

Exploring involvement of father figures in the management of type 1 diabetes in their children: A rapid review

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LIST OF ABBREVIATIONS

ADA	American Diabetes Association
DADS	Dads' Active Disease Support Scale
DSMP	Diabetes Self-Management Profile
DSMP-PR	Diabetes Self-Management Profile-Parent Reported
DSMP-SR	Diabetes Self-Management Profile-Self-Reported
IDF	International Diabetes Federation
JBI	The Joanna Brigg Institute
JSTOR	Journal Storage
SRQ	Self-Regulation Questionnaire

DECLARATION BY RESEARCHER

I, *Simphiwe Hope Mathole*, declare that *Exploring involvement of father figures in the management of type 1 diabetes in their children: A rapid review*, a mini-dissertation submitted in partial fulfillment of the MA Counseling Psychology degree at North-West University, Potchefstroom campus, is my own work. I declare that sources used in this mini-dissertation have been acknowledged using the American Psychological Association guidelines, the 6th edition Publication Manual. This document has been edited by a certified language editor, as per the stipulated requirements.

I furthermore certify that the submission of this mini-dissertation is exclusively for examination purposes at the North West University, Potchefstroom Campus and has not been submitted for any other purpose to any third party.



Simphiwe Hope Mathole

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PERMISSION TO SUBMIT

We, the undersigned and supervisors of this study and co-authors of the journal manuscript, hereby declare that the mini-dissertation entitled *Exploring involvement of father figures in the management of type 1 diabetes in their children: A rapid review* completed by Simphiwe Hope Mathole, does reflect the research regarding the subject matter and is her own work. Permission is granted that she may submit the manuscript for examination purposes and confirm that the mini-dissertation submitted is in partial fulfilment of the requirements for the degree Master of Arts in Counselling Psychology at the Potchefstroom Campus of the North-West University. The article may also be submitted to the *Journal of Child and Adolescents Mental Health* for publication purposes.



Prof E Deacon
Supervisor



Prof E van Rensburg
Co-supervisor

PREFACE

- This mini-dissertation is submitted in partial fulfilment of the requirements for the Magister of Artium degree in Counselling Psychology at the North-West University (Potchefstroom campus). It has been prepared and written in accordance with the North-West University requirements.
- The author adhered to the American Psychological Association (APA) referencing style as per the 6th edition Publication Manual.
- The manuscript was compiled in accordance to author guidelines set by the *Journal of Child and Adolescent Mental Health*.
- The document was language edited; proof of this is attached as an annexure.
- Permission for submission was granted by the supervisor and co-author, Prof. Elmari Deacon.

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God. The glory has always and will always be yours. Thank you for turning my pain into purpose. I am walking in what you have always known about me. This chapter of my life has come full circle.

Mommy, I'm so glad that I have you as both my nurturer and covering. I'm here because of the endless sacrifices you singularly made and continue to make for us. Thank you for fighting for me to reach the goals I've set for myself. You've expressed how amazed you are at God, for the person I have become. That's because you planted seeds in me that He was able to later work with. I hope I've made you proud. Love you always.

To my little brother, Lesedi. You don't know this, but your very existence is one of the things that inspire me to be a better person because you are always watching. Thank you for helping me dare to become better.

The rest of my family. Support is not always direct. Thank you for your support, in whichever shape or form it materialised.

To my friends who have become my sisters, Dzunisani, Lindiwe, and Sikelelwa. Thank you for walking this journey with me. For being available to listen to my long voice notes. For encouraging me when I doubted myself. For speaking truth to me and for keeping me accountable when I didn't feel like putting in the work. And for reminding me of the "why" when I wanted to give up.

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Thank you to each individual who said a word of encouragement to me, assisted me, inspired me, covered me in prayer, or even just gave me a hug as I embarked on this journey. Thank you from the bottom of my heart.

And last, but certainly not least, I would like to thank the person to whom I do not give enough credit, myself. I'd like to thank myself for pushing through moments where the finish line seemed unreachable. For not giving up even when it was the easiest thing to do. For shutting down the voice of insecurity that tried to whisper in my ears and for working as hard as I did, to successfully complete this journey. This milestone would not have been reached without the endless sacrifices I made and some of the hard yesses I had to give.

DEDICATION

For Moses, Emily, Floyd, and Sibusiso Mathole – my guardian angels in heaven.

In the words of Maya Angelou: *I come as one and stand as ten thousand*. I stand on the shoulders of those who came before me. You kicked down doors so I could walk through them and broke the glass ceiling so I could soar. This is the Mathole legacy.

SUMMARY

Type 1 diabetes is a chronic condition common in children and is becoming more prominent as numbers are expected to double by 2030 (World Health Organization, 2016). Managing type 1 diabetes is challenging as it requires a rigorous daily regimen to follow. It becomes even more challenging for children to manage type 1 diabetes because they may not understand the intricacies that the care regimen requires. Family members and parents of children with type 1 diabetes therefore play a key role in diabetes management. Diabetes literature, however, identified mothers as the primary parent reporters in managing the daily tasks of the child. Little is known about fathers' involvement in management (Shorer et al., 2011).

Father involvement in diabetes management has been identified as an understudied topic. The aim of this study was to investigate the involvement of fathers in managing their child's type 1 diabetes. The study was guided by the following three sub-questions: (1) Are fathers involved in the management of their child's type 1 diabetes?; (2) How are fathers involved in the management of their child's type 1 diabetes?; and (3) Which factors contribute to fathers' involvement in the management of their child's type 1 diabetes?

A rapid review was the method chosen to conduct this study. The North-West University database was used as the main engine to search for articles that would be used for this review. A comprehensive electronic search was conducted, which yielded 170 results. Articles were taken through a rigorous selection process, which was facilitated by the researcher and supervisor. This process entailed inclusion criteria and a critical appraisal, whereafter eight articles were finally included for review. The findings from the eight articles were extracted and captured in table format.

Data analysis was conducted through thematic synthesis in order to analyse the findings. Three themes were identified from the findings and are as follows: (1) Involvement in diabetes management tasks; (2) Support in diabetes management; and (3) Involvement in creating diabetes awareness. The review yielded limited yet valuable findings and showed that fathers are involved in managing type 1 diabetes in their children. The findings also showed that fathers were directly involved in specific diabetes tasks, with the task they performed the most being blood glucose monitoring.

Fathers were indirectly involved in diabetes management through the provision of supplies, which contributed to the children's overall diabetes management. Two factors were identified as contributing to father involvement, namely the father's relationship with the mother, and the child's ability of self-management.

OUTLINE OF STUDY

The mini-dissertation is submitted in article format. This is consistent with the Rules for the Classification of Thesis and Dissertations (7.1.11.9). This document consists of three different sections.:

Section 1: Introduction and Contextualisation

This section highlights the development of the research proposal. This includes an introduction, a literature review, the aims of the study, a step-by-step guide of the method of investigation, and ethical considerations.

Section 2: Manuscript in Article Format (Are Fathers Involved in Diabetes Management? A Rapid Review)

This section is written according to the *Journal of Child and Adolescents Mental Health* author guidelines, as this is the intended journal to submit the article to. This section and reference list comply with the American Psychological Association (APA) referencing style guide, as per the 6th edition Publication Manual.

Section 3: Critical Reflection

This section is a critical reflection on the study. In this section, the researcher provides a critical reflection of the entire process of the study, as well as the contribution and wider application of the study.

SECTION 1: INTRODUCTION AND CONTEXTUALISATION

Introduction

In 2017, 451 million people worldwide were estimated to be living with diabetes; with half of them believed to be undiagnosed (International Diabetes Federation [IDF], 2017). Of this number, 171 million are individuals aged 20 years and below who live with type 1 diabetes (Willemse, 2018). According to the World Health Organization (2016), this number is expected to double by 2030. Diabetes prevalence in South Africa has been estimated at 8.7%, and 5% to 10% are presumed to be type 1 diabetes (IDF, 2017).

Diabetes

Diabetes is a chronic autoimmune illness where the pancreas' beta cells are attacked, which causes the pancreas to stop producing insulin (Bullard et al., 2018; Holt & Hanley, 2012). Two types of diabetes exist; type 1 and type 2. Type 1 diabetes is congenital and has been identified as the most common type in most parts of the world (Soltesz, Patterson, & Dahlquist, 2007). Type 2 diabetes, on the other hand, is preventable and develops over time (American Diabetes Association [ADA], 2016; IDF, 2017). Unlike type 2 diabetes, individuals with type 1 diabetes need to follow a rigorous diabetes care plan, which not only affects them but their families and loved ones as well (ADA, 2013; Cruz, 2014; Hansen, Schwartz, Weissbrod, & Taylor, 2012).

Diabetes has generally been attributed to five million deaths worldwide, with \$850 billion healthcare expenses (IDF, 2017). Type 1 diabetes is chronic but treatable using exogenous insulin, which can be delivered using an insulin pen or pump (DiMeglio, Evans-Molina, & Oram, 2018). An insulin pen is when patients living with diabetes manually inject themselves (ADA, 2011), while an insulin pump is a portable electronic device worn externally to the body (Mitchell, Hilliard, Mednick, Cogen, & Streisand, 2009). Insulin does not cure type 1 diabetes; a rigorous diabetes care plan is therefore required (Garvey et al., 2016; Hansen et al., 2012). This includes frequent blood glucose checks, monitoring food choices, having snacks available, regular exercise, and routine doctor's appointments (ADA, 2013; Cruz, 2014; Garfield & Isacco, 2006).

Living with diabetes and adjusting to the diabetes care plan can be challenging as it takes families six to nine months to adjust to lifestyle changes once a child has been diagnosed with diabetes. Families often experience Kubler Ross' five stages of grief; from denial until they reach total acceptance of their family member living with diabetes (Bateman, 2018). This

grief process assists families in navigating the transition that has taken place due to the diabetes diagnosis and it becomes a family condition (Lang & Zyberg, 2015; Merkel & Wright, 2012). Families who do not manage this transition effectively may experience challenges with family functioning, which may negatively impact the child's glucose control (Wysocki et al., 2007). The impact that diabetes has on parents' physical and mental wellbeing likely influences how the child adapts to living with diabetes (Mitchell et al., 2009).

Caregiver and Parental Involvement in Child Rearing

Parental involvement is important in child rearing. Jordan, Dito, Nobles, and Gramah (2018) refer to the parents' role as that of mentors, as they primarily help the child to navigate the world through setting a standard that encourages autonomy as the child matures. Research shows that due to economic difficulty, households with low-income have been associated with reduced parental involvement, which manifests through low involvement in the children's education and in the overall quality of care giving (Wei & Chen, 2014).

General parental involvement can be perceived differently across households, according to each family's unique dynamics and structure (Pleck, 2010). In a physical sense, involvement includes, but is not limited to, provision for the child, education, and everything else in between (Shenk, Starkweather, Kress, & Alam, 2013). Emotional involvement, on the other hand, refers to closeness in the quality of the relationship between the individual and child (Peyper, De Klerk, & Spies, 2015), where the parents are responsive and supportive to the child (Miles, 2006; Rostad, Silverman, & McDonald, 2014). Emotional involvement can be seen through daily parenting decisions, actively engaged parenting, regular conversations with children, and knowledge of the children's schooling (Jordan et al., 2018).

One does not need to live in the same house as the child to be physically involved, as labour migration workers, for example, do not live with their families but are primary providers nonetheless (Clowes, Ratele, & Shefer, 2013; Padi, Nduna, Khunou, & Kholopane, 2014). It was evident from Jordan et al.'s (2018) research that migrant parents still played a very active role in involvement, through both physical and emotional involvement. The findings in Jordan et al.'s (2018) study demonstrate that the primary motivation for these parents was to ensure an enhanced life for their children, which they achieved by providing for their children to attend school and having conversations via video call about how the children were experiencing school and other life-related situations (Jordan et al., 2018).

Caregiving and Parental Involvement in a Chronic Illness

Chronic health conditions are becoming more prevalent in childhood (Morton, Everard, & Elphick, 2014). These conditions typically require an intensive medical regimen, which often includes medication, appointments, monitoring symptoms, diet, activity, physical therapy, lifestyle interventions, and responding to symptoms that may suddenly appear (Garfield & Isacco, 2006; Miller, 2009; Morton et al., 2014). If not done well, the child's health could deteriorate further (Mitchell et al., 2019). Chronic childhood conditions have been described as a family disease, due to the impact on families and because parents are primarily responsible for management outcomes (Mitchell, Morawska, & Mihelic, 2019; Moreira, Frontini, Bullinger, & Canavarro, 2014).

According to Mitchell et al. (2019), the parents' role in this regard is to be the main responsible individuals in the child's overall illness management and treatment adherence, which manifest differently depending on the specific chronic condition the child has. Apart from the general demands of daily parenting, parents who raise children with chronic conditions experience added demands and challenges. These parents face challenges related to the child's lifestyle, the family's lifestyle, and social functioning (Miller, 2009). According to Miller (2009), challenges include, but are not limited to, figuring out what to do when treatment tasks conflict with individual or family activities, or making decisions on how and when to fit in treatment in the child's schedule. Parents must also constantly weigh the child's present actions against long-term benefits or potential disease complications, which may sometimes mean denying the child certain activities or foods (Miller, 2009; Moreira et al., 2014).

Parents raising children with chronic conditions have also been reported to possibly experience elevated challenges in parenting, as children are more likely to present behavioural and emotional problems (Mitchell, 2019).

Parental Involvement in Diabetes Management

Parents of children living with diabetes are involved in diabetes management tasks to assist in controlling the condition. These tasks include frequent blood glucose checks, assisting the child to monitor food choices, ensuring the availability of snacks, regular exercise, routine doctor's appointments, and the financial provision needed (ADA, 2013; Cruz, 2014; Garfield & Isacco, 2006). In younger children, diabetes management is mostly dependent on the parents due to the child's limited ability to understand the intricacies of diabetes management (Kichler, Marik, Kaugar, & Nabor, 2013). Children have unpredictable

eating patterns, and may not understand indicators of high or low blood glucose levels and how physical activity generally contributes to diabetes management (Mitchell et al., 2009). Unfortunately, households where there are socio-demographic factors such as multiple individuals in the household, single-parent households, low family income, and ethnic/racial minority status have been correlated with low parental involvement in type 1 diabetes management (Delamater et al., 2018).

The demands of caring for a child with type 1 diabetes adds physical, psychological, and financial strain on the parents (Berg, Butner, Butner, King, & Hughes, 2013; Hansen et al., 2012). Parents with younger children are more likely to experience significant paediatric parenting stress, as they primarily take on management tasks (Hansen et al., 2012). This is, however, slightly different for parents with adolescents with type 1 diabetes, due to the evolved role that adolescents play in management (Hilliard, Chen, Holmes, Maher, & Robinson, 2013). There is a transitional period that takes place, where an adolescent becomes less dependent on the parents and takes on more responsibility in managing their condition (Kichler, Marik, Kaugar, & Nabor, 2013). The parental role evolves to a supervisory one, where they supervise the adolescent's self-care strategies (Holt & Hanley, 2012; Palmer et al., 2011).

Maternal Involvement in Diabetes Management

It is important to consider the role of different types of caregivers in relation to diabetes outcomes as maternal and paternal care take different forms in catering to a child's needs. Research in paediatric diabetes has mainly placed the focus on mothers and has reported them as typically assuming the role of the primary caregiver (Hilliard et al., 2013; Romano & Bruzzese, 2007), which means that the mothers are often the parent mostly and directly involved in the daily diabetes care tasks of the child (Berg et al., 2013; Young, Lord, Patel, Gruhn & Jaser, 2014).

Mothers have been identified as generally exhibiting persuasive parenting styles in diabetes management (Young et al., 2014), usually being overinvolved (Berg et al., 2013). Young et al. (2014), further describe mothers' way of parenting as critical, intrusive, and characterised by restrictive parenting behaviours. They further identified this as relatively normal in paediatric diabetes households where one parent will automatically become the "good cop" (primary caregiver), while the other is the "bad cop" (Hilliard et al., 2013; Young et al., 2014).

The persuasive strategies that mothers use are helpful in smaller children, as they positively influence blood glucose control (Berg et al., 2013; Young et al., 2014). These persuasive strategies, however, pose a dual effect in adolescents; as much as being persuasive is beneficial for the adolescent's health, in the adolescent's perspective, this results in feelings of low-self-confidence and incompetence to self-manage (Berg et al., 2013; Hilliard et al., 2013).

Additionally, mothers report high levels of anxiety, stress, depression and sleeping problems, symptoms that have all been associated with persuasive parenting (Hansen, Schwartz, Weissbrod & Taylor, 2012; Young et al., 2014).

Paternal Involvement in Diabetes Management

The focus of this study is on fathers' involvement in diabetes management. For the purpose of this study, a father is defined as a male caregiver who perceives himself in a paternal role. This can be a biological, foster, or stepfather (Ahmann, 2006). The literature shows that fathers of children with type 1 diabetes demonstrate interest in being involved in the day-to-day management of their child's condition (Moore & Kotelchuck, 2004). Traditionally, fathers serve as the primary provider to generate income for the household and therefore experience challenges with getting time off work due to the inflexibility of their work hours (Ahmann, 2006; Delamater et al., 2018). Aspects such as routine checks at the doctor may be a challenge, considering that appointments take place during the day, at a time when fathers are typically occupied with work (Garfield & Isacco, 2006). In recent times, mothers have also started to contribute to generating income, which influences the parental roles in this regard.

In some cases, fathers find it challenging to be involved in their child's life due to the stigma that exists in different cultures and belief systems regarding illness or disability (Hawkins et al., 2002), especially related to raising girls (Hallberg et al., 2007). Another hindrance may be the ability of fathers to understand the intricacies of management (Goethals et al., 2017). Additionally, educational programmes for type 1 diabetes are primarily targeted at mothers and are often not gender sensitive (Ahmann, 2006).

Both paternal and maternal involvement are important for type 1 diabetes management in children, as it may impact the child positively (Ahmann, 2006; Goethals et al., 2017). When a father is involved, mothers experience less psychological stress regarding the child's condition, as well as increased marital satisfaction (Gavin & Wysocki, 2006; Hallberg et al., 2007).

It is not that fathers are not involved in managing their child's condition, but that mothers have been identified as the primary parent reporters (Berg et al., 2013; Goethals et al., 2017; Palmer et al., 2011). This study aimed to investigate the involvement of fathers in managing type 1 diabetes. The following research sub-questions are posed: (1) Are fathers involved in the management of their child's type 1 diabetes?; (2) How are fathers involved in the management of their child's diabetes?; and (3) Which factors contribute to fathers' involvement in the management of their child's diabetes?

This study will contribute to existing literature by providing knowledge and creating awareness on father involvement. The results of the study may also benefit diabetes healthcare teams by providing recommendations for interventions, providing guidance and making decisions regarding how fathers can be assisted and encouraged to be involved through gender-sensitive programmes.

Review Question

What evidence is available from scientific literature on the involvement of fathers in the management of their child's type 1 diabetes?

Sub-questions:

1. Are fathers involved in the management of their child's type 1 diabetes?
2. How are fathers involved in the management of their child's diabetes?
3. Which factors contribute to fathers' involvement in the management of their child's diabetes?

Aim and Objectives

The aim of this study was to investigate the involvement of fathers in managing their child's type 1 diabetes. The specific sub-aims were to investigate if fathers are involved in the management of their child's type 1 diabetes, how they are involved in the management of their child's diabetes, and which factors contribute to fathers' involvement in the management of their child's diabetes.

Research Approach and Design

A rapid review is the proposed method of investigation for this study. Grant and Booth (2009, p. 92) define reviewing as "to view, inspect, or examine a second time or again". This is when current literature is used to answer a research question (Piper, 2013). It is therefore a summary of results from existing studies (The Johanna Briggs Institute [JBI], 2014; Piper,

2013) and specifically refers to the assessment of what is known about a topic or policy in scientific literature (Grant & Booth, 2009). Findings from a rapid review additionally attempt to provide information that is valuable for making suggestions for interventions, guidance, decision making, and planning regarding a specific topic or area (Dobbins, 2017). This method is relevant for the proposed study as the study sought to explore what is already known in the literature about fathers' involvement in managing type 1 diabetes. This knowledge will be beneficial in providing guidelines for diabetes management intervention-based programmes, to ensure father inclusivity. Systematic review methods are used in a rapid review; however, a rapid review is time limited, ranging from a few days, weeks, or months (Dobbins, 2017).

Research Method

Dobbins' (2017) five steps for conducting a rapid review were followed as the research method.

Step 1: Define a practice question: A practice question needs to be clearly articulated and relevant to the policy, programme, or intervention (Grant & Booth, 2009). The question should be neutral, ensuring that it does not deviate in a certain direction as this would make the findings of the study biased (Dobbins, 2017). The sub-questions that guide this study are as follows: (1) Are fathers involved in the management of their child's type 1 diabetes?; (2) How are fathers involved in the management of their child's type 1 diabetes?; and (3) Which factors contribute to father involvement in the management of their child's type 1 diabetes? In defining a practice question for a rapid review, one must identify what type of practice question it is (Dobbins, 2017). The type of practice question for this study is lived experience, as the focus is on the lived experiences of fathers in their involvement with children with diabetes type 1.

Step 2: Search for research evidence: Articles were searched using the North-West University's database search portal. This portal includes EBSCO Discovery Services, which gives access to 73 national and international databases. Journal Storage (JSTOR), *South African Journal of Psychology*, PsycINFO, and Southern African Bibliographic Information Network were used as additional search engines.

The combination of search levels is specified in Table 1, which provided relevant articles that speak to the proposed review question. The following criteria were used to determine the inclusion and exclusion of articles:

Table 1: Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
• Type 1 diabetes • Fathers' involvement in diabetes management or strategies • English-language articles • Full-text articles and PhD dissertations • Timespan: From 2010 to current article dates • International and national studies • Qualitative and quantitative studies • Open-access and accredited journals	• Type 2 diabetes • Articles not adhering to high ethical standards

A feasibility study was conducted on the North-West University's database. One hundred and seventy articles were identified using the keywords and search levels shown in Table 2.

Table 2: Search String

LEVEL	KEYWORDS (use <u>OR</u> to indicate synonyms and <u>NOT</u> to indicate exclusions)	FIELD (Indicate what the keyword search should focus on: Title, abstract, or all text)	BRIEF JUSTIFICATION FOR CHOSEN FIELD
LEVEL ONE	Type 1 diabetes	Title and abstract	Two types of diabetes exist. The study focuses on type 1; hence this should be emphasised.
	AND		
LEVEL TWO	Diabetes management OR Diabetes care plan	Title and abstract	Focus of the study is on the involvement in management.
	AND		
LEVEL THREE	Fathers' role, paternal role/involvement	Title and abstract	The focus of the study is on the father's involvement in management, not any other parent or family member. Any individual who perceives themselves in a paternal role will be included.
	AND		
LEVEL FOUR	Children, youth, adolescents	Abstract and text	The focus is on children, which takes a different form in adolescents and adults because they can better manage their illness individually.

The following table further provides the inclusion and exclusion table, together with justifications:

Table 3: Inclusion and Exclusion Criteria Justification

CRITERIA	INCLUDE OR EXCLUDE? PROVIDE BRIEF JUSTIFICATION
Full-text journal studies	Include, as it will report scientific research.
Peer-reviewed studies	Include, as this will ensure credibility of the study.
Non-peer-reviewed studies	Exclude, may not necessarily be credible.
Quantitative studies	Include, as it may report experiences of father involvement.
Qualitative studies	Include, as this will provide valid information as it will be from individuals who personally experienced the phenomena.
Mixed-methods studies	Include, as this will provide valuable information for the question asked in the proposed study and quantitative point of view.
Review studies	Exclude, not enough literature as they are a discussion of existing explorative literature.
PhD theses	Include, as these studies are often researched well as ample time is spent on them. They are also published.
Master's dissertations / mini-dissertations	Include, as they report on scientific studies.
Studies published in languages other than English and/or Afrikaans	Include, the JBI advises to use articles published in other languages, as long as they are credible, and translation is available.

Saving your search: A record of each retrieved article was made by saving retrieved papers on different user profiles, depending on the different search engine.

Step 3: Critically appraise the information: The focus in this step is to assess the trustworthiness of the articles (Dobbins, 2017). The JBI Critical Appraisal Checklist for Qualitative Research was used to scrutinise articles (The JBI, 2017). The JBI is an internationally recognised institute for systematic review critical appraisal tools. Each article will have a JBI Critical Appraisal Checklist for Quality Research. It was scored accordingly in the manner directed by the JBI's instructions. Articles that do not comply with the inclusion criteria and that do not meet the standard of the appraisal checklist were also documented, as well as providing the reason why they were not selected. The checklist is shown in Table 4.

Table 4: JBI Critical Appraisal Checklist for Qualitative Research

	Yes	No	Unclear	N/A
1. Is there congruity between the stated philosophy perspective and research methodology?				
2. Is there congruity between the research methodology and the research question or objectives?				
3. Is there congruity between research and methodology and the methods used to data collect?				
4. Is there congruity between the research methodology and the representation and analysis of data?				
5. Is there congruity between the research methodology and the interpretation of results?				
6. Is there a statement locating the researcher culturally or theoretically?				
7. Is the influence of the researcher on the research, and vice versa, addressed?				
8. Are participants, and their voices, adequately represented?				
9. Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?				
10. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?				

Source: The JBI (p 3. 2017)

Step 4: Synthesise the evidence: Once critical appraisal has been completed, the synthesis of evidence step follows. Synthesising evidence refers to putting all the information together. This step focuses on extracting relevant information, summarising the overall results, and formalising conclusions (Dobbins, 2017). Table 4 was used to extract data from identified articles. Data extraction is presented in table format, including the title of the study, author(s), date of publication, the type of publication (summary, synthesis, and single study), and the population studied (Dobbins, 2017). This process was facilitated by the researcher and supervisor. Based on these findings, the researcher then outlined possible recommendations and implications.

Step 5: Identifying applicability and transferability issues for further consideration during the decision-making process: According to Dobbins (2017), this step is aimed at determining relevance, success, and suitability. Important aspects relating to the questions are highlighted here. As it relates to the study, this is a recommendation section, which is a write-up in response to the research question, while also providing recommendations and highlighting possible limitations for future researchers on the topic.

Data Analysis

Thematic synthesis was used for data analysis. Thematic synthesis is a type of data analysis adapted from thematic analysis, which is suitable for secondary data synthesis (Cruzes & Dyba, 2011; Thomas, O'Mara-Eves, Kneale, & Shemilt, 2017). It has three steps to it, namely (1) coding, (2) developing descriptive themes, and (3) generating analytical themes.

Step 1: Coding: In this step, themes across the different studies are identified and coded using a numbering system. Main themes are coded using solid numbers such as Theme 1, 2, and 3. Should there be sub-themes, they will be coded under their main theme in the following manner: Sub-theme 1.1, 1.2, and 1.3.

Step 2: Developing descriptive themes: From the themes generated in the previous step, links are made and descriptive themes are grouped together.

Step 3: Generating analytical themes: This is where the researcher inquisitively develops possible new explanations that respond to the review question(s).

Ethical Considerations

A rapid review does not include any human or animal subjects; harm is therefore minimal. Duplication of other studies is avoided, and integrity is assured (Wager & Wiffin, 2011).

Plagiarism was avoided by adhering to the American Psychological Association referencing style, and by submitting the document to Turnitin, which is a software program used to detect plagiarism. To ensure that the study is transparent and replicable, rapid review methodology was strictly applied based on the guidelines. The inclusion and exclusion criteria also served to reduce possible bias. Ethical clearance was received from the North-West University Research Ethics Committee (NWU-00346-20-A1).

Ensuring bracketing: The way a researcher approaches the data collection and analysis is often influenced by ideas from their thought processes (Creswell, 2013; Thorne, 2008). It is therefore crucial for a researcher to refrain from being biased or influencing the study according to his or her experience (Laidlaw, 2014). Journaling was used throughout the data-collection and -analysis process. Journaling and making notes helped to ensure that any biases were interpreted and accounted for. The whole process was reviewed by the supervisor.

Trustworthiness: In order to ensure methodological adequacy and soundness, trustworthiness is fundamental as it assists in establishing high ethical and quality research (Merriam, 2009). Four criteria to ensure trustworthiness within qualitative research were proposed by Lincoln and Guba (1985), namely credibility, transferability, confirmability, and dependability.

Credibility refers to the consistency and confidence of the findings (Creswell, 2013). In this study, the researcher and supervisor had to agree on the articles to be used, as well as the data extracted, before the study commenced.

Transferability and dependability entail the degree to which data may be applied to various contexts and the study can be replicated to produce similar results (Creswell, 2013). In this study, a comprehensive description of the study's research methodology is provided to enhance transferability and consistency of results.

Confirmability ensures that the research process is free from the researcher's interests and biases, while aiming to ensure neutrality (Creswell, 2013). In this study, the researcher and supervisor worked independently and involved the co-supervisor as an objective third party to ensure that the researcher's biases did not influence the findings. The researcher also used a reflexive journal in which she noted down ideas pertaining to the research process (Lincoln & Guba, 1985).

Contribution of the Study

It is known from the literature that father involvement in managing type 1 diabetes has a positive impact on the child's condition, the child's general functioning, and the general functioning of the family (Ahmann, 2006; Duke, Raymond, & Harris, 2014; Goethals et al., 2017). This study contributes by providing guidelines that can assist programmes that focus on diabetes management training and parental guidance, in having interventions that are gender sensitive and inclusive of fathers. The findings from the study will also assist such programmes in supporting and encouraging father involvement in managing the child's condition. Additionally, support networks specifically designed for fathers with children with type 1 diabetes can be developed based on the information provided by this study.

Study Outline

This section presented the background to the study, including discussing diabetes, caregiving of parents for children with diabetes, as well as maternal and paternal involvement in diabetes management. The gap identified in the research was described and the aims of the research were set. This was followed by a methodology section that motivated the research method and provided a step-by-step guide on the method of investigation, as well as the ethical considerations.

The next section presents the research article entitled *Are Fathers Involved in Diabetes Management? A Rapid Review*. This section is written according to the *Journal of Child and Adolescents Mental Health* author guidelines, as this is the intended journal to submit the article to.

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SECTION 2: MANUSCRIPT

Guidelines to Authors

The aim is to submit this manuscript to the *Journal of Child & Adolescent Mental Health*. The document is written in APA format and adheres to the full criteria of the journal requirements, which are stated below.

Instructions for Authors

The *Journal of Child & Adolescent Mental Health* accepts papers from all disciplines addressing child and adolescent mental health (Routledge Taylor & Francis Group, 2014). The specific focus is on areas such as epidemiology, mental health prevention and promotion, community-based interventions, psychotherapy, pharmacotherapy, policy, and risk behaviour. The journal publishes original research papers, brief reports, systematic reviews, book reviews, editorials, and letters to the editor. Systematic reviews are required to be 4 000 words or below, unless by special arrangement.

Editorial Policy

Considered submissions should not be previously published or considered for publication elsewhere. Manuscript submissions will be taken to imply transfer of copyright of the material to the publishers, NISC (Pty) Ltd. Once material is accepted for publication, it cannot be reprinted or published without permission of the publishers, NISC. The editor has the authority to revise the final draft of the manuscript to adhere to editorial requirements.

Submissions

Manuscripts are submitted online at the *Journal of Child & Adolescent Mental Health*, ScholarOne Manuscript site. New users are required to create an account then make the submission via the Author Centre.

Manuscript Presentation

Manuscripts should be in MS Word or compatible format. Authors are advised to consult an existing journal for general layout and style. Manuscripts should be submitted in English UK spelling. Sentence case used for title and any other heading. First-, second-, and third-level headings are used without numbering.

Format

Title: Title should be brief, informative, and retrievable by automatic searching techniques. It should also preferably be less than 10 keywords.

Author(s) and author(s) addresses: Corresponding author should be indicated, with an email address and telephone number provided. The author's respective work address (where the work was done should be indicated as well).

Abstract: The abstract should be structured as follows: *Objective* - primary purpose of the paper, *Method* - data source, subjects, design, measurements, data analysis, *Results* - key findings, and *Conclusion* - implications, future directions. Abstract should not exceed 200 words.

Referencing: APA 6th edition, author-date system. Each source cited in-text should appear in the reference list and visa-versa. Examples are as follows:

Book

Winnicott, D. W. (1977). *The Piggie: An account of the psychoanalytic treatment of a little girl*. London: Hogarth Press.

Chapter in edited book

Lee, A. C. (2009). Psychoanalytic play therapy. In K. J.O'Connor & L. D. Braverman (Eds.), *Play therapy theory and practice: Comparing theories and techniques* (2nd ed., pp. 1–58). London: Wiley.

Journal article

Newman, L., & Stevenson, S. (2005). Parenting and borderline personality disorder: Ghosts in the nursery. *Clinical Child Psychology and Psychiatry*, 10(3), 385–394. doi: 10.1177/1359104505053756

Lein, E. S., Hawrylycz, M. J., Ao, N., Ayres, M., Bensinger, A., Bernard, A., ... Jones, A. R. (2007). Genome-wide atlas of gene expression in the adult mouse brain. *Nature*, 445 (7124), 168-176. doi: 10.1038/nature05453

Tables and Figures: Tables must be figured with Arabic numerals and be accompanied with a stand-alone caption. Figures should conform to the style of the journal. Journal printed page size is 140 mm wide x 256 mm high.

Page charges: South African and African contributors ZAR225 per page; USD19 per page for international contributors. Non-essential use of colour will be charged at ZAR900 per page for African contributors and USD75 per page for contributors from elsewhere.

Open Access: *Journal of Child & Adolescent Mental Health* is a hybrid journal which allows authors the option of publishing their article Open Access for a set fee. Further details are provided in NISCoA: Publishing an Open Access Article with NISC.

Are Fathers Involved in Diabetes Management? A Rapid Review

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Abstract

Objectives: Many studies on type 1 diabetes in children identify mothers as the primary caregivers in managing the condition. Little research speaks to fathers and their involvement in managing type 1 diabetes. The aim of this study was to investigate the involvement of fathers in managing their child's type 1 diabetes.

Method: An electronic search was conducted on the North-West University online library, from the year 2010 to 2020. Ultimately, eight articles adhered to the inclusion criteria. A rapid review was the method of investigation, and articles were analysed using thematic synthesis.

Results: Three themes relevant to fathers' involvement emerged from the extracted data, namely (1) Involvement in diabetes management tasks; (2) Support in diabetes management; and (3) Involvement in creating awareness.

Conclusion: Fathers are involved in managing type 1 diabetes in their children. They are both directly and indirectly involved in diabetes tasks. They are directly involved through tasks such as blood glucose monitoring, insulin administration, and developing predictable daily routines for the child to follow. They are indirectly involved through supporting the child's overall diabetes management. Fathers were found to be generally involved despite the presence of diabetes and they later increased their involvement post diagnosis.

Key practitioner message

What is known?

- Fathers are generally involved in their children's lives despite the presence of diabetes, and this involvement increased due to diabetes.
- Fathers provide support through indirect tasks, which add to the child's overall type 1 diabetes management.

What is new?

- Evidence shows that fathers are involved in direct diabetes tasks in the same capacity that mothers are.
- One of the significant ways in which father involvement was displayed was through striving to create a sense of normalcy in the child's life.

What is significant for clinical purposes?

- Support interventions specific and gender sensitive to fathers may be beneficial.
- Father involvement positively impacts on the child's functioning and the parents' marital system.

Keywords: Fathers, diabetes management, involvement, children, type 1 diabetes

Introduction

Type 1 diabetes is a chronic condition commonly diagnosed in children (Albanese-O'Neil et al., 2019). Of the 451 million people reported to have diabetes in the year 2017, 171 million were aged 20 years and below (Wild, Rolic, Green, Sicree, & King, 2004; Willemse, 2018). In younger children, better management has been identified when parents are involved in the day-to-day diabetes care tasks (Wiebe et al., 2014). Mothers have been identified as the primary parent reporters; little research has therefore been conducted on the involvement of fathers in managing type 1 diabetes (Berg, Butner, Butner, King, & Hughes, 2013; Goethals et al., 2017; Palmer et al., 2011). To address this gap, this study attempted to investigate father involvement in the management of their children's type 1 diabetes.

Diabetes is a major health concern and if not managed correctly, the progression of type 1 diabetes can lead to deterioration in body functions, vital organs, cardiovascular disease, increased risk of neurological complications, amputation, or even death (American Diabetes Association, 2011; Pastor et al., 2018;). The complex diabetes care plan involved requires adherence to a rigorous care plan, which consists of specific tasks that need to be followed in order to ensure glycaemic control (Berg et al., 2017; Maas-Van Schaaijk, Roeleveld-Versteegh, & Van Baar, 2013). These tasks include blood glucose monitoring, following a strict diet, administering exogenous insulin dosages, and physical activity (Albanese-O'Neil, Schatz, Bernhardt, & Elder, 2016; Berg et al., 2017). The administration of exogenous insulin does not cure type 1 diabetes, but helps to treat it, using an insulin pen or pump (DiMeglio, Evans-Molina, & Oram, 2018). This complex routine can be demanding for individuals with the condition, and even more for children and adolescents; hence parental involvement is crucial (Osborn, Berg, Hughes, Pham, & Wiebe, 2013).

The diagnosis of type 1 diabetes is a life-altering experience that has a significant impact on the family system as a whole, as well as the role they play in managing diabetes (Berg et al., 2017; Williams, Laffel, & Hood, 2009). Moreira, Frontini, Bullinger, and Canavarro (2014) refer to it as a family disease, due to interrelations of the family functioning and child adjustment. Family cohesion refers to healthy family relations and the support families give to one another (Moreira et al., 2014), which is required for families to successfully manage type 1 diabetes and maintaining good glycaemic control (Shorer et al., 2011).

Some literature has hypothesised that fathers play a small role in the daily management of type 1 diabetes in their children and should be educated and encouraged to be more involved (Barzel & Reid, 2011; Seiffge-Krenke, 2002; Waizenhofer, Buchanan, & Jackson-Newsom, 2004), while other literature has suggested that the father's role may be different from the

mother's role (Palmer et al., 2011). What is known, however, from existing literature is that lack of involvement has been associated with the child's poor metabolic control (Gavin & Wysocki, 2006), while father involvement has been associated with better disease management and less disease impact on families (Goethals et al., 2017).

Fathers display an initial reaction of being overwhelmed after the child's diagnosis (Sullivan-Bolyai, Rosenberg, & Bayard, 2006) and find this learning experience challenging because it requires active involvement for them to feel adequate in fulfilling the daily management required (Sullivan-Bolyai et al., 2006). Developing literature has also emphasised fathers participating and adjusting to the child's diabetes (Gavin & Wysocki, 2006).

Fathers' involvement in the diabetes management of their children is an understudied area, due to most studies reporting findings from the mother's perspective or with the mother as the focus. This study serves as a foundation towards addressing the gap that exists and can be an entry point for other studies to further explore and build on this concept. The study could further contribute by providing knowledge and creating awareness of father involvement, which can be used in the development of interventions centred around fathers. Furthermore, this can influence guidelines for paternal involvement to be incorporated by healthcare teams in encouraging fathers to be involved.

Aim and Objectives

The aim of this study was to investigate scientific literature on the involvement of fathers in the management of their child's type 1 diabetes. The specific sub-aims were to investigate if fathers are involved in the management of their child's type 1 diabetes; how fathers are involved in the management of their child's diabetes; and which factors contribute to fathers' involvement in the management of their child's diabetes.

Method

A rapid review was conducted to answer the research question by using current literature (Dobbins, 2017). Rapid reviews provide information on what is already known about a topic (Grant & Booth, 2009). The findings from rapid reviews provide information for making suggestions for decision making, interventions, guidance, and planning for a specific topic or area (The Joanna Brigg Institute [JBI], 2014; Piper, 2013). This method is relevant for the proposed study as it seeks to provide guidance through informing diabetes management intervention-based programmes that ensure father inclusivity. This rapid review made use of

systematic methods; however, in a limited range of time (Dobbins, 2017). Ethical clearance was received from the North-West University Research Ethics Committee (NWU-00346-20-A1).

Inclusion and Exclusion Criteria Applied

Studies with the following keywords were included: Type 1 diabetes and fathers' involvement in diabetes management or diabetes strategies as related to the research question. Both national and international studies from open-access and accredited journals were included to ensure that all relevant studies could be identified. Furthermore, English full-text journals, peer-reviewed studies, qualitative studies, quantitative studies, mixed-methods studies, PhD theses, and master's dissertations/mini-dissertations were included to provide a bigger base of scientific articles. Articles that contained the term "Type 2 diabetes" were excluded as they were not relevant to the study, and studies published in a different language with no translation available, as well as non-peer-reviewed and review studies, were excluded. The search was limited to studies from 2010 to 2020 because, during the feasibility search, a review was found that had taken place in 2009. Articles that did not adhere to high ethical standards were also excluded.

Search Strategy

The search was done through the North-West University's online library website, which includes EBSCO Discovery Services (North-West University Library and Information Services, 2018). The database provides access to national and international books, journal articles, and online resources for over 73 databases. These databases include Science Direct, Academic Search Premier, PsycInfo, and PsycArticles. Google Scholar was used as an additional search engine to ensure thoroughness.

Results and Discussion

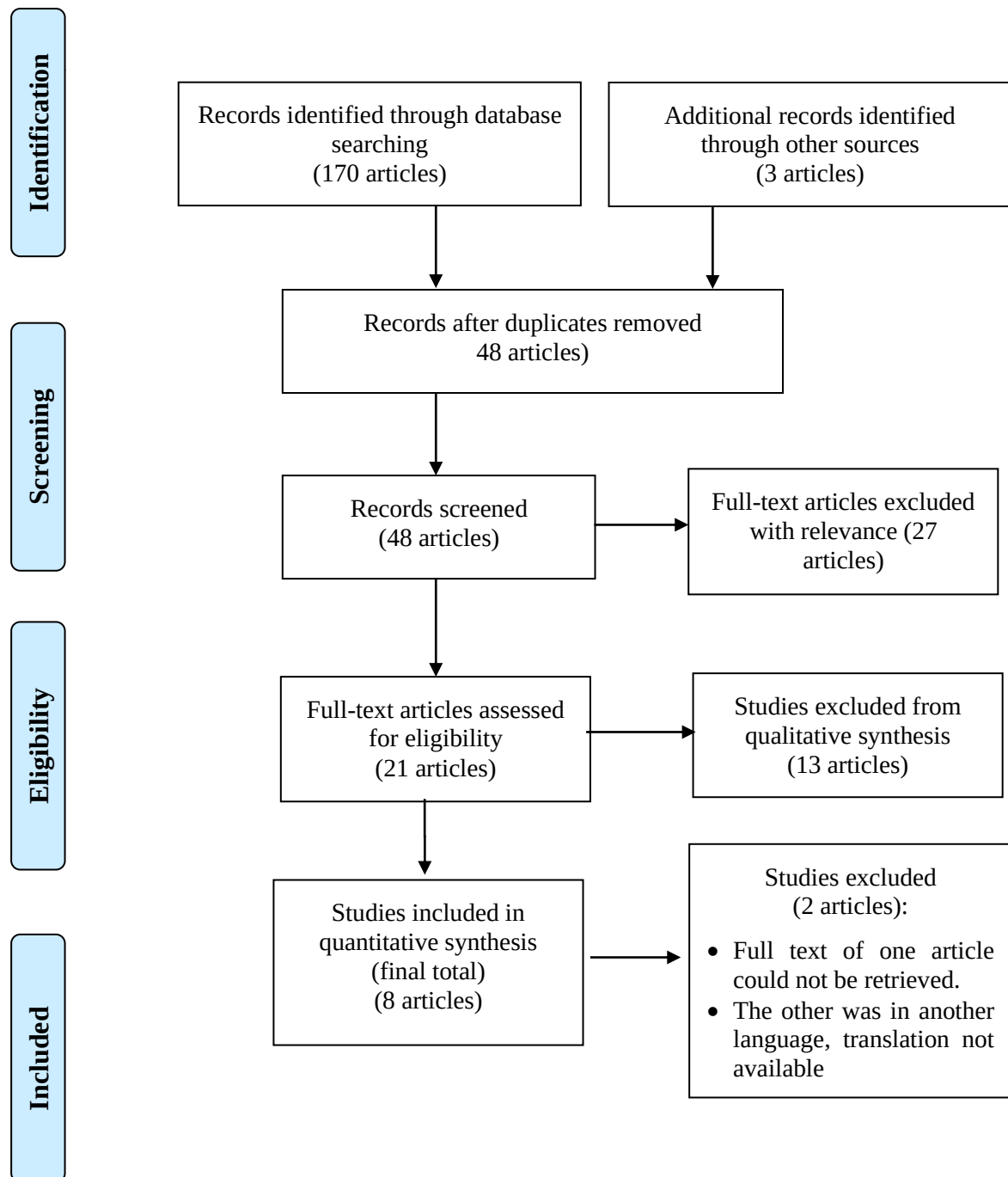
Using the criteria defined in the study, a general search performed on the North-West University Library Catalogue yielded 170 results. The authors applied the inclusion and exclusion criteria filters, and 48 articles remained. The abstracts of the 48 remaining articles were independently reviewed by the first and second authors. Of the 48 articles, 27 articles were further excluded due to irrelevance to the research question, which left 21 articles to be further reviewed. Excluded studies did not explore the research question to the fullest; some

articles were about available programmes for fathers, not necessarily highlighting their current involvement, while other articles did not include the father aspect.

The remaining 21 articles were critically appraised using the JBI Critical Appraisal Checklist for Quality (2017). This process was done by both the first and second authors. Finally, 13 articles were excluded due to not adhering to the critical appraisal requirements, mainly ethics or methodology. The eight remaining articles were identified as suitable to be explored for the research question.

Figure 1 presents a visual representation of the process of included articles (Moher, Liberati, Tetzlaff, Altman, & The PRISMA Group, 2009).

Figure 1: PRISMA Flow Diagram



Source: Moher et al. (2009)

Data Extraction and Synthesis

The eligible data were extracted from the eight articles that are presented in Table 1. Thematic synthesis principles were used to generate themes from the extracted data. Thematic synthesis is a type of data analysis adapted from thematic analysis, which is suitable for secondary data synthesis (Cruzes & Dyba, 2011; Thomas, O'Mara-Eves, Kneale, & Shemilt, 2017). It involves three steps, namely coding, developing descriptive themes, and generating analytical themes.

Study Selection

Participants in the eight articles investigated in this review included fathers, mothers, family members, and diabetes care teams of children and adolescents with type 1 diabetes (Boman, Povlsen, Dahlborg-Lyckage, & Borup, 2013; Boman, Povlsen, Dahlborg-Lyckage, Hanas, & Borup, 2014; Goethals et al., 2019; Hansen, Schwartz, Weissbrod, & Taylor, 2012; Hilliard, Chen, Holmes, Maher, & Robinson, 2013; Iversen, Graue, Haugstvedt, & Raheim, 2018; Quirk, Blake, Dee, & Glazebrook, 2014; Stambaugh, 2016). The eight articles varied greatly in socio-cultural context. Three studies were conducted in the United States of America (Hansen et al., 2012; Hilliard et al., 2013; Stambaugh, 2016), two studies in Sweden (Boman et al., 2013; Boman et al., 2014), and of the remaining three articles, one was conducted in Belgium (Goethals et al., 2019), the other in Norway (Iversen et al., 2018), and the last one in the United Kingdom (Quirk et al., 2014). The studies used medical records, online surveys, questionnaires, in-depth interviews, open-ended interviews, semi-structured interviews, and focus groups as the data-collection methods.

According to the data, five articles were qualitative (Boman et al., 2013; Boman et al., 2014; Iversen et al., 2018; Quirk et al., 2014; Stambaugh, 2016) and the rest were quantitative (Goethals et al., 2019; Hansen et al., 2012; Hilliard et al., 2013). Five of the articles had fathers and mothers as participants. From these articles, data that only reported on the role of the father were carefully extracted (Iversen et al., 2018; Goethals et al., 2019; Hansen et al., 2012; Hilliard et al., 2013; Quirk et al., 2014). There were, however, nuances where it was challenging to distinguish the father's role; the word "parents" was used in these instances. The remaining three studies reported solely on fathers (Boman et al., 2013; Boman et al., 2014; Stambaugh, 2016).

Table 1: Main Findings of the Study

Data-Extraction Table						
No.	Author(s)	Aims and Objectives	Study Design	Study Measures	Summary of Results	Conclusion
1	Goethals, E. R., Soenene, B., De Wit, M., Vansteenkiste, M., Laffel, L. M., Casteels, K., & Luykx, K. (2019).	To examine the role of parental expectations and communication style in predicting adolescents' motivation to adhere to self-management for type 1 diabetes.	Quantitative study. Structural Equation Modelling was used in a cross-sectional, multi-informant study.	• Demographic survey • Medical records • Degree and style of parental expectations, which contained four statements: autonomy-supportive scale, empathic scale, open-minded perspective scale, and controlling scale • Self-Regulation Questionnaire (SRQ-Parental Rules) • Diabetes Self-Management Profile-Self-Reported (DSMP-SR) • Diabetes Self-Management Profile-Parent Reported (DSMP-PR)	Communication and parenting style are important in ensuring adolescent self-management and treatment adherence. The autonomy-supportive parenting style was identified as effective. It enhances internalisation of diabetes self-care recommendations in adolescents. Paternal expectations were linked with internalisation. This suggests a more pronounced role for fathers in setting expectations.	The parental style of communication played a significant role in adolescents' motivation for self-care/treatment adherence. It would be useful for diabetes care teams to incorporate this education during routine diabetes care visits. For clinicians to have conversations with parents on how to best communicate their expectations effectively with their adolescents. To ensure clear, realistic, support communication that avoids control and manipulative techniques.
2	Iversen, S. A., Graue, M., Haugstvedt, A., & Raheim,	To explore the lived experiences of mothers and	Qualitative study. Interpretive Phenomenological methodology.	• In-depth interviews were conducted. Interviews were 45-90 minutes in length and	Parents strived to live like a "normal" family, while faced with the contrast of experiencing a "new normal".	Parents of children with type 1 diabetes need support from healthcare professionals. Not just

Data-Extraction Table						
No.	Author(s)	Aims and Objectives	Study Design	Study Measures	Summary of Results	Conclusion
	M. (2018).	fathers of children with type 1 diabetes aged one to seven years.		consisted of open-ended questions. - Seven interviews were conducted face to face at the participants' homes. - Four conducted at the nurses' office: two in a silent corner, one at a café, and the other at the participant's workplace. - The last interview was conducted telephonically.	Parents had to quickly educate themselves on diabetes and it became crucial to establish strict routines for regulating blood glucose. Parents found themselves in a state of bodily and mental readiness, as things can change any minute. Two fathers reported this as a feeling of being overwhelmed, as they often had teachers call them, asking about the glucose check and the action to be taken. They had to leave work to rush to the school to assist the teachers. Parents engaged in a great deal of planning to ensure that the child's blood glucose was stable and to avoid diabetes emergencies.	support in supervision but in helping them navigate the life change that comes with living with a child with type 1 diabetes, especially in the first year of diagnosis.
3	Stambaugh, J. D. (2016).	To fill the gap found in the literature regarding few	Qualitative study using a phenomenological approach.	- Open-ended and in-depth interviews - Semi-structured	Fathers highlighted the permanence of diabetes. They had to consider everything they did and the decisions they	The author concluded that more formal support groups would be beneficial for fathers.

Data-Extraction Table						
No.	Author(s)	Aims and Objectives	Study Design	Study Measures	Summary of Results	Conclusion
		studies that have examined fathers with children with type 1 diabetes, by collecting stories of fathers raising a child diagnosed with type 1 diabetes.		formal interviews	made. They described this as having to think three hours or three days ahead. They were, however, intentional about not always making it about diabetes by not making the child feel different or special. Post diagnosis, fathers described being more involved and more present in the child's life; being a more hands-on father. They became responsible for more things and felt pressured to correct individuals who had misconceptions about diabetes. Fathers ensured they were able to provide their child with diabetes management supplies, work with the child on how to eat properly, and operate their insulin pump. Teamwork was essential; fathers educated family and close friends on how to care for their child.	Others can be in the form of mentorship.

Data-Extraction Table						
No.	Author(s)	Aims and Objectives	Study Design	Study Measures	Summary of Results	Conclusion
4	Quirk, H., Blake, H., Dee, B., & Glazebrook, C. (2014).	To understand parents' perceptions of what influences physical activity, and to explore the role that parents play in their child's physical activity.	Qualitative study using an interpretive-descriptive approach.	• Online survey for demographics • Semi-structured interviews conducted telephonically	There was conflict between careful planning and spontaneous physical activity; parents therefore had to establish well-rehearsed routines. Any change in the routine caused distractions to the already planned routine. Monitoring blood glucose during physical activity had to take place before, during, and after the physical activity, and throughout the day. Parents described it as a 24/7 job. Parents overcame hurdles to physical activity using assertive and forceful methods. They advocated for their child and fought against policies that excluded their child from activities.	The findings highlight the need for knowledge and competence on type 1 diabetes in all personnel involved in the supervision of children's physical activities. There is a need for healthcare professionals to collaborate with families of children with type 1 diabetes, in order to give guidance on managing physical activity, as they have the opportunity to promote an active lifestyle.
5	Boman, A., Povlsen, L., Dahlborg-Lyckage, E., Hanas, R., &	To describe how fathers of children with type 1 diabetes understand their	Qualitative study using an inductive design.	• Demographic questionnaire • Parent Responsibility Questionnaire	Fathers took leave from work to stay home with their children, adapted their work schedules, reduced work hours, and worked from home.	The quality of involvement is essential in diabetes outcomes and important for paediatric diabetes teams to identify

Data-Extraction Table						
No.	Author(s)	Aims and Objectives	Study Design	Study Measures	Summary of Results	Conclusion
	Borup, K. I. (2014).	involvement in their child's daily life from a health-promotion perspective.		Semi-structured interviews: Five conducted telephonically and two at the researcher's workplace. Eight were conducted at the participants' homes and one at the participant's workplace.	Fathers' ability to prioritise their children was dependent on the nature of the relationship they had with the mother. This ensured good and joint commitment where both parents actively partnered through prioritising the child. This was despite parents being together or not. Fathers felt they needed to know more about their child than other fathers had to, and this was through regular contact. They find themselves in constant communication with their child; calling to check up on them when at school and texting to find out what the blood glucose level was. Involvement was due to diabetes involvement planning, structuring the daily life of the child, food preparation, and activities. Fathers also equipped the child to manage	this degree of involvement and its relationship to the child's age, developmental status, and blood glucose control. Father involvement is essential to the child's future health and wellbeing.

Data-Extraction Table						
No.	Author(s)	Aims and Objectives	Study Design	Study Measures	Summary of Results	Conclusion
					diabetes in the future.	
6	Hilliard, M. E., Rohan, J., Rausch, J. R., Pendley, J. S., & Drotar, D. (2013).	Describe trajectories of paternal involvement in diabetes care over a period of three years during adolescence. To examine bidirectional associations with diabetes outcomes across early adolescence.	Quantitative study using longitudinal analysis.	• Background information form regarding family demographic characteristics • Dads' Active Disease Support Scale (DADS) • DADS-Amount • DADS-Helpfulness • DSMP • Blood glucose meter, which is used as a specific behavioural indicator for diabetes treatment adherence	Fathers scored in the medium range of involvement in diabetes tasks, which means that they participated in diabetes tasks 50% of the time. This made it easier for adolescents to cope when transitioning into increased responsibility and self-management. Fathers' amount of involvement and level of contribution were predicted by the child's ability to manage their diabetes across the transition to adolescence. Fathers increased their involvement as the need arose; such as when the child was not optimally self-managing diabetes or a child who had a higher risk for poor diabetes outcomes. Some fathers support their child's overall diabetes self-management over	Father involvement declines modestly during early adolescence. Communication about how fathers can enhance involvement before children transition to adolescence is needed as it may assist in preventing declines in diabetes management/control.

Data-Extraction Table						
No.	Author(s)	Aims and Objectives	Study Design	Study Measures	Summary of Results	Conclusion
					managing specific tasks. This supportive involvement includes provision for medical bills.	
7	Boman, A., Povlsen, L., Dahlborg-Lyckage, E. & Borup, K. I. (2013).	To analyse how Swedish paediatric teams perceive and discuss fathers' involvement in caring for their child with type 1 diabetes. To discuss how the teams' attitude towards the fathers' involvement develop during the process of data collection.	Qualitative study using constructivist grounded theory approach.	• Repeated focus group discussions, which lasted approximately 60 minutes • Quasi-intervention was conducted	Fathers were more technically and mathematically inclined. They attended more technical training sessions such as insulin pump training over other types offered for diabetes education. This was believed to be a characteristic that fathers possessed and that originated from their professional experience. Fathers had specific areas of responsibility, which were not directly related to the child's everyday care. They took more of a supportive role towards the child. It became clear that fathers were involved in the everyday life of their child's diabetes care.	The results of this study can be summarised in the following sentence: If dad attends, we are happy – if mom does not, we become concerned. The conclusion made from this study is that Paediatric Diabetes Teams' perception was initially compared to the mother's role as the primary caregiver but once the focus was on the father's contribution, awareness of father significance and importance was recognised.
8	Hansen, J. A., Schwartz, D. D., Weissbrod, C., & Taylor, P.	To examine the relationship between fathers' diabetes care	Quantitative study using post hoc power analysis. Exploratory study.	• Medical information • DADS • Paediatric Inventory for Parents	When fathers were highly involved, maternal psychological stress, marital functioning, and child	The findings suggested that fathers' and mothers' perceptions of their involvement may be

Data-Extraction Table						
No.	Author(s)	Aims and Objectives	Study Design	Study Measures	Summary of Results	Conclusion
	(2012).	and paternal psychological functioning. To examine paternal psychological stress, namely depressive/ anxiety symptoms, sleep, and marital satisfaction.	Multivariate regression.	• Pittsburgh Sleep Quality Index • Hospital Anxiety and Depression Scale • Dyadic Adjustment Scale • Self-Care Inventory	adherence to treatment improved. Additionally, father involvement increased due to the child's poor blood glucose control.	differently associated with children's glycaemic control and regimen adherence. The overall findings of this study support previous hypotheses, which state that father involvement promotes health and wellbeing for the child, the mother, and the family.

Results

The aim of this review was to investigate the involvement of fathers in managing type 1 diabetes in their children. The eight articles that were reviewed provided information on the research sub-questions, namely (1) Are fathers involved in the management of their child's type 1 diabetes?; (2) How are fathers involved in the management of their child's type 1 diabetes?; and (3) Which factors contribute to father involvement in the management of their child's type 1 diabetes? The findings were captured under three headings: (1) The extent of fathers' involvement in the management of their child's type 1 diabetes; (2) Factors that play a role in fathers' involvement in diabetes management; and (3) The nature of fathers' involvement in diabetes management. Each of the three headings that follow is a direct answer to the sub-questions that guided the study.

1. The extent of fathers' involvement in the management of their child's type 1 diabetes

The reviewed studies reported on the general involvement of fathers in their children's lives and the benefits of being involved in the diabetes management of their child. Boman et al. (2014) expressed the importance of the general involvement of fathers in their children's lives despite the presence of illness. Fathers also described being more involved and present in their child's life following the type 1 diabetes diagnosis as they started being more hands-on and taking on more responsibilities as it related to the child than before (Stambaugh, 2016).

Fathers in these two studies were intentional about being involved in their children's general lives and in diabetes care, by adapting their work schedules, reducing their work hours, working from home, and/or taking paternal leave (Boman et al., 2014; Stambaugh, 2016). These findings are similar to a previous study by Zamarlik (2019), who found that fathers share duties in partnership with mothers, and some even take over. There has been a significant increase in the level of father involvement in child-care responsibilities, as more fathers are open and willing to perform care tasks (Zamarlik, 2019).

Boman et al. (2014) and Hansen et al. (2012) identified the benefits of fathers being involved in managing the child's type 1 diabetes. The father's involvement encouraged the child and created a level of self-control in the child's ability to manage their illness in the present and in being able to fully take over in the future (Boman et al., 2014), while also promoting maternal psychological functioning, marital functioning, and better child adherence (Hansen et al., 2012). Previous studies also revealed benefits of father involvement in children with type 1 diabetes in the areas of adaptive behaviour, improved social skills, and less maternal psychological distress, which overall have a positive effect on marital satisfaction (Ahmann, 2006; Gavin & Wysocki, 2006).

2. Factors that play a role in fathers' involvement in diabetes management

It was clear from four studies (Boman et al., 2013; Boman et al., 2014; Goethals et al., 2019; Hilliard et al., 2013) that different factors contribute to fathers' involvement in managing type 1 diabetes in their children. The analysed and synthesised data demonstrate that a father's desire to be involved may not be the sole determinant of whether he will be involved. Different circumstances in households play a role in either promoting or preventing fathers to be involved with managing type 1 diabetes in their children, such as the mother and the child's ability to self-manage.

Boman et al. (2014) found that fathers' desire to be involved in the diabetes management of their child and their ability to prioritise their child were influenced by the nature and quality of the relationship they had with the mother. According to this study, parents typically had an active partnership when the relationship between the mother and father was good, which enabled them to communicate regarding what was in the best interest of the child (Boman et al., 2014). Interestingly, the quality of the relationship between the mother and father was not dependent on them cohabitating and that even without cohabitation, a good relationship was possible (Boman et al., 2014).

Adding another dimension to the relationship between the mother and father, Boman et al. (2013) identified that father involvement or the lack thereof was initiated by the mother's role as the primary caregiver. Fathers were found to be passive in their involvement in instances where mothers denied them access to the child's everyday life and from taking an active part in diabetes care tasks. Fathers were able to occasionally step in as the primary caregiver in the mother's absence. This is mirrored by Palmer et al. (2011), who found that mothers have often been identified as primary caregivers.

The child's ability to self-manage also influences the involvement of the father, as described by Hansen et al. (2012) and Hilliard et al. (2013). Higher perceptions of father helpfulness were correlated with the child's poor adherence, which suggests that higher father helpfulness was a result of the child's poor adherence (Hansen et al., 2012). Fathers increased their involvement as the need arose, such as when the child was not optimally self-managing or if the child was at a higher risk for poor diabetes outcomes (Hilliard et al., 2013).

3. The nature of fathers' involvement in diabetes management

The answer to how fathers are involved in diabetes management was found in three themes: (1) Involvement in diabetes management tasks; (2) Support in diabetes management; and (3) Involvement in creating diabetes awareness.

Theme 1: Involvement in diabetes management tasks

Managing type 1 diabetes requires following a complex diabetes care plan, which involves adherence to a daily routine in which several tasks are performed to ensure glycaemic control (Berg et al., 2017; Maas-Van Schaaijk et al., 2013). This includes frequent monitoring of blood glucose, carbohydrate counting, adhering to a daily routine, physical activity, administering exogenous insulin dosages, and readiness for diabetes emergencies (Albanese-O'Neil et al., 2016; Berg et al., 2017).

In this review, six articles revealed that fathers are involved in **blood glucose level checking** (Boman et al., 2013; Boman et al., 2014; Hilliard et al., 2013; Iversen et al., 2018; Quirk et al., 2014; Stambaugh, 2016). The findings from Hilliard et al.'s (2013) research show that fathers scored in the medium range on the DADS for involvement in diabetes tasks, which indicates that fathers participated in diabetes tasks 50% of the time, with blood glucose monitoring as the most often performed diabetes task by fathers (Hilliard et al., 2013). The studies by Iversen et al. (2018) and Quirk et al. (2014) support this notion, but add that regular blood glucose monitoring is mostly aimed at avoiding hypoglycaemia associated with exercise.

Boman et al.'s (2014) study add another dimension to the task of blood glucose monitoring with the idea of being involved in monitoring the child's blood glucose even when the child is not present. Boman et al. (2013) further hypothesise that this is due to fathers' inherent qualities and specific areas of responsibilities, such as fathers being identified as more technologically and mathematically inclined than mothers. These findings are similar to those of a previous study conducted by Goethals et al. (2017), which hypothesise that the complex type 1 diabetes regimen requires one to have executive functioning cognitive ability. Although this result hints at fathers having specific qualities, the authors are aware of changes in traditional family functioning that might not support this finding in a modern family.

Beside specific diabetes management tasks mentioned, four studies also reported on fathers being involved in **planning, preparation, and managing a daily routine** as part of diabetes management (Boman et al., 2014; Iversen et al., 2018; Stambaugh, 2016; Quirk et al., 2014). Fathers highlighted the importance of planning, as this helped them to be a step ahead and to be prepared (Boman et al., 2014; Stambaugh, 2016; Quirk et al., 2014). Having a daily routine further helped fathers be prepared for any sudden changes that might occur, to ensure the regulation of blood glucose, and to avoid diabetes emergencies (Boman et al., 2014; Iversen et al., 2018; Quirk et al., 2014, Stambaugh, 2016). This daily routine was strictly structured, well rehearsed, and well practised. This included making provision for these emergencies, being available, and knowing what to do should an emergency occur.

As a result of creating a daily routine, a new normal was created (Iversen et al., 2018; Quirk et al., 2014; Stambaugh, 2016). This was further facilitated by maintaining this sense of normalcy by re-engaging the child in activities they used to engage in prior to their diagnosis, such as play dates with friends, vacations, and going out with family (Iversen et al., 2018; Stambaugh, 2016). An added benefit of having a good routine was that it ensured that children were able to participate in physical activities (Quirk et al., 2014).

Theme 2: Support in diabetes management

This theme captures ways in which fathers provide support in managing type 1 diabetes in their child, relating to indirect ways of helping the child to manage diabetes. As with direct diabetes care tasks, these indirect supportive ways in which fathers are involved have also been proven to be beneficial and quite adaptive (Hilliard et al., 2013), and could be due to traditional differences in occupations between parents (Boman et al. 2013)

Four articles reported on ways in which fathers provide support in managing type 1 diabetes in their child, including financial support, general involvement, and mentoring. **Financial support** referred to ensuring medical supplies and paying medical bills (Hilliard et al., 2013, Quirk et al., 2014, Stambaugh, 2016), as well as providing equipment and transporting children (Quirk et al., 2014), while **general involvement** referred to the father's intention to be close to the child, displaying an active role in the relationship, and paying more attention to the child (Boman et al., 2014; Stambaugh, 2016). This finding is in line with literature supporting that fathers provide diabetes supplies, as the primary providers (Delamater et al., 2018).

One way in which fathers in Boman et al.'s (2014) and Stambaugh's (2016) studies achieved this involvement in the child's life was through ensuring that they were **accessible to their child** and that there was regular contact between the father and the child. Another way of being involved is by encouraging and mentoring the child, as well as assigning responsibilities and leading by example in an attempt to equip the child with the necessary skills that contribute to diabetes management (Boman et al., 2014; Quirk et al., 2014).

It is clear from these studies that fathers had a need to be more involved with their children. They were intentional about having a close relationship with their children through being accessible in the case where the children needed them, through how they parented, and by ensuring that they were in constant contact (Boman et al., 2014; Goethals et al., 2019; Stambaugh, 2016).

Theme 3: Involvement in creating awareness

This theme illustrates how fathers found themselves creating awareness of diabetes through education and advocacy, in the different contexts that their children were involved in (Iversen et al.,

2018; Quirk et al., 2014; Stambaugh, 2016). Firstly, fathers had to **educate themselves** (Iversen et al., 2018; Stambaugh, 2016), but also had to educate others such as the child, close family members, friends, and teachers (Iversen et al., 2018; Quirk et al., 2014; Stambaugh, 2016). Stambaugh (2016) indicates that the process of learning about diabetes took six months to a year and was mainly through trial and error. This includes aspects such as how to eat properly and how to operate the insulin pump (Stambaugh, 2016). Educating close family members and friends helped to develop an enhanced care team that would rally around the child and assist in managing diabetes (Iversen et al., 2018; Stambaugh, 2016). According to Kichler et al. (2013), interventions that include a team and a sub-system, such as a family, have been proven to be the most beneficial to managing type 1 diabetes in children.

A part of educating others meant fathers clarifying and **addressing any misconceptions** others had about diabetes. The findings show that fathers often had the sense that there is a general lack of understanding about what diabetes is, the difference between the two types, and the fact that it is not contagious. For example, in one of the studies, a father reflected on the time when someone asked when his son would outgrow diabetes (Stambaugh, 2016).

The third powerful way of creating awareness in which fathers were involved was through **advocacy**. Parents were focused on raising their child based on who he or she was and were cognisant of the fact that it is not always about diabetes, as they did not want it to define the child (Iversen et al., 2018; Stambaugh, 2016). They also encouraged friends and family to do the same as it was essential for their child to feel like they were being treated like other children (Iversen et al., 2018). Fathers in Stambaugh's (2016) research advocated for their children to be treated normally including in the house, by raising children in the way they believe they would have even if they did not have diabetes. Fathers did not restrict the child but instead encouraged them to invest in finding out who they are in the world, as they would with any other child.

Parents even used assertive and forceful measures in ensuring a normal life where their children could take part in physical activities. This included making firm requests against policies that excluded the child and setting clear boundaries, as a way of advocating for their children's health. Two fathers in Quirk et al.'s (2014) study lodged a formal complaint after their children were excluded from school activities such as swimming.

It was apparent from this review that fathers were committed to creating awareness of diabetes in the different environments that the child engaged with. This education and advocacy brought awareness to others and encouraged them to also create a sense of normalcy for the child.

In conclusion, the overall findings of this study show an underlying intention by fathers to be involved in the diabetes management of their children. This was evident throughout the themes in how intentional they were to put measures in place to ensure this involvement. There were also

slight nuances in the study that compared paternal involvement to maternal involvement in managing diabetes. The study showed that fathers were also capable of performing tasks that mothers did.

Conclusions and Limitations

It was clear from this review that fathers are directly and indirectly involved in managing their child's diabetes. Direct ways of involvement included blood glucose monitoring as an example, while indirect ways were demonstrated by support in diabetes management and involvement in creating awareness

The literature emphasised fathers' intentionality in prioritising involvement in their child's condition. Studies showed that some fathers started being involved when their child was diagnosed, while those who were already involved became more involved after the diagnosis. This study contributes to the conceptual understanding of father involvement in type 1 diabetes in their children.

Limited studies were available on father involvement in managing type 1 diabetes in their child. Fathers' involvement in diabetes management are still understudied in this area and this was reflected in some of the articles that were used in the review. These articles had mothers and fathers as participants, instead of only the father.

The main limitation of this study was the lack of representation of different cultures, especially in developing countries. Most of the studies were conducted in first-world countries, with specific societal-cultural laws. An example that can be mentioned is that two of the articles were from Sweden and the authors identified that Swedish laws encourage father involvement and that work leave for paternal responsibilities was more flexible there. This is due to the emergence of the child-orientated masculinity concept followed in Swedish culture, which refers to the idea that having a close relationship with one's child is a central part of being a man (Bekkengen, 2006). No African studies could be found to include in this review, which highlights the need for research on the African father's involvement.

Recommendations

Future studies and interventions should focus on father involvement in type 1 diabetes in their children. These studies should also solely focus on fathers, instead of the mothers, as this will provide clear representation.

Implications for Clinical Practice

The findings identify factors that enhance or prevent fathers from being involved. These findings can assist mental health workers to tailor their interventions around enhancing those factors, such as working with the mother and father on communication.

Fathers are as involved as mothers in diabetes management and are also in need of psychological support and support networks to enhance their adjustment to diabetes management.

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Ethical Considerations

This study had no human or animal participants and therefore did not carry any risks. Approval was received from the Optentia Scientific Committee, followed by ethical approval from the North-West University Health Research Ethics Committee, ethics number NWU-00346-20-A1.

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Supporting Information

No additional files or supportive documents will be provided.

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SECTION 3: CRITICAL REFLECTION

Introduction

This section is the critical reflection, where the researcher reflects on her experience of conducting the mini-dissertation. In this section, the researcher provides a brief description of how she chose the topic, followed by a reflection on the process. The reflection on the process is where the researcher practically reflects on the different steps of the research and reiterates the findings in relation to the research question. The section ends with a personal reflection and final closing remarks.

Research Question and Findings

This study set out to review scientific literature on the involvement of fathers with children with type 1 diabetes and the sub-aims were to investigate the following: (1) If fathers are involved in the management of their child's type 1 diabetes; (2) How fathers are involved in the management of their child's diabetes; and (3) Factors that contribute to fathers' involvement in the management of their child's diabetes. The study was conducted in order to address the gap that exists in the existing literature, which is that little research speaks about father involvement in children's type 1 diabetes management. Most studies on type 1 diabetes management in children report on the mother's perspective, which makes mothers the primary reporters in the literature (Berg et al., 2013; Goethals et al., 2017; Palmer et al., 2011).

Three sub-questions were used to guide the review in answering the bigger research question. These questions were as follows: (1) Are fathers involved in the management of their child's type 1 diabetes?; (2) How are fathers involved in the management of their child's type 1 diabetes?; and (3) Which factors contribute to fathers' involvement in the management of their child's type 1 diabetes? This was done by conducting a rapid review of available literature, which ultimately yielded eight articles that met the inclusion criteria and critical appraisal process. Data extracted from the eight articles provided information that was explained under the following headings: (1) The extent of fathers' involvement in the management of their child's type 1 diabetes; (2) Factors that play a role in fathers' involvement in diabetes management; and (3) The nature of fathers' involvement in diabetes management.

In addition to the headings that provided information on the extracted data, the following three themes were identified: (1) Involvement in diabetes management tasks; (2) Support in diabetes management; and (3) Involvement in creating diabetes awareness. These themes fall under the last heading, namely the nature of fathers' involvement in diabetes management.

The findings from this study demonstrated the lengths to which fathers go to ensure involvement generally in the child's life and in diabetes management. Some fathers quit their jobs, while others worked from home in order to be with the child. How mothers functioned in their role as a caregiver was identified as one of the factors that contributes to fathers' involvement. The findings showed that fathers tended to be passive in instances where mothers functioned as the only or primary caregiver. The child's ability to self-manage was identified as the second factor that contributes to the father's involvement. Overall, what can be deduced from the findings is that fathers are involved in diabetes management through specific diabetes tasks such as monitoring blood glucose levels and supportive tasks such as providing for the child. The findings also showed the active role that fathers play, including in advocating for the child and creating diabetes awareness among others.

Reflections

Reflection on Choosing the Topic

In the first meeting that the researcher and supervisor had, they brainstormed on possible topics for the research. Both the researcher and supervisor then agreed to conduct a study on diabetes (an area that the supervisor was very familiar with) and added the aspect of father involvement, which was an area of passion for the researcher. This is how the topic came about, which was needed because father involvement in type 1 diabetes is an understudied area.

Reflection on the Research Process

As fast and truncated as the proposal stage was, I really enjoyed this part of the process as it broadened my understanding of diabetes. When I started familiarising myself with the process of rapid reviews, my concern was whether the study would be feasible. It, however, quickly became apparent that the study was feasible when my supervisor and I conducted a feasibility check via the North-West University's database and the EBSCO Discovery Service search portal (North-West University Library and Information Services, 2018).

The study became even clearer when I received feedback from the Optentia Scientific Committee, after submitting my proposal and doing a brief presentation for them. I experienced the feedback as very valuable. The feedback helped me to narrow down the study even further and assisted in defining certain concepts further. The feedback included broadening the concept of fathers to father figures, as not all children live with their biological fathers and this would have limited the studies we found. Furthermore, the feedback received on the methodology section helped me to consider whether the aim of my study was appropriate for a rapid review.

Once ethical clearance was granted, the process of searching for articles took place. The article search was independently conducted on the North-West University library database by the researcher, where she searched for articles in accordance with search strategies, as explained in the Method section. The results of this search yielded several duplicate articles, while others were not available in full text. In the case where articles were not available in full text, the researcher and her supervisor searched for them on other databases. The researcher experienced this process as relatively manageable, as she was in constant communication with the supervisor, who played the role of checking and confirming the article search.

As in the article search step, the articles were appraised by the researcher and checked by the supervisor. The researcher experienced this process as very complex, as she had to firstly ensure that she understood what the different questions in the critical appraisal checklist meant. The second challenge was that some of the articles did not explicitly highlight the different aspects required to report on in the critical appraisal checklist. As a result, the researcher and supervisor had ongoing conversations to ensure that they were in agreement regarding the checklist questions. They also had extensive discussions to motivate why certain articles were to be included or excluded.

Initially, four themes were generated, with sub-themes. The researcher and supervisor then realised that the sub-themes that were generated were only reported by a few articles. This information was then integrated into other main themes, but not as sub-themes. The co-supervisor was also a part of checking this process. Finally, three themes were identified to best answer the research question and sub-questions.

The researcher believes that this study was needed and is relevant, especially because gender roles have evolved over the years in households. More studies on father involvement need to be conducted, especially in the South African context. This study is a foundation for many studies that can be conducted on fathers' involvement in diabetes management, to slowly but surely fill the gap in the existing literature.

Personal Reflection

Completing this dissertation was quite challenging, but rewarding at the same time. My supervisor and I agreed on what seemed like a very impossible timeline, while in a very demanding internship programme. This was quite challenging but introduced me to a level of resilience I did not know I possessed.

In the beginning of this process, I knew very little about diabetes; let alone that there were two types. My very limited knowledge and exposure to type 1 diabetes stemmed from hearing a colleague's insulin pump beep a couple of times and from a family friend whose son was diagnosed at a young age. Coming from a township, I had heard many people speak about diabetes as though it

was a disease that instantly killed people. I had no knowledge of the rigorous management tasks that need to be performed. I thought one just had to take medication and that was it.

As I delved deeper and became more acquainted with the topic, I realised that it was possible to have a good quality of life if diabetes is managed well. What I found fascinating about type 1 diabetes was the fact that so many people live with it and manage it well. The strength and dedication that fathers with children with type 1 diabetes had was very evident throughout this study. The ability of the family to work together for the benefit of the child's health was also very inspiring.

Upon completing this study, I realised that there is a great need for further studies that focus on father involvement in type 1 diabetes. Many of the available studies that focus on fathers seemed to do this in comparison to the mother and how the mother does things, which may not necessarily provide a clear representation of father involvement. Another aspect that I identified from engaging in this study is the great need that still exists to educate teachers about managing type 1 diabetes. Many of the articles reviewed in the study highlighted a sense of being overwhelmed when the child was at school, because teachers were not taking this condition seriously, even after being trained by the parents. Individuals in the townships and rural areas would also benefit from intervention programmes, to educate and support fathers, families, and teachers about type 1 diabetes management.

What I found most challenging in this process was writing up the discussion section. I found it challenging to write in an integrative manner as opposed to only mentioning what different articles said about the themes. This is a process that stretched me and my writing skills. It was quite challenging to achieve in the beginning but became more attainable with the help of feedback from my supervisor and reading other rapid reviews.

The overall research process broadened my skills as a researcher and taught me to be patient with the process. I am truly grateful for this invaluable growth-orientated process.

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ANNEXURES

Annexure A: Declaration by Language Editor



08 December 2020

To whom it may concern

Re: Proofreading and academic editing: S.H. Mathole

I, J.L. van Aswegen of Grammar Guardians, hereby confirm proofreading and academic editing of the thesis entitled "Exploring involvement of father figures in the management of type 1 diabetes in their children: A rapid review" by Simphiwe Hope Mathole (student number 23981946) in December 2020.

Please contact me on 082 811 6857 or at jeanne@grammarguardians.co.za regarding any queries that may arise.

Kind regards,

A handwritten signature in black ink, appearing to read "J.L. van Aswegen", is written over a horizontal line.

J.L. van Aswegen

Grammar Guardians

Annexure B: Turnitin Report

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ORIGINALITY REPORT

15%

SIMILARITY INDEX

10%

INTERNET SOURCES

12%

PUBLICATIONS

6%

STUDENT PAPERS

Annexure C: JBI Critical Appraisal Checklist for Quality Research

Reviewers: Hope Mathole (1) & Elmari Deacon (2)

Abbreviations: Yes (Y), No (N)

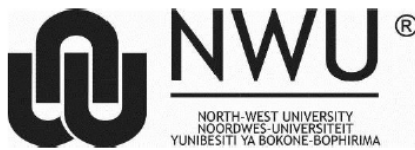
Author(s) & Year	Philosophical perspective and research methodology?		Research methodology and research question?		Research and methodology and methods used to collect data?		Research methodology and analysis of data?		Research methodology and interpretation of results?		Statement locating researcher culturally or theoretically?		Influence of researcher on research addressed		Participant's voice adequately represented?		Research ethics and approval?		Conclusions flow from analysis or interpretation of data?		Include or Exclude	
	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
Boman, A (2013).	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Hansen, J.A., Schwartz, D.D., Weissbrod, C, & Taylor, P. (2012).	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y
Hilliard, M.E., Rohan, J.,Rausch, J.R., Pendley, J.S, & Drotar, D. (2013).	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	Y	Y	N	N	Y	Y	Y	Y
de Wit, M., Vansteenkiste, M., Laffel, L.M., Casteels, K, & Luyckx, K. (2019).	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y
Quirk, H., Blake, H, & Glazebrook, C. (2014).	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Stambaugh, J.D. (2016).	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
L.,Dahlborg-Lyckage, E.,Hanas, R, & Borup, K. I. (2014).	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Boman, A., Povlsen, L., Dahlborg-Lyckage, & Borup, K. I. (2013).	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Iversen, S. A., Graue, M., Haugstvedt, A, & Raheim, M. (2018).	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Annexure D: Demographic Characteristics of Included Articles

Demographic Characteristics						
	Authors & Year	Article Title	Journal	Participants	Country	Risk
1	Goethals, E.R., Soenene, B., de Wit, M., Vansteenkiste, M., Laffel, L.M., Casteels, K., & Luykx, K. (2019).	'Let's talk about it' The role of parental communication in adolescents' motivation to adhere to treatment recommendations for type 1 diabetes	Pediatric Diabetes	110 mothers and 89 fathers of adolescents diagnosed with type 1 diabetes for at least 6 months.	Belgian	No
2	Iversen, S. A., Graue, M., Haugstvedt, A., & Raheim, M. (2018).	Being mothers and fathers of a child with type 1 diabetes aged 1 to 7 years" a phenomenological study of parents' experiences	International Journal of Qualitative Studies on Health and Wellbeing	Eight mothers and seven fathers of children with type 1 diabetes, diagnosed at least one year.	Norway	No
3	Stambaugh, J.D. (2016).	The lived experiences of being a father of a child with type 1 diabetes: A phenomenological study.	Doctoral Dissertation	Twelve fathers of children with type 1 diabetes, diagnosed at least one year. Primary requisite for children to be eighteen years or younger.	USA	No
4	Quirk, H., Blake, H., Dee, B., & Glazebrook, C. (2014).	You can't jump on a bike and go: a quantitative study exploring parents' perceptions of physical activity in children with type 1 diabetes	BMC Pediatrics	Eighteen mothers and two fathers of children with type 1 diabetes, diagnosed at least three months. Children aged seven to thirteen years. Eight of these parents were married and seventeen parents had two or more children. Recruitment of parents was done through purposeful sampling approach with snowball techniques.	United Kingdom (UK)	No

5	Boman, A., Povlsen, L., Dahlborg-Lyckage, E., Hanas, R., & Borup, K. I. (2014).	Fathers of children with type 1 diabetes: Perceptions of fathers involved from a Health Promotion Perspective	Journal of Family Nursing	Sixteen fathers of children with type 1 diabetes, diagnosed over a year. Fathers varied in educational level, occupation, number of children, duration of child's diabetes and cohabitating with the child's mother.	Sweden	No
6	Hilliard, M.E., Rohan, J., Rausch, J.R., Pendley, J.S., & Drotar, D. (2013).	Patterns and Predictors of Paternal Involvement in early adolescents' type 1 diabetes management over 3 years	Journal of Pediatric Psychology	136 families with both a participating male and female caregiver of a child with type 1 diabetes. 95.6% were from a two parent household, the remaining sample had two participating caregivers in separate households. 68.4% parents had primary college education and 75.7% secondary college education.	USA	No
7	Boman, A., Povlsen, L., Dahlborg-Lyckage, & Borup, K. I. (2013).	Swedish pediatric diabetes teams' perception of fathers' involvement: A Grounded Theory study	Nursing and Health Sciences	Pediatric Diabetes Teams from three different diabetes teams. These included: pediatric nurses, pediatricians, dieticians, social workers and psychologists. Mean duration of experience in their respective professions was 18 years.	Sweden	No
8	Hansen, J.A., Schwartz, D.D., Weissbrod, C., & Taylor, P. (2012).	Paternal Involvement in pediatric type 1 diabetes: Fathers' and mothers' psychological functioning and disease management	Families, Systems, & Health	84 mothers and 43 fathers of children with type 1 diabetes, diagnosed at least 3 months.	USA	No

Annexure E: Ethics Approval Letter (HREC)



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**North-West University Health Research Ethics
Committee (NWU-HREC)**

Tel: 018 299-1206
Email: Ethics-HRECApply@nwu.ac.za (for human
studies)

28 February 2020

RESEARCH ETHICS COMMITTEE LETTER OF DECISION: NO RISK

Based on the review by the North-West University Health Research Ethics Committee (NWU-HREC) on 28/02/2020, the NWU-HREC hereby clears your study as a no risk study. This implies that the NWU-HREC grants its permission that, provided the general conditions specified below are met, the study may be initiated, using the ethics number below.

Study title: Exploring involvement of father figures in the management of type 1 diabetes in their children: A Rapid Review

Principal Investigator/Study Supervisor/Researcher: Prof E Deacon

Student: SH Mathole- 23981946

Ethics number:

N	W	U	-	0	0	3	4	6	-	2	0	-	A	1
Institution			Study Number						Year		Status			

Status: S = Submission; R = Re-Submission; P = Provisional Authorisation;
A = Authorisation

Application Type: Single study
Commencement date: 28/02/2020

Risk:

No Risk

General conditions:

The following general terms and conditions will apply:

- The commencement date indicates the first date that the study may be started.
- In the interest of ethical responsibility, the NWU-HREC reserves the right to:
 - request access to any information or data at any time during the course or after completion of the study;
 - to ask further questions, seek additional information, require further modification or monitor the conduct of your research;
 - withdraw or postpone clearance if:
 - any unethical principles or practices of the study are revealed or suspected;
 - it becomes apparent that any relevant information was withheld from the NWU-HREC or that information has been false or misrepresented;
 - submission of the required amendments, or reporting of adverse events or incidents was not done in a timely manner and accurately; and/or
 - new institutional rules, national legislation or international conventions deem it necessary.
- NWU-HREC can be contacted for further information via Ethics-HRECApply@nwu.ac.za or 018 299 1206

Annexure F: Scientific Committee Approval Letter (Optentia)



Scientific Committee Approval for a Research Application Research using human participants, health or health-related studies

Scientific Committee Information			
Name of the scientific committee	Optentia Scientific Committee	Discipline(s)	Psychology, Social Work, Industrial Psychology, Sociology
Research Entity	Optentia Research Focus Area	Contact Person for the committee	Ms Nadia Jordaan
Faculty	Humanities	E-mail address for the committee contact person	29390915@nwu.ac.za

Study & Scientific Review Information			
Title of the study:	Exploring involvement of father figures in the management of type 1 diabetes in their children: A rapid review		
Researcher/Study Supervisor Initials, Name and Surname:	Prof. E. Deacon; Ms F. Sizane	NWU Number:	10857729; 20197772
Student Initials, Name & Surname:	S H Mathole	NWU Number:	23981946
Other Researchers involved in the study (Initials, Names and Surnames):	None		
Potential risk level for human participants:	No risk	☒	Motivate: The study entails a rapid review and no human participants are involved.
	Minimal risk	☐	
	Medium risk	☐	
	High risk	☐	
Potential risk level for children and incapacitated adults:	No risk	☒	Motivate: The study entails a rapid review. No risks for children or incapacitated adults.
	No more than minimal risk of harm	☐	
	Greater than minimal risk with the prospect of direct benefit	☐	
	Greater than minimal risk with no direct benefit	☐	
Recommendation for the REC:	Review by the research ethics committee required	☐	Motivate: Click here to motivate

Any additional comments	Motivate: Click here to enter any additional comments
Chairperson of the committee	Prof. S. Rothmann
Committee members present during the review (NB, please ensure no conflict of interest)	Prof. S Rothmann, Prof. J. Hoffman, Prof. V. Roos, Prof. M.M. Heyns, Prof. M.W. Stander, Prof. A. Fouche
Date of review	2019/12/04



Signature of Chairperson

Date: 2020/02/20



Signature of Research Director

Date: 2020/02/20

Form developed by Prof Minrie Greeff, 1 March 2017
Form updated by Prof Minrie Greeff, 31 January 2019
Form updated by Prof Minrie Greeff, 8 May 2019
Form updated by Prof Minrie Greeff, 23 July 2019
Form updated by Prof Minrie Greeff, 10 August 2019

Original details: (23239522) G:\My Drive\9. Research and Postgraduate Education\9.1.5.6 Forms\9.1.5.6_SC Approval_Human Participants.docm
10 August 2019

File Reference: 9.1.5.6