EXPLORING HEALTH INFORMATION NEEDS OF MIDWIVES TO SUPPORT THEIR CARE FOR MOTHERS WITH ANXIETY AND DEPRESSION DURING THE ANTENATAL AND POSTPARTUM PERIOD IN THE WESTERN CAPE

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ABSTRACT

Background: Mothers experience anxiety and depression during antenatal and postpartum period; midwives need evidenced-based information to improve their care services to mothers experiencing anxiety and depression during the antenatal and postpartum period.

Aim: The aim of this study was to explore and describe the information needs of midwives to care for mothers with anxiety and depression during the antenatal and postpartum period in the Western Cape.

Methods: The study employed a qualitative research approach with exploratory and descriptive design which involves interviewing professional midwives. This study was conducted at a primary health care facility in Cape Town. Purposive sampling technique was used to select twelve (12) participants. The interview guide questions, and audio recorder were used to conduct face to face interviews. Data were analyzed using thematic content analysis. Ethics approval was obtained from Biomedical Ethics Committee at the University of the Western Cape. Permission to conduct the study at Maternity unit was granted by Department of Health and the head of the health facility.

Findings: Three themes emerged from the data analysis: Midwives health information needs; source of health information; and barriers to access health information. Midwives' information-seeking behavior were hindered by multiple barriers, such as lack of access to computer and internet technology, inadequate computer knowledge and skills, time constraints and lack of resources. Midwives continue to face challenges of health information needs with regard to anxiety and depression during the antenatal and postnatal period, lack of knowledge and skills on how to explore health databases to satisfy their information needs.

Conclusion and recommendation: The study revealed that midwives did not have sufficient knowledge about a specific mental health condition, such as anxiety and depression during the antenatal and postnatal period. Midwives use colleagues, physicians as their main sources of information. Lack of sufficient knowledge and skills about using a computer, health databases, poor internet connection and lack of resources were the main barriers. It is recommended that midwives should receive in-service training on mental health conditions and supported to access and engage with multiple technology devices and sources at their clinical practice place.

KEYWORDS: Antenatal, anxiety, barriers of information needs, depression health information needs, information sources, midwives, postpartum and post-natal care.

DEDICATION

This study is dedicated to the late William Morganrood Crous who provided me with endless love and support as I undertook this academic journey. This study is also dedicated to my mom, dad, sisters and brothers who have trusted and supported me to complete this research.

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I would like to thank my Lord and Savior for granting me this opportunity to broaden my knowledge. Lord, you taught me how to love and strive; You taught me how to appreciate the trivial things in life. You are my symbol of stability; Jesus, I love you. Without You I would be nothing.

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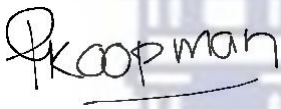
DECLARATION

I declare that this study entitled *Exploring Health Information Needs of Midwives to Support their Care for Mothers with Anxiety and Depression during the Antenatal and Postpartum Period in the Western Cape* is my own work, that it has not been submitted before for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged by complete references.

Full name: Pauline Koopman

Signed: 

Date 01/03/23

LIST OF ABBREVIATIONS

PPD – Postpartum depression

PA − Postnatal anxiety

EBP – Evidence-based practice

WHO – World Health Organisation

AD – Antenatal depression

AA – Antenatal anxiety

CPMDs − Common perinatal mental disorders NI – Nursing Information

PND − Postnatal Depression

ICT − Information, communication and technology EHR − Electronic health records

MOU - Maternity Obstectric Unit

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CHAPTER 1

OVERVIEW OF THE STUDY

1.1 INTRODUCTION

Chapter 1 presents the background information on health information needs of midwives to support their care for mothers with anxiety and depression during the antenatal and postpartum period. This chapter also presents the rationale and problem statement, the aim, objectives and significance of the study. Key concepts related to the study are defined.

1.2 BACKGROUND OF THE STUDY

Motherhood can be a difficult but rewarding task. The transition into motherhood is an essential process in the life of many women as it encompasses learning, discovery, and excitement. However, some women find the transition into motherhood frustrating due to fatigue and emotional confusion, which can lead to a condition called postpartum depression (WHO, 2020). The feelings of emotional distress and loss of control not only affect the mother but also affect the unborn child during the antenatal depression (Corrigan, Kwasky & Groh, 2015). Postpartum depression may be defined as moderate to severe depression that occurs in a woman after she has given birth (Silverman, Reichenberg, Savitz, Cnattingius, Lichtenstein, Hultman, Larsson & Sandin, 2017) and it occurs within the first six months of childbirth. A recent meta-analysis showed that about 20% of mothers in developing countries experience clinical depression after childbirth (WHO, 2020).

Anxiety and stress is often considered normal in the antenatal period but for some women anxiety can become a fundamental problem and affect their health and wellbeing (Stadtlander, 2017). Depression and anxiety are the most common psychiatric disorders during antenatal and postpartum period (Alipour, Lamyian & Hajizadeh, 2012) and the symptoms can range from mild to severe depression, which causes maternal suffering, threatens a mother's health, and constitutes an additional risk for the whole family. Diagnosing antenatal depression can also be difficult if women are only screened once throughout pregnancy. Midwives experience problems in the provision of quality health care to women suffering from antenatal and postpartum depression (Kathree, Selohilwe, Bhana & Petersen, 2014).

A study has shown that an increasing number of new mothers are being diagnosed with postpartum depression (PPD) and each midwife must attend to up to fifteen (15) patients every single day (Kathree, Selohilwe, Bhana & Petersen, 2014). Midwives also experience lack of hospital resource and healthcare information to support their care provision to mothers with PPD (Kathree, Selohilwe, Bhana & Petersen, 2014). This study focuses on the health information needs of midwives to support their care for mothers with anxiety and depression during the antenatal and postpartum period. Indeed, health professionals have reported the importance of health information and the level of impact that it is currently has, not only in nursing, but also in the whole context of healthcare provision (Corrigan, Kwasky & Groh, 2015).

This means that technological advancements, coupled with the availability of healthcare information have made nursing work much more efficient and easier to ensure the accuracy of care (Sampson, Zayas & Seifert, 2013). As described above, the number of

postpartum depression cases in South Africa is increasing while at the same time, midwives are facing a huge challenge in terms of accessing sufficient information that can guide evidence-based clinical practices and provision of high-quality care to the mothers (Stellenberg & Abrahams, 2015). However, with the technological advancements, this problem can be mitigated through integration of health information to facilitate the best evidence-based care to increase the efficiency and provision of high-quality care for mothers with anxiety and depression (Alshenqeeti, 2014). Studies exploring midwives' skills in identifying and supporting women with antenatal mental health issues have revealed lack of confidence, feelings of discomfort and lack of safety due to insufficient knowledge and skills about specific mental health condition,such as maternal anxiety and depression (McCauley et al., 2011; Ross-Davie et al., 2013; Hauck et al., 2015). Midwives lack access to evidence-based information on the diagnosis, treatment, health education and counselling skills and other credible information sources (WHO, 2020). Mothers can be well educated regarding signs and symptoms on anxiety and depression and to get help sooner. The World Health Organization (WHO) recommends that mothers receive four postnatal assessments beginning within 24 hours after birth and continuing at day 3, between days 7–14, and at 6 weeks (WHO, 2013). The first postnatal check should be conducted in the hospital prior to discharge (WHO, 2013). Assessment is essential for evaluating the mother and newborn for complications and to teach essential newborn and self-care practices (WHO, 2018).

According to Alvi (2020), information is imperative in everyone's lives because without information, we would not be able to develop our knowledge on the world. People use sources such as books, the internet, the spoken word, communication with others, and

the world around us to find information (Alvi, 2020). According to Lisbdnetwork (2022), when someone or something provides you with information, they are called sources**.** Sources of information can be people, books, files, films, literacy (Lisbdnetwork, 2022). Sources are very significant if you want to report on events or issues and explain the world to your audience (Lisbdnetwork, 2022). Lisbdnetwork (2022) asserts that information source is a source of information for somebody, for example, anything that might inform a person about something or provide knowledge to somebody. It can also be observations, people speeches, documents, pictures, organisations (Lisbdnetwork, 2022). According to Alvi (2020), information can come from virtually anywhere for example books, journal and magazine articles, expert opinions, newspapers, and websites. Different assignments require information from a variety of sources; therefore, one needs to understand where to go to find certain types of information (Alvi, 2020). Midwives frequently state that clinical practice guidelines and some websites were important information sources of information needs to support their clinical work (Barnes, Sinnamon & Giustini, 2020).

There is a shortage of professional midwives informed by international standards is detrimental to the need for universal access to high-quality care (Homer, Friberg & Dias, 2014); scaling up midwifery healthcare implies not only increasing the quantity of midwives, but also customizing evidence-based health care to fit local conditions are essential (WHO, 2015). One of the main challenges is that there are only four midwives per 10.000 populations (WHO, 2015). Few of the health professional barriers are inadequate training, in information technology and negative attitudes towards of health professionals technology (Filby, McConville & Portela, 2016). Though South Africa has implemented a primary healthcare re-engineering program to deliver services in the

communities, of which health information systems is one of the determinant components, it is still struggling with its implementation in clinical practices (Jinga, Mongwenyana, Moolla, Malete & Onoya, 2019). Another barrier involves a lack of computers, and no internet access that midwives face to obtain evidence-based information from evidence-based data bases.

Midwives do not have sufficient knowledge and skills on mental disorders such as anxiety and depression, because their training did not equipped them with mental health knowledge and skills. Lack of knowledge and skills about antenatal anxiety and PPD of the midwives has presented challenges for them to deliver quality medical care to patients suffering from antenatal anxiety and PPD (Bell, Carter, Davis, Golding, Adejumo, Pyra, Connelly & Rubin, 2015). However, inequalities in access to and experience of mental health services remain due to the lack of specialist antenatal mental health services. Despite recognition of the significance of this issue, women often do not receive the care they need and fall between the gap of maternity and mental health services (Coates, Ayers & de Visser, 2014). Coates & Foureur (2019) state that to address the gaps of maternity and mental health services there is a call for reform in the way in which antenatal mental healthcare is delivered.

Stellenberg and Abraham (2015) also illustrate that midwives lack access to relevant health information regarding PDD and often make errors (misdiagnose, misinformation) when handling their patients. Midwives do not have relevant information or updated information on maternal mental health due to lack of training and midwives do not always know where to find information regarding mental health care.

According to a study conducted by Barnes, Sinnamon & Giustini (2020) midwives reported that limited access to clinically relevant information is a key challenge in applying information in practice. Midwives lacked confidence in evidence-based practice (Barnes, Sinnamon & Giustini, 2020). The majority of midwives cared for women with mental health problems during the antenatal period in their clinical practice; however, their knowledge related to anxiety and depression during antenatal and postnatal health problems was quite limited and they lacked skills in mental health care (Higgins et al., 2018). Barriers include midwives' lack of updated training, limited knowledge related to maternal mental health conditions, confidence and inconsistent screening practices; inadequate referral system, and inefficient long waiting lists for services (Viveiros & Darling, 2019).

1.3 RATIONALE OF THE STUDY

Postnatal mothers suffering from antenatal depression and anxiety are sometimes left alone in their condition without being noticed. Mothers who experience antenatal anxiety, depression and PPD lack practical, emotional, and professional support (Gardner, Bunton, Edge & Wittkowski, 2014). The effective use of antenatal care service during pregnancy is regarded as one of the most common significant strategies that help in reducing maternal mortality (Chemir, Alemseged & Workneh, 2014). The recent decrease in global rates of maternal mortality is an indication of the fact that pregnant mothers are responding positively to antenatal care offered to them (WHO, 2015). Recently, published research reported that the overall objective of antenatal care was to assist pregnant mothers with healthcare services, including health education, and provide them with relevant information, such as routine dietary supplementation, to detect complications to prevent mortality (Hofmeyr & Mentrop, 2015). Furthermore, the idea for conducting this study was conceptualized when the researcher had to manage a mother with emotional problems particular to depression during the antenatal and postpartum period. The knowledge about

antenatal, anxiety, depression, and postpartum period that the researcher had at that time was insufficient because she lacked a deep understanding of the phenomenon of anxiety and depression during the antenatal and postpartum period. As a result, the researcher had little insight and could only offer minimal support to the mothers. Later, in the practice, the researcher began encountering several mothers with anxiety and depression during the antenatal and postpartum period. Regardless of repeated exposure, she experienced every event as different and more complex. The lack of evidence-based information as well as where to find the information needed to support mothers who had suffered anxiety and depression during the antenatal and postpartum period were becoming a challenge. Thus, the information needs of midwives at the time of providing care for mothers are crucial.

1.4 PROBLEM STATEMENT

Pregnancy is a period of elevated risk for a woman that is associated with suffering, ill health and even death, and antenatal services provide a unique opportunity to manage and decrease these risks (Gudayu, Woldehannes & Abdo, 2014). One of the main strategies used in antenatal care is health education to provide relevant health information to prevent these risks (Agus & Horiuchi, 2012; Pell et al., 2013). Depression and anxiety are highly comorbid during the antenatal period, and indeed high anxiety during pregnancy is one of the strongest risk factors for depression (Verreault, Da Costa, Marchand, Ireland, Dritsa & Khalife, 2014). Women with feelings of anxiety are at increased risk of suffering from depression during pregnancy, for example, a recent study (Mohamad, Yusuff, Tang, Binns & Lee, 2015) has found that women who had experienced antenatal anxiety were about three times more likely to suffer from depression during pregnancy. A study has shown that the general prevalence rate of depression associated with childbearing in South Africa is between 10 and 15% (Kathree et al., 2014). In 2009 study conducted by (Ramchandani, Richter, Stein, & Norris, (2009) found out that the prevalence of postnatal depression in Soweto was 16.4%. Another study identified that the pervasiveness of postpartum depression in KwaZulu- Natal was 47% (Corrigan, Kwasky & Groh,

2015). The statistical figures reported showing instances of high number of postpartum depression in South Africa, (Peltzer & Shikwane, 2011). Latest statistics show that up to 40% of mothers in Cape Town, South Africa are affected by antenatal depression (Ghaedrahmati et al., 2017). Antenatal anxiety, and depression has negative effects not only for patient themselves but also to their families and the newborn (Kathree et al., 2014). Depression has the potential to affect the parenting ability of the mother as the mother is not able to take care of the child (Choi, Sikkema, Vythilingum, Geerts, Faure, Watt & Stein, 2017). Women complain that health information given to them is insufficient or does not address their health information needs during pregnancy (Ohlendorf & Weiss, 2012). The unmet health information needs cause frustration in pregnant women, a loss of interest in antenatal visits and lead to women seeking information from other sources which are sometimes less reliable (Ohlendorf & Weiss, 2012). According to WHO (2018), health facilities often struggle with the lack and use of relevant information to provide quality of care to patients. Given that the high numbers of depressed mothers and the resultant problems they are facing, it was documented that midwives lack access to relevant healthcare information about PPD and it is one of the reasons why midwives are unable to provide quality of care for mothers with anxiety and PPD (Stellenberg & Abraham, 2015). Research shows that the access to such relevant health information for evidence-based practice by the midwives is typically not a straightforward process (Kathree et al., 2014). The lack of updating their professional knowledge and skills with relevant evidence-based health information result in the provision of poor-quality care to the mothers (Corrigan, Kwasky & Groh, 2015). The situation is worsened at a first antenatal care visit, which should be a valuable opportunity to influence the health and wellbeing of the mother and child during pregnancy, birth and beyond. To the context of this study, there was no study conducted examining the health information needs of midwives to support their care for mothers with anxiety and depression during the antenatal and postpartum period. In the context of this study, no study was found examining the health information needs of midwives to support their care for mothers with anxiety and depression during the antenatal and postpartum period. Thus, this study explores health

information needs of midwives to support their care for mothers with anxiety and depression during the antenatal and postpartum period in the Western Cape.

1.5 RESEARCH AIM

The aim of this study was to explore and describe midwives' healthcare information needs, sources of information and barriers of accessing health information to support their care for mothers with anxiety and depression during the antenatal and postpartum period in the Western Cape.

1.6 STUDY OBJECTIVES

The objective of the study was:

1. To explore health information needs of midwives to provide care for mothers with anxiety and depression during the antenatal and postpartum period.

2. To explore sources of health information preferences to provide care for mothers with anxiety and depression during the antenatal and postpartum period.

3. To explore and describe barriers of health information needs of midwives to care for mother's anxiety and depression during the antenatal and postpartum period.

1.7 RESEARCH QUESTION

1. What is the health information needs of midwives to provide quality care and services to mother with anxiety and depression during the antenatal and postpartum period in the Western Cape?

2. What are the sources of health information preference to provide care to mother with anxiety and depression during the antenatal and postpartum period in the Western Cape?

3. What are the barriers to access health information needed by midwives to provide care for mother with anxiety and depression during the antenatal and postpartum period in the Western Cape?

1.8 SIGNIFICANCE OF THIS STUDY

The findings of the study would provide relevant information about midwives needs of information while caring for mothers with anxiety and depression during antenatal and postnatal period. The findings of this study could stimulate further research to aid policymakers to equip midwives with health information technology knowledge and skills, and access to the relevant digital technology to update their knowledge and skills. This enables them to provide high quality of care to mothers to meet the needs of women with anxiety and depression during the antenatal and postpartum period. Management can also use the information to identify the needs of midwives and the challenges they are facing while delivering care to mothers with anxiety and depression during the antenatal and postpartum period. Intervention approaches can then be developed to improve service delivery to the public.

1.9 DEFINITIONS OF CONCEPTS

Postpartum depression - is a disorder that a mother suffers following childbirth, typically arising from the combination of hormonal changes, psychological adjustment to motherhood, and fatigue; also called postnatal depression (Roseinquist, 2010). In this study, it refers to mothers with postpartum depression within six months following childbirth.

Postnatal anxiety- refers to persistent and excessive worries, feelings of tension, and inability to relax (Miller, Hoxha, Wisner & Gossett, 2015). In this study, it refers to mothers who experience postnatal anxiety that occurs after giving birth**.**

Postnatal depression–refers to feelings of sadness, irritability, tearfulness, appetite changes, and sleep disturbance (Miller, Hoxha, Wisner & Gossett, 2015). In this study, it refers to postnatal depression that occurs in mothers after the birth of a baby refers to unusual amount of worry about giving birth and parenthood. Lack of energy and disturbed sleep. Losing interest in yourself or your pregnancy. Feeling emotionally detached, teary, angry, or irritable. Poor concentration. Sense of hopelessness about the future (Harding, 2017). In this study it refers to mothers who experience postnatal depression after giving birth.

Antenatal anxiety- refers to worrying thoughts that keep coming into the mother's mind.–worrying that something may be wrong with her baby. Sometimes this leads people to start avoiding situations for fear it may reoccur. One can also feel constantly restless, 'on edge' and irritable (COPE, 2021). In this study, it refers to mothers who experience antenatal anxiety before give birth.

Evidence-based Practice (EBP) – refers to the diligent use of current best evidence in making decisions about patient care (Sackett, Straus, Richardson, Rosenberg & Haynes, 2000). In this study, it refers to the healthcare information obtained from relevant sources to provide evidence-based care for mothers with antenatal and postnatal anxiety and depression.

Postnatal Care - In this study, it refers to is the care given to the mother and her newborn baby immediately after the birth and for the first six weeks of life (Baston & Hall, 2009). In this study, it refers to a care provided by midwives to mothers during postnatal period at public health facilities.

Antenatal care- is defined as a unique routinely preventative healthcare service offered to pregnant women of reproductive age in public and private healthcare facilities (Hofmeyr

& Mentrop, 2015). In this study, it refers to a care provided by midwives to mothers before birth at public health facilities.

Information needs- refers to often understood as an individual or group's desire to locate and obtain information to satisfy a conscious or unconscious need (Wilson, 1981). In this study, it refers to the needs of relevant healthcare information, such as the needs of up-to-date information on diagnosis, treatment, patient education, counselling, referral systems or knowing how to search for relevant evidence-based information to care for mothers with anxiety and PPD.

1.10 THESIS OUTLINE

Chapter 1 Provides background of the study: it provides the background information on health information needs of midwives to support their care for mothers with anxiety and depression during the antenatal and postpartum period. it also provides rationale and problem statement of the study, the aim, objectives and significance of the study

Chapter 2 Presents a literature review: the literature review relates to the heath information needs of the midwives during antenatal and postnatal period, sources of health information and barriers to access to health information needs of midwives

Chapter 3 Research methodology: This chapter presents the research methodology applied to conduct the study, which includes the research approach, research design, the study setting, the target population of the study and the sampling procedure and sample size, including the trustworthiness of

the study, and data collection procedure, data analysis and finally ethical considerations

Chapter 4 Presents the findings of the study: This chapter provides the data analysis.

process and a description of the researcher's account of the data offered. in terms of the themes and subthemes that emerged during data analysis

Chapter 5 Discussion of the findings: This chapter provides the discussion of the findings in relation to current relevant literature and conclusions drawn from the discussion of the findings

Chapter 6 This chapter provides a summary, the limitations and recommendation and conclusion of the study

1.11 Summary of the chapter

Chapter one presented a general overview of the study. It covered the introduction, background, rationale, statement of the research problem, purpose and objectives of the study, established the significance of the study, definition of terms, and outline the thesis chapter.

The following chapter presents the literature review.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

Chapter 1 provided an overview of the study, identified the research problem, aim and objectives, definition of terms as well as significance of the study. Chapter 2 presents the literature review related to the heath information needs of the midwives during the antenatal and postnatal period, sources of health information, and barriers to access health information needs of midwives. This chapter also presents the conceptual framework that underpins the study and reviews the relevant literature. Lastly, a conclusion of the chapter is provided, highlighting the main review findings and gaps that were identified.

2.2. LITERATURE SEARCH STRATEGIES

This chapter explores the literature on numerous factors that have been reported in numerous studies as influential in information needs and information-seeking behaviors and barriers hindering information needs. The following data bases and websites were searched for relevant literature information: CINHAL, Medline, PubMed, Ebscohost, EMBASE and Cochrane library. CINAHL stands for the Cumulative Index to Nursing and Allied Health Literature, and the *CINAHL* A combination of journals, scholarly articles, and grey literature, and books were included in the literature review. The researcher searched for literature from direct access journals, such as BMC library, Research Articles, and other sources from Academic journals, as well as Google scholar, PubMed Health and Research Gate for relevant articles applicable to the study.

The key words used to navigate through the literature were information needs and midwives; information-seeking behavior and midwives; information preference and midwives; midwives' information needs and anxiety and depression; midwives' information-seeking behavior and anxiety and depression; information preference and midwives; source of information and midwives; and barriers of information needs.

2.3 INFORMATION NEEDS AND INFORMATION-SEEKING BEHAVIOUR

Information that is needed is a requirement that drives people into information seeking. Information need evolves from an awareness of something missing, which demands the seeking of information that might contribute to understanding and meaning. People search for information because they have an information need. When something is lacking, there is a demand for information that forces you to look for data that can help you understand and make sense of it (Kuhlthau, 1993). There are two types of information needs: general and specific. General information refers to current information on interesting topics, while specific information entails problem solving and solution finding (Smith,1991). Information should instead be viewed as a construct or instrument that helps to meet fundamental human wants rather than as a need in and of itself (Ikoja-Odongo & Mostert, 2006). Meeting information demands is a dynamic process, and latest information requirements may arise because of knowledge obtained (Kuhlthau, 1991; Kebede, 2000).

Information seeking is used to remedy the "inadequacy," which can appear as a gap, scarcity, uncertainty, or incoherence. Information seeking is a complicated process that combines social, linguistic, and interactive activity (Kajtazi, 2012). According to Wilson (2002), information need is the deliberate seeking of information to achieve specific objectives, while Johnson (1997) defines information needs as the purposive acquisition

of information from selected information sources. Case (2002) describes information needs as a deliberate endeavor to obtain information in response to a need or knowledge gap. Kuhlthau (1991) conceives of information seeking as a user's proactive attempt to make sense of information to increase their level of knowledge about a specific subject or issue. Health information-seeking behavior in healthcare delivery includes activities such as search, finding and using of information related to diseases, health-threatening factors and health-related activities performed by health professionals (Lalazaryan & Farashbandi, 2014).

Because of this, finding information is not always an effortless process. It is a method of problem-solving that includes the steps of problem identification, problem articulation, source selection, query creation, search execution, results analysis, information extraction, and reflection (Marchionini, 1995). Those seeking information can be responsible for their own processes or work through or with intermediaries. Wilson (1999) defines information-seeking behavior as any activity in which an individual may identify his or her need for information, seeks out such information in some way, and may engage in using or transmitting that information (Jervelin & Wilson, 2003:2). All research assumes that there is an underlying model for the phenomenon under study, whether implicitly or explicitly assumed. Eiko I. Fried (2020) they believe that models are broader than scientific theories because it provides the basis for the premises of theory formation and provides the conceptual and methodological tools for forming hypotheses and theories.

2.4 HEALTH INFORMATION NEEDS OF MIDWIVES

Many health professionals including midwives seek information from several types of sources that is necessary to improve knowledge on prevention, diagnosis, education, counselling, and complications (Lalazaryan & Zare-Farashbandi, 2014). In the context of this study, antenatal and postnatal visits of mothers to their primary care provider are

often driven by the need to receive diagnostic and/or therapeutic information from their healthcare provider based on the signs and symptoms the patient may be experiencing. It is evident that information on an illness or medical conditions, such as diagnosis, and treatment are common information needs for most healthcare providers (Lalazaryan & Zare-Farashbandi, 2014). While midwives are not expected to be experts in mental health or mental health interventions, they do need the knowledge and skills necessary to identify women at risk and to discuss a range of perinatal mental health problems (Carroll, Downes, Gill, Monahan, Nagle, Madden & Higgins, 2018).

Pregnancy and childbirth is a major developmental period in a woman's life. Access to useful and relevant information in this period is crucial for expectant mothers (Kamali, Ahmadian, Khajouei & Bahaadinbeig, 2017). Preparation for prenatal care can effectively reduce the adverse outcomes of pregnancy for both mother and foetus (Kamali, et al., 2017). Health 2020 highlights midwives as having key and increasingly important roles to play in society's efforts to tackle the public health challenges of our time, thereby ensuring the continuity of care and addressing peoples' rights and changing health needs (WHO, 2013). According to Ndosi & Newell (2010), nurses need access to reliable evidence-based information to allow them to exercise professional judgment in the best interest of their patients. This study is focusing on evidence-based information needs, so that midwives use the best available evidence for clinical decision making when providing care to patients (De Leo, Bayes, Geraghty & Butt, 2021). Midwives, therefore, have a need for information that is accessible, of excellent quality, up-to-date, manageable, and relevant, as well as information services that assist nurses in finding that information (Lundgrén-Laine et al., 2013; Younger, 2010).

Maternal health information refers to information women require during pregnancy, childbirth and during the postpartum period (WHO, 2017). It also implies knowledge communicated or received concerning circumstances of preventive, curative or palliative

health care (Salali & Owino, 2016). The role of information to women and their information needs is innumerable (Mumba, 2015). Bates (2010) explains that when the term 'information' is used in the world of information behaviour research it is assumed to cover all instances where individuals interact with their environment in such ways that it leaves some impact on the individual which adds to existing knowledge or adjusts one's knowledge. Ehikhamenor, as cited in Emmanuel and Jegede (2011) notes that an information need could be alluded to as the degree to which information is obtained to solve problems, in addition to the degree of expressed satisfaction or dissatisfaction with the information found. Professional midwives, including those working with antenatal and PPD in other dynamic environments need to keep current relevant information for practice to render quality healthcare services and improved patient outcomes (Matlala & Lumadi, 2021).

According to Kathree et al. (2014), midwives need information that is accessible, excellent quality, relevant, and manageable, including information services to help them with the management of mothers with anxiety and depression during the antenatal and postpartum period. Midwives should have access to evidence-based information on diagnosis, treatment, education and counselling skills and other credible information sources to enable them to increasingly participate in nursing informatics training opportunities (World Health Organization, 2015). Both a woman and her baby should receive care with respect and dignity, and a woman and her family should have access to the social and emotional support of their choice. The development of new knowledge and technologies requires deliberate efforts to ensure that clinical practice keeps pace with innovations WHO (2000). Evidence-based outcomes shape policy and practice directions to support nursing practice and knowledge development (Doran, 2011). McLachlan et al. (2011) evaluated communication skills, an education package for midwives and found that the training increased self-reported comfort and competency of

midwives to recognize and care for women with psychosocial issues during the postnatal period.

The internet is a global network 'information superhighway' that enables computers and other communication gadgets to communicate directly and transparently (Computer Hope, 2010). Internet is defined as a global broadcasting capability, a system for information broadcasting, and a means for interaction and collaboration between individuals and their communication devices, irrespective of their geographical location (Ajuwon, 2015). The internet is an immensely popular and important source of health information for both healthcare professionals and patients, as it offers formal access to high quality, huge volume, current, and relevant healthcare information (Lagoe & Atkin, 2015).

Continuing education and professional development mitigate outdated practice and protects the public (Weaver, Newman-Toker & Rosen, 2012). In this way, midwives should be considered to have an impact on the health of the community (Biro, 2011).

Surveys have indicated that most internet users in the world have used the internet to get health information (Bujnowska-Fedak, 2015; Burrus, Werner & Starman, 2017). Developments in internet access and improvements in performance due to innovative technologies have made the internet the focus of many new healthcare improvements (Burrus, Werner & Starman, 2017; Aardoom, Dingemans, Spinhoven, Roijen & Van Furth, 2013; Laugesen & Hassanein, 2015; Biruk & Abetu, 2019). As a result, the internet is having a significant impact on health and health care, as it has the potential to advance the healthcare delivery and support the decision making of healthcare providers (Kantor, Bright & Burtchell, 2018).

High quality maternal care consists of care led by midwives for all women who need care at every stage, i.e., for normal pregnancy, birth, and the postnatal period (WHO, 2021). The midwife cares for women by making decisions based on their clinical need, values, and preferences, using evidence-based practices that will ensure optimal care are provided (WHO, 2021). In short term and long term, pregnancy and early years have a decisive impact on the health and wellbeing of mothers, children, and families. The midwife, therefore, plays a vital role in helping to ensure not only the immediate health of mother and baby, but in their future health and wellbeing and that of society (Royal College of Nursing, 2014).

Michael, Makarfi, Goshie and Jimada (2014) emphasize that technological advancements have unfolded new avenues for the creation, storage, access, distribution, and presentation of information. Developing informatics competencies enable clinicians to comprehensively understand the value of ICT (Information Communication and Technology) and its potential impact on patient safety and other important patient and organizational outcomes, as opposed to simply mastering procedural skills to operate technology (Nagle, 2013). Studies regarding the health information needs of nurses revealed limited access to information and a high demand for value-added information services that help nurses to find excellent quality, up-to-date, manageable, and relevant evidence (Lundgrén-Laine et al., 2013). Fenwick et al. (2018), in evaluating an outcome of a counselling training intervention for midwives, established that training improved midwives' knowledge, skills, and confidence to counsel women on psychosocial issues significantly, for example, training on counselling skills, training on diagnoses and treatment and training on varied management of complications of delivery, pregnancy, preeclampsia, haemorrhage, fetal distress, maternal exhaustion. Midwives' needs is an information demanding industry, in which quality and timely information is a critical source (WHO, 2022). Computer systems are used within most healthcare units such as medical

practices, pharmacies, pathology and radiology services and hospitals (Coyne , Amory , Gibson , & Kiernan, 2016). According to Coyne, Amory, Gibson, & Kiernan (2016) however, numerous information interactions between healthcare workers are still paper based. This, is associated with ineffectiveness of data entry, the struggle of sharing paper-based records between clinicians, loss of the physical record, difficulties in reading handwriting, the potential for error, and the difficulties in extracting information from large paper files. Uneven access to information technology across healthcare and aged care facilities and between the professions are all due to lack of access to computers and internet facilities (Coyne , Amory , Gibson , & Kiernan, 2016). Information needs of health professionals are categorized as follows Andualem, Kebede & Kumie (2013) :

- Confirm or update existing knowledge through review.
- Assist in solving a new or unfamiliar patient care problem.
- Obtain information from another colleague or team when dealing with a patient or person with multiple problems.
- Highlight and communicate a particular patient care concern to other members of the healthcare team.
- Find out about or clarify a rare or unusual patient care problem from review or another team member.
- Determine whether a knowledge gap exists in the literature and whether a new research project or publication should be planned; or
- Assist in implementing new administrative or organizational initiatives.

2.5 MIDWIVES' INFORMATION NEEDS DURING POSTNANATAL AND ANTENNAL ANXIETY AND DEPRESSION

Depression causes maternal suffering, threatens a mother's health, and also constitutes an additional risk for the whole family. Untreated antenatal and postpartum depression can have significant consequences for both mother and child (Jarde, Morais, Kingston, Giallo, MacQueen & McDonald, 2016; Madigan, Oatley, Racine, Fearon, Schumacher, Akbari & Tarabulsy, 2018). Psychiatric disorders are a leading indirect cause of maternal morbidity and one of the main causes of death in the postpartum period (Knight, Nair, Tuffnell, Shakespeare, Kenyon & Kurinczuk, 2017; Wisner, Miller & Tandon 2019). The consequences are far-reaching - PPD remains the second leading cause of direct deaths occurring during pregnancy and up to a year after its end; 1 in 7 women who die by suicide die in the period between six weeks. Despite the high prevalence of PPD, deficiencies in proper care that women received, mostly from midwives, were widely reported (Jones, Creedy & Gamble, 2012). The training and education of midwives might not prepare them adequately for their role (Jones, Creedy & Gamble, 2012). This is supported by studies that have assessed midwives' levels of knowledge and learning needs, which conclude that midwives generally do not have the necessary knowledge and skills to provide mental health care (Higgins, Downes, Monahan, Gill, Lamb & Carroll, 2018; Lau, McCauley, Barnfield, Moss & Cross, 2015). Midwives consistently report limited access to training and information to provide mental health care (Legere, Wallace, Bowen, McQueen, Montgomery & Evans, 2017; Noonan, et al., 2018). Midwives caring for mothers with postnatal and antenatal anxiety and depression called for exquisite health information needs, skills, and training on diagnosing and treatment, decision making, and the ability to understand as well as form the opinion on the sustainability of evidence, all while being in partnership with the childbearing

woman, keeping her at the centre of care, and promoting optimal health and wellbeing (Legere et al. 2017).

2.5.1 Information needs during antenatal period

According to the national Department of the Health (2015), midwives need information during the antenatal period on providing education and counselling to clients and partners on the danger signs in pregnancy, nutrition, child feeding and weaning, sexually transmitted diseases, HIV, delivery, new-born, and child care.

According to the national Department of Health (2015), during the antenatal period pregnant women usually develop anxiety and feel unwell as they are pre-occupied with the discomfort of pregnancy. Midwives need information on providing appropriate counselling, advice and services to pregnant women requesting termination of pregnancy (Department of Health, 2015). Information needs on delivering uncomplicated pregnancies and recording all information on cases and outcomes of deliveries correctly in the register and to ensure registers are kept up to date. The antenatal care includes screening for pregnancy problems, assessment of pregnancy risk, assessing the mental status, and provision of information to pregnant women and support for women to make pregnancy and birth a positive life experience (Department of Health, (DOH, 2015). Antenatal care also provides routine preventive care to pregnant women to aid in the development and delivery of a healthy child (Department of Health, (DOH, 2015). While screening is effective in identifying women at risk of poor antenatal mental health outcomes, the current service system is fragmented (Bayrampour, Hapsari & Pavlovic, 2018). Most women reported that their mental health needs are mostly left unaddressed (Royal College of Obstetricians and Gynaecologists, 2017). Mclnerney and Suleman (2010) discovered a considerable number of barriers encountered by healthcare practitioners in implementing evidence- based practice in a South African health

institution, which included lack of knowledge pertaining to EBP, lack of access to research findings, insufficient evidence, and insufficient time.

2.5.2 Information needs during postnatal period

Half of all postnatal maternal deaths occur during the first week after the baby is born, and the majority of these occur during the first 24 hours after childbirth (WHO, 2014). The leading cause of maternal mortality in Africa – accounting for 34 percent of deaths – is hemorrhage, the majority of which occurs postnatally (WHO, 2014). The World Health Organization (WHO, 2015) defines the postnatal period as the first six weeks after birth – a period that is critical to the health and survival of a mother and her newborn. The most vulnerable time for both is during the hours and days after birth. Lack of care in this time may result in death or disability as well as missed opportunities to promote healthy behaviors, affecting women and newborns. WHO (2015) recommends integrated postnatal care that includes?

- Identification and management of problems in the mother and the newborn.
- Counselling, information, and services for family planning.
- Health promotion for the newborn and mother, including immunizations, advice on breastfeeding, postnatal bleeding

According to Coates & Foureur (2019), midwives need information regarding facilitating family and group support of women and need to respect the concerns of women. Midwives need to provide evidence-based information on postnatal care and danger signs in the new mother and baby tailoring it to the specific needs of the depressed postnatal woman (Coates & Foureur, 2019). Information needs to provide support to women with depression, such as postnatal counselling is a safe space for mothers to

express ‘inconvenient’ emotions that may arise after birth and where they can share difficulties dealing with their role of mother (Coates & Foureur, 2019). Through the gentle guidance of the midwives, women will then find renewed inner resources to deal with this new part of their identity; their sense of competence and adequacy will be strengthened, and they will feel confident as mums (WHO, 2023). Postnatal counselling will facilitate a good relationship with, and a healthy attachment to, the baby (WHO, 2023).

2.6 MIDWIVES HEALTH INFORMATION SOURCES

Literature evidence has shown that most healthcare providers use multiple sources to address information needs while providing health care to patients (Clarke, 2016). The Practice Standards for Midwives stipulate that midwives should access to evidence-based information sources to provide women with sufficient, evidence-based information to empower them to make informed decisions about their care and the care of their babies (Kloester, Willey, Hall & Brand, 2022). Informed decision making is a vital component of midwifery philosophy and a core recommendation of the global respectful Maternity Care Charter; however, women and midwives report a lack of informed decision making in actual practice (Kloester, et al., 2022). For any meaningful information to be provided, relevant sources of information must be available so that the information sought is ideal to enable meaningful decision making (Yusuf, 2012). Midwives require access to professional information to answer questions that arise in clinical practice and to update and extend their professional knowledge. They also need to access consumer health information to provide or to discuss with patients and families, since patient education is an important aspect of nursing work in many contexts (Gilmour, Huntington, Broadbent, Strong & Hawkins, 2012; Jones, Schilling & Pesut, 2011). Most researchers reported that colleagues, physicians, mass media, internet-data bases were commonly used as sources of information by healthcare providers.

2.6.1 Physicians/colleagues as source of information

Interprofessional communication in healthcare is characterised as the process of different professional groups working together (on a common task), to positively impact patient care which they serve as a source of information to one another. (Reeves, Pelone, Harrison, Goldman & Zwarenstein, 2017). Information communication involves regular negotiation and interaction between professionals, valuing the expertise and contributions that various disciplines bring to patient care Reeves, Pelone, Harrison, Goldman & Zwarenstein, 2017; Willumsen, 2016).

A study conducted indicate that more health workers first turn to their colleagues (55%) second only to asking their managers. Colleagues' learning can be a powerful development tool (Palmer & Blake, 2018). According to Kosteniuk, Morgan & D'Arcy (2013), colleagues in the main patient care setting were the top sources of health information for the purpose of making specific clinical decisions. Colleagues in the main patient care setting were most physically accessible (easy to access) for health information source.

2.6.2 Mass media as source of health information

The use of mass media such as radio, television, newspapers, and magazines as sources of health information was reported in a study by (Hossain, Islam & Mohammed, 2012). Most people use mass media extensively as sources because they are found to be cheaper and more affordable than other sources of information. In the twenty-first century, communication and engagement will include the use of social media: "social media and most importantly, that's where our patients are going to get information about their health" (Prasad 2013: 492). Many midwives stated that video is a

good means of health information as it helps to see a live birth take place or to see things visually (Sally, 2022). Many midwives prefer visual information than theory reading because many midwives do not like reading (Sally, 2022).

2.6.3 Internet, and online databases

The general assumption is that Internet access, at least in principle, is universal (Miller, Graves, Jones & Sievert, 2010; McKenna & McLelland, 2011). The impact of the internet on the healthcare profession has increased as healthcare professionals use it more often to stay informed about the new development and up to date on recent improvements in their respective specialties (Lialiou & Mantas, 2013; McInnes, Gifford, Kazis & Wagner, 2010).

Practicing midwives need to learn about EBP, for instance, by exploring information from health databases, such as MEDLINE, PubMed, CINHAL and use of EBP protocols (WHO, 2021). There are electronic guidelines, protocols, and e-books to consult for their information needs as sources of health information (WHO, 2022). Midwives can also access the evidence-based health information from the following publications: journal articles, policy statements, research organizations such as WHO, UNICEF and reports on health education needs of pregnant women were searched and accessed electronically using the following search (engines and or database: Google Scholar, PUBMED, CINAHL and Science Direct (Wagner, 2016).

2.7 Barriers to health information needs

A systematic review has identified that structural, political, and financial constraints are important barriers to access health information needs in low-income countries

(Akhlaq,et al., 2016). The lack of data in decision making, insecurity, lack of training and poor infrastructure were also major challenges in information needs of health professionals (Kruse,et al., 2014). These barriers can be overcome through the combination of leadership, use of low-cost technologies, and alignment with national and local initiatives that are dependent on data generating (Akhlaq, 2016). Furthermore, the barriers are related to lack of access to information, inadequate information, limited usefulness and usability of the technologies, challenges associated with using multiple health IT, and technical problems (Carayon, Hundt & Hoonakker, 2019). Holen-Rabbersvik (2018) identified barriers related to the lack of Electronic Health Record (EHR) usability, inadequate workflow processes, digital systems incompatibility, the understanding of needs in different systems and knowledge and practices regarding privacy, and confidentiality information needs arise out of situations pertaining to a specific task that is associated with one or more of the work roles played by the actors (Holen-Rabbersvik, 2018).

Other factors that influence midwives' information needs include lack of time, lack of knowledge on certain illnesses or diseases, not enough training or skills, attributes, and circumstances, such as age. (Clarke et al., 2016). Although the information alone cannot grantee healthy behavior, having enough related information can facilitate positive changes in people's health-related behaviors (Wang, Viswanath, Lam, Wang

& Chan, 2013). Barriers of information needs related to lack of access to computer and internet, support from colleagues, lack of time, workload, access to relevant evidence-based books or journals, lack of knowledge and skills on how to operate with computer, and access to health databases and socio-demographic variables such as age, hinder the accessibility and utilization of information (Clarke et al., 2016)

2.7.1 Age of health professionals

Many older professional nurses are reluctant to learn new technology and to read up more to update their knowledge. There is a belief that young nurses are more capable and that they are still fresh; they could also not overwork their brains (Fedele, 2021). Many older nurses have the mindset that they do not need to learn new things or new ways (Gilmour, Huntington, Broadbent, Strong & Hawkin, 2012). According to Stichler (2013), older nurses might start to experience sensory limitations related to vision and hearing acuity and risk contracting chronic illnesses. Personal health concerns and limitations are common issues faced by older nurses (Stichler, 2013). Older nurses also tend to report more physical pain; some indicated chronic neck, shoulder or back pain, while others suffered from pain associated with musculoskeletal disorders or arthritis (Stichler, 2013).

2.7.2 Limited access to training on the use of information technology

According to Russell & Alpay (2016), Information technology (IT) is an integral part of the development and delivery of health services. The effective use of health information technology is the vehicle to reduce the barriers to high-quality care. Healthcare professionals, including nurses and midwives are in need of appropriate educational training to enable them to use IT adequately, however, nurses have had less access to IT training and fewer opportunities to benefit from IT (Russell & Alpay, 2016). Furthermore, little evidence is found in the literature on the current situation of IT training needs and requirements for nurses (Russell & Alpay, 2016). Many studies have shown that midwives consistently report limited access to training on information technology on how to explore relevant health information to provide quality of health care to pregnant mothers (Legere, et al., 2017); McCauley, Elsom, Muir-Cochrane Lyneham, 2011; Noonan et al., 2018; Ross-Davie, Elliott, Sarkar & Green, 2013). On the other hand, it was reported that the reasons for the labour ward midwives persist with non-evidence-

based practices and resistant to change are due to lack of updated training (Muda, Fahy & Hastie, 2013).

2.7.3 Lack of time to search for information

Many health professionals reported lack of time to access electronic (databases and/or internet) sources and this is considered as one of the most significant barriers to meeting the information needs of midwives (Bell and Anderson, 2016). Emma and Biza (2016) report that midwives faced momentous time constraints, which left them feeling that they could not spend the necessary time with the women to meet their pregnancy needs. The midwives felt unsupported in their attempts to deliver adequate midwifery care, speaking about lack of accessible support for pregnant women and were left feeling responsible to fill the gaps in service provision (Emma & Biza, 2016). Midwives perceive numerous barriers, including lack of time to carrying out their tasks in a timely and effective manner (Julie et al., 2019). In many cases, nurses lack the time, tools and training to perform essential nursing tasks, to deliver high-quality care, and duties are left undone (Ball, 2015). According to White, Aiken, & McHugh (2019) found that 72% of nurses reported missing one or more necessary care tasks on their last shift due to lack of time or resources. According to Hjelen and Sagbakken (2018), shortage of time is one of the main barriers to searching for, reading and assessing professional and research articles, At the same time, the findings show that time allocated to working in an evidence-based manner is not always used as intended and that spare time is regarded as sacred (Hjelen & Sagbakken, 2018).

2.7.4 Midwives lack of knowledge and skills on ICT

It also discusses where midwives need to develop in their use of technology to meet the needs of the women and families they work with and provide evidence-based care to pregnant women. Dalton et al. (2014) reported that the major barriers that midwives lack

knowledge and skills on ICT in clinical practice related to a lack of time, difficulty accessing computers, and social and cultural considerations whereby there was a perceived lack of peer and managerial support for using ICT in the workplace. According to Bau (2018), strategies need to be developed to ensure that obstacles to midwives using ICT are addressed. Healthcare professionals are lacking the digital skills necessary to work in today's increasingly technological society (Bau, 2018). A lack of information technology skills and access affects nurses' use of research evidence (Bau, 2018).

2.8 CONCEPTUAL FRAMEWORK

A conceptual framework is described as a set of broad ideas and principles taken from relevant fields of enquiry and used to structure a subsequent presentation. Wilson (1999) describes a model as a framework for thinking about a problem which may evolve into a statement of the relationships. Bates (2010) states that models are most valuable at the portrayal and expectation phases of understanding a reality or fact, in the society. “Wilson's model of information-seeking behavior was actually born out of a need to focus on the field of information and library science on human use of information, rather than the use of information systems and sources. Wilson’s (1999) information behavior model had been developed to describe information behavior; what information behavior research encompasses. Wilson proposed a so-called nested model of information behavior, which illustrated how broad the field of information behavior is and how many sub-areas it encompasses (Wilson, 1999). He described information behavior as an onion, which contains of at least three layers. In the inner layer, Wilson put information search behavior, which is understood as information retrieval or interactive information retrieval. Information searching takes place in a database, while seeking, the next layer, can take place everywhere else. In the all-embracing layer, Wilson put what he defined as information behavior that embraces all kinds of human interactions with information.

Active research exchange between the layers, between information retrieval and seeking, but also between seeking and the more general behavioral research groups are still sparse (Tamine-Lechani, Boughanem, & Daoud, 2010). According to Wilson (1999), human needs can be divided into three contexts which can be the individual, the social context, and the individual's environment which may also affect or inhibit information seeking also referred to by Wilson as barriers. Bates (2010) states that 'information behaviour' is presently the desired term used to explain the numerous ways in which human beings engage with information, the ways in which people seek and utilize information. Wilson described information behavior as those activities a person may engage in identifying his or her own needs for information, searching for such information in using or transferring that information, but subsequently described information behavior as the totality of human behavior in relation to sources and channels of information, including both active and passive information seeking and information use (Wilson, 1999).

Robson and Robinson (2013:184-185) reported that several factors affect information behavior which have emerged from the models of information behavior: context- the environment in which an information actor operates. This included location, social influences, culture, activity-related and work role-related factors, finances, and technology. International studies indicate that research in information behavior has occupied information scientists, since before the term information science was coined (Wilson 1999). The advent of the new century has created innovative challenges in the healthcare settings; great emphasis is directed towards technology to deliver innovative therapies at the bedside, and to interpret substantial amounts of quality-related outcomes data in the executive boardroom (Godsey, 2015). The current expanded use of computers and information systems in health care means that all healthcare workers, especially nurses will need to interface with multiple technological sources to either enter or extract data to aid them in caring for patients (Gonen, Sharon, Offir & Lev-ari, 2014; Benner,

Sutphen, Leonard & Day, 2010). The information behavior model, as illustrated by Wilson, suggests that information-seeking behavior emanates because of a need perceived by an information user, to satisfy that need, makes demands on formal and informal information sources or services, which may lead to failure or success in finding the relevant information (Wilson, 1999). The models in the information behavior, as argued by Moodley (2014), attempt to describe the information-seeking activity, the causes, and consequences of the activity as well as the relationship among stages in information-seeking behavior. The model provides practical insights into the behavior of both users and providers of information and the factors that influence the use and its patient satisfaction. Thus the figure below depicts information needs, source of information and barriers of information needs towards the utilization of health information in patient care.

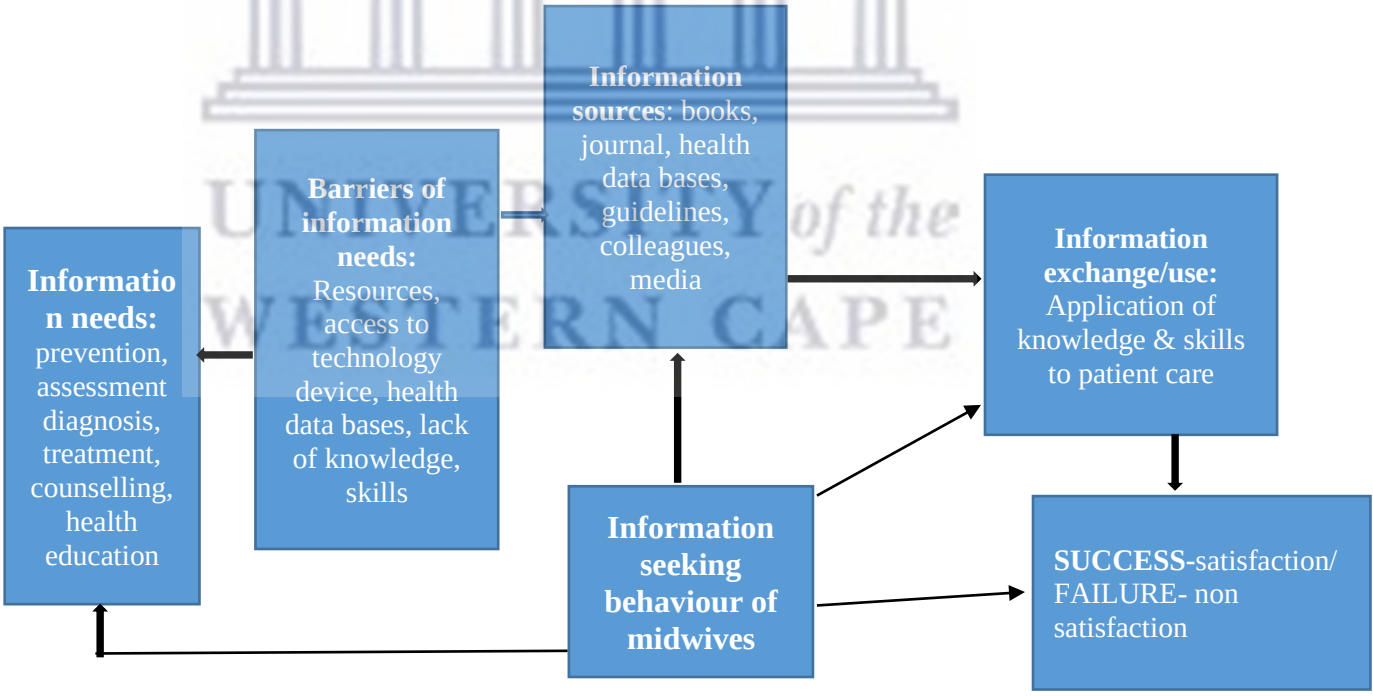

Figure 1: Adapted from Wilson Information Behavior Model (1999)

2.8.1 Application of the conceptual framework

Wilson's (1999) model of information behavior was appropriate for this study as it guided the study to illustrate information needs, information sources, and barriers to information needs, in caring for mothers with antenatal and postnatal anxiety and depression (Murray et al., 2010). Wilson (2000) describes it as the totality of human behavior in relation to sources and channels of information, including both active and passive information use. A conceptual model information behavior is therefore applied as a means of specifying the direction of the study (Järvelin & Wilson, 2003:4). A study identified that if patients' information needs are not satisfied, patients will turn to other sources of information to satisfy those information needs (Clark et al., 2015). Pettigrew, Woodman & Cameron (2001) refer to information behavior as the study of how people need, seek, give and use information in different contexts, including the workplace and everyday living. Knowing one's own information needs and information-seeking behavior will assist to effectively satisfy patients' expectations, which could promote informed clinical decision making and lead to increased quality of patient care. In this regard, the Information Behavior Model by (Wilson, 1999) is critical in explaining the information needs of midwives on the assessment, diagnosis, management and prevention of anxiety and depression during the antenatal and postpartum period.

The Information behavior model illustrates that information-seeking behavior emanates from formal and informal information sources or services which may lead to failure or success in finding the relevant information (Wilson, 1999). There are various sources of information midwives access and utilize for their clinical practice. In this study, the information behavior model (Wilson, 1999) guided on how the optimal information usage

meets the information needs of midwives while providing care for mothers with anxiety and depression during the antenatal and postnatal period.

According to Robson and Robinson (2013), there are several barriers that affect the application of information behavior, for instance, context- in which an information user operates, which includes location, social influences, culture, and work-role-related barriers, finance constraint, and technology. The information behavior conceptual framework was applied to this study to explore information need, sources of information, and barriers to information needs. The conceptual framework guided the data collection, analysis and the discussion of the findings of the study.

2.9 Summary of the chapter

Midwives have health information needs for assessment, diagnosis, intervention and treatment, education and counseling, referral, and emergency skills. Midwives need executive, clinical, professional growth, and health information needs to be meet. Services and devices need to be in working condition and made available, and training for capturing, accessing, transmitting information between services providers or colleagues need to be provided. Numerous information sources were used daily in healthcare facilities among midwives, such as media, colleagues, databases, internet. However, the barriers included lack of computer knowledge and skills, age of health professionals, lack of time, limited training on ICT, unreliable network access, unreliable information sources − these are structural, individual and systemic challenges. The chapter discussed the conceptual framework applied to the study.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology applied to conduct the study. This includes the research approach, research design, the study setting, the target population of the study and the sampling procedure and sample size. The chapter also presents the trustworthiness of the study, the interview guide questions, data collection procedure, data analysis and finally, ethical considerations of the study are also discussed.

3.2 Research approach

Qualitative research describes and analyses human experience in detail and seeks to understand the interpretations and motivations of people (Grove, Burns & Gray, 2016). The researcher chose a qualitative research approach to get more in-depth information from the participants to get their point of views on the matter, and allow them to express themselves. With quantitative research approach participants are limited to their opinions due to it being a questionnaire, participants cannot express themselves. According to McLeod (2021), qualitative research is the process of collecting, analyzing, and interpreting non-numerical data, such as language. Qualitative research can be used to understand how individuals subjectively perceives and give meaning to their social reality (McLeod, 2021).

3.3 Paradigmatic assumption

Denzin and Lincoln (2008) define a paradigm as a worldview philosophy and perspective that guides the researcher in their judgements and actions. Paradigms are classified as influential constructs that support the following philosophical assumptions: meta-

theoretical (ontological); considered as reality, theoretical (epistemological); insight that is gained from the research and methodological assumptions; suitable methods to utilize to direct the research (Guba & Lincoln, 1994: Polit & Beck, 2017:738, Ling & Ling, 2017). Assumptions are values that are accepted as the truth (Polit & Beck, 2017).

3.3.1 Ontology

Ontology refers to the reality or essence of the study, which incorporates the concept of various realities of the participants under study. A qualitative study is supportive of multiple realities (Polit & Beck, 2017; Creswell & Poth, 2018). From the onset of the study, the researcher intended to chronicle the multiple realities of the midwives' information needs as meaningful data. This was accomplished using quotes from the sample study to depict the unique information needs in caring for mothers with anxiety and/or depression, which resonated with the objectives of this study.

3.3.2 Epistemology

Creswell and Poth (2018:18) explain epistemology as the concept of being aware of actuality, which directs one to discern what is unknown becomes known (Holloway & Galvin, 2017:21). This is supported by the unique views through which knowledge becomes known by the subjective experience of each participant. The researcher was able to apply this qualitative study and gain insight and knowledge on what was unknown, namely, midwives' information needs while caring for mothers with anxiety and/or depression during the antenatal and postnatal period (Creswell & Poth, 2018:21). The aim was to explore and describe midwives' healthcare information needs, sources of information and barriers of accessing health information to support their care for mothers with anxiety and depression during the antenatal and postpartum period and how participants constructed their knowledge as ascribed to their experiences and interactions with daily clinical information needs in decision making.

3.3.3 Constructivism

The constructivist approach is born out of education and sociology in which, individuals are seen as actively constructing an understanding of their worlds, heavily influenced by the social world(s) in which they are operating (Bates, 2005). Constructivist approach to information behavior research treats the individual's reality as constructed within their own mind rather than built by the society in which they live (Talja, 2007). The constructivist metatheory makes space for the influence of society and culture with social constructivism, which argues that, while the mind constructs reality in its relationship to the world, this mental process is significantly informed by influences received from societal conventions, history and interaction with significant others (Talja, 2007). For this study, the qualitative research method was chosen for a deeper understanding of the phenomena. And also to explore the feelings and experiences regarding access and barriers to access relevant health information while providing care to antenatal and postnatal mothers. Qualitative research allows researchers to get deeper insight into the fundamental problem as presented by the participants' natural voice.

3.4 Research design

A research design is the process of finding solutions to set objectives in a systematic way. An appropriate design to solve problems is a prerequisite for a true solution to a problem (William, 2011). An exploratory and descriptive research design was used in this study. Exploratory research tends to tackle recent problems on which little or no previous research has been done (George, 2021). Exploratory research focuses on the phenomenon of interest by pursuing the research question (George, 2021). In this study, exploratory research will help to have a better understanding of the problem.

Researchers who conduct a descriptive investigation observe and describe e.g., human experiences (George, 2021). A descriptive design may be used to identify problems with

current practices or justify current practices (Burns & Grove, 2007:240). Descriptive research can be explained as a statement of affairs as they are at present with the researcher having no control over (George, 2021).

In this study, descriptive research will help to describe the condition more completely. Creswell (2013:300) uses the term research design to refer to the entire process of research, from conceptualizing a problem to writing the narrative, not simply the methods such as data collection, analysis, and report writing. Creswell (2013:37) states that to study a problem, qualitative researchers use an emerging qualitative approach to inquiry and the collection of data in a natural setting sensitive to the people and places under study. Reasoning is inductive and the data analysis indicates themes that include the voices of participants, the reflexivity of the researcher, and the interpretation of the problem (Creswell, 2013:37).

3.5 Research setting

Grove, Burns & Gray (2016) explain the setting as the location where a study is being conducted. The study was conducted in the Delft Maternity Unit situated Northern Tygerberg Region of Cape Town. Delft Maternity Unit see pregnant patients from N2 Gateway, Belhar, Wesbank, Blikkiesdorp, Kalkfontein, Sarepta, Kuils River and Connifers, including Mfuleni and Phillippi who are dependent on the essential health services offered at the unit. Both units consist of ten beds and offer the normal antenatal services and specialised antenatal services, such as Kangaroo Mother Care, Phototherapy for babies with jaundice and deliveries.

The current antenatal service attends to an average total of 1350 clients per month of which about 350 are new pregnancies (Western Cape Government, 2019). Delft maternity division has 150 deliveries per month.

3.6 Population

Grove, Burns & Gray (2016) explained population is the total number of units from which data can potentially be collected. According to Grove et al. (2013), a population is a particular group of people or type of elements that is the focus of the research and who meets sampling criteria A population is the entire group of objects or persons that the researcher is interested in during his/her research (Brink, Van Der Walt & Van Rensburg, 2012). Alshenqeeti (2014) describes a population as a collection of individuals or objects known to have similar characteristics. The study population is therefore comprised of registered midwives providing antenatal and postnatal care at primary healthcare institutions in the Western Cape. The location was Delft Maternity Unit. Delft Maternity Unit has fourteen (14) midwives, of which eleven (11) are females and three (3) are males, while three (3) work in the Antenatal clinic and sees patients suffering from depression. The unit has permanent midwives working shifts, four (4) midwives working night shift, (four) 4 midwives working day shift, while two (2) midwives work opposite shifts.

3.7 Demographic profile of the participants

Demographic information was considered essential as it provides a socio-cultural descriptive profile of the factors that contribute to the experiences of midwives. The age, current position, years of experiences, qualification and gender were recorded.

Age	Current Position	Years working in Nursing Profession	Qualification	Gender
25	Midwife	2	Nursing Diploma	Male
26	Midwife	3	Nursing Degree	Female

27	Midwife	3	Nursing Degree	Male
28	Midwife	4	Nursing diploma	Male
29	Advance midwife	7	Nursing Diploma, Nursing Management, Primary health care	Female
32	Midwife	10	Nursing Diploma, Nursing Education, nursing management	Female
35	Advance midwife	10	Nursing Degree	Female
36	Advance midwife	10	Nursing Degree	Female
38	Midwife	10	Nursing Degree	Male
44	Advance midwife	10	Nursing Degree	Female
54	Midwife	12	Nursing diploma	Female
55	Advance midwife	15	Nursing degree, nursing management	Female

Table 4.1 Demographic profile of midwives

3.8 Inclusion and exclusion criteria

Inclusion criteria − midwives that have worked for more than one year at primary health care facility were included in the study. Exclusion criteria − midwives who were not working with antenatal and PPD, nursing assistants, enrolled nurses and other health professional were not included in the study.

3.9 Sampling and sample size

A sample is a proportion of the defined population who is selected to participate in a study and is intended to reflect all characteristics of that population (Burns & Grove, 2016). According to Stellenberg and Abrahams (2015), sampling refers to the process of selecting a sample from a group of items, objects, or people from a larger population. A sample is a part or fraction of a whole, or a subset of a large set, selected by the researcher to participate in a research study (Brink, Van Der Walt & Van Rensburg, 2012). The sample size refers to the number of subjects, events, behaviors, or situations that are examined in a study (Burns & Grove, 2016).

The study utilized purposive sampling technique to select the study participants. Creswell (2014) defines purposive sampling as a non-probability sample where the participants are selected based on the characteristics of the population and the objective of the study. In this research study, purposive sampling was used to select twelve (12) participants from one of the maternity units in the Western Cape.

3.10 Interview guide question

In qualitative research the interview guide questions act as a prompt, reminding the interviewer of necessary topics to cover questions to ask, and areas to probe. The interview guide questions developed the objectives of the study. Example of the interview guide question is: Tell me your experiences about the health information you needed while providing care for mothers with anxiety and depression during the antenatal and

postpartum period? Examples of a probing question: Explain what information you may need to know related to anxiety and depression during the antenatal and postpartum patient diagnosis? What information you may need to know related to the treatment of anxiety and depression during the antenatal and postpartum period? The interview guide was pilot tested to determine its clarity, and the time it would take to address the objective of the study, to understand the current healthcare information needs of midwives to care for mothers with anxiety and depression during the antenatal and postpartum period. The interviews lasted 30 to 40 minutes and the responses were directly recorded on a tablet.

3.11 Pilot study

A pilot study is defined by Powers and Knapp (2006) as a preliminary study carried out before the actual study starts, to test the data collection tools. It was proceeded to identify if any loopholes were in the interview guide questions and to correct unclear questions. A pilot study was done at Delft Maternity Unit. This is a governmental hospital that admits and manages low-risk patients. The researcher selected a sample of two (2) midwives. The midwives who took part in the pilot study were not included in the major study. Input about the layout of the interview guide questions was received and changes were made accordingly.

3.12 Data collection procedure

Information in the form of facts is one of the essential raw materials of research and these facts are called data which a researcher uses to understand the phenomenon of the world around him (Lawal, 2009). “Data refers to information which researchers collect in order to find answers to the particular questions they are asked” (Bertram and Christiansen, 2014:63). The researcher provided the participants with a written document outlining the details of the study. Semi-structured interviews were used in this study. Interviews were conducted face-to-face by the researcher and the language use for the interviews was

English. The interview guide questions (Appendix C) were posed one by one to individual participants. The probing question was used to clarify relevant issues and for deeper understanding of the matter under investigation. In this study, the interview focused on the health information needs of midwives to support their care for mothers with anxiety and depression during the antenatal and postpartum period. Interviews were conducted in a place agreed by both the participants of the study and the researcher. Guest, Bunce & Johnson (2006) define data saturation as the point when no current information or themes are observed in the data. In this study, data collection was continued until data saturation was reached. The researcher visited on various day and nights shifts, to contact all the midwives on the establishment. Data collection took place over a 4-week period.

3.13 Field and observation notes

The researcher observed participants' reactions and behavior during interviews. The written notes of these observations are called field notes (Gray et al., 2017:257). Field notes is a method to obtain more data for analysis that can deepen the knowledge and comprehension of the phenomena (Pacheco-Vega 2019:2). Field notes contribute to the rigor of the study, improve, and enrich data and data analysis. Moreover, shortcomings during the interview could be recognized when reviewing field notes and recorded interviews (Nieuwenhuis, 2016:94). During the transcription of interviews, the nonverbal content can be added thereby enriching the findings (Phillippi & Lauderdale, 2018:386).

3.14 Data analysis

Data analysis is the technique used to reduce, organize, and give meaning to data (Burns & Grove, 2016). "Analysis" means the categorizing, ordering, manipulating and summarizing data to obtain answers to research questions therefore the purpose of analysis is to reduce data to an intelligible and interpretable form so that the relations of research problems can be studied, tested and conclusions drawn" (De Vos, Strydom,

Fouché & Delport, 2005:218). All the data were analyzed so that the relation to the study could be determined. Data were analyzed qualitatively using the ATLAS, ti.7 software. The interview information was transcribed verbatim and analyzed using thematic content analysis. Thematic analysis is the process of identifying patterns or themes within qualitative data. Braun and Clarke (2006) provide a six-phase data analysis framework. Step 1: Become familiar with the data, Step 2: Generate initial codes, Step 3: Search for themes, Step 4: Review themes, Step 5: Define themes. Step 6: Write-up. This is the most useful approach, in the social sciences, at least, probably because it offers such a clear and usable framework for doing thematic analysis. The response from respondents was critically compared after all interviews were completed in the most efficient manner possible. Analysis by the researcher was employed to first determine the experiences of midwives in healthcare information needs to provide quality care and services (Alshenqeeti, 2014). Then, it proceeded to identify the accessibility to relevant information in caring for mothers with anxiety and depression during the antenatal and postpartum period in the Western Cape and lastly, were barriers were identified that limit midwives' access to relevant healthcare information.

3.15 Trustworthiness

Trustworthiness refers to establishing validity and reliability of qualitative research (Taylor, Bogdan & DeVault, 2016). Trustworthiness is one way in which researchers can persuade themselves and readers that their research findings are worthy of attention (Nowell et al., 2017). Lincoln and Guba (1985) suggest that trustworthiness is all about establishing credibility, dependability, confirmability, and transferability. These four criteria of trustworthiness are discussed below:

3.15.1 Credibility

Guba and Lincoln (1989) stated a study is credible when it presents faithful descriptions and when readers recognize the experience when they are confronted by it. The credibility was attained by first explaining to the participants the importance of the study and being true and accurate to the participants. The study findings were analyzed and compared with other research findings to ensure that the results are credible. Member checks were conducted by allowing the participants the opportunity to peruse through and confirm the findings.

3.15.2 Transferability

Transferability refers to the extent to which the results of one research in one context can be applied to another context and setting (Elo et al., 2014). Alshenqeeti (2014) defines transferability as the degree to which the findings of a qualitative research can be generalized to other contexts. To ensure transferability, the researcher provided a detailed description of the research context and a detailed description of the phenomenon under study.

3.15.3 Dependability

Dependability describes whether the facts involved in the study can be used by other researchers or peers to repeat the study, even without the intention of attaining the same results (Elo et al., 2014). The concept of dependability from the view of Alshenqeeti (2014) is based on reliability or repeatability. It examines whether the same results can be obtained in subsequent studies conducted under the same conditions. To ensure that this research study is dependable, the researcher provided a detailed description of the methodology used throughout the study. Furthermore, the supervisor verified the processes and the procedures used by the researcher.

3.15.4 Conformability

Conformability, according to Creswell (2014), refers to the extent to which results can be corroborated by others. The conformability was addressed by ensuring that an audit trail is kept in order that decision making, conclusions and recommendations drawn from this study can be traced back. This was safeguarded by ensuring that field notes, memos, transcripts, and reflective reports are kept safe.

3.15.5 Reflexivity

Reflexivity is the process of re-examining the researcher's own biases, preferences and preconceptions that could affect the collection, analysis, and interpretation of data (Gray et al., 2017:65). The researcher had an 'insider' status relative to the topic, as she was a nurse working at primary health care facilities. Therefore, the researcher had to reflect on her preconceptions in terms of what she assumed and already knew or experienced. Through reflecting and bracketing, the researcher was able to set aside her prior ideas and /or experiences related to the topic for the duration of data collection and analysis (Gray et al., 2017:66). To ensure consistency in the reflexivity, the researcher also held discussions with peers to reveal her own hidden beliefs, values, perspectives, and assumptions. The reflexive journal was consulted consistently throughout the data collection process and analysis (Amankwaa, 2016:122).

3.16 Ethical considerations

The study ethics was approved by the Biomedical Research Ethics Committee (see Appendix 1). The researcher obtained permission from the Department of Health to conduct the research at a primary healthcare facility. The researcher informed the participants of the purpose and the aim of the study (see Appendix 2). Participants were informed that they could withdraw from the research process at any stage and that this would not disadvantage them in any way. Participants were offered an opportunity to ask questions for clarifications related to the study.

The researcher observed all the fundamental ethical principles that guide social science and health research (autonomy, rights to privacy and confidentiality, justice, and protection from risk and harm). Each participant signed a consent form before participating in the study.

3.16.1 Right to privacy

Informants were provided with an Information Sheet (see Appendix 3) and that included the purpose of the study and an explanation of the right to privacy, as well as the benefits and risks associated with the study, and the data collection methods and process. Participants determined where, when and under what circumstances their confidential information was shared. Participants agreed on a quiet room for interviews, at a time that was convenient to them and ensure their privacy. Precautions were taken to protect their privacy in data collection and storage. Participants could acquire their data at any time and could refuse access to whoever they want (Gray et al., 2017:168). The participants' identities were not linked with the collected data, and they were assured of their anonymity by giving a code for their transcripts and their names would also not be used in any publication (Ellis, 2016:53). The researcher conducted the interviews in a place and time that were convenient to them. Analysis and reporting were handled in a way so that no other person would be able to link the names of the informants with the interviewees.

3.16.2 Right to protection from harm

The researcher has an obligation to protect the participants from any harm (Gray et al., 2017:173). Participants are considered as individuals with diminished autonomy, and they need extra protection. During research process, participants may experience physical discomfort by becoming tired or bored, and experience psychological discomfort by discussing their experiences with strangers or discussing their cultural, social, and economic background (Gray et al., 2017:173). In the occurrence of distress, participants

were allowed to discontinue and be referred for debriefing and counselling at no cost to them. Participants were reminded that there would be no remuneration or penalty for taking part in the study or withdrawing from taking part to the study at time. The researcher respected all agreements made with the participants. The risks were continuously examined and there were no risks experienced during the data collection process. Participants were not forced to be interviewed; they were requested to indicate their willingness to participate in the study by signing a consent form. However, there were no participants had experienced any psychological or physical discomfort.

3.16.3 Right to confidentiality

All information collected throughout this study was treated as confidential (Brink, 2006). Assurance was given to participants of the confidentiality of their information. No names were mentioned during the reporting of the data or in publications. Participants' names were substituted with codes. The interview transcripts, and the audio records were strictly handled by the researcher and the supervisor. The researcher did not collect any other data outside of the scope of this study. The data collected is secured safely, the electronic transcriptions are stored on a computer disk top and are password encrypted and the hard copy of the data are stored in the cabinet with key and lock for five years, after which the electronic data will be deleted from the computer and the hard copy of the data will be shredded.

3.16.4 The Principle of Justice

This principal mandates that all individuals taking part in the study be treated with fairness and equality. Purposive sampling was used with specific inclusion criteria to select participants, which ensured fairness in the selection process. This ensured justice was established and no participant was subjected to any biased treatment (Dhai, & McQuoid-

Mason, 2011:15). All the participants were treated equally during the interview process. The study did not have any potential risks.

3.16.5 Summary of the chapter

This chapter dwelt on elaborating the research approach, method and design, study setting and population, and sampling techniques. The process of data collection methods were used in the study described. The ethics issues related to data collection and trustworthiness of the study ensured.

CHAPTER 4

PRESENTATIONS OF RESEARCH FINDINGS

4.1 INTRODUCTION

This chapter presents the findings of the data analysis. The objectives of the study was to explore and describe midwives' healthcare information needs, sources of information and barriers of accessing health information to support their care for mothers with anxiety and depression during the antenatal and postpartum period in the Western Cape. The population of the study was registered midwives at a maternity unit in the Western Cape. All registered midwives, who met the inclusion criteria for this study, were purposively selected to participate in the study. A total number of twelve (12) registered midwives signed an informed consent and participated in the study.

4.2 OBJECTIVES OF THE STUDY

The results address the objectives of the study which were:

1. To explore health information needs of midwives in the Western Cape to provide care for mothers with anxiety and depression during the antenatal and postpartum period.
2. To explore sources of health information used by midwives to provide care for mothers with anxiety and depression in the Western Cape during the antenatal and postpartum period.

3. To explore and identify barriers of health information needs of midwives to care for mother's anxiety and depression in the Western Cape during the antenatal and postpartum period.

4.3 THEMES IDENTIFIED IN THE INTERVIEWS

The themes that emerged from the data and the respective subthemes which form the main findings of this study are presented in Table 4.3 below. The emerged themes are midwives' health information needs, source of health information and barriers to accessing health information. Theme one has three (3) subthemes: Midwives knowledge about antenatal and postnatal depression; midwives' health information training needs; and counselling skills needs. Theme two has three (3) subthemes: healthcare professionals as a source of health information; internet technology, and guidelines and protocols as a source of information. Theme three has six (6) subthemes: Midwives' knowledge and skills of computer; access to workplace internet connections; midwives lack of experiences; accesses to relevant health information; limited resources available at healthcare facilities; knowledge of midwives about health databases; and constraints of time to explore health information needed to care for mothers. The following table shows the themes and subthemes emerged from the qualitative data analysis. It also shows the application of the conceptual framework to the themes developed.

Table 4.1 Themes and subthemes emerged from the analysis

Wilson Information Behaviour Model: conceptual framework	**Themes**	**Subthemes**
Information behaviour: human information needs at individual, level	4.1 Midwives health information needs	1. Midwives' knowledge about antenatal and postnatal depression 2. Midwives' health information training needs 3 Counselling skills needs
Information seeking: The act of actively searching for information from selected sources to satisfy certain goals	4.2 Source of health information midwife use for caring mothers	1. Healthcare professionals as source of health information 2. Internet technology 3. Guidelines and protocols as a source of information
Barriers at individual, societal and environmental affect or inhibit information needs and information seeking behaviour of a person	4.3 Barriers of midwives' access to health information	1. Midwives knowledge and skills of computer 2. Access to workplace internet connections 3. Midwives lack of experiences accesses to relevant health information 4. Limited resources available at healthcare facilities 5. Knowledge of midwives about health databases 6. Constraints of time to explore health information needed to care for mothers

Table 4.1 Themes and subthemes

In this section the identified themes and subthemes are described and interpreted, and quotations from participants are provided as part of the evidence. In the description of the theme and subthemes the researcher used the alpha numeric code, M01, M02 where “M’ denotes ‘midwife participant’.

4.4. THEME 1: MIDWIVES’ HEALTH INFORMATION NEEDS

Midwives work in a dynamic setting and need to keep up to date with essential information for practice in nursing to render quality care to mothers and their babies. Keeping up to date with present health information is often challenging because of substantial workload, different information needs and the unavailability of the required information at the point of care. Health information needs relate to the extent to which the healthcare service providers require evidence-based information to care for mothers and babies to improve desired health outcomes. Participants expressed that they did not have sufficient information about the treatment of anxiety and depression experienced by antenatal and postnatal mothers. It is highly likely that they will miss the diagnosis and use incorrect management. Participants stressed that their knowledge is outdated, and they never went for training to update their knowledge about anxiety and depression. Participants also expressed that midwives lack knowledge and skills on how to explore health information related to their daily practice. Participants had the following to say in this regard:

> *…health information needed for midwives to provide adequate information to patient about the use of treatment correctly. Lack of experience without empathy because we do not deal with anxiety and depression cases a lot, but I think the skills and knowledge I have about anxiety and depression are outdated that is a*

problem with the facility as they do not send us for training to update our knowledge. Lack of information cause patient not to use treatment (M02).

...due to the lack of health information, we cannot fully care and treat the mothers with antenatal and postnatal anxiety and depression, we need knowledge on how they should be getting treated and cared for (*M01).*

Midwives have a need for health information because at times it seems they are clueless when it comes to antenatal and postnatal anxiety and depression, especially when depression and anxiety is a reality as many mothers have been experiencing it.

4.4.1 Subtheme: Midwives knowledge about antenatal and postnatal anxiety and depression

With an increase in mental health illnesses, mental health nursing has become a diverse profession. With this diversion and increases in mental health illnesses, especially postnatal and antenatal anxiety and depression, midwives have a need for information to stay up to date with the assessment and management of antenatal and postnatal anxiety and depression. Some participants also stated that midwives have received no updated information or training on managing mothers with anxiety and depression during the postnatal and antenatal period. Participants asked a question: How can midwives educate patients if the midwives lack information with regard to mental health illness? Most participants expressed that they only have limited insights with regard to mental health illness but insufficient knowledge with regard to antenatal and postnatal anxiety and depression. The following are extracts are from participants in this regard:

…I mentioned earlier, there is no updated information. We did not go for training for exceptionally long time. I do not recall going on any training, since I have been here 2016 (M02).

…I do not have sufficient knowledge and skills working with anxiety and depression mothers. Now how can we educate our patients if the midwives have lack information; I have a few insights with regards to mental health illness. But it is not enough regarding pre and postnatal depression and anxiety due to all my patients I am working with are different cases of anxiety and depression every day (M05).

…they need to provide us with some sufficient knowledge and skills to treat anxiety and depression patients (M07).

Participants pointed out that obtaining adequate and sufficient information will allow them to deal with patient's multiple problems.

4.4.2 Subtheme: Midwives health information training needs

Participants expressed that they had limited mental health skills and knowledge, there were lack of access to training and education to deliver good mental health care for antenatal and postnatal mothers. Most participants have expressed the need for training on counselling skills and knowledge on diagnosis and treatment. Some participants expressed that they did not have any training in mental health illnesses, and they require mental health training on antenatal and postnatal depression. Participants explained that more in-depth service training is needed on mental health knowledge, which is currently lacking. The following statements were made by many participants:

> *…again, need training on mental health, so yes, the need for training, like I said, training on databases, to be available online and computer or so, that is supposed to exhibit it should be easily exist, suitable for us to access information needed. For us to use if we need to get any information. So yes, I think they something that needs to be worked on, we need to address the issue of we need more information (M02).*

> *…We need to have a full training on postnatal depression. More in-depth service training, this is something that is lacking is the mental health knowledge Okay, the reason is that because we are not well trained for such situations or conditions (M01).*

…I do not have any training in mental health illnesses. I can improve in my knowledge if training is provided. (M07).

…. Would love more training on diagnosis and treatment and referrals to the next level of care relating to the severity of the illnesses in antenatal and postnatal anxiety and depression in mothers (M09).

4.4.3 Sub-theme: Counselling skills needs

Midwives sometimes meet with mental health situations in which they have limited knowledge, skills, and experience, yet are not always able to access suitable counselling services for clients. Participants expressed that sometimes they feel they are out of their depth when it comes to counselling mothers who experience anxiety and depression in the antenatal and postnatal period. Additionally, participants expressed that they do not have sufficient skills in counselling, particularly patients experiencing anxiety and depression. The following are extracts from participants:

…as a midwife we do not have in depth counselling skills in mental health. I think we will always need more counselling skills. We do have basic skills to counsel patients that appear with any mental illness (M03).

… I personally do not have the skills in counselling patient with anxiety and depression (M06)…. I do not have any in depth counselling skills (M09.) Midwife does not have in depth counselling skills in mental health (M011).

…we as midwives sometimes feel we are out of our depths when it comes to counselling skills in anxiety and depression mothers in antenatal and postnatal period(M07).

Participants have also expressed that due to their lack of counselling skills they cannot fully care and treat mothers with antenatal and postnatal anxiety and depression. Midwives felt ill-equipped to deal with mental health challenges when it comes to counselling mothers experiencing anxiety and depression during the antenatal and

postnatal period. Moreover, participants have also expressed that they believe they will benefit from specialized counselling training.

4.5. THEME 2. SOURCE OF HEALTH INFORMATION

Midwives seek information from several types of sources. Midwives work with a multi-disciplinary team where they get health information from other healthcare professionals if they need additional information regarding anxiety and depression during the antenatal and postnatal period. At health practices, a doctor or someone who specializes in the fields, (a psychiatrist, and psychologist) can provide information when asked for assistance or guidance. Most participants expressed that primarily they consult with healthcare workers such as doctors, mental health nurses at the prominent level of care for further intervention. Some participants stated that nowadays they use their cell phone to explore health information needed to provide care for the patient, such as information on treatment, information on signs and symptoms of illnesses. Most participants use Google to explore health information, however, this is always at their own cost, as computers in the healthcare facilities are not always available for healthcare professionals or there is no internet connection. The following are extracts from the participants in this regard:

> *A doctor or someone that specializes in those fields, a psychiatrist, psychologist provide information you asked or just guide you (M04).*

> *Consult with healthcare workers such as doctors, mental health nurses at the prominent level of care for further intervention. Information technology would be my cell phone. I Google everything due to our computers is not always in working order and no internet connection. So that is why I use my cell phone for treatment information and signs and symptoms of illnesses (M05).*

Midwives, most of the time, use cell phones due to doctors possibly being busy with other medical emergencies that the doctor cannot attend to queries from midwives immediately,

hence, they make use of their cell phones to search for health information to help mothers experiencing anxiety and depression in the antenatal and postnatal period.

The following subthemes emerged for several types of sources of information which midwives use during their healthcare services: healthcare professionals, internet technology, and guidelines and protocols.

4.5.1 Subtheme: Healthcare professionals as a source of information

Midwives are part of a multi-disciplinary team that works together with several healthcare professionals to provide patient care. Participants have expressed that depending on the need of the patient's condition, either they consult physicians regarding the diagnosis and treatment of the patient, or psychologist or social workers. Participants stated that they are unable to fully counsel mothers with antenatal and postnatal anxiety and depression due to their lack of counselling skills. Participants also expressed that mothers are not getting treated and cared for because many times mothers come with lots of other dilemmas that are beyond their intellectual skills and understanding of counselling skills, therefore, mothers are referred to the appropriate healthcare professional which is part of a multidisciplinary team to attend to the patient holistically. Participants stated they have one psychologist that will link on to mental health and obviously, the patient will first be referred to the social worker for counselling and then be referred directly to the psychologist because the patient needs to be assessed. Participants stated that they normally refer the patients with anxiety and depression to the social worker because the social worker do deeper counselling with patients. Participants stated that most of the times they phoned the tertiary institutions like Karl Bremer Hospital and Tygerberg Hospital to ask for a doctor's opinion on medical health illnesses. The following are some of the extracts in this regard:

We normally refer them to social workers and psychologists. Most of the times we phoned the tertiary institutions like Karl Bremer Hospital and Tygerberg Hospital to ask for doctor's opinions (M01).

…we refer the patient with anxiety and depression to the social worker. Social Worker does deeper counselling with patient (M09).

… I have one psychologist that will link on to mental health and obviously, the patient will first be referred to the social worker, also have counselling and then refer directly to the psychologist because the patient needs to be assessed (M012).

…due to the lack of counselling skills, I cannot fully counsel mothers with antenatal and postnatal anxiety and depression, how they should be getting treated and cared for because many times mothers come with lots of other dilemmas that is beyond our intellectual skills and understanding of counselling skills, that is why we refer them to the appropriate healthcare professional which is part of a multidisciplinary team to sort patient out holistically (M05).

4.5.2 Internet technology

Internet technology is becoming increasingly essential as a source of information to guide practice and manage patient care. Midwives use internet technology to deliver care and improve services. They seek information from the Google site which is a source of information for many participants. Some participants stated that they use their cell phone to search for health formation and for signs and symptoms of illnesses, and for diagnosis. Most participants stated that their popular website is Google; they access it on their cell phone for additional information and for management, and guidelines regarding management of certain conditions of illness. A participant stated that she makes use of Google for information needs to obtainThe following are some of the extracts from participants in this regard.

…Internet technology would be my cell phone. I Google everything due to our computers is not always in working order and no internet connection. So that is

why I use my cell phone to look for health formation and for signs and symptoms of illnesses for diagnosis (M05).

…Most of the time I use my cell phone for information about treatment, management, and diagnosis. We are currently using Google on our cell phone for additional information and for management and treatment, so I make use of the internet mostly for information or getting more insight on an illness or treatment (M06).

…I make use of Google for information needs to give me guidelines regarding management of certain condition of illness, especially during the day like over lunchtime, our cell phones are extremely helpful than even the internet service connection here with Wi Fi is also not exceptionally reliable (M02).

… use my cell phone to get information on the diagnosis and treatment and management of the illnesses are helpful. I do not have data do not get me wrong, we do have computers, but it is not in use for internet technology (M09).

4.5.3 Guidelines and protocols as a source of information

Midwives need information that is accessible, of excellent quality, up-to-date, manageable, and relevant, as well as information technology that can assist nurses in finding this information. Midwives mostly seek information from books, guidelines and protocols which is their main sources of information. Most participants stated that they make use of protocols and guidelines that are available in the facility and in the maternal guidelines and BANC protocols. Most participants stated that clinical books, guidelines- and protocols are the source of health information. A participant expressed that many of the midwife's skills overlap with their nursing and medical colleagues and that they seek additional sources of health information from other healthcare professionals. The following are some of the extracts in this regard:

… then I use my protocols and my guidelines that I use in the facility and in the maternal guidelines, the BANC protocols, and those things (M05).

… Clinical books, our guidelines, are the source of health information; doctors and other health professions (M010).

…many of the midwife's skills overlap with our nursing and physician colleagues and that is they seek additional source of health information from other health care professionals (M01).

Participants expressed that their guidelines, protocols, and books assists them a lot when it comes to diagnosing and treating mothers with anxiety and depression in the antenatal and postnatal period.

4.6. THEME 3: BARRIERS TO ACCESS HEALTH INFORMATION

Midwives experience difficulty in accessing various information resources. In this regard, there is a lack of internet connection, lack of knowledge on databases, inadequate computer knowledge, time constraints and lack of resources, which all acts as barriers for accessing relevant health information. Other midwives mentioned telephone lines not always working, which disrupted their daily routine and work activities, and they are unable to communicate to tertiary level of care, for additional advice and transferring critically ill patients for further management. The following are subthemes that emerged from the analysis: midwives' knowledge and skills of computer workplace internet connection; midwives' access to relevant information; limited resources in the health facilities; knowledge of midwives about health databases; and constraints of time.

4.6.1 Subtheme: Midwives knowledge and skills of computer

Midwives expressed that some of them do not even know how to use a computer; they lack knowledge regarding computers, and skills on how to search information using computers, while others indicated that they did not have access to computers at their workstation. Most participants suggested that they need computer training to gain computer knowledge and skills to help them search for treatment information from the

relevant healthcare databases. The following are some of the extracts from participants in this regard:

> *… many of us as midwives do not have computer knowledge or skills; we do not even have working computers in the process, we are not well informed about computer(M05).*

> *…we lack knowledge regarding computers, and how to information search on computers. We need computer training to get to know how to operate a computer (M09).*

> *… they need to send us for computer training to get insight on computer knowledge, and to help us search treatment information by using computer (M03).*

Many midwives expressed that computer knowledge and skills are relevant to facilitate patient care. They emphasized the need for computer training to help them with patient treatment and management.

4.6.2 Workplace internet connections

Midwives did not have internet connection at their workplace to explore relevant information needed during clinical practices. Lack of internet connection do not allow midwives to view important blood results which a client was expecting to receive, and this delayed the care of the client. Many participants stated they have no internet access at their workplace; they make use of their own data to access internet for information needs. It is very costly to download relevant health information using own data. Most participants stated that the internet is not used to get information needed or treatment, but it is used to book appointments and to check blood results. Most participants stated that the internet is always unstable, because a lot of the time the server of the system is offline, which makes it difficult to function effectively.

The following are some of the extracts from the participants in this regard:

…*there is no internet access at workplace, they make use of their own data to access internet for information needs (M06).*

…internet is not making use of information needed for treatment it is used to book appointments and to check blood results (M07).

The computer internet is always offline which makes it difficult to function effectively. The computer system is a barrier, because a lot of the time the server of the system is offline, so our computers is always offline (M08).

4.6.3 Midwives access to relevant health information

Midwives experience lack of access to relevant health information to provide holistic care to clients. As a result, clients are not getting proper information regarding illness and treatment. Most participants stated, in terms of technology unfortunately, although midwives are making use of their cell phone for relevant health information needed, that it was not enough. Participants mentioned that due to lack of relevant health information the quality of their service delivery was not up to standard, which includes the lack of proper health information to mothers in antenatal and postnatal care who are experiencing anxiety and depression. Most participants expressed that not having access to relevant information makes them feel unskilled and unsupportive to mothers with anxiety and depression during the antenatal and postnatal period.

The following are some of the extracts from the participants in this regard:

In terms of technology unfortunately, midwives are making use of their cell phone for relevant health information needed (M03).

Due to lack of relevant health information, lack of service delivery, lack of proper health information to mother in antenatal and postnatal with anxiety and depression (M08).

We do not have access to relevant information, which makes us feel unskilled and unsupportive to mothers with anxiety and depression during antenatal and postnatal period (M07).

4.6.4 Limited resources in the health facilities

Midwives state that resource constraint is one of the top challenges they are facing in their work environment, and they do not have a clear guideline to manage patients with anxiety and depression, which is a challenge because they cannot function sufficiently to deliver comprehensive care to clients. Some of the participants expressed that they had limited resources in the facility and as a result, in most cases, they had to refer patients who are at risk even if they are experiencing depression and anxiety. Most participants stated because of workload, they did not have sufficient times they can give to the patient information, and they do not have clear guidelines in the facilities regarding the management of mothers with anxiety and depression. Participants explained that due to resource constraints, they do not have databases and did not go on training and computers are always offline. Most participants stated they do not have Wi-Fi to access Google or other useful health information. Below are some of the extracts from participants in this regard:

Well, my experiences what I have noticed, we have limited resources in the facility, we must in most cases, refer patients who are at risk even if depression and anxiety. And like I said, because of our workload, there are certain times we can give the patient information, but we do not have clear guidelines in our facility, how to treat to manage those patients with anxiety and depression, but to refer the patient to our social worker and at the facility. And all places have lack of staff and resources people just start stop complaining of lack of needs to managers (M02).

Most of the time the lines or internet are not working, or lines has been stolen. Telephones are not working, so there is no way that you can phone to other clinicians to get more information (M06).

Due to resource constraints, we do not have internet databases. We do not go on training and computers are always offline. We do not have Wi-Fi to access Google or other useful health information (M08).

Many participants expressed that counselling women in crisis can become particularly difficult when a midwife is unable to access appropriate resources.

4.6.5 Knowledge of midwives about health databases

Health databases is a structured set of data that is online as a very quick and easy way to find health information. Many midwives who were interviewed stated that they do not know what healthcare databases were and do not even know what its purpose is. Lack of knowledge of health-related databases leads to midwives not making use of health databases for evidence-based patient care. Some participants expressed that they only know the health database on the computer for the use of email and the self-referral pathway for the patient. Other participants expressed that they would appreciate a health database for treatment and management of mothers during the postnatal and antenatal period; it would facilitate them to provide quality services. The following are some of the extracts from participants in this regard:

I would not say database on the computer specifically we just use the email and self-referral pathway for the patient. We do not use health databases; our client did not get quality services due to not getting sufficient or accurate information from midwives (M04).

Other participant expressed that: if we only had database for treatment and management of mothers in postnatal and antenatal would be so easy to provide quality services (M06).

4.6.6 Constraints of time

Midwives experienced having insufficient time with mothers who experience anxiety and depression. Many times they are unable to provide quality services due to lack of time. Midwives also expressed that they do not have time to search relevant information to help them care for patients with anxiety and depression, and they are not skilled in searching for evidence-based information to help with patient care, for instance, some participants stressed that there was really no time for them to search for information due to the number of patients who were waiting to be seen. Many participants stated that they do not have enough time to do everything they want for their patient. Time is a big barrier to search for information in order to give proper care and attention to patients, hence, time constraints are a barrier due to the multitude of patients and they do not have enough time to inform patients of everything, particularly in their efforts to solve matters of anxiety and depression in antenatal and postnatal mothers. Other participants expressed that holistically care is not possible due to the influx of patients and emergencies that need their attention. Concerns about the impact of time pressures were expressed by participants, If you do not have the time to provide, the necessary information, or do not have the appropriate resources in the right time, then the provision of care services are always compromised, which leads to poor patient outcomes. The following are extracts from participants in this regard:

So, there is really no time for me to search for information. Because you always want it in the back of your mind. What about the other patients who is still waiting? Not enough time to do everything you really want with the patient. Time is a big barrier to search for information to give proper care and attention to patients (M06).

Time constraints are a barrier due to the multitude of patients; you do not have enough time to consult everything to patients or to the consult about cause of the problem (M04).

Time is extremely limited. You do not get enough time to be able to solve the matters of anxiety and depression in antenatal and postnatal mothers (M09). Time is really a barrier we want to do so much for these mothers in antenatal and postnatal period when experiencing anxiety and depression but time do not allow as to do what we really want to do which is sorting out these mothers holistically due to the influx of patients and emergencies that need your attention we do not have a lot of time spending with mothers every day we have countless clients coming in for help (M03).

The major barriers to using IT (Information Technology) in clinical practice relates to a lack of time; difficulty accessing computers; and social and cultural considerations whereby there were a perceived lack of peer and managerial support for using IT in the workplace.

Midwives felt that they were apprehensive of computer technology, and not being effective and efficient in their work due to everyone not being skilled in using and searching for information on computers. Some are quick learners, whereas others are slower to learn about computer technology, which may take up a lot of time from midwives. Fear of computer technology is a barrier to effective use of technology in health care, including material access, skills access, usage access and motivational access. Time pressures were the greatest factor, in the opinion of participants, that lead to problems in usage access. One of the factors leading to negative attitudes is the usability issue. Changes to workflow that affect job efficiency comprised the greatest barrier to acceptance and lack of peer and managerial support for using technology in the workplace.

4.7 Summary of the chapter

This chapter presented the findings of the qualitative study. The chapter achieved the objectives of describing the views of midwives and their experiences related to the health information needs, health information sources and barriers to information needed to care for mother with anxiety and depression. The next chapter, Chapter five, will present the discussion of the key findings of the study, supported by the relevant literature.

CHAPTER 5

DISCUSSION OF THE FINDINGS

5.1 INTRODUCTION

Chapter 4 presented the findings of the study. This chapter discusses the research findings using relevant current literature evidence to interpret the results in a broader context. The study aimed to explore and describe midwives' health information needs, sources of information, and barriers to accessing health information to support their care for mothers with anxiety and depression during the antenatal and postpartum period. Three (3) themes emerged from the analysis of the interviews conducted with the participants. These themes are midwives' information needs, information sources, and barriers to access health information to support their care for mothers with anxiety and depression during the antenatal and postpartum period.

5.2 HEALTH INFORMATION NEEDS OF MIDWIVES

The findings show that though most participants had some insight about mental illness, they did not have sufficient knowledge about the treatment of anxiety and depression of antenatal and postnatal mothers. Their knowledge about mental health is outdated and they had no training to update their knowledge about anxiety and depression during the postnatal and antenatal period. Participants asked how they can educate patients if they lack knowledge regarding mental illness? It is highly likely that they could miss the diagnosis and use incorrect management. The study also reveals that participants do not have sufficient skills in counselling, particularly patients with anxiety and depression. The study identified that midwives lack knowledge and skills on how to explore health information to update their knowledge on their daily practice. Wilson's (2000).

Information behavior (conceptual framework) explains that human information needs are classified at individual, societal and environmental levels. In this study, information need is at individual level whereby midwives search for information to satisfy their need. The roles and related tasks undertaken by professionals during daily practice prompt particular information needs, which in turn give rise to the information-seeking process. Information seeking is influenced by several interacting variables, which can affect the outcome of information use (Case 200). Wilson's (1999) conceptual framework explains that information-seeking behavior arises because of a need perceived by an information user. To satisfy that need, the user then makes demands upon formal or informal information sources or systems.

A similar study identified that health professionals, including midwives had insufficient knowledge about antenatal depression and this could be the reason why depression during pregnancy is underdiagnosed (Sherman & Ali, 2018). The study indicates that many midwives do not have knowledge to deal with mothers suffering from mental health issues. Women give birth to their bundles of joy but face many problems accommodating the child in daily activities. Many women also have to quit their jobs or move to another area to care for their children. The situation limits midwives from collecting information about the mother's mental health problems (Sherman & Ali, 2018). The current study participants expressed that they see mothers in the hospital after birth and never see them again. In many cases, midwives assume that the mother is fine and doing very well. The situation indicates that health institutions should have a framework to communicate with new mothers after birth and diagnose their mental state. Any depression and anxiety concerns should be addressed to help these mothers. Midwives are an essential part of health care who offer timely and effective antenatal and postnatal service. As women give birth, they trust midwives because they are there for them when needed Griffith (2016).

Therefore, equipping midwives with sufficient information can help identify and manage cases of anxiety and depression during the antenatal and postnatal period.

According to Nagle and Farrelly (2018), many women who are anxious during the antenatal period are likely to suffer depression during the postnatal period. The midwives should be aware of such occurrences to identify women that need support. Midwives are suitable health promoters to women during the antenatal and postnatal period, however, many midwives lack the required knowledge to promote positive mental health (Dayyani, Jepsen & Lou, 2021).

A negative mental stage of mothers during antenatal severely affects their maternal and baby well-being. The spouse or sibling should gather information from the midwives about how to care for the patient. Pregnant women and new mothers suffering from anxiety and depression seek input from midwives, or even family members seek help from midwives. Therefore, uninformed family members can worsen the situation involuntary by seeking information from the wrong sources. Nowadays, people depend on the internet to seek crucial medical information. In the researcher's experience, using the internet as a source of information can also mislead midwives and individuals, leading to the wrong decision and conclusion. Therefore, midwives need a reliable source of information to address anxiety and depression during the antenatal and postnatal period.

Further, technology has increased women's ability to care for themselves, which can be useful to monitor changes in health status during pregnancy, hence midwife training on exploring information needs to include continuous training on a regular basis, which can help midwives gain knowledge to empower women, and to address mental health problems. In addition, midwives should also learn to use technologies to increase convenience and accuracy.

5.3 SOURCE OF MIDWIVES' HEALTH INFORMATION

The findings reveal that most midwives primarily consult with healthcare professionals such as doctors, mental health nurses at the prominent level of care for further intervention. Some midwives expressed that nowadays they use their cell phone to explore health information needed to provide care for the patient, particularly when they think that the doctor might be busy with a medical emergency. However, this is always at their own cost, as computers and internet are not always available for healthcare professionals in healthcare facilities.

Midwives also seek information from clinical books, guidelines and protocols that are available in the facility which is the main source of health information. These include maternal guidelines and BANC protocols, however, there is a lack of guidelines for some specific health conditions, such as antenatal and postnatal anxiety and depression. Participants have expressed that, depending on the need of the patient condition, either they consult physicians around regarding the diagnosis and treatment of the patient, or psychologist and social workers. Wilson's (1999) conceptual framework explains that Information seeking is the act of actively searching for an answer from selected sources to satisfy certain goals. The current expanded use of computers and information systems in the health care industry requires healthcare workers, specifically nurses to engage with multiple technology sources to aid in caring for their patients (Wilson 2005).

It was evident in this study that the source of information can determine the accuracy of measures midwives use to address anxiety and depression during the antenatal and postnatal period. For instance, in the case of a pregnancy emergency, midwives seek information from their colleagues or experts (Çankaya, 2020). Mental health issues differ, and the way that people react to anxiety and depression is different, therefore, seeking

information from colleagues that have dealt with depression and anxiety during pregnancy and after birth can help address the issues (Çankaya, 2020). According to (Wilson 1999, Wilson 2000) conceptual framework,information searching and identifying relevant information usually starts by asking a colleague The perceived accessibility of the information source is a strong predictor of source use for many information users (Fidel & Green 2004). Anxiety and depression require patient-based care to address the patient's condition and environment (Çankaya, 2020). For many women going through the divergent phases from conception to birth are overwhelming as they experience changes physically, emotionally, and psychologically, which can affect their mental state (Çankaya, 2020). Midwives play a central part in the prevention and recovery of mothers from mental issues by promoting good health and welfare. Information about the types of food the women should consume, the number of hours they should rest, and the symptoms of a complication should be available for women during the antenatal and postnatal period (Mellor, Payne & McAra-Couper, 2019). Midwives should use the resource to help women transition to being mothers without anxiety during antenatal and postnatal depression (Mellor, Payne & McAra-Couper, 2019).

A psychologist always told me at every visit that knowledge that can help women's transition to mothers without mental health issues, is a positive mindset. Midwives should have information about psychologists and psychiatrists that can help women during pregnancy and after birth. According to this study, most of the participants revealed that they had contacts for therapists that deal with different mental issues. Therefore, the researcher noted that in order for midwives to retain women's trust and prevent panic about anxiety or depression, they need to participate in therapy through monitoring and evaluation. The midwives also believed that being a team leader could help organize group therapy during the antenatal and postnatal period. Talking to women as a group can help ease their nerves and prevent anxiety among them. Interaction with people going

through the same problems is vital in gathering relevant information about their mental health and recommending action (Mellor, Payne & McAra-Couper, 2019). The study determined that midwives pursue information from books, guidelines, protocols, the internet, midwifery colleagues, and doctors to make the right decisions (Mellor, Payne & McAra-Couper, 2019). In summary, midwives obtain information from a variety of sources to perform their work sufficiently. Therefore, monitoring the source of information can prevent from using incorrect information, and taking wrong decisions.

5.4 BARRIERS TO ACCESSING HEALTH INFORMATION

The study revealed that midwives have barriers in accessing information sources, such as lack of internet connection; lack of knowledge on databases; inadequate computer knowledge; time constraints and lack of resources. Most midwives do not have computer knowledge or skills to explore relevant health-related information in their daily clinical practices, which makes them feel unskilled and unsupported to mothers with anxiety and depression during the antenatal and postnatal periods. The study also revealed that the lack of internet connection at workplaces did not allow midwives to view important blood results that the client was expecting to receive, and this delayed the care of the client. In most cases, they make use of their own data to access internet for information needed; it is very costly to download relevant health information using own data. Most participants

expressed that in terms of technology, though midwives are making use of their cell phone for relevant health information needed, that it was unfortunately not enough. The information behavior model proposes that the enquirer is likely to encounter various kinds of barriers in his effort to discover information to satisfy a need (Wilson, 1999). The Willson's (1999) information behavior model explains that barriers at individual, societal and environmental levels affect or inhibit information needs and information-seeking

behavior of a person. The environment in which an information actor operates including location, social influences, culture, finance, technology, and work-related factors can affect information needs and information-seeking behavior (Wilson, 2000). Most midwives expressed that they need computer training to get insight on computer knowledge and skills, and to help them search treatment information from the relevant healthcare databases.

The study recognized that most barriers to accessing health information are related to the patient's treatment and diagnosis (Mellor, Payne & McAra-Couper, 2019). The finding and understanding of the study are that barriers to access health information needed by midwives are critical, and it helps them in their preparation and treatment of patient care in their work setting.

Midwives explained that resource constraint is one of the top challenges they are facing in their work environment, and they do not have a clear guideline to manage patients with anxiety and depression, which is a challenge because they cannot function sufficiently to deliver comprehensive care to clients. As a result in most cases, they had to refer patients who are at risk, even in the case of depression and anxiety. The empirical findings indicate that midwives' work becomes challenging due to under-resourced settings. Barriers include inadequate essential equipment and supplies, infrastructure and referral resources, and in-service training. Midwives have consistently limited access to training on how to seek evidence-based information to provide mental healthcare (Savory et al., 2022). A similar findings identified that midwives' work is highly pressured, particularly due to financial stringency and inadequate staffing. It describes them as working within intense patient centric information ecology, and lack of access to evidence-based resources as are barriers to information seeking (Savory et al., 2022). However, nursing staff may also be unaware of potentially valuable information resources available to them,

despite diligent marketing efforts on the part of health information specialists (Savory et al., 2022).

Health databases is a structured set of data that is held in a computer as a very quick and easy to find health information. This study revealed that many midwives who were interviewed expressed that they do not know what healthcare databases were and do not even knew what its purpose is. Lack of knowledge of health-related databases leads to not making use of health databases for evidence-based patient care.

Time constraint is another barrier to midwives to search for information, particularly during working hours due to the multitude of patients waiting to be seen and they do not have enough time to consult to address patients' need, particularly related to psychosocial problems, including anxiety and depression. Midwives pointed out that holistic care is not possible due to the influx of patients and emergencies that need their attention. Concerns about the impact of time pressures were expressed by participants, there is no time to provide, the necessary information or do not have the appropriate resources in the right time, then the provision of care services are always compromised, which lead to poor patient outcomes. Lack of time, especially to access electronic sources, is considered one of the most significant barriers to meeting the information needs of midwives (Mellor, Payne & McAra-Couper, 2019).

5.5 Summary of the chapter

The study findings from the qualitative were discussed by comparing with relevant literature evidence or other studies conducted locally and globally and the findings are explained using Wilson conceptual framework. In the next chapter, the summary of the findings, limitations, recommendation and conclusion of the chapter are addressed.

CHAPTER 6

SUMMARY, LIMITATION, RECOMMENDATION AND CONCLUSION

6.1 INTRODUCTION

In the previous chapter, the results of the study were presented and discussed. In this chapter, the summary of findings and the limitations of the study are provided, and recommendations are presented based on the study findings.

6.2 SUMMARY OF FINDINGS

The research revealed that midwives had insufficient knowledge about antenatal and postnatal anxiety and depression and the management of these disorders. Midwives continue to face challenges of health information needs when caring for mothers experiencing anxiety and depression during the antenatal and postnatal period. Three themes emerged from the data: health information needs, source of health information and barriers to access health information. Midwives' knowledge and skills related to information seeking behavior were context-specific, most midwives rely mainly on colleagues for information needs, and some refer to the guidelines and recently the mode of information seeking behavior is changing to the use of cellphone to explore health related information from google to satisfy their information needs. Relating to the investigation of barriers and constraints, participants indicated that the reason they lack knowledge was because they have not received any refresher training in mental health since they started their practice. As a result, these challenges hinder their ability to provide appropriate mental health care. Midwives encounter many organisational- and practical-related barriers that negatively impact on their ability to incorporate mental health care

into their practice. Among all their professional responsibilities, midwives lack knowledge and skills in assessing the mental state of women.

6.3 LIMITATIONS

The data were collected in 2021 during COVID-19 restriction. It was difficult to gain access to the participants. One health facility refused to allow the researcher to conduct the study due to COVID-19 pandemic. This study was conducted at a maternity unit in the Western Cape. Midwives may not report experiences that might cast them in an unfavorable light, such as the clinical decision made due to insufficient knowledge and skills that affected mothers. The small sample of the study also affected the transferability of the findings. Additionally, the sample size for this study was small, and the study covered only one district maternity unit in Western Cape. Nonetheless, this is the first study that explored the information needs of midwives in a maternity unit in the Western Cape.

6.4 RECOMMENDATIONS

6.4.1 Recommendation to clinical practice

- The use of computers and information systems in the healthcare industry requires healthcare workers, specifically nurses to engage with multiple technology sources. To aid in caring for their patients, midwives' use of technologies increases convenience and accuracy of healthcare services and communication with women.
- The study identified that midwives lack clear guidelines for some specific health conditions, such as antenatal and postnatal anxiety and depression. Therefore, it is recommended that, as the first line of treatment, and early detection, diagnosis, treatment, and appropriate referrals to higher levels of care, the Department of

Health should provide midwives with guidelines for assessment and management of antenatal and postnatal anxiety and depression.

- Midwives at times use their cell phones to explore the health information needed to provide care for the patient, however, this is always at their own cost, as computers and internet are not always available for healthcare professionals in healthcare facilities. It is recommended that the management of healthcare facilities should make computers and internet available for midwives to enable them to update their knowledge and skills through exploring evidence-based information from known medical databases to improve the quality of day-to-day patient care.
- The Pack manual or Symptom-Based Integrated Approach to the Adult Primary Care, Symptom-Based Integrated approach to the adult primary care should be used for in-service training on the management of mental health at primary care level, including the related Mental Health Care Act forms.
- Time constraints were identified as one the significant barriers for midwives to research information needed and provide holistic care. To alleviate time constraints, the management of health facilities should make provision in terms of more human resources to cover clinical work and create space and time for midwives to explore and engage with recent evidence-based practices to improve the quality-of-care provision for mothers suffering from antenatal and postnatal depression.

6.4.2 Recommendation to education

It was demonstrated that midwives do not have sufficient knowledge about the treatment of anxiety and depression in antenatal and postnatal mothers.

Therefore, it is highly likely that they could miss the diagnosis and management of antenatal and postnatal anxiety and depression. It is recommended that in-service training be provided on a regular basis for midwives to update their mental health knowledge and skills. Providing mental health in-service training is the key knowledge gap towards an integrated mental health system. Specifically, useful information practices in relevant midwifery educational programs to improve midwives' practices, and education should be included.

Health databases is a structured set of data that is online as a very quick and easy way to find evidence-based health information, however, midwives' lack of knowledge of health-related databases, may lead to not making use of health databases for evidence-based patient care. It is recommended that training on the diverse types of health databases should be offered to midwives to help them gain knowledge and skills on how to access the diverse types of health databases using a search strategy, and to explore information from such health databases, to read and update their knowledge related to evidence-based healthcare services.

6.4.3 Recommendation to research

- More studies should be conducted at other midwife obstetric units in different contexts to compare all the results for a better understanding of midwives' healthcare information needs, sources of information and barriers of accessing health information to support their care for mothers with anxiety and depression during the antenatal and postpartum period within a MOU. A proper understanding of the information practices of healthcare professionals for the

different processes will contribute towards the design of a relevant intervention of information system.

The following are recommendations for future work and research:

- The findings of the study would contribute to midwifery research and health sectors in general.
- It is recommended that more participants, for instance, doctors, psychologists, social workers, and nursing assistants should be included in the study, to get a more comprehensive view of information practices of all the staff at a MOU.

6.5 CONCLUSION

The findings of this study determined that although midwives are well placed to respond to the mental health needs of women in their care, many midwives lack knowledge and the ability to do so due to little insight into mental health illness and the care that goes with mental illnesses. Midwife counselling is hindered by a lack of confidence and competency rather than a lack of willingness and awareness. This study findings advocate that once midwives receive sufficient training and support, they can support mental healthcare and play an imperative role in supporting women who experience antenatal and postnatal mental health difficulties. Midwives can support enhancement of these barriers by engaging in further antenatal and postnatal mental health training to increase knowledge and become aware of community resources and referral pathways. Midwives can also introduce discussions about antenatal and postnatal mental health with all clients. During the training, instructors should make it clear that, according to research, maternal depression is preventable, and counselling is a key component of innovative and science-based prevention of postnatal depression. Additionally, interpersonal skills needed to maintain a relationship with a depressed mother and

motivate her to seek further counselling (when needed) should be taught. To achieve this goal, midwives should be able to benefit from psychological supervision devoted to the

discussion of the difficulties they encounter in their ongoing work with depressive patients. Furthermore, midwives lack knowledge and skills on how to explore health databases to satisfy their information needs. Information-seeking behavior of midwives were hindered by multiple barriers, such as lack of access to computer and internet technology; lack of internet connection at workplace; lack of knowledge on databases; inadequate computer knowledge; time constraints and lack of resources.

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APPENDIX 1: INTERVIEW GUIDE QUESTION

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21-9592819, Fax: 27 21-9593515

E-mail: 3969737@myuwc.ac.za

Interview Guide Questions

What are some of the barriers of healthcare information needs faced by midwives in the administration of care for mothers with anxiety and depression during the antenatal and postpartum period in the Western Cape?

INTERVIEW GUIDE QUESTIONS:

1. What are your experiences when providing care for pre/postpartum mother with anxiety and depression?

    a. What information should you know about anxiety and depression among antenatal and postpartum mothers?

    b. What are your sources of healthcare information?

    c. How often do you need to contact the care coordinator/ professionals to get additional information or advice?

2. Can you please explain the healthcare informatics that you have adopted in your practice?

    a. What information technology do you use and why?

b. Which database do you to access healthcare information and why?

3. What are the key barriers of health information needs?
   Probing question:

   a. What hindrances prevents you from accessing relevant health information?(infrastructural, computer knowledge)

   b. What barriers do you encounter when sharing information about your experiences with other caregivers?

   c. Explain what are the impact of the lack of health information needed on patients

4. What do you feel can improve the health information needs of midwives?

APPENDIX 2 : PARTICIPANTS INFORMATION SHEET

PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM

UNIVERSITY OF THE WESTERN CAPE
Private Bag X 17, Bellville 7535, South Africa ***Tel: +27 21-9592819, Fax: 27 21-9593515***
E-mail: 3969737@myuwc.ac.za

INFORMATION SHEET

Project Title: Exploring health information needs of midwives to support their care for mothers with anxiety and depression during the antenatal and postpartum period in the Western Cape

What is this study about?

This is a research project being conducted by at the University of the Western Cape and I am inviting you to participate in this research project. The purpose of this study is to gain more insight into the experiences of exploring health information needs of midwives to support their care for mothers with anxiety and depression during the antenatal and postpartum period in the Western Cape.

What will I be asked to do if I agree to participate?

An in-depth interview will be conducted, and you will be asked to discuss certain questions posed. The questions that will be addressed will be related to your experiences in dealing with anxiety and depression during antenatal and postpartum women. The interview will be done within 30 min.

Would my participation in this study be kept confidential?

I will do my best to keep your personal information confidential. To help protect your confidentiality, the information you provide will be private; no names will be used so

there are no way you can be identified for participating in this study. Your information will be anonymous and treated confidentially. If we draft a report or article about this research project, your identity will be protected to the maximum extent possible.

What are the risks of this research?

All human interactions and talking about self or others carry some number of risks. We will nevertheless, minimise such risks and act promptly to assist you if you experience any discomfort, psychological or otherwise during the process of your participation in this study where necessary, an appropriate referral will be made to a suitable professional for further assistance or intervention. There are no known risks associated with participating in this research project.

What are the benefits of this research?

This research is not designed to help you personally, but the results may help the investigator learn more about the experiences of healthcare information needs of midwives to support their care for mothers with postpartum depression in the Western Cape. We hope that, in the future, other people might benefit from this study to understand the experiences of healthcare needs of midwives to support their care for mothers with anxiety and depression during antenatal and postpartum period in the Western Cape. The findings will provide greater insight into how they cope with the challenges and strive for resilience.

Do I have to be in this research, and may I stop participating at any time?

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify. Participation in the research is not a course requirement.

What if I have questions?

This research is being conducted by *Pauline Koopman* at the University of the Western Cape. If you have any questions about the research study itself, please contact email: 3969737@myuwc.ac.za

Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:

Dean of the Faculty of Community and Health Sciences
University of the Western Cape Private Bag X17,
Bellville 7535

APPENDIX 3: CONSENT FORM

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21-9592819, Fax: 27 21-9593515

E-mail: 3969737@myuwc.ac.za

CONSENT FORM FOR PARTICIPANTS

Title of Research Project: Exploring health information needs of midwives to support their care for mothers with anxiety and depression during the antenatal and postpartum period in the Western Cape

The study has been described to me in language that I understand and I freely and voluntarily agree to participate. My questions about the study have been answered. I understand that my identity will not be disclosed and that I may withdraw from the study without giving a reason at any time and this will not negatively affect me in any way.

For this research project an audio recording will be made during the course of the interview. Audio recordings will be kept in a safe area at all times. After the transcription of data the audio recordings will be deleted.

___ I agree to be audio-taped during my participation in this study.

___ I do not agree to be audio-taped during my participation in this study

Participant's signature…….

Date……

Biomedical Research Ethics Committee

University of the Western Cape

Private Bag X17

Bellville

7535

Tel: 021 959 4111

E-mail: research-ethics@uwc.ac.za

APPENDIX 4 - ETHICS CLEARANCE

UNIVERSITY of the WESTERN CAPE

60 YEARS of hope, action & knowledge

10 June 2021

Ms P Koopman
School of Nursing
Faculty of Community and Health Sciences

Ethics Reference Number: BM19/9/1

Project Title: Exploring health information needs of midwives to support their care for mothers with anxiety and depression during antenatal and postpartum period in the Western Cape.

Approval Period: 08 June 2021 – 08 June 2024

I hereby certify that the Biomedical Science Research Ethics Committee of the University of the Western Cape approved the scientific methodology and ethics of the above mentioned research project.

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval.

Please remember to submit a progress report annually by 30 November for the duration of the project.

Permission to conduct the study must be submitted to BMREC for record-keeping.

The Committee must be informed of any serious adverse event and/or termination of the study.

Ms Patricia Josias
Research Ethics Committee Officer
University of the Western Cape

Director: Research Development
University of the Western Cape
Private Bag X 17
Bellville 7535
Republic of South Africa
Tel: +27 21 959 4111
Email: research-ethics@uwc.ac.za

NHREC Registration Number: BMREC-130416-050

FROM HOPE TO ACTION THROUGH KNOWLEDGE.

APPENDIX 5 - APPROVAL LETTER FROM THE DEPARTMENT OF HEALTH

Western Cape Government
Health

STRATEGY & HEALTH SUPPORT
Health.Research@westerncape.gov.za
tel: +27 21 483 0866: fax: +27 21 483 6058
5th Floor, Norton Rose House,, 8 Riebeek Street, Cape Town, 8001
www.capegateway.gov.za)

REFERENCE: WC_202003_002
ENQUIRIES: Dr Sabela Petros

Private Bag X17
Bellville
7535
South Africa

For attention: MS Pauline Koopman

Re: Understanding healthcare delivery for antenatal and postpartum mothers in the Western Cape

Thank you for submitting your proposal to undertake the above-mentioned study. We are pleased to inform you that the department has granted you approval for your research.

Please contact the following people to assist you with any further enquiries in accessing the following sites:

Delft CHC	**Dr Sheron Forgus**	**021 954 2237**

Kindly ensure that the following are adhered to:

1. Arrangements can be made with managers, providing that normal activities at requested facilities are not interrupted.
2. Researchers, in accessing provincial health facilities, are expressing consent to provide the department with an electronic copy of the final feedback (**annexure 9**) within six months of completion of research. This can be submitted to the provincial Research Co-ordinator (Health.Research@westerncape.gov.za).
3. In the event where the research project goes beyond the *estimated completion* date which was submitted, researchers are expected to complete and submit a progress report (**Annexure 8**) to the provincial Research Co-ordinator (Health.Research@westerncape.gov.za).
4. The reference number above should be quoted in all future correspondence.

Yours sincerely

DR M MOODLEY
DIRECTOR: HEALTH IMPACT ASSESSMENT
DATE: 22/10/2020
CC