefore, the study recommends that children who have been identified as exposed to one ACE, should also

be screened for other possible ACEs. This recommendation is supported by an earlier study by Murphy et al (Murphy et al., 2014).

The rendering of effective support leads to the integration of a prevention monitoring tool. The outcome of the original ACE study indicates that there is a definite link between ten ACEs and a person's future physical and psychological health (Murphy et al., 2014). Professional persons must accept the ACE study, as a useful instrument to address all ACEs and request treatment or services to combat their effects (Krienitz, 2008). The ACE questionnaire is recognised as an ACE prevention monitoring tool in social work practice.

Biography

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CHAPTER 3

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ABSTRACT

Objective: The norm in South Africa seems to be that ACEs happen unexpectedly; however, it is possible to minimise the impact they may potential have on adult's mental wellbeing. In fact, such events may even prevent if the communities can be empowered with relevant knowledge about ACEs. The purpose of this study is to determine the relationship between adverse childhood experiences (ACEs) and the cumulative effect they have on adult mental well-being.
Method: Data was retrieved in two separate "waves" from 372 adult respondents belonging to a general population. Firstly, they were asked to complete a survey about 10 ACEs, after which they had to complete the WEMWBS wellbeing questionnaire, which included their mental well-being score. (This score was divided into two perspectives, namely hedonic and eudemonic. The scores were then adjusted according to relevant demographic factors.) Lastly, the bivariate relationship between the Total ACEs scores and the WEMWBS wellbeing results were then analysed and linear regression models were utilised to determine the cumulative effect that ACEs have on an individual's mental well-being after adjusting for demographic factors.
Results: The total ACE score, combined with the WEMWBS wellbeing score, indicated that people with more than four ACEs were likely to have a low wellbeing score, while those with less than one ACE were likely to have a good wellbeing score. Of the respondents, 78.7% was exposed to at least one ACE during their childhood, while 45.6% (mean) of the WEMWBS wellbeing score indicates a low WEMWBS wellbeing in the study population.
Conclusion: The results of the study are consistent with other ACE studies in that the findings provide compelling evidence that ACEs have a cumulative effect on adult mental well-being. Therefore, the implementation of an ACE screening tool within practice is important to refrain from health-related behaviours, risk, and illnesses.

Keywords: Adverse Childhood Experiences, Child Abuse, Child Neglect, Mental Wellbeing.

3.1 Introduction

Adverse childhood experiences (ACEs) are of paramount importance in determining the mental wellbeing of adults (Hughes, Lowey, Quigg, & Bellis, 2016). The original ACE study was initiated by Dr Felitti and Anda, specialists in preventative medicine at the Kaiser Permanente Health Management Organisation in San Diego, California (Murphy et al., 2014), and examined the association between a wide range of ACEs and a broad range of adult health risk behaviours, as well as diseases throughout the participants' lifespans (Krienitz, 2008).

Ten types of ACEs were identified in the study, namely sexual abuse, verbal abuse, physical abuse, having an alcoholic or mentally ill parent, having a mother who was a domestic violence victim, having an incarcerated family member, losing of a parent through divorce or abandonment, and, lastly, experiencing emotional neglect and physical neglect (Steele et al., 2016). Adverse childhood experiences are linked with many negative health outcomes in adulthood, including "premature death, delinquency, teenage pregnancies, drug and alcohol abuse, and other psychological, and social problems" (Ritacco & Suffla, 2012b)."The consequences last a lifetime" was a pertinent statement by Gonzalez and Wekerle (2015).

Furthermore, researchers have determined that adults who experienced ACEs run a higher risk of perpetrating violence or being a victim of violence. Further risks include depression, obesity, and the harmful use of tobacco, drugs, and alcohol. As mentioned previously, such individuals also run a higher than average risk of sexually inappropriate behaviour and unintended pregnancies (Gonzalez & Wekerle, 2015).

Within a South African context, a gap within the research was identified in terms of the cumulative effect ACEs have on adult mental wellbeing. Research has found an increasing number of ACEs to be associated with greater risks of low mental wellbeing. These studies also showed that mental wellbeing is linked with external factors; such as people's current circumstances; such as marital status and employment status, etc. Hughes et al. (2016), indicated that the more ACEs participants reported, the more likely they were to report low mental wellbeing.

A later study by Hughes et al., (2019) further concluded that ACEs are strongly associated with substance use and mental illness. This means that the more ACEs individuals reported, the more likely they were to have adopted substance use and developed poor mental health.

This is further supported by a similar study involving young adults in rural China that concluded that ACEs have a deleterious effect on participants' psychological wellbeing. In this particular study, six indicators of psychological functioning were assessed, namely: anxiety, depression, perceived stress, posttraumatic stress disorder, loneliness, and suicidality. The results indicated that ACEs were prevalent among young adults (Zhang, Mersky, & Topitzes, 2020), while, another study in the US emphasised the overview that those exposed to ACEs are significantly associated with lower life satisfaction, and lower psychological and social well-being (Mosley-Johnson et al., 2019).

A cross-sectional study done by Bruwer et al., (2014b) has proven that high levels of depression, anxiety and distress are present in adults who were exposed to sexual and physical abuse during their childhood. Lifetime suicide attempts were linked to significant risk indicators such as childhood experiences of physical abuse, sexual abuse, and parental divorce (Bruwer et al., 2014b). The same study, done in South Africa, indicated that 4351 respondents with suicidal behaviour, had experienced at least one ACE, with physical abuse, parental death, and parental divorce being the most dominant stressors (Bruwer et al., 2014a, 2014b).

All the above-mentioned ACEs cause trauma to, not only the victims, but also their family members. Trauma is deeply rooted in South Africa, and even more so when it is left unresolved and untreated. Data from a nationally representative sample revealed that approximately, 75% of South Africans experience some traumatic event during their lives (Sorsdahl et al., 2011).

Moreover, abuse and neglect occurring during early childhood contribute to trauma and, as a result, affects a child's brain development. According to Levenson (2017), social workers frequently encounter clients with a history of trauma, which is defined as an "exposure to an extraordinary experience that presents a physical or psychological threat to oneself or other and generates a reaction of helplessness and fear".

Adverse childhood experiences also influence a person' cognitive and psychosocial adjustment, resulting in the increased risk of violent and anti-social behaviour (Jamieson & Mathews, 2016). Exposure to childhood violence is found to be associated with aggressive behaviour later in life, particularly rape and intimate partner violence(Mathews, Jewkes, & Abrahams, 2011b). This is particularly concerning considering similar research, such as the community-based survey done in Mpumalanga and the Western Cape that focused on physical abuse, approximately 55% of participating children reported lifetime physical abuse by their caregivers, teachers, or relatives (Mathews & Benvenuti, 2014).

The above-mentioned study further made mention of another small scale study, conducted in Gauteng, which confirmed that 15% of those children reported being neglect by "drunken parents" (Mathews & Benvenuti, 2014). Consequently, these findings support the concept of children in South Africa being brutally exposed to more than one ACE.

Furthermore, it was found that psychological consequences, such as depression, anxiety disorders, substance abuse, suicide, unwanted pregnancy, and HIV are more common in females, who had experienced physical and sexual abuse during childhood (Mathews & Benvenuti, 2014). In terms of males, exposure to ACEs like neglect, physical, and sexual abuse tend to shape violent and risk-taking behaviour, such as "truanting, gang involvement and crime" (Mathews & Benvenuti, 2014). This behaviour, in turn, continues the vicious cycle from generation to generation.

Official statistics of the South African Police Service in the year 2018/2019 indicated the crime rate against children is 45 229 (Crime Situation in Republic of South Africa Twelve (12) Months (April to March 2018/19), 2019) which highlights the great need for child protection services. The number of sexual offences against children were indicated as 24 387 for the year 2018/2019 (Crime Situation in the Republic of South Africa Twelve (12) Months (April to March 2018/19), 2019). The above mentioned statistics confirm the need for ACE screenings/assessments by the South African Child Protection Service Department.

The original ACE study, done by Williams, Nelson-Gardell, Faller, Tishelman, and Cordisco-Steele (2014), found a direct link between ACEs, physical health factors and psychological behaviour during adulthood (Steele et al., 2016). Therefore, the researcher of this study emphasises the importance of first identifying each participant's ACE score before determining the cumulative effect it has on the participant's mental wellbeing. Mental wellbeing is divided into two perspectives, namely hedonic (the subjective experience of happiness), and eudemonic (positive psychological functioning), (Taggart and Stewart-Brown, 2015).

According to Ryan and Deci (2001), mental wellbeing develops from psychological functioning, which includes the ability to improve and maintain mutually beneficial relationships, and forms levels of happiness and contentment with life. Psychological functioning also includes the ability to support a sense of autonomy, agency, self-acceptance, self-esteem, personal growth, and purpose in life. The WEMWBS wellbeing questionnaire was implemented in the study to determine the respondents' mental wellbeing level, in order to test the hypothesis: adverse childhood experiences will have a negative effect on adult mental wellbeing.

Focusing on the multiple effects that ACEs can have in adulthood enables an improved assessment to prevent physical and psychological health challenges when they occur. In a critical review of child maltreatment, the ACE questionnaire was used as a tool to determine the efficacy of intervention and prevention programmes for ACEs (Ritacco & Suffla, 2012a). The study concluded that in cases where one ACE is reported, social workers have the tendency to focus solely on the reported ACE event.

However, without an ACE screening tool, the impact of other factors could wrongly be attributed only to single types of ACEs and the cumulative effect of multiple categories of ACEs would go unassessed (Dong et al., 2004b). Furthermore, Dong et al. (2004) speculated that if child protection workers implement the ACE screening tool in all new intakes, and investigation strategies, the possibility of such ACEs going unnoticed and unresolved will be eliminated. The monitoring tool's objective is to empower the victims of ACEs with resilience capacity, psychological support, and coping mechanisms. For example; the child concerned was alleged sexually abused, exposed to a drunk parent, and the child's parents are divorce, only one ACE which is sexual abused, is assessed.

The other adversities are unconsciously transferred to adulthood and according to several studies can cause negative physical health and psychological behaviour issues. Levenson (2017), further highlights that these ACEs causes changes in the brain over time and can disrupt emotional regulation, social attachments, impulse control, and cognitive processing.

Thus, not only does such a combination of ACEs create grave health risks for the individual but may also impact the larger community (Steele et al., 2016). Consequently, it is advised that children who have been 'exposed to abuse, neglect, or household dysfunction' should be further screened for other types of adversities. The aim is to assist professional persons provide support, and, to improve psychological and medical diagnoses, as well as render more effective treatment to victims.

Moreover, this method of screening result in the integration of prevention programmes and social services. If ACEs can be eliminated in the community, there will be marked decreases in social issues. Predictions include a decrease of 55.7% in anxiety, 58.9% in HIV high risk, 21.3 % in heavy drinking (alcohol), 32.9 % in separation and divorce, and 67.2% in life dissatisfaction. Lastly, a 43.5% decrease in hopelessness is predicted (Gillespie & Francisco, 2014).

3.2 Quantitative method

The probability sampling method was implemented in the study due to the use of random procedures to select a sample that can allow the researcher to estimate the expected degree of sampling error in the study and determine or control the likelihood of specific units in the population that is selected for the study (Rubin & Babbie, 2013). In order to ensure accuracy, all participants of the study were adults aged 18 years and older.

The study was identified as a cross sectional and refers to the characteristics of a population which can easily be quantified; e.g., age groups, gender, marital status, and employment status. Questionnaires: The relationship between the two questionnaires, namely the total ACE score and WEMWBS wellbeing score, was determined by utilising a correlation study method.

3.3 Study Population

The study population included adult members (n = 372) of several random, closed, community related Facebook groups in South Africa. Initially, the researcher did not obtain a minimum of four hundred respondents during the first Wave of the advertising phase; therefore, a second Wave was implemented on another five groups. This was repeated until the target number of respondents was reached, specifically 372. The closed Facebook groups were the only data gathering method used in this study.

In order to ensure accurate results (in line with the study's objective), the following inclusion criteria was established: firstly, only respondents, aged 18 years and older, were allowed to participate, to determine the psychological influences of ACEs during adulthood. Since the study aimed to test the hypothesis of the results within a South African context, only South African citizens were allowed to participate.

In order to view the advertisement for the study, the respondents had to be a member of the identified, closed Facebook groups. Lastly, they were expected to have access to a stable internet connection to complete the web-based survey. The exclusion criteria entailed that non-Facebook users would not be able to take part and all respondents younger than 18 years of age at the time of participation, were eliminated.

3.4 Statistical analysis

The data was analysed to safeguard against any discrepancies and missing information. The researcher and the Department of Statistics used the SPSS statistical package (Version 26) to perform the relevant analysis by means of correlation, a bivariate analysis that measures the strength of association between two variables (ACE score and WEMWBS wellbeing), and its direction. The study population included 372 respondents, of which 87.9% were female, and 11.6% were male. The majority of the participants were between the ages of 18 and 29 years (43%), while the second highest number (24.7%) were between 30 and 39 years of age (24.7 %). Additionally, 18% of participants were 40 to 49 years of age, while 12.4% were aged 50 to 59 years. Only 1.6% of the respondents were 60+ years of age.

With regard to the marital status, more than half of the respondents (56.5%) indicated that they are married or living as a couple. Furthermore, 67% of the respondents indicated they were employed, a category that was further broken into: self-employed, homemaker, business owner, etc. The researcher requested that the respondents answer a few simple Yes/No questions. Firstly, they had to indicate whether they have any psychological conditions (Yes/No) and, if so, whether they use any support or medication for the condition (Yes/No). Lastly, they had to indicate whether they had experienced any traumatic event within the past six months (Yes/No).

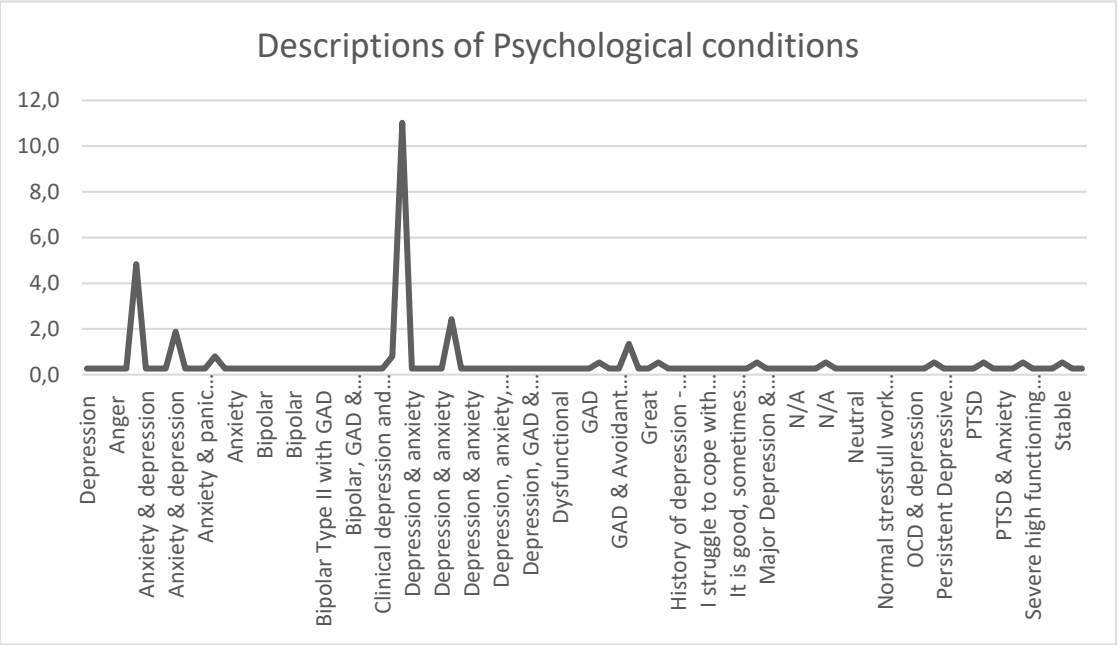

Figure 1: Description of psychological conditions

Of the 372 respondents, 42.5% indicated they suffer from a psychological condition. Figure 1 above shows the psychological conditions that were listed, of which anger, depression, and anxiety were the outliers. A further 32% indicated that they use psychological support and/or medication (e.g. antidepressants), while 35.8% had experienced a traumatic event within the past six months, which could possibly influence their mental wellbeing.

3.4.1 ACE questionnaire

The ACE questionnaire contained detailed questions about childhood abuse, neglect, growing up in a dysfunctional household, and provided information about mental wellbeing during adulthood. A simple scoring system was implemented (i.e., 0 = No, and, 1 = Yes) to determine the cumulative exposure of ACEs. Exposure to each type of ACE counted as one point and the points were then summed up to determine the total ACE score.

Child abuse

Of the 372 respondents: 44.9% indicated that they were emotionally abused during childhood (Q: did a parent or other adult in the household: swear at you, insult you, put you down, or humiliate you? Or act in a way that made you afraid that you might be physically hurt?). Of the respondents, 27.2% indicated they were physically abused, (Q: did a parent or other adult in the household: push, grab, slap or throw something at you? Or ever hit you so hard that you had marks or were injured?). Only 26.1% of the respondents indicated they were sexually abused (Q: did an adult or person at least 5 years older than you ever: touch or fondle you or have you touch their body in a sexual way? Or try to or perform oral, anal, or vaginal sex with you?).

Child neglect:

Of the 372 respondents: 45.2% indicated they were emotionally neglected (Q: did you feel that: no one in your family loved you or thought you were important or special? Or that your family did not look out for each other, feel close to each other, or support each other?), while 9.1% indicated they were physically neglected (Q: did you feel that: you did not have enough to eat, had to wear dirty clothes, and had no one to protect you? Or that your parents were too drunk or high to take care of you or take you to the doctor if you needed it?).

Family dysfunction:

Of the 372 respondents: 37% indicated their parents were separated or divorced during their childhood (Q: were your parents ever separated or divorced?). Less than 17% of the respondents indicated that they were exposed to domestic violence (Q: did your

mother or stepmother pushed, grabbed, slapped, or had something thrown at her? Or sometimes kicked, bitten, hit with a fist, or hit with something hard? Or repeatedly hit for, at least, a few minutes at a time, or threatened with a gun or knife?).

Of the respondents, 33.3% indicated they were exposed to alcohol/drug abuse in their households (Q: did you live with anyone who was a problem drinker or alcoholic, or who used street drugs?). Almost half of the respondents (46%) were exposed to mental illness in their family (Q: Was a household member depressed or mentally ill or did a household member attempt suicide?), while only 5% experienced the loss of a family member through incarceration (Q: did a household member go to prison?).

The number of ACEs to which a person was exposed during childhood were then summed up into categories. This summary measured ranges from 0 (unexposed) to 10 (exposed to all categories of ACEs). The study showed that 21.3% of the respondents was exposed to 0 ACEs and in total 78.7% of the respondents was exposed to at least 1 ACE. Furthermore, 12.1% of the respondents were exposed to 2 ACEs, 11.1% was exposed to 3 ACEs, 11.3% was exposed to 4 ACEs, 11.1% was exposed to 5 ACEs, 6.2% was exposed to 6 ACEs, 4% was exposed to 7 ACEs, 3.2% was exposed to 8 ACEs, and 2.7% was exposed to 9 or more ACEs.

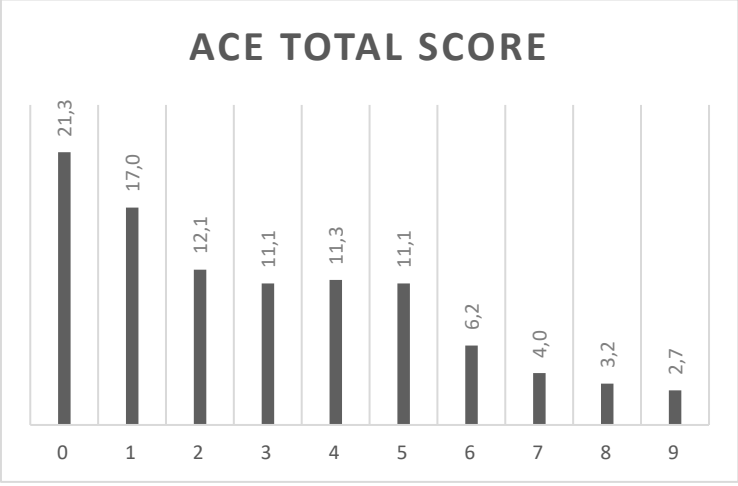

Figure 2: ACE total scores

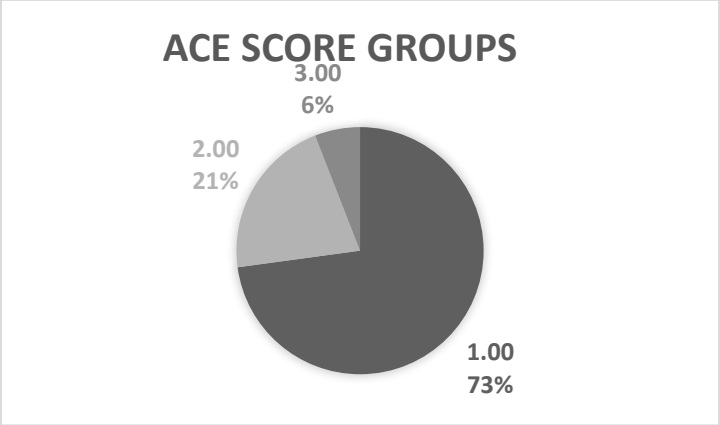

Figure 3: ACE score groups

The total ACE scores were divided into the following groups; 0-4, 5-7 and 8-10 Total ACEs. In accordance with the ACE scores retrieved from the questionnaire, it was found that: 73% of the respondents was exposed to 0-4 ACEs, a further 21% scored were exposed to 5 – 7 ACEs, and lastly, 5.9% were exposed to 8 – 10 ACEs.

3.4.2 WEMWBS wellbeing questionnaire

The WEMWBS wellbeing questionnaire's primary purpose is to measure the mental wellbeing, a terms that covers aspects associated with subjective wellbeing and psychological functioning (Stewart-Brown & Janmohamed, 2008a). The questionnaire scale consists of 14 items that relate to an individual's state of mental wellbeing. The participants of this study were requested to answer according to a five-point Likert scale, ranging from 1 to 5 (i.e., none of the time, rarely, some of the time, often, all of the time). These scores were then summed up to provide a scale score from 14 to 70 (n = 371).

The highest score was for Q1, in which 37.5% of the respondents indicated that they feel optimistic about the future (3). Almost 40% of the respondents indicated they feel useful, according to Q2. The third question, namely Q3, revealed that 36% of participants feel relaxed 'some of the time', while answers to Q4 indicated that 33.7% of them 'often' feel interested in other people. Next, Q5 indicated that one-third (1/3) felt as though they 'rarely' had energy to spare (Q5). The researcher identified that 38.5% of the respondents had 'often' been dealing with problems well (Q6). Similarly, the same percentage of respondents (38%) indicated that they had been dealing with their problems well for

‘some of the time’. Forty-three per cent indicated they had ‘often’ been thinking clearly (Q7), and 36.1% felt good about themselves ‘some of the time’ (Q8). More than half (65%) felt close to other people, either ‘some of the time’ or ‘often’ (Q9). Almost 35% indicated they felt confident ‘some of the time’ (Q10), and 41.5% were ‘often’ able to make up their own mind about things (Q11). Almost 35% indicated they ‘often’ feel loved (Q12). The same percentage (35.3%) indicated they are ‘often’ interested in new things (Q13). Lastly, 39.1% of the respondents indicated they had been feeling cheerful ‘some of the time’ (Q14). Of the respondents, 66.6 % scored an average between ‘some of the time’ (3) and ‘often’ (4). These results indicate a measurement of overall good wellbeing in respondents. In terms of the above mentioned, 45.6% (mean) of the WEMWBS wellbeing score presented low mental wellbeing.

3.5 Results

The minimum score of the ACE questionnaire was 0 and the maximum was 9, which showed a mean of 2.90 and a standard deviation of 2.50. The ACE scores ranged from 0 to 10 and are measured by Cronbach’s alpha coefficient, which was found to be 0.779. The KMO (Kaiser Meyer Olkin) and Bartlett’s test was applied to the data; and indicated a value of 0.837, which is seen as significant. The above-mentioned data indicates that the average respondent was exposed to 2.9 ACEs during their childhood. The minimum of the WEMWBS wellbeing questionnaire was 21 and the maximum score was 70, which gave a mean of 45.69 and a standard deviation of 9.91. The WEMWBS wellbeing scores ranged from 14 to 70 and are measured by Cronbach’s alpha coefficient, which was found to be 0.930 (n = 371). The KMO and Bartlett’s test was applied to the data (0.940) and was seen as significant.

Factor	**KMO**	**Total % variance explained**	**Factor loadings (min to max)**	**Cronbach's alpha**	**Mean**	**Std. Deviation**
ACE	0.837	34.54	0-9	0.78	2.90	2.50
Wellbeing	0.940	52.96	21-70	0.93	45.69	9.91

Table 1: Statistical relationship between the total ACE and WEMWBS wellbeing scores

			Correlation	
ACE category (Yes)	N	Prevalence %	ACE	Wellbeing
Abuse:				
- Emotional	167	45 %	.759**	-.348**
- Physical	101	27.2%	.595**	-.268**
- Sexual	97	26.4%	.435**	-.195**
Neglect				
- Emotional	168	45.3%	.740**	-.461**
- Physical	34	9.2%	.454**	-.170**
Household dysfunction:				
- Parental separation or	138	37.2%	.568**	-.171**
divorce	124	33.4%	.616**	-.176**
- Household substance	169	45.6%	.612**	-.174**
abuse	62	16.7%	.506**	-.201**
- Household mental	18	4.9%	.245**	-.126*
illness				
- Domestic violence				
- Crime				
Median	371		2.00	45.00

Table 2: The correlation statistical measurements of the total ACE and WEMWBS wellbeing score

Table 3 shows the correlations between individual items with total ACE score and with WEMWBS wellbeing score. A significant correlation between the total ACE score and the WEMWBS wellbeing score (<0.01) was found.

3.6 Characteristics of the study population (demographics)

The researcher used T-tests to compare the following demographics in each individual participant: gender, marital status, psychological condition, the use of psychological support, and the experience of a traumatic event (within the past six months) in association with the total ACE score and WEMWBS wellbeing score. The following results were obtained:

		Total ACE score				
		N	Mean	Std. Deviation	P Value	Effect sizes
Gender	Male	43.00	2.00	1.93	0.012	0.40
	Female	327.00	3.02	2.55	0.003	
Psychological condition	Yes	158.00	3.86	2.59	0.000	0.64
	No	213.00	2.20	2.19	0.000	
Psychological support or medication	Yes	120.00	3.48	2.58	0.002	0.33
	No	245.00	2.62	2.43	0.003	
Traumatic experience	Yes	133.00	3.61	2.60	0.000	0.42
	No	238.00	2.51	2.36	0.000	

		Wellbeing				
		N	Mean	Std. Deviation	P Value	Effect sizes
Gender	Male	43.00	49.79	10.11	0.004	0.46
	Female	327.00	45.14	9.78	0.006	
Psychological condition	Yes	158.00	40.94	8.95	0.000	0.91
	No	213.00	49.23	9.09	0.000	
Psychological support or medication	Yes	120.00	41.35	8.85	0.000	0.66
	No	245.00	47.81	9.81	0.000	
Traumatic experience	Yes	133.00	41.91	9.68	0.000	0.61
	No	238.00	47.81	9.41	0.000	

Table 3: Significant difference between the total ACE and WEMWBS wellbeing scores

3.6.1 Relationship between total ACE score & WEMWBS wellbeing score

Gender

A significant p-value of 0.003 and Cohen's d=0.40 was identified between gender and the total ACE score. This indicates that the female respondents experienced, in practice, more ACEs than the male respondents. A significant P value of 0.006 and Cohen's d=0.46 was found, which shows a small to medium significance between gender and WEMWBS wellbeing score.

Marital status

The researcher found that marital status had no statistically significant effect on the Total ACE score (p = 0.399), However, it did have a statistically significant effect on the WEMWBS wellbeing score (p = 0.001).

The difference was identified between ‘widowed/divorced/separated’, which showed a lower WEMWBS wellbeing score (mean of 41.15 and a standard deviation of 9.35) than ‘married’ (mean= 47.27, standard deviation = 9.94, d= 0.65), and ‘single’ (mean= 44.46, standard deviation = 9.41, d=0.35).

Psychological condition:

A significant value of 0.64 was found between respondents who indicated they suffer from a psychological condition and their ACE scores. A significant value of 0.91 was found between respondents who suffer from a psychological condition in relation to their WEMWBS wellbeing score, presenting strong evidence supporting the null hypothesis.

Use of psychological support:

A significant value of 0.33 was found between the respondents who use psychological support in terms of their condition, and their total ACE scores. Between the respondents who use psychological support and their WEMWBS wellbeing score, a significant value of 0.66 was found.

Experience of a traumatic event (within the past six months):

A significant value of 0.42 was found between the respondents who experienced a traumatic event within the past six months, and their total ACE score. Between the respondents who experienced a traumatic event and their WEMWBS wellbeing score, a significant value of 0.61 was found.

To determine the unique contribution of ACEs to WEMWBS wellbeing score, a hierarchical regression model was implemented in two steps: the first step (1) dealt with the demographic groups which influenced wellbeing, such as: gender, marital status, psychological condition, psychological support, and experience of a traumatic event within the past six months. The second step (2) entailed the addition of the total ACE score of the respondents to the model. The demographic data was dummy coded before being incorporated into the model: female (0) and male (1), all No (0) and Yes (1), Widowed (1), and married (0), and single as (0).

In order to perform a multiple linear regression, all of the above-mentioned data were entered into the model and the variance inflation factor (VIF) was found to be <5. This indicated no multicollinearity. The regression was found to be statistically significant (F 23.77 and P 0.00). The first regression model explained 22.7% of the variation in the WEMWBS wellbeing score, which is its own a medium to large effect size. The second step explained 28.7% of the variation declared in terms of the total ACE score. An increase of 6% was found, which indicated a medium significant increase in practice.

In Table 4, the significant contribution of all independent variables to the WEMWBS wellbeing score is given. Gender, on its own does not have a small significant (p= 0.189); however, marital status (p= 0.029), is statistically significant, and has a unique contribution. The next variable, psychological conditions, also showed a statistically significant (p= 0.001); however, psychological support did not show a unique contribution (p= 0.721). A traumatic experience within the past six months (p= 0.001), and the ACE total score (p= 0.000) were statistically significant.

The standardised coefficient (beta) of each variable indicates the importance of its contribution to wellbeing: psychological conditions (beta= -0.242) and the total ACE score (beta= -0.266) indicated that the above mentioned variables are seen as having the most important contribution to testing the hypothesis. This indicates the more ACEs a person has had, the lower their WEMWBS wellbeing score will be. Furthermore, if the person suffers from a psychological condition, their WEMWBS wellbeing score will also be lower.

Coefficients

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	50.037	0.702		71.307	0.000
	What is your gender?	2.431	1.454	0.079	1.672	0.095
	What is your current marital status?	-3.491	1.523	-0.107	-2.291	0.023
	Do you have any psychological condition?	-6.691	0.992	-0.335	-6.742	0.000

	Did you experience any traumatic experience within the past six months?	-3.879	0.994	-0.188	-3.902	0.000
2	(Constant)	52.249	0.783		66.742	0.000
	What is your gender?	1.816	1.402	0.059	1.296	0.196
	What is your current marital status?	-3.304	1.465	-0.102	-2.256	0.025
	Do you have any psychological condition?	-5.240	0.989	-0.262	-5.299	0.000
	Did you experience any traumatic experience within the past six months?	-3.123	0.965	-0.151	-3.236	0.001
	ACE total score	-1.049	0.188	-0.266	-5.566	0.000

a. Dependent variable: Wellbeing

Table 4: Regression model of demographic data and WEMWBS wellbeing scores

3.7 Conclusion

To briefly summarise the findings of the study, both the total ACE score and the WEMWBS wellbeing score showed that people with more than 4 ACEs were likely to have a low wellbeing score, while those with less than 1 ACE were likely to have a good wellbeing score. As already mentioned, 78.7% of the respondents were exposed to at least one ACE during their childhood, and 45.6% (mean) of the WEMWBS wellbeing score indicates a low WEMWBS wellbeing in the study population.

As mentioned in the study conducted by Dong et al. (2004b), ACEs are important because of the negative short and long term influence they have on behaviours, psychological and social wellbeing, and physical health, while research has repeatedly indicated that such effects are cumulative in nature.

The study estimates if the prevalence of childhood exposures are similar to estimates of a national survey (Dong, Anda, Felitti, Dube, Williamson, Thompson, Loo and Giles, 2004b) indicating that the experience of the study's participants are comparable to those of a larger population of adults. The ACE study done by Dong et al. (2004B) showed 26.4% of respondents were physically abused during their childhood. This study found that 27.2% of the respondents were physically abused.

The above mentioned study also showed 21% of respondents, were a victim of sexual abuse. Of the total respondents in this study, 26.1% indicated they were sexually abused as a child. This study further showed 9.1% of respondents were physically neglect, which closely parallels the percentage of 9.9% found in Dong et al. (2004b) study. Several other studies: Afifi, McMillan, Asmundson, Pietrzak, and Sareen, (2011); Hughes et al., (2019); Mosley-Johnson et al., (2019); and Zhang et al., (2020) showed prevalence among the respondents, in terms of having at least one to four ACEs and harmful effects on their psychological wellbeing.

Our study showed that respondents, who suffered of ACEs, is likely to report low mental wellbeing scores. These effects can contribute to the life cycle of adversity and poor mental wellbeing; individuals that grew up with ACEs are less able to provide an optimum childhood environment for their children/generation (Hughes et al., 2016). Moreover, poor access to health care workers, who can assist in dealing with ACEs, may directly affect mental health.

Furthermore, a recent study on ACEs and childhood trauma as the primary cause of adult mental illness concludes that they may produce a public health burden that exceeds all other root causes (Zarse et al., 2019). Protective factors against ACEs were identified by Crouch, Radcliff, Strompolis, and Srivastav (2019), whose research suggests that children growing up with an adult who makes them feel safe and protected and who ensures their basic needs are met are less likely to report mental illness or poor health. In terms of the study done, the need arises to expand the ACE screening method and identify other ACEs that might be present, even when only 1 ACE is reported. The possibility is great that these other ACEs will resurface and impact the mental wellbeing in adulthood.

Preventing ACEs are seen as critical for reducing risks of some of the most damaging combinations of health harming behaviours, rooted in lower mental wellbeing. Building resilience in children through developing supportive bonds with adults may reduce some of the risks. Hughes et al. (2017) identified solutions such as early parental support and preschool enrichment programmes that can develop resilience and improve child parent relations and reduce child maltreatment.

Resilience is seen as the most important ability that reduce the harmful physiological and psychological impacts of ACEs. Resilience can be learned, when having access to a trusted adult during childhood, which is associated with reductions in the impacts of ACEs (Hughes et al., 2017). The same study showed that individuals who reported >4 ACEs, but lacked AAA (always available adult) support in childhood, increased the odds of lower mental wellbeing with >2 health harming behaviours by over thirty times (vs. 0 ACEs with AAA support) (Hughes et al., 2017).

The above-mentioned information can be incorporated into the ACE screening tool to prevent mental illness during adulthood. More prevention methods were further identified by Srivastav et al. (2020), such as awareness of ACEs, capitalising on the bipartisanship of children's issues, ACE related policies, school safety and violence prevention programmes.

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CHAPTER 4

FINDINGS, RECOMMENDATIONS AND LIMITATIONS

Adverse childhood experiences include being a victim of abuse, neglect, or growing up in a dysfunctional household, therefore, exposure to ACEs are strongly associated with adopting health harming behaviours in adulthood (Hughes et al., 2017). As mentioned, ACEs can change brain development including pleasure and reward centres and can conciliate the role of the prefrontal cortex with regards to impulse control. This results in lower tolerance for stress and thus have a greater tendency for antisocial behaviour (domestic violence, abuse, etc.) and difficulties feeling close to other people (low mental wellbeing). Neurological changes related to ACEs can also have an impact on cognitive function, affecting learning, memory and school performance (Hughes et al., 2017).

Adverse childhood experiences are directly related to child maltreatment, and in order to understand the etiology of child maltreatment, it is important to remember there is no single cause of childhood trauma, rather multiple in interacting factors at the individual, familial, community and societal levels that contributes to child maltreatment (Dong et al., 2004b). More than one adverse experience can be present, at the same time. For example; a child can be a victim of abuse and domestic violence at the same time.

4.1 Findings

To briefly summarise the findings of this study, both the total ACE score and the WEMWBS wellbeing questionnaire score showed; people with more than 4 ACEs were likely to have a low wellbeing score, while those with less than 1 ACE were likely to have a good wellbeing score. As already mentioned, 78.7% of the respondents were exposed to at least one ACE during their childhood, and 45.6% (mean) of the WEMWBS wellbeing score indicates a low WEMWBS wellbeing in the study population.

As mentioned in the study conducted by Dong et al., (2004a), ACEs are important because of the negative short and long term influence they have on behaviours, psychological and social wellbeing, and physical health, while research has repeatedly indicated that such effects are cumulative in nature.

More importantly, in terms of the study done, the need arises to expand the ACE screening method and identify other ACEs that might be present, even when only one ACE is reported. The possibility is great that these other ACEs will resurface and impact the mental wellbeing in adulthood (Dong et al., 2004a). Furthermore, a recent study on ACEs and childhood trauma as the primary cause of adult mental illness concludes that they may produce a public health burden that exceeds all other root causes (Zarse et al., 2019).

The study estimates of the prevalence of childhood exposures are similar to estimates of a national survey (Dong, Anda, Felitti, Dube, Williamson, Thompson, Loo and Giles, 2004b) indicating that the experience of the study's participants are comparable to those of a larger population of adults. The ACE study done by Dong et al., (2004a) showed 26.4% of respondents were physically abused during their childhood. This study found that 27.2% of the respondents were physically abused.

The above mentioned study also showed 21% of respondents, were a victim of sexual abuse. Of the total respondents in this study, 26.1% indicated they were sexually abused as a child. This study further showed 9.1% of respondents were physically neglect, which closely parallels the percentage of 9.9% found in (Dong et al., 2004a) study. Several other studies (Afifi, McMillan, Asmundson, Pietrzak, & Sareen, 2011; Hughes et al., 2019; Mosley-Johnson et al., 2019; Zhang et al., 2020) showed prevalence among the respondents, in terms of having at least one to four ACEs and harmful effects on their psychological wellbeing.

A study done by Karatekin and Hill, (2019) showed a prevalence between, >2 ACEs present and mental illnesses (depression, anxiety, and suicidality) among college students. Hughes et al. (2019) study indicated a strong association between ACEs and substance abuse, and mental illness. Our study showed that respondents, who suffered of ACEs, is likely to report low mental wellbeing scores. These effects can contribute to the life cycle of adversity and poor mental wellbeing; individuals that grew up with ACEs are less able to provide an optimum childhood environment for their children/generation (Hughes et al., 2016).

Moreover, poor access to health care workers, who can assist in dealing with ACEs, may directly affect mental health. Therefore, preventing ACEs must be seen as critical for reducing risks of some of the most damaging combinations of health harming behaviours, rooted in lower mental wellbeing scores.

Building resilience in children through developing supportive bonds with adults may reduce some of the risks. Resilience is seen as the most important ability that reduce the harmful physiological and psychological impacts of ACEs. Resilience can be learned, when having access to a trusted adult during childhood, which is associated with reductions in the impacts of ACEs (Hughes et al., 2017). The same study showed that individuals who reported >4 ACEs, but lacked AAA support in childhood (always available adult), increased the odds of lower mental wellbeing with >2 health harming behaviours by over thirty times (vs. 0 ACEs with AAA support) (Hughes et al., 2017).

Hughes et al. (2017) identified solutions such as early parental support and preschool enrichment programmes that can develop resilience and improve child parent relations and reduce child maltreatment. Along with the above-mentioned solutions, the researcher identified the need for an evidence based ACE screening form, to be developed and implemented in social work related practices; such as NGOs and private practices.

The above mentioned screening will consists of ACE information pamphlet, followed by an ACE questionnaire, to complete during the intake phase of every report made. The researcher should provide the final article (Chapter 3) to willing social work related NGOs and private practices, in order for professional persons, working with children, to be empowered with knowledge about ACEs, and be able to conduct an ACE screening.

The contribution of this study is, if ACEs are identified at an early stage, and resolved, it would minimise or diminish the negative effect it have on adult mental wellbeing. These social work related NGOs and private practices can be seen as a pilot study in order to decrease the effect of ACEs, when looking at the South African statistics in terms of child maltreatment.

4.2 Limitations

Limitations of the study is identified as the reason why people don't report ACEs during childhood. The following challenges were identified: lack of ACE knowledge, lack of reporting ACEs, health care workers primarily focus on the reported ACE, and not screening for other potential harm in the form of ACEs. Lastly, the possibility exists that participants did not remember their ACEs, or forgot it over time.

Present emotional impairment may influence the memory of events. Some people may struggle to recall adverse events, as a protective mechanism (Dong et al., 2004b). In the study difficulty in recalling childhood events most likely would result in the classification of persons with exposure of ACEs as unexposed, which cause the results to become biased toward the null.

4.3 Recommendations

This study illustrates the need for approaches/programmes that provide knowledge of ACEs (definition, behaviours, and characteristics) and prevention methods to follow, in order to abstain from mental illness. Protective factors against ACEs were identified by Crouch, Radcliff, Strompolis, and Srivastav (2019), whose research suggests that children growing up with an adult who makes them feel safe and protected and who ensures their basic needs are met are less likely to report mental illness or poor health.

The above mentioned information can be incorporated into the ACE screening tool to prevent mental illness during adulthood. More prevention methods were further identified by Srivastav et al., (2020); such as awareness of ACEs, capitalising on the bipartisanship of children's issues, ACE related policies, school safety and violence prevention programmes.

Promoting mental wellbeing must be seen as a public health priority in South Africa. Interventions that seek to reduce ACEs can also involve; develop parenting skills, and promote resilience in children (Hughes et al., 2016). ACEs continue to affect many lives of children in South Africa, therefore, better prevention measures must be implemented to treat ACEs before reaching adulthood.

Article 3 will be submitted for publication to Child Abuse & Neglect, an international and interdisciplinary journal.

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Annexures

Annexure A – ACE and WEMWBS questionnaire

Annexure B – Advertisement

Annexure C – Goodwill permission from Lifeline

Annexure D – WEMWBS permission

Annexure E – HREC approval

Adverse Childhood Experiences and the cumulative effect on adult mental wellbeing.

Research Study done at the North-West University

* Required

1. The aim of the survey is to do a quantitative analysis of Aces, mental well-being level and the demographic factors influencing above-mentioned. You have been invited to participate in the study due to your age (18 years and older functioning in adulthood), South African citizenship and because you are a member of the identified Facebook community group. The aim of the research study is to determine the relationship between Aces and the cumulative effect on adult mental well-being. With this survey, the researcher would like to obtain information about your Ace score, current mental well-being and other demographic factors. This will assist the researcher in gaining relevant contextual information and ensure that the ACE screening tool/assessment will be suitable for social workers within the South African context. This survey is completed anonymous. Your identity (email address) will be requested, if you wish to receive the results of the study. The researcher will protect the provided email address. Only the researcher, study leader and the assistant of the Statistical Department (NWU), who signed a confidential contract, will have access to the provided email addresses. No email address or any identities will be used in the research report. If participants don't want to provide their email address, no identity will be requested. Because of the anonymity, participants will not be able to withdraw from the study after submission of the survey. You can complete the survey at your own convenience and there will be no financial implication for you. Your participation is voluntary and by completing and submitting the survey, you give consent for the data gathered to be used as part of the research study. The survey consist of 34 questions and will not take longer than 10 minutes to complete. Is there anything else that you should know or do? You can contact the researcher, Estelle Jacobs at 074 813 5070 or estellejacobs.mw@gmail.com, if you have any further questions or problems, contact the study leader, Prof Cornelia Wessels at 082 469 0066 or Cornelia.Wessels@nwu.ac.za *

   Mark only one oval.

   - ◯ Agree
   - ◯ Disagree

2. What is your age? * *Mark only one oval.*

   - ◯ 18 - 29 years
   - ◯ 30 - 39 years
   - ◯ 40 - 49 years
   - ◯ 50 - 59 years
   - ◯ 60+ years

3. What is your gender?

   Mark only one oval.

   - ◯ Female
   - ◯ Male

4. What is your race/ethnicity?

Mark only one oval.

- Black African
- Coloured
- White
- Other: _____

5. In which province of South Africa do you live?

Mark only one oval.

- Western Cape
- Eastern Cape
- Northern Cape
- Mpumalanga
- Gauteng
- Limpopo
- Free State
- North-West
- KwaZulu-Natal
- Other: _____

6. What is your current marital status?

Mark only one oval.

- Single
- Married/Living as a couple
- Widowed/Divorced/Separate
- Other: _____

7. What is your current employment status?

Mark only one oval.

_____

- Employed
- Student
- Retired
- Unemployed
- Other:

8. Do you have any psychological condition? *
If 'Yes' please answer the following question

Mark only one oval.

- Yes
- No *Skip to question 12*

9. Describe your psychological condition

10. Are you using any psychological support or medication (e.g. anti-depressants) for the above-mentioned condition?

Mark only one oval.

- Yes
- No

11. Did you experience any traumatic experience within the past six months? *

Mark only one oval.

- Yes
- No

While you were growing up, during your first 18 years of life…

12. Did a parent or other adult in the household often…Swear at you, insult you, put you down, or humiliate you? Or Act in a way that made you afraid that you might be physically hurt?

Mark only one oval.

- Yes
- No

13. Did a parent or other adult in the household often…Push, grab. Slap or throw 1 point something at you? Or Ever hit you so hard that you had marks or were injured?

Mark only one oval.

- Yes
- No

14. Did an adult or person at least 5 years older than you ever…Touch or fondle 1 point you or have you touch their body in a sexual way? Or Try to or actually have oral, anal, or vaginal sex with you?

Mark only one oval.

- Yes
- No

15. Did you often feel that…No one in your family loved you or thought you were 1 point important or special? Or Your family didn't look out for each other, feel close to each other, or support each other?

Mark only one oval.

- Yes
- No

16. Did you often feel that…You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you? Or Your parents were too drunk or high to take care of you or take you to the doctor if you needed it?

Mark only one oval.

- Yes
- No

17. Were your parents ever separated or divorced? 1 point

Mark only one oval.

- Yes
- No

18. Was your mother or stepmother: Often pushed, grabbed, slapped, or had 1 point something thrown at her? Or Sometimes or often kicked, bitten, hit with a fist, or hit with something hard? Or ever repeatedly hit over at least a few minutes or threatened with a gun or knife?

Mark only one oval.

- Yes
- No

19. Did you live with anyone who was a problem drinker or alcoholic or who used 1 point street drugs?

Mark only one oval.

- Yes
- No

20. Was a household member depressed or mentally ill or did a household member attempt suicide?

Mark only one oval.

- Yes
- No

21. Did a household member go to prison? 1 point

Mark only one oval.

- Yes
- No

Mental Wellbeing Scale

Below are some statements about feelings and thoughts.
Please tick the box that best describes your experience of each over the last two weeks.

22. I've been feeling optimistic about the future *

Mark only one oval.

- None of the time
- Rarely
- Some of the time
- Often
- All the time

23. I've been feeling useful *

Mark only one oval.

- None of the time
- Rarely
- Some of the time
- Often
- All of the time

24. I've been feeling relaxed *

Mark only one oval.

- None of the time
- Rarely
- Some of the time
- Often
- All of the time

25. I've been feeling interested in other people *

Mark only one oval.

- None of the time
- Rarely
- Some of the time
- Often
- All of the time

26. I've had energy to spare * *Mark only one oval.*

- None of the time
- Rarely
- Some of the time
- Often
- All of the time

27. I've been dealing with problems well * *Mark only one oval.*
- None of the time
- Rarely
- Some of the time
- Often
- All of the time

28. I've been thinking clearly * *Mark only one oval.*
- None of the time
- Rarely
- Some of the time
- Often
- All of the time

29. I've been feeling good about myself * *Mark only one oval.*
- None of the time
- Rarely
- Some of the time
- Often
- All of the time

30. I've been feeling close to other people * *Mark only one oval.*
- None of the time
- Rarely
- Some of the time
- Often
- All of the time

31. I've been feeling confident * *Mark only one oval.*

- None of the time
- Rarely
- Some of the time
- Often
- All of the time

32. I've been able to make up my own mind about things *

Mark only one oval.

- None of the time
- Rarely
- Some of the time
- Often
- All of the time

33. I've been feeling loved *

Mark only one oval.

- None of the time
- Rarely
- Some of the time
- Often
- All of the time

34. I've been interested in new things *

Mark only one oval.

- None of the time
- Rarely
- Some of the time
- Often
- All of the time

35. I've been feeling cheerful *

Mark only one oval.

- [ ] None of the time
- [ ] Rarely
- [ ] Some of the time
- [ ] Often
- [ ] All of the time

36. Do you wish to receive the feedback?

Mark only one oval.

- [ ] Yes
- [ ] No

37. Please provide your email address

_____

Annexure B – Advertisement

Adverse Childhood Experiences vs. Adult Mental Well-being Research Study

knowing the signs

Aces are defined as "subsequent psychological and physical health problems" including; developmental and emotional problems in children, health risk behaviours among adolescents and challenging psychological and physical illnesses among adults.

To participate in the research study:

- 18 years functioning in adulthood
- South African citizen
- Stable internet access to complete the survey

Whats in it for me?

- Find out what your Ace score is
- Gain knowledge about adverse childhood experiences and your mental well-being level
- Prevent physical and psychological challenges/harm in adulthood, which can cause mental illness or even death.

prevention tips

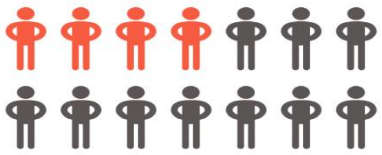
Traumatic events during childhood, can have a negative impact on adult mental well-being. Complete the online survey to found out what your ACE score is, to prevent the following during adulthood.

Up to 75% of South Africa experience some traumatic event during their lifetime.

75 %

People with an ACE score of 4 + is more likely to experience the following during adulthood:

Ace score of 4+



- 4.6 times more likely to suffer from depression
- 12 times more likely to attempt suicide
- 7 times more likely to be an alcoholic or drug addict

Whats my ACE SCORE?

Complete the online survey to find out!

Hyperlink to survey:

HREC Approved

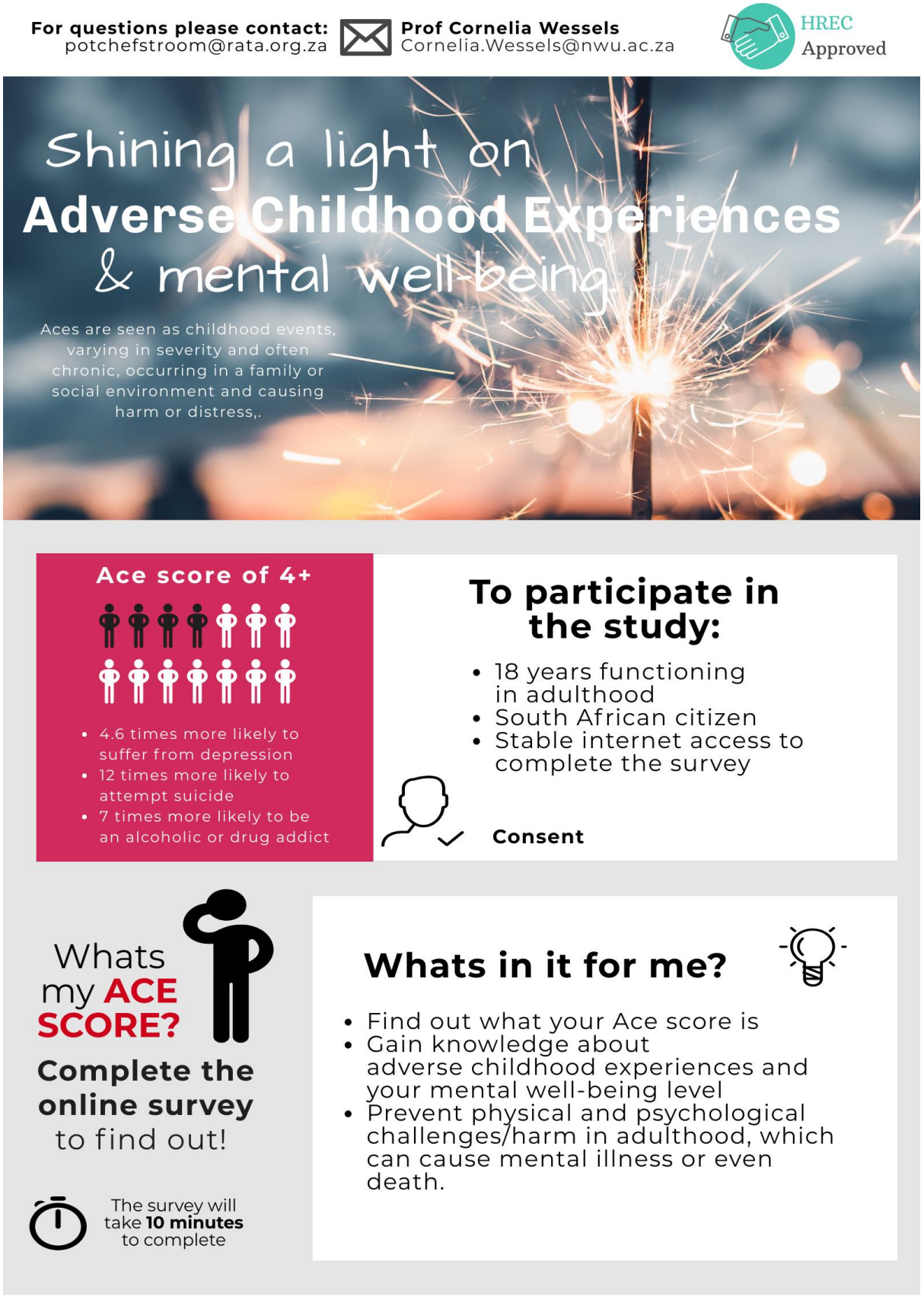
For questions please contact:
potchefstroom@rata.org.za

Prof Cornelia Wessels
Cornelia.Wessels@nwu.ac.za

Make sure to provide your email address if you wish to receive the results of the study.

powered by PIKTOCHART

Annexure B - Advertisement



Annexure C – Goodwill permission from Lifeline

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT

CONFIDENTIALITY UNDERTAKING

entered into between:

I, the undersigned

Prof / Dr / **(Mr)** / Ms **Willy Mdanisi Qwabe**

Identity Number: **7211255864080**

Address: **Cnr Twist and Smit Street flat number 612 Century Plaza Joubert Park 2001 Johannesburg**

hereby undertake in favor of the **NORTH-WEST UNIVERSITY**, a public higher education institution established in terms of the Higher Education Act No. 101 of 1997

Address: Office of the Institutional Registrar, Building C1, 53 Borcherd Street, Potchefstroom, 2520

(hereinafter the "NWU")

1 Interpretation and definitions

1.1 In this undertaking, unless inconsistent with, or otherwise indicated by the context:

1.1.1 "Confidential Information" shall include all information that is confidential in its nature or marked as confidential and shall include any existing and new information obtained by me after the Commencement Date, including but not be limited in its interpretation to, research data, information concerning research participants, all secret knowledge, technical information and specifications, manufacturing techniques, designs, diagrams, instruction manuals, blueprints, electronic artwork, samples, devices, demonstrations, formulae, know-how, intellectual property, information concerning materials, marketing and business information generally, financial information that may include remuneration detail, pay slips, information relating to human capital and employment contract, employment conditions, ledgers, income and expenditures and other materials of whatever description in which the NWU has an interest in being kept confidential; and

1.1.2 "Commencement Date" means the date of signature of this undertaking by myself.

1.2 The headings of clauses are intended for convenience only and shall not affect the interpretation of this undertaking.

2 Preamble

2.1 In performing certain duties requested by the NWU, I will have access to certain Confidential Information provided by the NWU in order to perform the said duties and I agree that it must be kept confidential.

2.2 The NWU has agreed to disclose certain of this Confidential Information and other information to me subject to me agreeing to the terms of confidentiality set out herein.

3 Title to the Confidential Information

I hereby acknowledge that all right, title and interest in and to the Confidential Information vests in the NWU and that I will have no claim of any nature in and to the Confidential Information.

4 Period of confidentiality

The provisions of this undertaking shall begin on the Commencement Date and remain in force indefinitely.

5 Non-disclosure and undertakings

I undertake:

5.1 to maintain the confidentiality of any Confidential Information to which I shall be allowed access by the NWU, whether before or after the Commencement Date of this undertaking. I will not divulge or permit to be divulged to any person any aspect of such Confidential Information otherwise than may be allowed in terms of this undertaking;

5.2 to take all such steps as may be necessary to prevent the Confidential Information falling into the hands of an unauthorised third party;

5.3 not to make use of any of the Confidential Information in the development, manufacture, marketing and/or sale of any goods;

5.4 not to use any research data for publication purposes;

5.5 not to use or disclose or attempt to use or disclose the Confidential Information for any purpose other than performing research purposes only and includes questionnaires, interviews with participants, data gathering, data analysis and personal information of participants/research subjects;

5.6 not to use or attempt to use the Confidential Information in any manner which will cause or be likely to cause injury or loss to a research participant or the NWU; and

5.7 that all documentation furnished to me by the NWU pursuant to this undertaking will remain the property of the NWU and upon the request of the NWU will be returned to the NWU. I shall not make copies of any such documentation without the prior written consent of the NWU.

6 Exception

The above undertakings by myself shall not apply to Confidential Information which I am compelled to disclose in terms of a court order.

7 Jurisdiction

This undertaking shall be governed by South African law be subject to the jurisdiction of South African courts in respect of any dispute flowing from this undertaking.

8 Whole agreement

8.1 This document constitutes the whole of this undertaking to the exclusion of all else.

8.2 No amendment, alteration, addition, variation or consensual cancellation of this undertaking will be valid unless in writing and signed by me and the NWU.

Dated at Potchefstroom this 31 October 2019

Witnesses:

1 Jacobs.

2

(*Signatures of witnesses*) (*Signature*)

Gmail Estelle Jacobs <estellejacobs.mw@gmail.com>

Research

Willy Qwabe <WillyQ@lifeline.org.za> Tue, Oct 15, 2019 at 1:48 PM
To: "estellejacobs.mw@gmail.com" <estellejacobs.mw@gmail.com>
Cc: Roseline Hwati <RoselineH@lifeline.org.za>, Annette Trapps <AnnetteT@lifeline.org.za>, Hendriettah Khupe <HendriettahK@lifeline.org.za>

Dear Ms Jacobs,

As Lifeline we would not mind you using or giving out our numbers for counselling to your participants

We have a 24 hours counselling line which is Stop Gender Violence helpline 0800 150150 and the Aids HELPNINE NUMBER 0800012322

Our office number to book for face to face counselling is 0117152000

Willy M Qwabe

Lifeline South Africa

Social Worker

Cell: 072 571 7549

Tel: 011 715 2000/32

Email: Willyq@lifeline.org.za

wqwabe@yahoo.com

web: www.lifeline.org.za

Good things come to those who believe, better things come to those who are patient, and the best things come to those who don't give up.

From: Annette Trapps
Sent: 15 October 2019 11:05
To: Hendriettah Khupe <HendriettahK@lifeline.org.za>; Roseline Hwati <RoselineH@lifeline.org.za>; Willy Qwabe <WillyQ@lifeline.org.za>
Subject: FW: Research

And this one? Not sure if we can really assist.

[Quoted text hidden]

Annexure D – WEMWBS permission

Mon 10/14/2019 8:34 PM
no-reply@warwick.ac.uk
Submission (ID: 504841273) receipt for the submission of /fac/sci/med/research/platform/wemwbs/using/register
To estellejacobs.mw@gmail.com

Thank you – this email confirms you have permission to use WEMWBS in accordance with the details entered in your registration shown below. We suggest you bookmark this page for future reference: https://warwick.ac.uk/fac/sci/med/research/platform/wemwbs/using/register/resources
If you have any questions please feel free to contact us via email: ventures@warwick.ac.uk

Question: Organisation name
Answer:
North West University Potchefstroom Campus

Question: Type of organisation
Answer:
University

Question: Size of Organisation
Answer:
>5001

Question: If public sector (other), please detail
Answer:

Question: Country of organisation
Answer:
South Africa

Annexure E – HREC approval

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

North-West University Health Research Ethics Committee (NWU-HREC)
Tel: 018 299-1206
Email: Ethics-HRECApply@nwu.ac.za

04 May 2020

To whom it may concern

APPROVAL OF THE RESEARCH STUDY FROM THE NORTH-WEST UNIVERSITY HEALTH RESEARCH ETHICS COMMITTEE (NWU-HREC) OF THE FACULTY OF HEALTH SCIENCES

Ethics number: NWU-00311-20-S1

Kindly use the ethics reference number provided above in all future correspondence or documents submitted to the administrative assistant of the North-West University Health Research Ethics Committee (NWU-HREC).

Study title: The relationship between Adverse Childhood Experiences and the cumulative effect on adult mental well-being

Study leader: Prof CC Wessels

Student: E Jacobs - 24083933

Application type: Single study

Risk level: Medium

You are kindly informed that this application was reviewed at the meeting of the North-West University Health Research Ethics Committee (NWU-HREC), Faculty of Health Sciences, North-West University, held on 13/02/2020. Following review of the application, it has been decided that the study is approved. Approval in this letter means that **final ethics approval** was indeed granted for the **research methodology and the ethical aspects** of this study and that the NWU-HREC has **no further ethical concerns** relating to the research ethics process, except for the outstanding documentation indicated below, which must be provided to the NWU-HREC by the researcher. It is important to mention that this letter indicates that there are no further ethical concerns that exist, regarding the execution of the research. A final ethics letter will be issued upon the receipt of the following documentation:

a. A copy of the permission letter from you as Lifeline, indicating that you are willing to act as external counsellors for the research study.

The mentioned document, as indicated above, should be submitted to Ethics-HRECProcess@nwu.ac.za by the researcher, for review before the ethics approval certificate can be provided. This approval is provided *for a year*, after which continuation of the study is dependent on receipt of an annual (or as otherwise stipulated) monitoring report and the concomitant issuing of a letter of continuation for another year.

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-HRECApply@nwu.ac.za.

Yours sincerely

Chairperson: NWU-HREC

Current details: (23239522) Q:\My Drive\9. Research and Postgraduate Education\9.1.5.3 Letters Templates\9.1.5.3.8_Gatekeepers_Letter_HREC.docm
30 April 2018

File reference: 9.1.5.3.8

Last Updated:

10 December 2020