MANAGEMENT OF INDIGENOUS KNOWLEDGE FOR MATERNITY AND CHILD CARE IN THE COMMUNITIES OF MATATIELE, EASTERN CAPE

by

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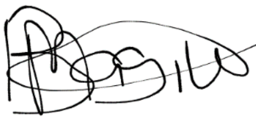
28 January 2022

DECLARATION

Student number: 35415002

I declare that "Management of indigenous knowledge for maternity and childcare in the communities of Matatiele, Eastern Cape" is my own work and all the sources I have cited or quoted have been acknowledged by means of a complete reference list.



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SIGNATURE **DATE 28 January 2022**

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DEDICATION

I dedicate this dissertation to my loving family for their unwavering support and encouragement: my mother Appolonia Nteboheleng Seshea, my brother, Mosa Masilo and my sister Malehlohonolo Maphetho Masilo.

To my son, Molemo Tshepang Masilo, thank you for being my biggest motivator and champion.

I also dedicate this work to my friends and colleagues who never failed to give words of encouragement and were always available to lend an ear when the journey got tough.

This work is also dedicated to my late grandmother, Mancholu Christina Seshea. May your soul find eternal peace.

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ABSTRACT

Indigenous knowledge and practices during the period of maternity and childcare form an important and spiritual part of African people. It is therefore imperative that this knowledge is meticulously managed by applying systematic methods of acquiring, preserving and ensuring sustainable access by all who require it. The aim of this study was to investigate the management of indigenous knowledge for maternity and childcare in the communities of Matatiele in the Eastern Cape province of South Africa. Its main objectives were to identify the different types of indigenous knowledge used for maternity and childcare in the communities of Matatiele, establish methods used to acquire, preserve and disseminate indigenous knowledge, as well as to establish methods that can be used to enhance the management of indigenous knowledge. The study adopted the hermeneutical phenomenology research design and a snowball sampling technique to determine the population for this study, which consisted of traditional midwives and women who have experience in using indigenous knowledge for maternity and childcare. Data were collected through semi-structured interviews and analysed thematically according to the study objectives. The study found that indigenous knowledge is widely used for maternity and childcare in the communities of Matatiele. These communities use indigenous medicine as well as cultural beliefs practices to address fertility problems, prevent miscarriages, manage labour, promote postpartum healing and for the wellbeing of children. The acquisition, preservation and dissemination of indigenous knowledge rely on oral traditions. A handful of participants reported that they write down indigenous knowledge and practices for preservation, as well as disseminate it through social media. The study identified indigenous knowledge management strategies such as the incorporation of indigenous in the school curriculum, research projects through universities and the department of health, and the use of media and broadcasting to positively portray indigenous knowledge, collaboration between community cultural groups and the government, as well as application of information and communication technology.

Keywords: Indigenous knowledge, indigenous knowledge management, maternal care, childcare, knowledge management, knowledge, maternal mortality, child mortality, knowledge management strategies, Matatiele communities, Eastern Cape Province, South Africa.

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LIST OF ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
CoGTA	Cooperative Governance and Traditional Affairs
HIV	Human Immunodeficiency Virus
ICT	Information and communications technology
IK	Indigenous knowledge
IKM	Indigenous knowledge management
IKS	Indigenous knowledge systems
KM	Knowledge management
NRF	National Research Foundation
SDGs	Sustainable development goals
SECI	Socialisation, extension, combination, internalisation
TB	Tuberculosis
TV	Television
UN	United Nations
WHO	World Health Organization

CHAPTER ONE
INTRODUCTION TO THE STUDY

1.1 INTRODUCTION AND BACKGROUND

Indigenous knowledge and practices during the period of pregnancy and childbirth are an important and spiritual part for African people (Mogawane, Mothiba and Malema, 2015:5). It is imperative that this knowledge is managed meticulously by applying a systematic method of acquiring, preserving and, most importantly, ensuring sustainable access to it by all who require it. It is estimated that about 50% of African women in South Africa choose to use indigenous knowledge during pregnancy, labour and postnatal care (Ngunyulu, Mulaudzi and Peu, 2015:1). Mothiba, Maselesele and Lebese (2015:81) reiterate the importance of indigenous knowledge and practices in the journey of pregnant women on the African continent. The authors observed that up to 75.9% of pregnant women in South Africa consult traditional healers for their prenatal needs, and 76.9% consult for postpartum needs. These numbers highlight a clear and urgent need for the management of indigenous knowledge for maternity and childcare, because this knowledge is widely used in Africa, and in South Africa to be precise.

Indigenous knowledge is described by Adom (2016:2) as regularised local knowledge developed upon, and passed through, oral traditions inherent in experiences and experiments of older generations to younger generations. It is a type of knowledge system that is unique and specific to a particular society or group of people that encompasses their cultural traditions, values, beliefs, taboos and rules (Magni, 2017:438). Indigenous knowledge relies on the memories and recollections of the older generation to pass it on to the younger generations, and at times, the elders die before passing on this knowledge. The younger generation sometimes shows little or no interest in indigenous knowledge, or there are simply no opportunities for them to receive this knowledge due to factors such as modernisation and the dissolution of family structures (Mpofu and Miruka, 2009:90).

The entire global community faces the challenge of maternal and child mortality and innovative methods of prevention are constantly being developed. The African

continent records some of the countries and communities that are highly affected by maternal and child mortality. The World Health Organization (WHO) estimates that over 290 000 women died in 2017 due to complications during pregnancy and child birth, and a staggering 53 million children died within the first five years of their lives; half of this was within the first month worldwide (World Health Organization, 2019).

Global health policies recognise maternal care and child mortality as a genuine area of concern and thus a priority. For instance, the United Nations (UN) developed the Sustainable Development Goals (SDGs) in 2015. These 17 SDGs are aimed at addressing the global challenges in achieving a better life for all (United Nations, 2020). Goal number 3 of the SDGs is to ensure healthy lives and promote well-being for all at all ages. According to Ogu, Agholor and Okonofua (2016:62), complications that arise from pregnancy and childbirth are a major contributor to the expanding burden of death and disability, especially in poor and developing countries. The efforts of alleviating and decreasing the challenges of pregnancy and child mortality in Africa are not achievable and sustainable without including indigenous or traditional methods. The WHO states that about eighty percent of African populations use traditional medicine for primary healthcare (Moos, Struwig and Roberts, 2010:10).

Different communities employ specialised methods and practices to care for women throughout their pregnancy, labour, delivery and child raising. Caring for women during pregnancy and during the process of delivering a child is a delicate process that requires expertise and knowledge that are both familiar and accepted by the expecting mother and the people that form part of their caregivers, family and community. Traditional beliefs, attitudes and practices take precedence in many countries, with cultural practices being central (John, Nsemo, John, Opiah, Robinson-Bassey and Yagba, 2015:235).

The belief systems of African people are critical role players in the handling of everyday situations and decision-making. Like many other African people, pregnant women seek out the assistance of traditional healers and midwives for assistance and guidance during this time and it is critical for the knowledge and practices that are shared and passed on be recorded, preserved and made widely accessible for the modern-day and era. Pregnancy is observed and recognised by different cultures as

a special transition period, encompassed by customs, rituals and beliefs (Lionjanga, 2014:2). Studies have shown that many African women prefer to use traditional care methods during pregnancy and for taking care of their children because modern medicine does not provide for the other ailments that stem from cultural beliefs of indigenous people (Irinoye, Omolola and Adeyemo, 2001;Naidu, 2013;Ngomane and Mulaudzi, 2012;Wadende, Oburu and Morara, 2016).

African cultures recognise pregnancy as a special transition period that is encompassed by specific beliefs, customs and rituals that are meant to guide behaviour during pregnancy (Lionjanga, 2014:1). The beliefs, rituals and customs are believed to ensure the protection of the woman during pregnancy, as well as to facilitate a healthy and safe delivery. In Zambia for instance, women use cultural-specific methods to care for ailments such as coughs and taking care of the umbilical cord (Buser, Moyer, Boyd, Zulu, Ngoma-Hazemba, Mtenje, Jones and Lori, 2020:7). To protect the infant from illness and evil spirits, the women of the Niger Delta region reported that they give infants a herbal juice to drink and rub palm kernel all over the infant’s body (John *et al.*, 2015:241).

It is imperative that indigenous knowledge is managed effectively for sustainable access and use by future generations. Several factors have contributed to the lack of documentation of indigenous knowledge to the extent of possibly rendering it extinct. For starters, the transmission of indigenous knowledge mainly takes place orally and preservation relies primarily on the memory of community members, who are mainly elders. According to Khumalo, Khumalo and Nsindane (2018:2), indigenous knowledge is transmitted primarily through methods such as family histories, taboos, song and dance, myths or legends, and rituals. These modes of dissemination rely on the memory and recollection of the older generation and their ability to transfer this knowledge to the younger generation. Modernisation presented the preservation and dissemination of indigenous knowledge with the challenge of the lack of interest and unavailability of today’s youth to participate in the dissemination practices of indigenous knowledge. The youth has become westernised and no longer sees the value of indigenous knowledge (Khumalo *et al.*, 2018:2). Another reason for the lack of documentation of this invaluable knowledge is the spread of colonisation throughout Africa. Plockey (2015:32) mentions that colonial rulers and missionaries created the

impression that indigenous knowledge is inferior, primitive and barbaric, thus not worth preserving. The knowledge and practices employed by African people to care for pregnant women and children is seldom recorded and, therefore, not easily accessible. The main purpose of this study was to add to the limited literature on the management of indigenous knowledge of maternal and childcare in terms of documentation, preservation and dissemination. It is through the systematic recording of such knowledge and practices that indigenous knowledge can be preserved and shared through generations to come.

The main constructs of the study included knowledge acquisition, preservation and sharing of indigenous knowledge in maternity and childcare by practitioners and consumers. These constructs share similar characteristics with models of knowledge management. Knowledge management is described by Wei Tong and Tsai (2020:26) as a continuous transmission of information that has been acquired through different sources being systematically organised and stored to ensure easy access. The main constructs of knowledge management are acquisition, dissemination and preservation (Donate and de Pablo (2015:362), which, in turn, inform the relationship with indigenous knowledge management.

Maternal, neonatal and child deaths are unacceptably high in South Africa (Bomela, 2020;Mabaso, Ndaba and Mkhize-Kwitshana, 2014). Research shows that children in the poorest communities are up to nine times more likely to die before reaching the age of five (Coll-Seck, Clark, Bahl, Peterson, Costello and Lucas, 2019:109). It is critical that solutions to African problems are designed to fit the African people and their unique ideologies and knowledge systems. The solutions to addressing maternal and child mortality in African countries should not sideline indigenous knowledge but should rather incorporate it in the maternal and childcare methods by adopting innovative ways of recording, preserving and disseminating it.

South Africa is a multicultural country with diverse societies, and all these societies and communities are rich with knowledge that is needed but not widely accessible because of the current methods that are used to manage it in terms of documenting, preserving and disseminating it. This study sought to explore and document indigenous practices of maternal and childcare, as well as possible methods used to

manage indigenous practices in terms of recording, preserving and transferring indigenous knowledge on the caring for women during pregnancy, childbirth and childcare by the communities of Matatiele in the Eastern Cape.

Matatiele is a small farming town in the Eastern Cape province in South Africa. The town is surrounded by multiple villages with a rural way of life. Traditional practices that are still prevalent in Matatiele include initiation schools, tribal courts, traditional healers and traditional midwifery. Modernisation and development in Matatiele present a challenge in access to and preservation of indigenous knowledge and practices, particularly in terms of maternity and childcare. The elders are no longer able to transfer the knowledge to the younger generation because most of the youth moved to cities after secondary school. This poses the threat of the older generation dying without having transferred this valuable knowledge; hence, the need to systematically record the knowledge they possess to ensure that it is preserved and easily accessible to generations to come. This town and its communities are ideal for the proposed study because there is a rich knowledge and pride about indigenous methods being used in maternity and childcare.

While researchers such as Iwata and Hoskins (2018); Khumalo *et al.* (2018); Maluleka (2017); Plockey (2015) are evidently giving attention to the management of indigenous knowledge, there is still a notable gap that calls for interventions and a need to expand the body of knowledge on the management of indigenous knowledge in maternity and childcare. The communities in Matatiele possess a rich knowledge of maternity and childcare. The custodians of this knowledge are elderly women who no longer have the option of passing this knowledge to the younger generation, mostly because of migration of the youth to cities (Cotnoir, 2017).

The researcher is a part of the Matatiele community and from talking to other women in the community, she (the researcher) observed that there are no durable methods of documenting and preserving indigenous knowledge and their experiences, yet the consumption of this knowledge is evident. For example, the houses and practice areas of women who are known to give care, advice, medicine, and any guidance and assistance pertaining to the care of pregnancies and children using indigenous knowledge and methods are usually filled with activity as women and families make

consultations. They are also very well known and trusted for their knowledge. Many of the young women in Matatiele leave this small town for bigger cities to seek higher education and job opportunities, and once they start seeking maternal healthcare services, it becomes a mountainous challenge because there are no databases they can consult to access indigenous care practices with which the Matatiele natives are familiar. The only solutions are to have phone consultations, where possible, or travel to Matatiele to meet with elders and relevant people that offer the needed services. There is also the challenge of the practices and knowledge being lost in translation and in the fading memories of the elderly custodians if they cannot remember the complete steps of a ritual, or the location and combination of certain herbs and roots. This challenge could be eradicated by the systematic documentation of practices and knowledge of this nature. These are the experiences that have been shared through conversations between the researcher and the women in the community, as well as the personal experience of the researcher. It would be unjust to watch this wealth of knowledge perish, but it will happen in these communities unless intervention strategies on the legitimate management of indigenous knowledge are employed.

This study focused on the indigenous knowledge management and practices of maternity and childcare in the communities of Matatiele, in the Eastern Cape province in South Africa.

1.2 CONTEXT OF THE STUDY

Matatiele is a small farming town located at the foothills of the Drakensberg Mountain in the Eastern Cape. It lies on the borders of KwaZulu-Natal and is 20 km from the southern frontier of Lesotho (Matatiele Municipality, 2020). The town is situated in the Alfred Nzo municipal district, which consists of 26 wards and a total of 249 villages. According to the census stats published by the Alfred Nzo Municipality (2016), the population in Matatiele consists of about 219 448 people, the most of which (98%) are African people followed by 0.9% coloured people, and the Asians and white people at 0.3% and 0.7%, respectively. Matatiele is a culturally diverse town with communities of varying cultural groups such as Basotho, amaXhosa, amaHlubi, Baphuthi, amaBhaca, amaZulu, Griqua, Asian, English and Afrikaner (Mokoena, 2015:2). The town is surrounded by multiple villages that still hold a strong belief in traditional

practices. The traditional practices that are still prevalent in Matatiele include initiation schools, tribal courts, traditional healers and traditional midwifery. The communities in Matatiele take much pride in initiation schools for both boys and girls. These events take place annually and are a big part of the life and celebrations that attract Matatiele natives from different parts of the country (Zulu, 2016:5). There are specific rituals and certain processes that are applied in order to protect the pregnant woman and the unborn child. For example, in order to avoid a miscarriage that can be caused by witchcraft, a pregnant woman drinks a mixture of finely ground ostrich eggshell. There is also a herb called *vimbela,* which is applied underneath the pregnant woman's feet to ward off evil spirits that may cause miscarriage.

When a woman falls pregnant or confirms a pregnancy, there is a special ritual that is performed whereby mothers in the community gather at the expecting mother's house to share wisdom, guidance and advice on how to behave, and actions to take to ensure a safe pregnancy. This also works as a counselling session to offer comfort and allay any fears of the mother-to-be. When a child is born, the mother and baby are placed in seclusion in a hut or room that is always kept warm by an open fire, with *impepho* continuously being fed to the fire to ward off evil spirits. Only close women relatives are allowed in the hut until the baby is three months old and believed to be strong enough to withstand strangers and the different spirits and auras they are believed to carry with them. These examples were derived from the observations and conversations the researcher had with women from communities in Matatiele, as well as the researchers' own experiences as part of this community. The study focused on all 26 wards in the Alfred Nzo District in Matatiele.

1.3 STATEMENT OF THE PROBLEM

Numerous third-world countries rely on their own indigenous institutions to tackle social, psychological and physical problems (Maluleka and Ngulube, 2018:516). These authors further state that traditional health facilities are the first preference in primary healthcare in rural communities in developing countries. This observation applies to communities in South Africa, who, like many other African countries, rely heavily on an indigenous way of knowing and living, and this knowledge system needs to be protected and made widely available and as accessible as possible (Mothiba *et*

al., 2015:82). The world's poorest communities look to indigenous knowledge for possible alternatives for progress. This statement is especially true for the vulnerable members of these poor communities such as women and children. Studies showed that women not only believe in indigenous knowledge methods to care for their pregnancies and children, but they especially prefer and seek these methods out (Ahmed, Nordeng, Sundby, Aragaw and de Boer, 2018;Kayombo, 2013;Malan and Neuba, 2011). Indigenous knowledge is in real jeopardy of being eradicated due to a number of factors, such as the nature of indigenous knowledge, which is mainly narrated, as well as the methods of transmission, which has always been in oral form through the generations (Brown, 2017;Khumalo *et al.*, 2018;National Research Foundation, 2019;Zablong and Plockey, 2015).

Matatiele is no exception to these experiences. There are several villages that surround this farming town, and the way of life is still predominantly rural and deeply rooted in a traditional manner of doing things. Traditional healers are central to healthcare of communities as they are usually the first point of reference. Traditional midwives are held in high esteem and are widely consulted by both the young and the older generation (Petzer, 2006:141). This knowledge has always been shared orally and, to this day, most of the custodians can neither read nor write. At the time of this study, there were no initiatives in Matatiele aimed at recording and preserving the oral histories and experiences of women and midwives with regard to maternal and childcare.

The practices of caring for pregnancies and children rely solely on oral means and the recollections of elders, as well as individuals who have had similar experience. Although there is evidence of scholars taking initiative to record indigenous knowledge and practices such as initiation school Zulu (2016), researchers are yet to document indigenous practices on maternity and childcare in the communities of Matatiele. Existing research published on indigenous knowledge on maternal care (Petzer, 2006) mainly focuses on the province of the Eastern Cape and from a medical perspective, rather than knowledge management. There are fewer opportunities and options of accessing indigenous knowledge in Matatiele, particularly on maternal health issues, because of a dire lack of management strategies that ensure the documentation and preservation of this knowledge. Because of the challenges currently facing indigenous

knowledge and the management thereof, there is a great risk of future generations in Matatiele having no access to the knowledge and the way of life that has always been respected and highly regarded. This study explored possible strategies that will enhance and improve the management of indigenous knowledge for maternal and childcare.

The study will add to the body of knowledge by exploring indigenous practices on maternal and childcare employed by the communities of Matatiele, and methods of managing indigenous knowledge in terms of documentation, preservation and dissemination.

1.4 PURPOSE OF THE STUDY

The purpose of this study was to investigate the management of indigenous knowledge for maternal and childcare in the communities of Matatiele, Eastern Cape.

1.5 OBJECTIVES OF THE STUDY

The objectives of the study were to:

- identify the different types of indigenous knowledge for maternity and childcare in Matatiele, Eastern Cape
- explore methods used by women and traditional midwives to acquire indigenous knowledge on maternity and childcare in Matatiele, Eastern Cape
- establish methods used by women and traditional midwives to preserve indigenous knowledge on maternity and childcare in Matatiele, Eastern Cape
- explore methods used by women and traditional midwives to disseminate indigenous knowledge on maternity and childcare in Matatiele, Eastern Cape
- establish the strategies that can be used to enhance the management of indigenous knowledge.

1.6 RESEARCH QUESTIONS

This study aimed to answer the following questions:

1. What are the different types of indigenous knowledge for maternity and childcare in Matatiele, Eastern Cape?
2. Which methods do women and traditional midwives use to acquire indigenous knowledge on maternity and childcare in Matatiele, Eastern Cape?
3. Which methods do women and traditional midwives use to preserve indigenous knowledge on maternity and childcare in Matatiele, Eastern Cape?
4. Which methods do women and traditional midwives use to disseminate indigenous knowledge on maternity and childcare in Matatiele, Eastern Cape?
5. What are the strategies that can be used to enhance the management of indigenous knowledge?

1.7 SIGNIFICANCE OF THE STUDY

Indigenous knowledge is a knowledge system that has been sidelined and subjugated in the developing world, yet it is still trusted and widely used in Africa for various reasons and in various stages of life; in particular, for taking care of pregnancies, child delivery and childcare (Anwar, 2011;Mothiba *et al*., 2015;Ngunyulu and Mulaudzi, 2009). African people, including South African people, regard pregnancy and childcare as highly significant life events; events that are surrounded by rituals, and traditional and spiritual beliefs, and therefore the caring and protection of these events warrant methods that go beyond the physical and medical relief that is offered by modern medicine. South Africa is making significant strides in promoting and elevating indigenous knowledge. For instance, the framework developed by the National Research Foundation (NRF) whose objective is to enhance indigenous knowledge in research by promoting, protecting, recording and documenting indigenous knowledge and indigenous knowledge systems (National Research Foundation, 2019).

While notable research has been conducted into indigenous knowledge and maternity care (such as studies done by Irinoye *et al.* (2001); Abrahams, Jewkes and Mvo (2002); Lionjanga (2014); Ahmed *et al.* (2018), Buser *et al.* (2020), these studies are mainly centralised on the health and pharmacology disciplines. Very little research has been conducted in the discipline of information management that focuses on the management of indigenous knowledge in maternity and childcare. The significance of

the study was to add to the body of knowledge with regard to the management of indigenous knowledge of maternity and childcare in the rural areas of Matatiele, and to identify strategies that could enhance the management of this type of knowledge.

1.8 DEFINITION OF KEY TERMS

This section provides brief definitions of basic concepts identified in this study. These identified basic concepts were indigenous knowledge, knowledge management, maternal mortality and child mortality.

1.8.1 Indigenous knowledge

Indigenous or traditional knowledge is described by Adom (2016:2) as regularised local knowledge developed upon, and passed through, oral traditions, inherent in experiences and experiments of older generations to younger generations. It is a type of knowledge system that is unique and specific to a particular society or group of people that encompasses their cultural traditions, values, beliefs, taboos and rules (Magni, 2017:438).

1.8.2 Knowledge management

Knowledge management is described by Wei Tong and Tsai (2020:26) as a continuous transmission of information that has been acquired through different sources being systematically organised and stored to ensure easy access.

1.8.3 Maternal mortality or death

Maternal mortality can be defined as the death of women from pregnancy-related complications during childbirth (Lalthapersad-Pillay, 2015:6471).

1.8.4 Child mortality or death

Infant and child mortality is described by Imam and Koch (2004:26) as the number of deaths within one year of birth per 1 000 live births and the number of children under the age of five out of 1 000 who die within one year.

1.9 SCOPE OF THE STUDY

The study investigated the management of indigenous knowledge pertaining to maternity and childcare in the communities of Matatiele in the Eastern Cape. The concept of indigenous knowledge management in this study includes acquisition, preservation and dissemination. This study focused on 26 wards, which are the total number of wards in the town of Matatiele. These wards are known to have a strong presence of indigenous and traditional ways of life, including the caring for pregnancies and children.

1.10 LIMITATIONS OF THE STUDY

The limitations of the study were that it focused on a few villages from one town in one out of the nine provinces in South Africa. Matatiele has a total number of 249 villages and conducting a study of that magnitude would require time and resources that the researcher did not have. Another limitation of the study was that it focused on a few individuals who were perceived as having knowledge of maternity care and child delivery practices using indigenous methods, as well as how this knowledge is acquired, preserved and shared within the community. These practices are not recorded and there is no registration prerequisite for indigenous knowledge practitioners, it is not possible to locate large numbers for participants. These individuals included traditional midwives and women aged 18 years and older who had experienced pregnancy, childbirth and childcare using indigenous methods. Statistics on maternal mortality in South Africa are available only until 2017, with no recorded statistics after this period. The timeframe allocated to this study also presented a limitation.

1.11 SUMMARY OF CHAPTER ONE

The main aim of this study was to investigate the management of indigenous knowledge for maternity and childcare in the communities of Matatiele in the Eastern Cape province of South Africa. This chapter provided an overview of the role of indigenous knowledge in maternity and childcare, as well as the challenges that encompass indigenous knowledge management. This chapter also described and detailed the context of the study. The study purpose, objectives, research questions, justification and significance were also presented in this chapter. This chapter also provided a definition of basic concepts in the study. The next chapter provides a literature review and a theoretical framework for this study.

CHAPTER TWO
LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 INTRODUCTION

The aim of this chapter is to provide a review of the literature on the management of indigenous knowledge in maternity and childcare, as well as to provide a theoretical framework that encompasses the study. The literature was reviewed to accomplish the objectives of the study. The purpose of a literature review is to examine previous studies conducted in the field of study, enhance the researcher's understanding of the study and establish whether the problem being studied has not been covered by other researchers (Leedy, Ormrod and Johnson, 2019:54). A literature review is an adventure in which the researcher discovers what is already known about the subject under study, often consulting various disciplines, and brings that information together, sometimes for the very first time (Pickard, 2017:26). It is through a comprehensive review of the literature that a researcher can become familiar with the latest developments in their chosen research area, identify gaps and find what other researchers have covered within that area. It also supports and strengthens the argument of the researcher. Leedy *et al*. (2019:54) further elucidate that a literature review is essential in highlighting and guiding the researcher on methodologies and frameworks that are central to a field of study.

The literature review for this study was constructed in line with the study objectives which are outlined in chapter one as follows:

- To identify the different types of indigenous knowledge for maternity and childcare in Matatiele, Eastern Cape.
- To explore the methods used by women and traditional midwives to acquire indigenous knowledge on maternity and childcare in Matatiele, Eastern Cape.
- To establish methods used by women and traditional midwives to preserve indigenous knowledge on maternity and childcare in Matatiele, Eastern Cape.
- To explore methods used by women and traditional midwives to disseminate indigenous knowledge on maternity and childcare in Matatiele, Eastern Cape.

- To establish strategies that can be used to enhance the management of indigenous knowledge.

The full scope and details of the review process are presented in the literature review map.

2.2 LITERATURE REVIEW MAP

For this study, a literature review map was designed to outline the relationship and correlation of the study objectives and the theoretical framework that underpins this study. The literature review map as depicted in figure 2.1 below starts with the perspective of maternity and childcare, followed by the conceptualisation of knowledge management and knowledge, and ends off with conceptualising indigenous knowledge and indigenous knowledge management.

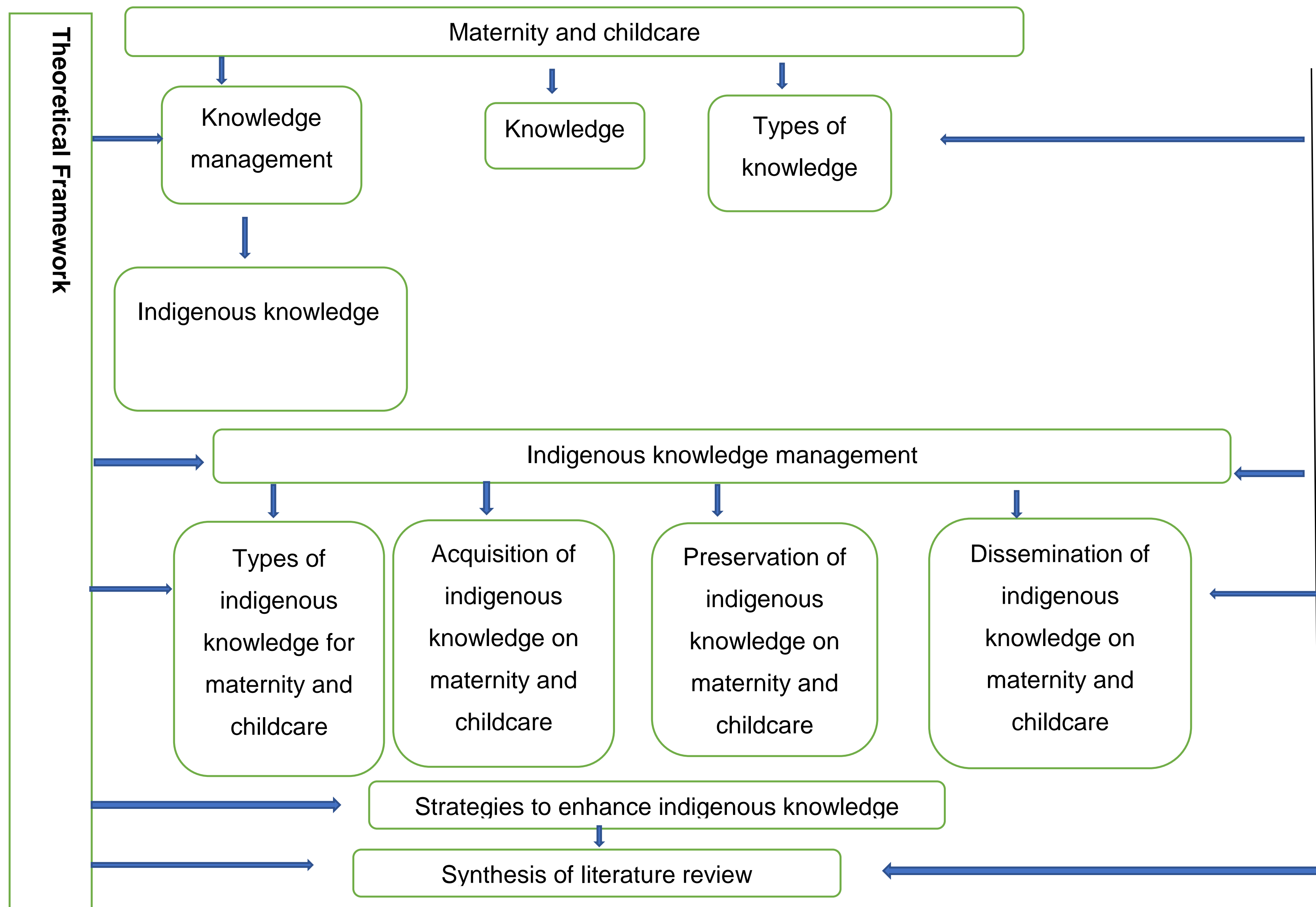

Figure 2.1: Literature review map

A literature review map is defined by Creswell and Creswell (2018:74) as a visual illustration summarising the research that has already been conducted in a particular field of study. The literature review map provides the reader with a visual representation of the flow and interconnectivity of the research objectives and constructs, with the theoretical framework that governs the study. The literature review begins with an understanding of the concept of maternal and child health.

2.3 MATERNAL AND CHILD HEALTH

Prioritising maternal health is part of recognising and promoting women's rights, such as human rights, sexual rights and reproductive rights (United Nations, 2014). Part of this recognition and promotion is ensuring that the information and knowledge on these rights are adequately managed for easy access and availability, as well as for preservation for future use. Knowledge management and its processes ensure that maternal and child health research and knowledge reach consumers of this knowledge, and that this knowledge is always available and accessible. Maternal health and mortality, as well as child and infant health and mortality, are a great concern around the world, particularly in developing countries. The discussion or inclusion of child mortality in development discourse can be traced back to the twentieth century (Oyefara, 2015:184). This section of the study reviews the literature on the state of maternal and child health globally and then focus on the state in South Africa.

Maternal health is defined by the World Health Organization (2021b) as the overall health of women during pregnancy, childbirth and the postnatal period. The organisation indicates that although some significant progress has been made around the world in the last two decades to improve maternal health, about 295 000 women died during and after pregnancy and childbirth in 2017. The death of women during pregnancy is called maternal mortality. To provide a meaningful and detailed definition, the World Health Organization (2021c) defines maternal mortality as the number of deaths of women in any given year due to or exasperated by pregnancy or its management, childbirth or within 42 days of termination of a pregnancy, irrespective

of the duration or site of the pregnancy. Infant and child mortality is described by Bamford, McKerrow, Barron and Aung (2018:26) as the number of deaths within one year of birth per 1 000 live births and the number of children under the age of five out of 1 000 who die within one year.

The discourse on maternal, infant and child mortality is one of priority with various organisations and institutions developing strategies at a global level. Some of the organisations that are at the forefront on this discourse are the United Nations and the World Health Organisation. The data and strategies collected by these two organisations inform strategies and policies in governments of different countries on different continents.

2.3.1 The World Health Organization (WHO) on Maternal Health

The WHO is a United Nations agency that was founded in 1946 to lead global efforts that will expand universal health coverage (World Health Organization, 2021a). The agency estimates the number of women who die every day from preventable causes related to pregnancy and childbirth to be 810 worldwide (World Health Organization, 2021b). Developing countries contribute the highest number to maternal and child mortality. Approximately 86% of maternal deaths in 2017 were recorded in southern Asia and sub-Saharan Africa (World Health Organization, 2021b). Some of the leading causes of maternal death are excessive blood loss, infections, high blood pressure, unsafe abortions, obstructed labour, malaria, anaemia and heart disease. The agency emphasises that the global agenda recognises the end of preventable maternal deaths as a top priority. It continues to advocate for health planning that centralises its own care with respect to women’s values and preferences. It recognises that there should be meaningful engagement and empowerment of women, families, communities and healthcare providers to archive quality improvement initiatives. The agency also commits to monitoring the progress of the Sustainable Development Goals (SDGs) that address maternal mortality. Another response to the crisis of maternal and child mortality from the global community is in the form of SDGs by the United Nations and these are discussed in the next section.

2.3.2 Sustainable Development Goals (SDGs) for maternal and child health

The 17 SDGs resulted from the 2030 Agenda for Sustainable Development as adopted by all members of the United Nations in 2015 (United Nations, 2021a). These goals aim to improve human lives and protect the environment by adopting strategies aimed at ending poverty and other deprivations. These strategies must correlate with strategies designed to improve health and education, reduce inequality, encourage economic growth, address climate change and protect oceans and forests. Goal 3 of the SDGs seeks to ensure healthy lives and well-being, and maternal and child health remain a priority under this goal. For instance, one of the targets under goal 3 of the SGDs is to reduce maternal mortality rate to fewer than 70 per 100 000 live births, as well as preventable deaths of children.

The challenges of high maternal mortality rates are experienced predominately by developing countries. According to the United Nations (2021b), 94% of all maternal deaths occur in low and lower-middle income countries. This reiterates the report by the WHO that some parts of Asia and Africa record staggering numbers of maternal deaths. These regions are mostly poor and populated by a variety of cultures, mostly indigenous and located in rural parts of the regions. The population group that faces the highest risk of complications and even death as a result of pregnancy is the adolescent group, girls between 10 and 14 years of age (United Nations, 2021b). Goal 3 of the SDGs has set the following targets in relation to maternal and child health to be achieved by 2030:

- 3.1: Reduce the maternal mortality ratio to less than 70 per 100,000 births worldwide.
- 3.2: End preventable deaths of new-borns and children under the age of 5 years with all countries aiming to reduce neonatal mortality to at least 12 per 1,000 live births, and under 5 mortalities to 25 per 1000 live births.

The crisis of maternal and child health is a priority discussion in the global community and is indeed a crisis facing many counties, particularly countries on developing continents. Approaches and strategies that address maternal and child health at a global level, focusing on different nations with different worldviews, and different

approaches to health and healthcare matters should be aware of being inclusive by acknowledging and incorporating the different knowledge systems of each nation. These different types of knowledge systems can be applied in the approaches to addressing the issues of maternal and child mortality and these information systems need to be readily and easily accessible. The state of maternal and child health in South Africa is discussed in the next section.

2.3.3 Maternal and child health in South Africa

South Africa, like many developing countries around the world, is faced with serious challenges of high maternal and child mortality rates and is still recording an alarming number of women who die during childbirth, as well as children who die within the first five years of their lives (South Africa, 2020:8). Statistics on maternal mortality in South Africa are available only until 2017 (Statistics South Africa, 2020). This was recorded as a limitation of this study and therefore the data on maternal mortality mentioned throughout the study reach only until 2017. Statistics South Africa (2020) reports that in 2017, five women died during pregnancy of every 1 000 live births or within two months of giving birth.

The maternal mortality ratio was reported by South Africa (2020:8) as 134 deaths per 100 000 live births in 2017. The mortality rate for infants and children under five years is reported by Statistics South Afirca (2021:12) as 21.1 infant deaths per 1 000 live deaths in 2021, and 30.8 deaths per 1 000 live births for children under five years between 2002 and 2021. These numbers paint a rather bleak picture of the state of maternal and child health in South Africa. Although this is the case, it is important to note that there has been a noticeable improvement in maternal and child mortality rates in the past decade (Bamford *et al*., 2018:25).

There are several health factors that contribute to the unacceptably high percentage of maternal and child mortality. Bamford (2012:51) identifies the causes of maternal death as non-pregnancy-related infections such as AIDS, obstetric bleeding, hypertension, pregnancy-related infections and pre-existing medical conditions such as diabetes and cardiac conditions. Moodley, Fawcus and Pattinson (2018:5) affirm these findings by including obstetric haemorrhaging and hypertensions in their

findings. These authors further include tuberculosis, pneumonia, meningitis and malaria as some of the major causes of maternal mortality. Bamford *et al.* (2018:30) identify pneumonia, malnutrition, tuberculosis, gastroenteritis and HIV as the leading causes of death in children under five years of age. According to Nannan, Groenewald, Pillay-van Wyk, Nicol, Msemburi, Dorrington and Bradshaw (2019:481), the main causes of infant and child mortality in South Africa are respiratory infections such as pneumonia, diarrhoea, prematurity, serious bacterial infections and meningitis.

The reduction of maternal and child mortality rates is a top priority in South Africa and a number of laws, policies, guidelines and intervention strategies are an indication of the level of attention directed at this crisis. The National Development Plan, for instance, highlights the crisis of high maternal and child mortality rates in the country and outlines the plans of action in this regard. The plan is to reduce maternal mortality rates to less than 100 deaths per live births by 2030, infant mortality rates to less than 20 deaths per 1 000 live births, and children under 5 years mortality rates to less than 30 deaths per 1 000 live births (South Africa, 2011:297). The realisation of these plans will require great collaborative efforts between various stakeholders such as the Department of Health and various departments that influence the high mortality rates that are reported, for instance, education and housing at national and at community levels.

The South African government, particularly the Department of Health, developed policies and ongoing strategies whose main mandate is to mitigate and combat high maternal and child mortality rates. For instance, the South African Maternal, Perinatal and Neonatal Health Policy, and the Guidelines for Maternity Care are good examples of a nation that is aware and making strides in combating a serious health and human rights concern. Moodley, Pattinson, Fawcus, Schoon, Moran and Shweni (2014:53) mention some other policies that have been adopted since 1994 to promote maternal health include:

- provision of free healthcare for pregnant women and children under six years of age
- approval of the Choice of Termination of a pregnancy Act (1996)
- development of the National Committee for Confidential Enquiry into Maternal Deaths

South African reproductive health policies are rated among the most progressive globally, particularly because they recognise human rights, including sexual and reproductive rights (Mathibe-Neke and Wageng, 2020:300). This does not mean that they are not faced with any challenges, and the fact that South Africa still records high maternal and child mortality rates is suggestive of the many challenges that still need to be overcome. The main challenges that factor in maternal health include high poverty rates, lack of education, mismanagement of state resources, shortage of qualified healthcare providers, the status of women in South Africa, community engagement and participation (South African, 2016:13). These factors call for collaboration within ministerial departments, particularly at policymaking levels. Another challenge and great concern in South Africa and many countries is a lack of a viable or functioning vital registration system that records all births and deaths (Bamford *et al.*, 2018:25). The lack of a vital registration system means that crucial data on the registration of births and deaths in the country are not accurately recorded and fed to the relevant departments. This, in turn, means that policy makers do not have a clear picture of the actual state of maternal and child health in the country, and the remedies and intervention strategies may not be built on the actual state.

The high maternal and child mortality rates are predominately prevalent in communities with poor and low education levels (Bomela, 2020:65). It is imperative that solutions be inclusive of the unique needs and circumstances of communities, particularly women within these communities. Women in poor and rural communities are the main consumers of indigenous knowledge on maternal and childcare, and initiatives of eradicating maternal and child mortality should indeed make serious strides in ensuring that they do not sideline indigenous knowledge.

This study aims to investigate different practices of indigenous knowledge in maternity and childcare, as well as the management of this type of knowledge in terms of the acquisition, preservation and dissemination thereof. In essence, this study used a knowledge management approach, and it is imperative that the review of the literature should extensively incorporate knowledge management. Therefore, the following section delves into knowledge management, its relevance to this study and its various processes.

2.4 KNOWLEDGE MANAGEMENT

Knowledge management, its objectives and its processes play an integral role in the preservation of indigenous knowledge. The principles and processes of knowledge management are essential in the transformation of indigenous knowledge into applicable ways that can increase community development and resilience (Rahman, Sakurai and Munadi, 2017:1). Indigenous communities possess a wealth of knowledge that presents solutions to world development, but due to the disadvantages such as the tacit nature of this information, as well as the previous and present threats, this knowledge is slowly disappearing (Plockey, 2015;Senanayake, 2006;The World Bank, 1998).

Knowledge management as a field of inquiry presents a solution to preserve indigenous knowledge and ensure its continuation. It is through the study of knowledge management that indigenous knowledge can be elevated and recognised as a knowledge system that can form part of solutions in global development. This phenomenon is discussed extensively under this subheading and the discussion demonstrates its relevance and application in endeavours to preserve indigenous knowledge and ensuring that it does not perish from existence.

There is no one universal definition of knowledge management, but researchers have developed various definitions over the years and some of these are discussed and reviewed.

The existence of knowledge management as a field of inquiry can be traced three decades back (Girard and Girard, 2015:1). In these 30 years, researchers from different disciplines have contributed greatly to the definition of this phenomenon. The emergence of knowledge management was predominantly for the business sector; however, it has spread to other sectors, including information services and libraries. According to Wiig (1994:93), knowledge management is a set of specialised approaches used to identify the advantages and disadvantages of the use of knowledge in different organisational operations. Nonaka and Takeuchi (1995:20) define knowledge management as the application of a systematic approach to the

capturing, structuring, management and dissemination within an organisation in an effort to optimise best practices and reduce the cost of reworking projects. O'Dell, Grayson, Essaides and Ostro (1998:6) contribute by defining knowledge management as a deliberate process of timeously connecting knowledge to relevant people and ensuring that the performance of the organisation is continuously improved through the sharing of information. Kanter (1999:7) defines knowledge management as a process of capturing, storing and analytically processing information that is stored in different databases for the purpose of decision-making. Another definition is given by Pearce-Moses and Baty (2005:255) who state that knowledge management is the administration of the intellectual capital of the organisation through the management of information and its use, and in that way ensuring maximised value.

Knowledge management is a process that involves specific strategies, tools and practices that are incorporated into an organisation to render knowledge an invaluable resource (Newell, Robertson, Scarbrough and Swan (2009:20). Onyancha and Ocholla (2009:54) recognise knowledge management as the management of information resources, services and systems by the utilisation of different technologies through initiatives such as information acquisition, classification, storage and retrieval. This definition can be applied in the field of library and information services because the initiatives recognised by the authors are typical processes in this field.

Knowledge management is defined by Dalkir and Liebowitz (2011:4) as an intentional and systematic engineering of people, technology and structure within an organisation to add value through reuse and innovation. Gonzalez and Martins (2017:251) explain that knowledge management is a strategy used by organisations to mobilise and promote the knowledge generated and acquired in the organisation. In their study, Wei Tong and Tsai (2020:26) define knowledge management as the continuous transmission of information that has been acquired through different sources being systematically organised and stored to ensure easy access.

Knowledge management was further defined by Ferrero-de-Lucas, Cantón-Mayo, Menéndez-Fernández and Escapa-González (2021:54) as a discipline with the objective of processing knowledge by acquiring, storing, transforming, distributing and using it so as to realise competitive advantages. It is a process with multiple activities

that are responsible for the creation, storage, retrieval and application of information (Sharma, 2021:1).

The definitions of knowledge management can be classified from the point of view of techniques, strategies, discipline and processes. The view of knowledge management as a set of processes is recurring in the literature. Therefore, this study adopted the definition of knowledge management as a set of processes whose objectives are to generate, acquire, organise, store, transfer, share and retain knowledge, and ensure easy access (Davenport and Prusak, 1999;Ferrero-de-Lucas *et al.*, 2021;Kanter, 1999;Nonaka and Takeuchi, 1995;Wei Tong and Tsai, 2020).

The incorporation of these processes in the definition is relevant and applicable to this study and its objectives because they provide answers to the research questions. The statement by Rahman *et al.* (2017:1) noting that knowledge management principles and processes are essential in transforming indigenous knowledge into applicable ways that can improve community development and resilience resonates with that of the researcher in adopting the definition of knowledge management as a set of processes. These processes of knowledge management are discussed further in the next section.

2.4.1 Knowledge management processes

Knowledge management processes are a recurring topic of discussion in knowledge management, and it is important to expand on these processes to gain a better understanding of their overall role in knowledge management. The literature recognises the following general processes, and within these processes, there are sub-processes that can be acknowledged at an operational level:

- Knowledge acquisition
- Knowledge creation
- Knowledge storage
- Knowledge dissemination
- Knowledge application

2.4.1.1 Knowledge acquisition

Knowledge acquisition can be defined as a process of accepting knowledge from the external environment and converting it into a commodity for the use and benefit of the organisation (Shongwe, 2016:146). This process, as the author explains, can include the location, accessing, capturing and collection of information from customers, suppliers, competitors, and other sources of knowledge. Additionally, knowledge acquisition involves analysis, modelling and validation of knowledge (Kaba and Ramaiah, 2020:4). The authors further posit that knowledge is acquired through experiences, grasping, incorporating, and adopting knowledge for the purpose of creating new knowledge. The acquisition of new knowledge is crucial to organisations, as Bloodgood (2019:46) explains, because they benefit from incorporating new knowledge with existing knowledge to enhance innovation.

Knowledge acquisition focuses mainly on tacit knowledge, but can also be applied to explicit knowledge (Igbinovia and Ikenwe, 2017:30). In this instance, tacit knowledge is converted into explicit knowledge through externalisation, meaning that tacit knowledge can be recorded in documentation and databases. The authors elaborate that knowledge can be created through processes such as research, brainstorming and writing.

2.4.1.2 Knowledge creation

The creation of knowledge essentially stems from incorporating newly acquired knowledge into existing knowledge in order to produce new knowledge. According to Choi and Lee (2002:176) knowledge creation is a continuous process through which tacit and explicit knowledge is shared by individuals or groups within or between firms. One of the most essential functions of knowledge creation, according to these scholars is to ensure the reduction of obsolesce within an organisation. Knowledge creation is further defined by Kaba and Ramaiah (2020:8) as the formulation of new ideas, theories, facts; finding new relationships between phenomena and the application of theories and ideas in real world situations.

In order for knowledge to be created, new knowledge must constantly be acquired and incorporated into existing knowledge to better understand the phenomenon and produce new problem-solving ideas. Nonaka (1994:18) views the creation of knowledge as a phenomenon that takes place through the process of conversion between tacit and explicit knowledge. This means that new knowledge is created as tacit knowledge is converted to explicit knowledge through various interactions. Dahiyat (2015:108) posits that processes such as communicating, sharing, and integrating acquired knowledge play a central role in creating knowledge. Knowledge acquisition plays an important role in the creation of knowledge because it is this acquired knowledge that is incorporated into existing knowledge to facilitate the creation of new knowledge. Kaba and Ramaiah (2020:8) highlight this position by stating that knowledge acquisition is an essential step in knowledge creation. Knowledge is acquired or created when new information is gathered and incorporated into the processes and functions of individuals and organisations, expanding to the existing knowledge base, and contributing to function and productivity.

2.4.1.3 Knowledge storage

Knowledge storage applies mainly to the preservation of knowledge for future access. Shongwe (2016:146) explains that knowledge storage refers to the identification and codification of existing knowledge into the organisational memory. He further emphasises the importance of this process by alluding to the fact that knowledge is vulnerable to being lost, particularly when it is still in tacit format and possessed only by the knower. According to Gonzalez and Martins (2017:260), knowledge storage is the retention of knowledge that is generated by individuals and socialised groups, forming an organisational memory. The process of storing knowledge is the ability to 'house' knowledge in such a way that it is preserved and easily accessible when the need to access arises. Shongwe (2016:146) points out the fact that knowledge can be stored electronically in repositories and databases, as well as manually in minutes and reports.

2.4.1.4 Knowledge dissemination

Knowledge dissemination is the transmission of knowledge from one place to another, communicated to other people within and across the organisation (Shongwe, 2016:145). It is the way in which knowledge is shared and transferred to the areas where it is most needed (Garcia and Sosa-Fey (2020:18). Dissemination of knowledge requires effective communication strategies, including a common language, because it involves an exchange of information, sharing of ideas and a level of understanding and comprehension. Igbinovia and Ikenwe (2017:30) elucidate the fact that knowledge that has been acquired and created needs to be exchanged so that it may be used for problem resolutions within organisations and in other areas.

2.4.1.5 Knowledge application

Knowledge that has been created, acquired, stored and shared needs to be applied effectively to fill identified gaps and solve problems with communities and organisations. This is the actual use of this knowledge and by applying it, there are opportunities to create new knowledge (Shongwe, 2016:146). According to Gonzalez and Martins (2017:260), knowledge is applied and used to expand the organisational knowledge base and rebuild its routines and skills. Knowledge management processes can be viewed as an ongoing cycle because they are continuous and each process feeds into the next process, and these processes are linked like a chain; a break in one process can affect the success or effectiveness of the next process. For example, knowledge that is not effectively preserved and stored may be lost, thus preventing the possibility of optimal application and use.

In order to fully comprehend the concept of knowledge management and its processes, one needs to understand knowledge, its definitions and applications, as well as the reasons it is recognised as a commodity that needs to be effectively managed. The next section discusses knowledge as a concept and the different types thereof.

2.5 KNOWLEDGE

The concept of knowledge does not have one universally accepted definition, but various definitions have been presented by different scholars in different disciples and

have evolved over the years. This section discusses the definition of knowledge as given by different researchers.

Knowledge is that which individuals believe and value on the basis of accretion of meaningful information through communication and experiences (Dretske, 1981:12). Wiig (1994:1) believes that knowledge is an element that pushes individuals' reason and their ability to reach intelligent acting behaviour. It is encapsulated by beliefs, truths, perspectives, judgments, methodologies and expectations. The author further states that knowledge is accumulated over extended periods of time to be accessible and applied in specific situations and problem resolutions. In their definition of knowledge, Nonaka and Takeuchi (1995:14) state that knowledge is simply a justified belief that enhances the capacity of any entity into action. The authors believe that knowledge is created through a process of converting one type of knowledge into another (tacit to explicit) highlighted by the interactions of individuals and groups, and essentially throughout the entirety of originations and communities.

Knowledge is a combination of framed experiences, values, contextual information and insight that informs a framework for evaluating and incorporating new information and experiences Davenport and Prusak (1998:265). Liew (2007:4) views knowledge as the understanding, capacity and recognition that prompts action, whose main purpose is value creation. The embodiment of knowledge is present not only in physical records such as documents or repositories, but also in processes, routines and practices of individuals and organisations (Ma, Huang, Wu, Dong and Qi, 2014:1005). Del Giudice, Maggioni, Ma, Huang, Wu, Dong and Qi (2014:1005) describe knowledge as a flowing mix of framed experiences, values, contextual information and expert insight that provides a framework for evaluating and incorporating new experiences and information. Garcia and Sosa-Fey (2020:19) provide a perspective on knowledge as a framework for creating, evaluating and applying information. It is a comprehension of a subject matter, either theoretically or practically.

Knowledge is embedded not only in documentation, but also in routines, practices and norms. Knowledge can be viewed as any information that has the ability to transform individuals and entities by becoming grounds for action or by inspiring action from

individuals and organisations. The ability to receive information and apply it in daily interactions to be productive, make decisions and solve problems is a demonstration of applying knowledge. The information that we receive and interact with (reading books, learning from our families and the environment, learning from formal institutions) is information that we receive that forms part of our knowledge base, develops our intuitions and forms part of our experiences and identity. Knowledge is the axis on which action is developed or begins. The literature informs us that companies and organisations recognise knowledge as a commodity and asset that should be deliberately managed in order to contribute to the development and prosperity of the organisation (Davenport and Prusak, 1998;Donate and de Pablo, 2015;Nonaka and Takeuchi, 1995).

There are different types of knowledge that have been recognised by researchers of this phenomenon. The following section discusses these types of knowledge and their significance and identifies the ones applicable to this study.

2.5.1 Types of knowledge

The literature mentions various types of knowledge, some being more prominent or applied, and some being mentioned more than others. Some of these identified types of knowledge are described below.

- **Tacit knowledge:** It is personal intangible knowledge rooted in the behaviour of people's minds and is obtained through learning and experience (Polanyi, 1966:167). Tacit knowledge is action-oriented, ingrained in practices and it is not easy to express in words or symbols (Nonaka and Takeuchi, 1995:13).

- **Explicit knowledge:** This is knowledge that is formal, methodical and can be organised into records and databases (Polanyi, 1966:167). Explicit knowledge is easily coded, transmitted and disseminated within an organisation (Nonaka and Takeuchi, 1995:13).

- **Situational knowledge:** This is knowledge about situations as they appear in particular circumstances and allow individuals to solve problems by sifting out

relevant features and applying solutions (De Jong and Ferguson-Hessler, 1996:106).

- **Conceptual knowledge:** This is stagnant knowledge about facts, concepts and principles as they relate to certain situations. This knowledge functions as additional knowledge used to solve problems (De Jong and Ferguson-Hessler, 1996:106).

- **Procedural knowledge:** This knowledge contains actions that are applicable in situations and enable the solver to transition from one state of the problem to the next, using known steps or procedures to apply solutions (De Jong and Ferguson-Hessler, 1996:9).

- **Strategic knowledge:** This type of knowledge allows individuals to organise their problem-solving processes by directing the stages they should go through to reach a solution (De Jong and Ferguson-Hessler, 1996:9).

- **Cultural knowledge:** This is a type of knowledge that consists of organisational beliefs based on experiences, observations and reflections that the organisation has of itself and its environment. These beliefs form the judging criteria for selecting new ideas, and evaluating projects and evaluating proposals (Choo, 2000:3).

- **Indigenous knowledge:** This is an amassed body of knowledge practices, expertise and representations that have been developed and managed by individuals who share prolonged histories and interactions with their environment. These unique interactions form part of a cultural complex and diversity that encompass language, resource use, rituals, naming and classification systems, practices, spirituality and worldviews (International Council for Science, 2002:9).

- **Experiential knowledge:** It is knowledge acquired from direct interaction with the environment and requires the use of our sensory systems (touch, taste, smell) and the brain then processes it (Bolisani and Bratianu, 2018:9).

- **Skills knowledge:** Skills knowledge is knowledge that is based on how things are done. It is acquired through repeatedly performing tasks and learning by doing, for example driving and swimming (Bolisani and Bratianu, 2018:9).

- **Knowledge claims:** This type of knowledge is based on what we know or what we think we know. It stems from our subconsciousness, is expressed through intuition and can be framed in an explicit manner through language and symbols (Bolisani and Bratianu, 2018:9).

This study focuses primarily on indigenous knowledge and its management. The concept of indigenous knowledge is discussed in subsequent sections. Tacit and explicit knowledge is of interest in this study due to their relationship to indigenous knowledge and how their definitions and applications can be part of solutions in the management of indigenous knowledge. The next section elaborates on these two types of knowledge.

2.5.2 Tacit and explicit knowledge

The most frequently used definitions of tacit and explicit knowledge are those of (Polanyi, 1966) and later on (Nonaka and Takeuchi, 1995). These two definitions draw some parallels and seem to fit in with the perspectives of many scholars in different disciplines, and also with this study. Polanyi (1966:167) recognises the anchoring of tacit knowledge within the human mind. He states that expression of tacit knowledge is through action and application and the acquisition is through observational learning and practical experience. (Nonaka and Takeuchi, 1995:13) share this understanding of tacit knowledge when they define it as action-based knowledge that is embedded in practices and not easily expressed in words or symbols.

Explicit knowledge, on the other hand, is tangible, systematic and can be codified into records and documentation (Polanyi, 1966:167). (Nonaka and Takeuchi, 1995:13) share these views by noting that explicit knowledge can be easily coded and shared within the organisation in which it exists. Explicit knowledge exists in methods that are tangible, transferable and shareable such as printed documents like books,

manuscripts, company policies and electronic records such as repositories, databases, social media and emails.

Over the years, researchers have echoed and built upon the definition of tacit and explicit knowledge by (Polanyi, 1966) and (Nonaka and Takeuchi, 1995). According to Kothari, Rudman, Dobbins, Rouse, Sibbald and Edwards (2012:2), tacit knowledge is a type of knowledge that is acquired mainly through practice and experience, rather than through recorded means. The author further posits that terms such as skills, intuition, procedural knowledge, implicit knowledge, unarticulated knowledge, and practical or experimental knowledge are used to describe tacit knowledge.

Explicit knowledge is defined by Koskinena, Pihlantob and Vanharantaa (2003:282) as accurate statements about issues such as material and technical properties, and can be expressed in numbers and in words. Dalkir (2017:10) further elucidates that it is information or content that has been recorded in a discernible form such as textual, audio recordings or drawings. The figure below illustrates the different properties of tacit and explicit knowledge as demonstrated by Dalkir (2017:10):

Properties of Tacit Knowledge	Properties of Explicit Knowledge
Ability to adapt, to deal with new and exceptional situations	Ability to disseminate, to reproduce, to access, and to reapply throughout the organization
Expertise, know-how, know-why, and care-why	Ability to teach, to train
Ability to collaborate, to share a vision, to transmit a culture	Ability to organize, to systematize; to translate a vision into a mission statement, into operational guidelines
Coaching and mentoring to transfer experiential knowledge on a one-to-one, face-to-face basis	Transfer of knowledge via products, services, and documented processes

Figure 2.2: Properties of tacit and explicit knowledge

Knowledge is recognised as a commodity that is essential in developing communities and organisations. The study and understanding of this phenomenon are of particular importance because it is a necessity in all aspects of life. Knowledge is used and

consumed at all levels of existence, and individuals, societies, organisations and communities use it to understand one another, develop new practices, build on old practices and evolve to ensure prosperity of any facet of interaction.

The main purpose of this study is to understand the management of indigenous knowledge, particularly in maternity and child health. The previous sections explored the concept of knowledge and knowledge management. The next section discusses indigenous knowledge.

2.6 INDIGENOUS KNOWLEDGE

Researchers from various disciplines contributed greatly to the conceptualisation and definition of indigenous knowledge, and some of these definitions are discussed in this section. There is no one singular, universally accepted definition of indigenous knowledge, but it is distinguishable from other types of knowledge by several traits (The World Bank, 1998). These traits include its uniqueness to a specific culture or society, being the basis for local decision-making in fields such as health, agriculture, natural resource management, being immersed in community practices, institutions, rituals and relationships, as well as its tacit nature, which is not easy to codify. Researchers who have provided some of the known definitions of indigenous knowledge include Grenier (1998:6) who defines it as traditional local knowledge that uniquely exists within, and developed around, specific conditions of community members indigenous to a specific geographic area. The author further states that indigenous knowledge is developed continuously by its custodians and it is particularly based on experience, often tested over centuries of use and it is adapted to the dynamic and ever-changing local culture and environment.

In a definition given by Chisenga (2002:16), indigenous knowledge is identified as a body of knowledge and beliefs developed by a community and is usually passed on orally through generations, highlighting the relationship that exists between human beings and their environment. Senanayake (2006:87) notes that indigenous knowledge is an exclusive kind of knowledge that is localised to a specific group of people, generated and transmitted over time to cope with their own agro-ecological

and socio-economical environments. According to Morris (2010:1), indigenous knowledge or folk knowledge is knowledge that ordinary people have of their local environment. Makinde and Shorunke (2013:28) define indigenous knowledge as a knowledge system held by traditional communities, based on their experiences and adaptation to local culture and environment. It is relevant for the development of agriculture, arts, crafts, medicine, music, natural resources and theatre.

Another definition of indigenous knowledge is given by Bruchac (2014:3814) who defines it as a network of knowledge and beliefs whose main aim is to preserve, communicate and contextualise indigenous relationships with culture and landscape over time. The author explains that this knowledge and beliefs are usually shared in families and communities through social encounters, oral traditions and ritual practices. Magni (2017:438) shares these sentiments by stating that indigenous knowledge is unique and specific to a particular society or group of people and encompasses their cultural traditions, values, beliefs, taboos and rules. Mweta and Juma (2020:3) describe indigenous knowledge as local knowledge with a particular uniqueness to a specific culture and society, which forms the basis for agriculture, healthcare, education, food preservation, and others.

The most common theme in these definitions is that indigenous knowledge is local and unique to a specific community. Communities that use indigenous knowledge rely on it for their survival. The literature demonstrates that indigenous knowledge is imperative to the survival of communities by providing practical solutions to health, education, food security and environmental preservation, among others (Makinde and Shorunke, 2013;Mweta and Juma, 2020;Senanayake, 2006;The World Bank, 1998).

Indigenous knowledge is unique from other knowledge systems because of its specific characteristics, some of which are identified by Chisenga (2002:17) as follows:

- It is based on ideas, experiments, practices and information that people developed, adopted and transformed to complement their way of life.
- It is usually communicated in a local language.
- It is difficult to transmit it to those who do not share the culture, language or tradition.

The author is of the view that indigenous knowledge is not necessarily developed for or by rural communities or even original inhabitants of a specified area. He argues that the knowledge may be generated elsewhere but adopted by another society and incorporated into their daily lives.

The most predominant characteristics of indigenous knowledge that constantly feature in the inquiry of the phenomenon were identified and mentioned by researchers such as Warren and Rajasekaran (1993); The World Bank (1998); Grenier (1998); Chisenga (2002); Anwar (2011); Bruchac (2014); Magni (2017); Magocha, Soundy, Muchie and Magocha (2019) as the following:

- It is socio-culturally bound to local people.
- It is transmitted orally.
- It is passed on from older generations to younger generations.
- It is essential for the survival of the communities that use it.
- It is particularly valued by rural communities
- It is fluid and adaptive
- Embedded in people’s memories

Communities that use indigenous knowledge consider it to be a survival resource and rely heavily on it. Senanayake (2006:87) affirms these sentiments by stating that indigenous knowledge is regarded as social capital for the poor as it is their main investment asset in the struggle for survival, food security, shelter provision and to establish control over their lives. It is mainly rural communities that are the custodians and consumers of indigenous knowledge, and these communities are considered poor by the developed world. Strong contextual and cultural connections make indigenous knowledge an essential part of its custodians, as it provides the necessary means for their survival (Magni, 2017:438). Okorafor (2010:8) acknowledges that indigenous knowledge plays a vital role in providing communities with essential skills that enable solutions to simple and complex problems, as well as contribute to developing disciplines like education, arts, medicine, and others. Indigenous knowledge forms part of and shapes the identity of people and communities. According to Plockey (2015:38), indigenous knowledge is part of the cultural heritage and histories of people

due to the fact that indigenous people are aware of a holistic way of life that embodies spirituality, social governance and collective community memory.

The literature identifies two types of indigenous knowledge: tacit and explicit indigenous knowledge. Tacit indigenous knowledge is practical and action-oriented and is based mainly on experience acquired by personal experience (Slade and Yoong, 2014:3). This definition is reiterated by Das and Sarkhel (2016:957) who observe that tacit indigenous knowledge is developed from practical experience that is obtained over a long period of time. The authors further explicate that tacit indigenous knowledge is used as the basis of decision making for day-to-day needs by communities at a local level. Tacit indigenous knowledge is rather difficult to extract from the mind of another and it is usually developed from mental models, perceptions, beliefs, experiences, and so on. The implications of this tacit nature are that it resides in people’s memories and is transferred primarily through oral practices (Moahi, 2012:542).

Explicit indigenous knowledge is scholastic knowledge that is easy to communicate, articulate, express and record; for example, feeding times of birds, names of fish, and identification and use of medicinal plants (Slade and Yoong, 2014:3). Explicit indigenous knowledge is documented or recorded; for example, using traditional medicine as recorded in ancient scripture (Das and Sarkhel, 2016:957). One might argue that the survival and prosperity of indigenous knowledge lies in the development of methods to convert tacit indigenous knowledge to explicit indigenous knowledge.

The very nature of indigenous knowledge, which is mostly tacit, as well as other historical events, poses a threat and a possibility of this kind of knowledge being eradicated. An example of these historical events is the arrival of western settlers and the introduction of colonisation in indigenous societies, and Africa is not exempted. Settlers from European countries used multiple strategies to peddle the myth that non-European regions contributed little, if at all, to the development of knowledge in disciplines such as humanities, arts, science and technology (Battiste, 2005:2). The author mentions strategies such as the blind reliance on, and the citation of Greco-Roman reference, despite the fact that the Greek Alphabet is largely of Syrian/Lebanese origin, the Europeanisation of the names of distinguished scientists

and their inventions and the classification and trivialisation of non-European science and technological innovations and inventions. These strategies greatly damaged the contribution of indigenous societies to world development and almost erased their knowledge systems from history. The ripple effects of these strategies are felt even today, for example, the scarcity of indigenous knowledge in the school curriculum is one such effect. These settlers from European countries viewed indigenous knowledge as inferior, undeveloped and ungodly; therefore, not deserving of being preserved (Plockey, 2015:32). These views and strategies held and used by the western world, or European settlers, contributed tremendously to the marginalisation of indigenous knowledge, as well as the status quo, which is the lack of development, documentation and management of indigenous knowledge that we see today.

By identifying and acknowledging the threats that exist and threaten to potentially rob future generations of the wealth of knowledge and wisdom that exists in indigenous knowledge, the possibility of sustainable solutions is in the midst. The next section will discuss indigenous knowledge management.

2.7 INDIGENOUS KNOWLEDGE MANAGEMENT

Indigenous knowledge management is defined by Ngulube (2002:95) as the process of organising and leveraging knowledge that is embedded in people's experiences, competencies, intuition, skills, wisdom and capabilities, in addition to codified and documented sources. This definition comprehensively applies to the objective of indigenous knowledge management, particularly because it encompasses the organisation of concepts that are implicit and tacit in nature. The author further posits that the success of humankind will greatly rely on gathering, sharing, analysing, harnessing what other members of society know and drawing upon classified and documented knowledge. Learning and drawing inspiration from predecessors are the cornerstone of successful societies and for this to be accomplished, their expertise and experiences need to be carefully documented, preserved, and managed to ensure that future generations continue to access and utilise it for their benefit and for this knowledge to continue to thrive.

Another definition of indigenous knowledge management worth noting is given by Biyela, Oyelude and Haumba (2016:2) and recognises indigenous knowledge as a process by which communities capture, control and share their indigenous knowledge to meet certain local needs. These researchers postulate that the management of indigenous knowledge is achieved through traditional methods that have been in existence for as long as indigenous knowledge has, as well as through modern methods that are slowly gaining momentum. They recognise traditional methods of managing indigenous knowledge such as word of mouth, storytelling and community practices, which are typical of the oral nature of disseminating and preserving indigenous knowledge and modern methods such as digitisation of indigenous knowledge. Adebayo, Oluwaseye and Adeyemo (2017:4) posit that indigenous knowledge needs to be managed as a way of preserving it for prosperity, national growth and sustainable development. The successful documentation and communication of indigenous knowledge needs to take into consideration the languages of the communities it represents, and access must be given in languages that are understood by both local and non-local people.

Indigenous knowledge greatly benefits communities in economic and social development initiatives and when managed effectively, these benefits can be sustained for future generations. According to Lodhi and Mikulecky (2010:94), indigenous knowledge management can potentially provide practical tools to greatly reduce the burden of poverty, sustainable development and empowerment of communities and society in general. The authors further state that developing countries should employ strategies that improve both scientific and indigenous knowledge at the local level for maximum benefit. Effective management of indigenous knowledge will promote community-based participation in development programmes and, most importantly, validate the dying cultures (Padmasiri, 2018:475). The author further posits that indigenous knowledge is economically affordable, socially desirable and sustainable, and involves minimal risk.

There are a host of challenges facing indigenous knowledge management on a scale that will put it on par with other knowledge systems. Indigenous knowledge is tacit in nature, meaning that it resides mainly in the minds of the individuals, embedded in their practices and experiences (Adeniyi and Subair, 2013:2). The most pressing

challenge then comes in the form of documenting and preserving indigenous knowledge in order to share it with the larger community or even non-local communities. It becomes onerous to systematically manage knowledge that is embedded in the very being of individuals, often expressed in the form of skills and culturally guided practices. This nature and characteristic of indigenous knowledge open the possibility of misinterpretation of the meaning in practices, as well as the possibility of cultural appropriation.

There is a great scarcity of policies on indigenous knowledge documentation, preservation, and dissemination at national and institutional level, the lack of qualified professionals in the field, the tacit and individualistic nature of indigenous knowledge (Adebayo *et al.*, 2017:5). This scarcity can be interpreted as a lack of recognition and prioritisation of indigenous knowledge by policy makers, which again derails the elevation of indigenous knowledge management initiatives. These scholars note that it is important to acknowledge the fact that managing indigenous knowledge can be laborious, time consuming and costly; therefore, the policies that are put in place should take this into consideration.

There is generally an increasing demand on the recognition of the importance of indigenous knowledge, particularly in local community primary healthcare, but the efforts by practitioners to document it are inadequate (Issa, Owoeye and Awoyemi, 2018:3).They further observe that indigenous knowledge practitioners are still sceptical about participating in initiatives of documenting indigenous knowledge because of the secrecy that still surrounds this type of knowledge, as well as the fact that they want to protect it as a source of their livelihood. This scepticism makes it difficult for indigenous knowledge practitioners and consumers to fully trust individuals outside their communities with their knowledge, which in turn hinders strategies for systematically managing their knowledge.

This sentiment is shared by Padmasiri (2018:478) who states that indigenous knowledge is treated as individual or family heritage. The challenge then for indigenous knowledge managers becomes acquiring the skills to break these barriers, gain the trust of indigenous knowledge holders, being able to communicate the good

intentions of ensuring survival and longevity of their knowledge, and alleviate the fears of exploitations.

Another challenge is that indigenous knowledge is transmitted mainly through oral means from the older generation to the younger generation (Mpofu and Miruka, 2009:86). The current times no longer accommodate this intergenerational preservation method because elders no longer have access to the younger generation, and young people show a significant lack of interest in indigenous knowledge and practices. The lack of access and interest by the youth can be attributed to modernisation and the current schooling system; children spend a significant amount of time in school and there is minimal incorporation of indigenous knowledge in the syllabus. With this status quo, the perishing of indigenous knowledge is inevitable unless systematic management strategies are implemented.

The need to preserve and manage indigenous knowledge has become a point of discussion within research spheres for both identified benefits of this type of knowledge and identified threats to its survival. Preservation measures of indigenous knowledge need to be identified as a matter of urgency because the risk of loss and misappropriation is rather great (Poorna, Mymoon and Hariharan, 2014:1240). Indigenous knowledge is widely used by the world population. According to the World Health Organization (2019:10), about 88% of the states that are members of the organisation use indigenous knowledge for health needs. The widespread use of indigenous knowledge calls for durable and systematic methods for managing it, and ensuring its continued availability, access and survival. This estimate is an indication of a global need for indigenous knowledge, and it presents an urgency in knowledge management methods and strategies that take into account the uniqueness of this type of knowledge.

The tacit nature of indigenous knowledge has always presented a great challenge in terms of management strategies (Padmasiri, 2018:476). This tacit nature means that indigenous knowledge relies greatly on oral traditions as a means of dissemination and preservation and this presents a pressing need to derive or use durable means of documenting and managing this kind of knowledge (Makhura, 2004:66).

There is a common African proverb that states: "*When an old man dies, a library burns to the ground*", which can directly translate that elders in communities are custodians of knowledge. This statement is reiterated by Mpofu and Miruka (2009:86) when they state that community elders are the primary custodians of indigenous knowledge.

Some other challenges of management, preservation and protection of indigenous knowledge are also highlighted by Poorna *et al.* (2014:1240) as the following:

- The creation and ownership of indigenous knowledge are collectively by the community, and its use and dissemination are largely guided by traditional laws and customs.
- Current intellectual property rights are based on modern ideologies that emphasise individual rights.
- Corporate companies use individual knowledge as the basis of their commercial products, which are then patented and exclude the source of the original knowledge, which is usually indigenous communities.
- Patent laws and intellectual property rights sometimes restrict the use of certain indigenous knowledge, which can negatively affect the practices and use by indigenous communities.
- These patents can negatively affect the cultural practices of indigenous communities.

The exclusion of indigenous communities in the commercialisation of indigenous knowledge is a gross injustice and a great form of exploitation. Government, information and knowledge management institutions and organisations have a moral and social obligation, as well as a great role to play in resolving and addressing the devastating consequences of a lack of effective, inclusive and systematic strategies for managing indigenous knowledge. The tacit nature of indigenous knowledge and the mode of transmission, which has been oral through generations, make it difficult to document and preserve, but it is in no way impossible. The next section discusses different types of indigenous knowledge for maternity and childcare.

2.8 TYPES OF INDIGENOUS KNOWLEDGE FOR MATERNITY AND CHILDCARE

Traditional health practitioners and practices play a vital and central role in maternal and childcare worldwide, and this section reviews the role of indigenous knowledge in maternity and childcare, as well as different types of indigenous knowledge used globally and nationally for maternity and childcare. The different indigenous knowledge practices for maternity care discussed in this section are practices for the care and protection of pregnancy, as well as the care and protection of children.

2.8.1 The role of indigenous knowledge in maternity and childcare

Maternity is observed and recognised by different cultures as a special transition period, encompassed by customs, rituals and beliefs (Lionjanga, 2014:2). In the event of a pregnancy, women consult traditional health practitioners before consulting the hospital or modern healthcare facilities. They are also the first to be consulted after the hospital visits (Mothiba *et al.*, 2015:80). These authors postulate that as much as 62% of pregnancy care involves traditional health practitioners in Nigeria, and as much as 76% can be observed in South Africa. There are various reasons why women seek indigenous methods for maternity and childcare.

In their study conducted in Nigeria, Irinoye *et al.* (2001:14) observed that the reason why women prefer to consult traditional health practitioners is the psychosocial support and the trust environment that exist, particularly due to the personal experience of the practitioners and the similarities of their backgrounds. Beliefs about health matters are largely influenced by culture and religion. Furthermore, the fear of being attacked by evil spirits discourages women from travelling at night to visit modern healthcare facilities (Naidu, 2013:254). Mothiba *et al.* (2015:81) propose that another reason for such a high demand for indigenous or traditional methods during pregnancy and childcare is that traditional medicine is holistic and focuses beyond the physical aspects of the individual, also taking the spiritual aspects into account. The spiritual aspect is particularly important to indigenous people, especially in Africa, because African people are known to embrace the ancestors and the spiritual realm. Other reasons noted in the literature are those given by Maliwichi-Nyirenda and Maliwichi

(2013:45) who posit that women seek care in local and traditional avenues because of insufficient modern facilities, rude personnel in hospitals and clinics, and cultural reasons. Lionjanga (2014:2) is of the opinion that pregnant women seek help from traditional healers and traditional midwives because they are easy to access, and they are often from the same cultural heritage.

2.8.2 Pregnancy care and protection

Care and protection of pregnant women and unborn children are encompassed by methods aimed at physical and spiritual aspects, and they are reported in different parts of the world. Practices of pregnancy care and protection are observed by aboriginal or indigenous women in Istanbul, a major city in the country of Turkey. For instance, pregnant women are discouraged from eating liver from any animal because it is believed that the baby will be born with an undesirable birth mark as a result (Karahan, Aydın, Güven, Benli and Kalkan, 2017:193). The authors further share that these pregnant women in this area also leave the lights on at night when they go to sleep and place garlic and onion next to their bed to protect themselves and their unborn children from evil spirits that are believed to be present and harmful at night. These practices appear to be entrenched in the belief and recognition that the physical world is not the only source of harm, but harm can manifest from avenues that we cannot see or touch. The consequences of these practices are also taken seriously.

The indigenous women of Australia connect the birth to the country and community of a woman and her baby (Adams, Faulkhead, Standfield and Atkinson, 2018:84). This connection is made by 'birthing trees', which are trees in a community that are identified, under which women deliver their babies. A hole is dug in the ground under the tree and covered with soft grass, leaves and soft red sand where the baby will be born. The authors mention that pain management practices are massages, hot and cold packs, and the pouring of cold water into the abdomen. Another unique practice in this region, as reported by Adams *et al.* (2018:86), is the use of 'birthing songs' that can also be viewed as a form of indigenous knowledge management. Songs are taught in communities so that when women marry and move between cultural and language groups, these songs become a tool to carry their knowledge about birth with them.

In other regions of Turkey such as Konya, there are reports of *incubus*, a demon that has sex with women when they are asleep at night (Altuntuğ, Anık and Ege, 2018:98). The authors mention that in order to protect the mother-to-be from *incubus*, she should not leave the house alone or go to unsafe structures such as basements or wood houses. In Pakistan, women use black tea and indigenous herbs for easy common symptoms that are associated with pregnancy (Ahmed, Raynes-Greenow and Alam, 2020:3).

In many parts of Africa, the protection of a pregnancy against physical and spiritual ailments is also practiced and reported. In the Niger Delta Region of Nigeria, herbal remedies such as concoctions, herbal baths and enema treatments are used for the treatment of symptoms and pregnancy protection (John *et al*., 2015:238). Women in this region are reported to use charms and amulets such as dried chicken sacrum, cowry and various beads to protect the mother from spiritual forces that can cause harm to herself and / or the unborn child. In a study conducted in the northern regions of Ghana by Bassoumah and Adam (2018:34) indigenous knowledge and practices regarding the protection of pregnancy are encompassed by African traditions and religious practices. Researchers report that maternal care and protection are encompassed by specific ritual performances, animal sacrifices and the consumption of herbal concoctions.

The practices reported in parts of Africa for the management of labour are more specific or are described in more detail in the literature. In some parts of Kenya, traditional birth attendants or traditional midwives use herbal remedies and lower abdominal massages to remedy prolonged labour (Kaingu, Oduma and Kanui, 2011:497). The authors add that herbal remedies are also used for the treatment of postpartum haemorrhage. M'soka, Mabuza and Pretorius (2015:3) report that in rural parts of Zambia, labour management is preceded by a number of behavioural adjustments a woman adheres to during pregnancy to ensure a safe delivery or labour, with as little pain as possible. These behavioural adjustments include the encouragement of faithfulness between the parents of a pregnancy because failure to do so may result in obstructed labour and convulsions. M'soka *et al.* (2015:3) further note that pregnant women are discouraged from eating bones from meat dishes and

drinking alcohol, including a traditional drink called *chibuku,* because this will result in prolonged and difficult labour. One cannot help but note that behavioural adjustments in indigenous knowledge and practices can be interpreted and included in different societies and still produce positive outcomes. For example, encouragement of faithfulness from partners can also prevent sexually transmitted infections, and discouragement of drinking alcohol during pregnancy can prevent foetal alcohol syndrome. Bassoumah and Adam (2018:35) report that the rural communities of Ghana use specific herbal mixtures and procedures for specific circumstances during labour. Women use *gmanchey*, *datiri* and *ayirimbiri,* which are indigenous herbal mixtures used in prolonged labour and retention of the placenta. Once the delivery process is complete, *akpeteshie*, a local gin, is mixed with herbs for the treatment of wounds and the cleaning of the reproductive system.

South African practices share characteristics similar to those reported globally and in other African countries. Abrahams *et al*. (2002:81) report that two-thirds of Xhosa-speaking women (one of the tribes in the Western Cape, South Africa) prefer traditional healing practices for themselves and their children. The authors mention that these women use indigenous knowledge practices because modern medicine does not take into consideration ailments that are believed to be from the spiritual realm. Women in this region speak of indigenous medicines and practices whose sole purpose is to strengthen the womb against evil spirits. According to Ngomane and Mulaudzi (2012:32), pregnancy is regarded as a great honour and the ancestors of both families (mother and father of the unborn child) are consulted to offer protection. The authors report on an animal called *mhlamba* for this function, which is slaughtered as a way of informing the ancestors about the pregnancy and asking for a safe passage to motherhood. *Ritlang*i is a type of indigenous running grass that is cooked, dried and tied around the waist of the pregnant woman to strengthen and protect the pregnancy (Ngomane and Mulaudzi, 2012:33). The authors also mention a herbal drink called *mbita*, which is used to preserve and protect pregnancy, as well as to ensure safe delivery of the baby. The practices in this region appear to be deliberate and purpose centred. For example, in the event of reporting a pregnancy, families are united, and ancestors are communicated with using one animal. This form of unity and symbolism can serve the purpose of demonstrating support to the expectant mother, which in turn improves her mental health and readiness to carry the pregnancy.

In the KwaZulu-Natal province in South Africa, women are reported to use *isihlambezo*, a herbal drink made of various indigenous herbs to protect the pregnant woman from harm that may befall her as a result of evil spirits and witchcraft (Naidu, 2013:253). Again, the strong belief in the fact that harmful occurrences are not only from the physical world and that taking care of a pregnancy does not end with nursing the body, but also includes protection from evil spirits is demonstrated. In another study conducted in the Limpopo province of South Africa by Mogawane *et al.* (2015:4), it was reported that women prepare *ditaelo*, an obligatory prescription almost like Joko tea, to protect a pregnancy from evil spirits. The authors also observed that in an effort to weaken any magic spells that might have been cast upon the pregnant woman, an egg of a hen that has been slaughtered in the homestead is broken and spilled in the middle of the top of her head. Indigenous communities strongly believe that the remedies and medications administered during pregnancy should not exclude those that treat spiritual and evil ailments. This belief is one of the reasons why maternal care strategies at national and local levels should incorporate indigenous knowledge of the local communities. The reports from the studies conducted demonstrated that these beliefs form part of the individual and community sense of identity and shape their realities.

In South African communities, like in global and other African countries, there are reports of indigenous knowledge specific to the management of labour, as well as the protection of labour from spiritual elements that can cause harm to the mother and baby. In the Western Cape, Afrikaans women, one of the native people in the province, use indigenous plants such as *dassiepis,* which is used for cleaning after birth, and *moerbossie,* which is used to clean the womb after birth (Abrahams *et al.*, 2002:81). This report demonstrates that indigenous knowledge is deeply rooted in the cooperation of people and their natural environment, and the knowledge of these plants that are indigenous to these regions may perish with the older generation of this region due to poor knowledge management strategies.

In a study conducted by Ngomane and Mulaudzi (2012:34) in Limpopo, it was observed that the protection and management of labour are guided by behavioural guidelines during pregnancy, as well as various remedies. The authors observed that

during pregnancy, a woman is advised against excessive water consumption because this is believed to result in excessive water during labour. In the event of a slow progressing labour, *xirheti* or *xiveve* (indigenous oxytocin) is boiled and given as a herbal drink. *Xirhakarhani* (indigenous analgesic) is administered to a woman in labour to alleviate excessive labour pains. Another insightful study was by Mothiba *et al.* (2015:86) in Limpopo where they reported that *Mokgorometsa* is a herbal drink that is given to a woman when labour starts to initiate precipitated labour. The authors state that the labour is also reported to the ancestors by placing *snuff* (smokeless tobacco) on the floor in the delivery room. This is believed to also help reduce labour pain.

The belief in these practices unique to different communities and cultures has been passed on from generation to generation and forms the knowledge basis of these communities. It is important to acknowledge that maternal care and protection is regarded as incomplete if it excludes indigenous knowledge and practices because it not only brings a sense of responsibility, but also makes one feel a full part of the community, which is an important factor in mental and psychological health as well as physical health.

2.8.3 Childcare and protection

Different countries report different indigenous knowledge and practices for the care of children from the moment they are born. These practices again draw a parallel between the physical and spiritual world, and the care provided addresses both, as it does with pregnancy.

In some parts of Cambodia, when a child is born, the mother uses indigenous medicines immediately after delivery to increase breast milk production and reduce the possibility of developing a psychological condition that affects postpartum women, including seizures and locked jaws called *Tos* (Turner, Pol, Suon, Neou, Day, Parker and Kingori, 2017:6). These medicines are indigenous to these regions and play an integral part of ensuring the health and safety during these events. In Istanbul, Turkey, children are protected from evil spirits by placing a knife under the child’s pillow and placing garlic and onion near their bed (Karahan *et al.*, 2017:194). The authors also mention the specific practices unique to this region that are believed to guide a child down a certain path. For an example, the umbilical cord of a newborn baby is buried

in gardens or grounds of specific locations to direct their futures to those institutions, school grounds and mosques; for instance, so that the child can grow up to be a teacher or a religious leader. There may be an argument that there is no proven correlation between these activities, but it is important to remember and acknowledge that beliefs and practices that have been shared for generations in a particular society form part of our knowledge base and shape our identities. Therefore, it is negligent to completely disregard these practices and erase them from existence simply because they are not universally understood.

Indigenous knowledge and practices in African communities reflect that a great deal of attention is given to the care and protection of children born in these communities. In Tanzania, for example, anyone who has participated in sexual intercourse may not hold a baby before washing their hands as this may cause illness to the child (Kayombo, 2013:4). This practice draws parallels with modern societal practices where the washing or sanitising of hands is required before holding a newborn baby. In the Delta Niger region of Nigeria, a newborn baby will be massaged with coconut oil and Shea butter before or after a warm bath to stretch and mould their bodies (John *et al*., 2015:240). These authors report that great care is taken to protect the child from evil spirits by making a small incision in the skin and applying gunpowder herbs. According to M'soka *et al*. (2015:3), the communities of some regions in Zambia believe that breastfeeding a baby in public, in the presence of other mothers, can cause illness in the child. This debate is prevalent in various societies where there is a sense of shame and taboo in the practice of breastfeeding in public for different reasons that apply in different societies.

In KwaZulu-Natal, *isihlambezo*, a herbal drink, is administered to the baby to protect against infections (Naidu, 2013:256). In the Vhembe district of the Limpopo province in South Africa, community members use herbal medicines such as *tshirungula* and *swazo* for the treatment of colic in newborns (Bele, Shilubane, Lowane and Nkhwashu, 2021:170). These herbal medicines are extracted from the trees and plants that are indigenous to this area and they are prepared and administered by people who are known to be experts in this field.

Another study done in KwaZulu-Natal was conducted by Ramulondi, de Wet and Ntuli (2021:7) where they reported that many health complications in children, such as jaundice, eczema and malnutrition, are related to the types of food consumed by the mother during pregnancy. Certain types of food such as bone marrow, rice, pineapples, laxatives, samp and meat prepared for ceremonies are believed to be bad for the health of the child and should be avoided during pregnancy.

Other indigenous knowledge and practices that are used in different parts of the world to care for and protect a pregnancy seem to be deeply entrenched in the various belief systems and indeed paint a picture of similarities, even for worlds that are far apart. The beliefs in, and fear of, witchcraft, demons, evil spirits and sorcery are deeply entrenched in the belief systems of indigenous people and often outweigh the fear of modern ailments. Plants, animals and the general environment play an important role in protecting pregnancies and children from physical and spiritual harm. Incorporating indigenous knowledge and practices is crucial in the promotion of health practices, and it has been proven that strategies that include cultural knowledge are more effective (Adams *et al*., 2018:81).

The literature review of this study was guided by the study objectives and research questions and to that end, the following discussions focus particularly on the four study objectives that are listed in the introduction.

2.9 ACQUISITION OF INDIGENOUS KNOWLEDGE ON MATERNITY AND CHILDCARE

The documentation of indigenous knowledge is scant due to several factors such as its tacit nature and oral transmission; therefore, the methods used by women and traditional midwives to acquire this knowledge are negligible from conventional sources such as books. The results of a study by Coleman (2013:57) revealed that women who use indigenous knowledge for maternity and childcare acquire that knowledge informally from elderly relatives, such as a mother, an aunt or a grandmother. This study also revealed that in the case of traditional midwives, the knowledge is acquired through personal experience while being a patient; the women make a decision themselves to become traditional midwives. They also acquire

knowledge through apprenticeship whereby an established midwife formally imparts knowledge over an extended period of time. Other methods of indigenous knowledge acquisition in maternity and childcare are mentioned by Ebijuwa and Mabawonku (2015:66) as storytelling, writing, drawing and photography. The author elucidates that documentation of indigenous knowledge is relatively poor in developing countries. According to Turinawe, Rwemisisi, Musinguzi, de Groot, Muhangi, de Vries, Mafigiri, Katamba, Parker and Pool (2016:14), indigenous knowledge is acquired by traditional midwives through daily interactions, observations and apprenticeship.

The literature confirms that there is indeed an urgent need for the systematic management of indigenous knowledge, particularly in maternity and childcare, because even up to date, the main method of acquiring this type of knowledge was orally and through informal structures.

2.10 PRESERVATION OF INDIGENOUS KNOWLEDGE FOR MATERNITY AND CHILDCARE

Indigenous knowledge recognises elders as the main and legitimate custodians of knowledge and, therefore, methods of preservation place them at the centre of indigenous knowledge. According to Khumalo *et al.* (2018:3), elders are the custodians of indigenous knowledge and preserve this knowledge by passing it down to the younger generation. These authors further state that in some communities, the youth or younger generation embark on research initiatives where they will consult community elders to conduct research projects for institutions of higher learning. According to Iwata and Hoskins (2018:175), in other communities, practices and medicinal plants, their value, and the places where they are commonly located are written down for access by family members. Scholars such as Mathibela, Egan, Du Plessis and Potgieter (2015:3) observe that rural practitioners of indigenous knowledge are the main custodians of this knowledge and the onus is usually on them to preserve it by ensuring that it is passed along to families and apprentices. In Nigeria, as observed and reported by Yeboah (2000:205), some priests are trained to commit medical knowledge to memory for the purpose of recollecting and supplying it when the need arises.

The literature reveals that preservation methods applied by women and traditional midwives are still lacking and unreliable because they still rely greatly on the custodians, which are mainly elders, to transfer this knowledge to the younger generation. However, it is clear that this may not always be possible because the younger generation may show a lack of interest in this knowledge, or the custodians may perish before transferring the knowledge.

2.11 DISSEMINATION OF INDIGENOUS KNOWLEDGE ON MATERNITY AND CHILDCARE

The dissemination of indigenous knowledge is achieved mainly by transferring it from generation to generation within families and communities at large. Participants in a study conducted in Ghana by Yeboah (2000:204), a medical librarian from the University of Namibia, reported that the knowledge held by traditional health practitioners, including traditional midwives, is not written down, but rather spread orally. These participants further posited that women share information with each other after receiving treatment from traditional midwives, which in turn, encourages these women to seek similar treatment. According to Adekannbi, Olatokun and Ajiferuke (2014:1), there are three modes of indigenous knowledge transmission: vertical, horizontal and oblique. The authors explain these modes as follows:

Vertical transmission: dissemination of knowledge from parents to children
Horizontal transmission: dissemination of knowledge between individuals of the same generation
Oblique transmission: dissemination of knowledge from one generation to unrelated individuals of the next generation

Vertical transmission is dominant in childhood years because parents are the primary source of education for children (Adekannbi *et al.*, 2014:2). Horizontal and oblique transmission becomes more important in adulthood as individuals are exposed to a greater variety of social models. Other methods used by women and traditional midwives to disseminate indigenous knowledge on maternal and childcare are identified by Iwata and Hoskins (2018:176) as apprenticeship, as well as inheritance and demonstration by parents and grandparents.

2.12 STRATEGIES TO ENHANCE INDIGENOUS KNOWLEDGE MANAGEMENT

The need to manage indigenous knowledge is widely recognised and one of the key strategies for successfully managing it is encoding into information (Dlamini, 2017:76). History has demonstrated that the survival of any civilisation relies largely on the transmission of its knowledge and skills, which ensures the continuity of its legacy (Mpofu and Miruka, 2009:87). Researchers and scholars identified strategies that can play an important role in enhancing and developing strategies that will ensure the preservation of indigenous knowledge for sustainable accessibility.

One of these scholars was Professor Anwar from the University of the Free State who believes that involving universities, research institutions and education systems are some of the strategies that could be applied in managing indigenous knowledge. Anwar (2011:142) states that African academics should consciously move towards incorporating indigenous knowledge within the curriculum and their core activities. This author further elucidates that indigenous knowledge needs to be positioned as a source of factual knowledge, for instance, by including theoretical and methodological conceptualisation thereof. The custodians, consumers and practitioners of indigenous knowledge are mainly the communities, and, therefore, management strategies should include these communities. According to Mpofu and Miruka (2009:91), communities need to form partnerships with cultural development agencies and universities so that researchers can be tasked with the documentation of indigenous knowledge, and communities can have archives of knowledge that can be accessed whenever the need arises. Identification, listing and description of various medicinal plants used by indigenous people come as another strategy of indigenous knowledge management identified by (Iwata and Hoskins, 2018:169). These authors emphasise that modern technology needs to be applied to transform the method in which indigenous knowledge is transmitted and stored, and this can be achieved through codification of indigenous knowledge into print and electronic formats to make it widely accessible.

The formulation of legal policies and legal frameworks is critical to elevating the status of indigenous knowledge and giving recognition to knowledge management strategies

at national level. Each country must have indigenous knowledge management policies that encourage and provide guidelines on innovation and conservation of indigenous knowledge (Padmasiri, 2018:478). For example, South Africa has adopted the Protection, Promotion, Development, and Management of Indigenous Knowledge Act 6 of 2019 (South Africa, 2019). Legislating indigenous knowledge and incorporating it into the laws of the country enhances the promotion and recognition of indigenous knowledge. Government institutions such as libraries, archives, museums and universities have a moral responsibility to identify, collect, preserve and disseminate indigenous knowledge for the benefit of local and global communities (Padmasiri, 2018:475). For instance, Makinde and Shorunke (2013:26) state that in performing their services, libraries acquire information resources in diverse media, organise, preserve, create original information, repackage information, and disseminate it to users through numerous user-oriented services which can be summed up as circulation and reference services. These libraries and their librarians act as depositories, collectors, organisers, distributors and mediators of information; therefore, they are able to play an active and enabling role for those aspiring to use indigenous knowledge (Plockey, 2015:40).

The establishment of indigenous organisations within communities can play a critical role in ensuring that local people participate in the management strategies of their indigenous knowledge. These organisations can develop formal processes of gathering and converting tacit knowledge into explicit knowledge to allow for easy use, access and preservation (Lwoga, Ngulube and Stilwell, 2020:48). These organisations can provide an inclusive environment that is conducive to individual members participating fully in meeting the objectives of the organisations.

The introduction of information and communication technology (ICT) has greatly increased the potential of indigenous knowledge management because of its unique features such as accuracy, speed, organisation, storage capacity, and dissemination technologies. (Padmasiri, 2018:477). Through platforms such as the World Wide Web and other ICT tools, the documentation, preservation and dissemination of indigenous knowledge can be achieved on scales that are not only durable, but also easily sustainable for lifelong access and use. Indigenous knowledge can be documented through digital media resources such as audio-visual recordings of oral histories,

photography and scanning. Preservation, access and dissemination can be achieved through national and local repositories and databases. Social networks provide an easy and accessible solution to share indigenous knowledge.

Other initiatives and strategies are suggested, developed and/or already running globally and nationally whose primary goal is to enhance the management of indigenous knowledge. One such initiative that Coleman (2013:58) highly recommends is the ICT database framework that will be able to systematically collect data on practitioners of traditional medicine and their practices. Khanyile and Dlamini (2021:6) mention the Honey-Bee Network (HBN) in India where communities known as fieldworkers collect information on India's traditional knowledge systems. The authors also recognise the Durban Ulwazi Program, which collects, disseminates and compiles indigenous knowledge in an online digital library in the format of a website made available to communities through web and mobile technologies.

The strengthening of policies and formation of frameworks within government and non-governmental organisations and institutions that deliberately focus on indigenous knowledge management strategies will provide law-binding solutions to indigenous knowledge management strategies. The next section discusses the theoretical framework that guides this study.

2.13 THEORETICAL FRAMEWORK

A theory is used to explain and predict the plausible relationship between independent and dependent variables (Creswell and Creswell, 2017:122). A theoretical framework is a coherent structure of meaning that directs the development of a research study by identifying main concepts and their relationship (Creswell and Creswell, 2017:309). The University of Southern California Libraries (2021) define a theoretical framework as the structure that can support a research theory by introducing and describing the said theory, explaining why the research study exists. They further posit that theoretical frameworks strengthen a research study by permitting the reader to critically evaluate theoretical assumptions, connecting the reader to existing knowledge and assisting the researcher to identify limits of the generalisation of the study phenomenon.

This study followed the theory of organisational knowledge conversion model developed by (Nonaka and Takeuchi, 1995). The model identifies socialisation, externalisation, combination and internalisation (SECI) as the four approaches to interaction that promote knowledge management. The main constructs of this study include the acquisition, preservation and dissemination of knowledge by practitioners (traditional midwives) and consumers (women) of indigenous knowledge in maternity and childcare. The characteristics of these constructs are similar to models and frameworks of knowledge management. Donate and de Pablo (2015:62) identify the key elements of knowledge management as acquisition, preservation and transfer of knowledge.

The organisational knowledge conversion theory identifies the interaction of tacit and explicit knowledge as an essential part of knowledge management. The theory as explained by Nonaka (1994:19) is composed of the following four models of knowledge conversion:

(1) **Socialisation** (from tacit knowledge to tacit knowledge)
(2) **Externalisation** (from tacit knowledge to explicit knowledge)
(3) **Combination** (from explicit knowledge to explicit knowledge)
(4) **Internalisation** (from explicit knowledge to tacit knowledge)

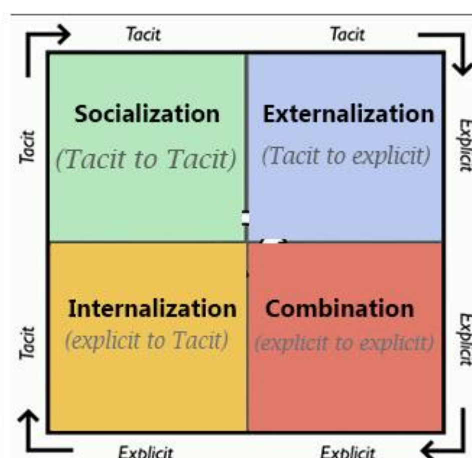

Figure 2.3: SECI model

The SECI theory of knowledge conversion is able to link tacit knowledge and explicit knowledge through these four models, thus allowing the process of the conversion of tacit knowledge to explicit knowledge. Socialisation allows tacit knowledge to be transferred into tacit knowledge through practice, guidance, imitation and observation. Externalisation allows the transfer of tacit knowledge into secondary knowledge, tangible format such as documentation, image, rock painting and clay pot, where it can be retrieved in the absence of the holder of this knowledge. The process of combination combines different bodies of explicit knowledge.

Combination uses secondary forms of explicit knowledge to make other forms of explicit knowledge. An example of combination would be writing a piece of magazine article about rock art in the caves of South Africa. Internalisation is the process of converting explicit knowledge to tacit knowledge. During this process, external knowledge from documents and rock art, for instance, is then used to create a new knowledge base within an individual who is able to transfer it to others. According to Nonaka and Takeuchi (1995:70), internalisation is the process of embodying explicit knowledge into tacit knowledge. This is achieved when the experiences gained through socialisation, externalisation and combination are internalised into the tacit knowledge base of the individual, usually through learning by doing.

2.14 APPLICATION OF THE SECI MODEL IN THIS STUDY

The basic principle of knowledge management when managing indigenous knowledge is the ability to convert tacit knowledge to explicit knowledge. This study applies the SECI model and the application of the four modes of knowledge conversion is explained below.

2.14.1 Socialisation

Nonaka (1994:19) explains that during socialisation, individuals are able to acquire and convert tacit knowledge into tacit knowledge and this process can take place

without the use of language. The author gives an example of apprenticeship whereby apprentices work with their mentors and learn craftsmanship through observation, imitation and practice. The process of socialisation takes place in everyday interactions, conversations, meetings and observations. In this study, women acquire their knowledge by interacting with older, experienced women in their communities and families who have used indigenous knowledge for maternity and childcare.

It is through observing the women in their lives who have gone through the same processes and listening to stories that have been passed down through generations that women in the communities of Matatiele acquire this type of knowledge. The acquisition of this knowledge gives way to the creation of new knowledge because as it is transmitted over generations, it evolves as communities evolve. Ngulube (2003:24) elucidates that socialisation takes place through face-to-face conversations, social interactions, storytelling, music and dance. Traditional midwives acquire their knowledge through socialisation through observation and apprenticeship where they undergo training for their vocation. The acquisition of this knowledge requires close and personal relationships and interactions.

2.14.2 Externalisation

According to Nonaka and Takeuchi (1995:64), externalisation is a process of converting tacit knowledge into explicit knowledge. The authors explain that externalisation is an important knowledge-creation process because this is where tacit knowledge is converted into explicit knowledge, at times adopting the forms of analogies, hypotheses, metaphors or models. During externalisation, experienced women and traditional midwives in this study intentionally share the knowledge they hold through conversation, advice, family interactions, training and apprenticeship. Furthermore, the literature revealed that in some communities, some practitioners of indigenous knowledge document their knowledge and practices.

Externalisation allows for tacit knowledge to be transferred to secondary format, for instance document, image, rock painting and clay pot, where it can be easily retrieved even in the absence of the custodian of said knowledge (Ngulube, 2003:25). The process of externalisation allows for indigenous knowledge, which is mainly tacit

knowledge to be transferred into formats that may allow for durable and long-lasting preservation and knowledge-sharing methods.

2.14.3 Combination

The process of combination in the knowledge creation model is achieved when explicit knowledge concepts are systematically combined to form new knowledge using tools such as documents, media and information and communication technology (Nonaka and Takeuchi, 1995:67). The authors postulate that by reconfiguring existing information through adding, sorting, combining and categorising, we are able to create new knowledge. When women and traditional midwives in Matatiele communities share and exchange ideas and experiences on indigenous knowledge and practices of maternity and childcare in their respective settings or circles, they are able to identify solutions and different approaches that can be adopted in certain situations for optimal results. Combination promotes a spirit of collaboration among individuals and communities. Individuals from different communities, different races and tribes achieve a combination when they share their different experiences and different solutions to problems encountered during pregnancy, childbirth and childcare, ultimately learning how the combination or integration of certain processes can result in practical solutions.

2.14.4 Internalisation

Internalisation is a critical part of the preservation of indigenous knowledge, which resides and has survived mainly in the minds of individuals. Nonaka and Takeuchi (1995:70) explain that internalisation allows for the embodying of explicit knowledge into tacit knowledge. This is related to the concept of learning by doing and can be achieved when the experiences realised during socialisation, externalisation and combination are internalised into an individual’s tacit knowledge base.

2.15 SYNTHESIS OF THE LITERATURE REVIEW

The literature review findings revealed that indigenous knowledge is recognised and used widely by indigenous communities in developed and developing countries for

healthcare, including maternity and childcare. These communities use indigenous knowledge to manage pregnancy symptoms, manage labour and offer physical and spiritual protection to the mother and child (Abrahams *et al.*, 2002;Adams *et al.*, 2018;Ahmed *et al.*, 2020;Altuntuğ *et al.*, 2018;Bassoumah and Adam, 2018;John *et al.*, 2015;Mogawane *et al.*, 2015;Ngomane and Mulaudzi, 2012). However, indigenous knowledge is faced with a real threat of not surviving for future generations because of inadequate knowledge management practices and because indigenous knowledge management practices primarily rely on oral traditions(Adebayo *et al.*, 2017;Makhura, 2004;Mpofu and Miruka, 2009;Padmasiri, 2018;Poorna *et al.*, 2014).

The literature further reveals strategies that can be used to enhance the management of indigenous knowledge. These strategies are summarised in table 2.1 below.

Table 2.1: Strategies to enhance indigenous knowledge management

Knowledge management strategy	**Studies**
Systematically encode and document indigenous knowledge	(Ngulube, 2002) (Dlamini, 2017) (Iwata and Hoskins, 2018) (Issa *et al.*, 2018)
Incorporate indigenous knowledge in the education systems, research institutions, libraries and universities	(Mpofu and Miruka, 2009) (Anwar, 2011) (Makinde and Shorunke, 2013) (Plockey, 2015) (Padmasiri, 2018)
Formulate legal frameworks	(Poorna *et al.*, 2014) (Padmasiri, 2018)
Utilise information and communication technology to manage indigenous knowledge	(Coleman, 2013) (Padmasiri, 2018) (Khanyile and Dlamini, 2021)

The most pressing threat to indigenous knowledge is the fact that it is mainly tacit knowledge, which resides in people’s minds. The first strategy to manage this threat

would be to systematically record indigenous knowledge into formats that will enable the preservation and management thereof. The literature findings also recognise the incorporation of indigenous knowledge into the education systems, including universities, libraries and research institutions, such as libraries, as a strategy to enhance indigenous knowledge management. Indigenous knowledge can also be successfully managed through the formulation of legal frameworks such as copyright and patent acts that will safeguard owners and practitioners of indigenous knowledge against exploitation. Lastly, the literature recognises the vital and central role played by ICT applications in documenting, preserving and overall management of indigenous knowledge. These applications can ensure digitisation of indigenous knowledge, which will guarantee lifelong preservation and access.

This study applied the organisational knowledge conversion theory as a theoretical framework. This theory recognises the four models of knowledge conversion as socialisation, externalisation, combination and internalisation (SECI). The theory is ideal for this study because it is able to link tacit knowledge and explicit knowledge through these four models, allowing the conversion of tacit knowledge to explicit knowledge. Therefore, this theory makes the application of knowledge management strategies to indigenous knowledge possible because it converts tacit knowledge to explicit knowledge.

2.16 SUMMARY OF CHAPTER TWO

The aim of this study was to investigate the management of indigenous knowledge for maternity and childcare. The review of the literature was conceptualised from this aim and guided by the research objectives. A literature review map was developed to demonstrate the relationship between the study objectives and the theoretical framework. Indigenous knowledge practices and belief systems are woven into the identities of the individuals and communities that practice them and are their way of life. The literature demonstrated that indigenous knowledge is widely used in Africa and thus deserves adequate management and preservation to ensure that future generations are not deprived of such knowledge. Although there is evidence that researchers are making efforts to focus on indigenous knowledge on maternity and childcare, a large number of these researchers are from the medical and

pharmacological disciplines. There is a notable gap in the research of indigenous knowledge about maternity and childcare in the field of knowledge management. Furthermore, the literature reveals that in South Africa, the research into indigenous knowledge of maternity and childcare is truly limited, only showing prevalence in the Limpopo province.

2.17 RESEARCH STRATEGY

The following diagram depicts an outline of the research strategy for this study.

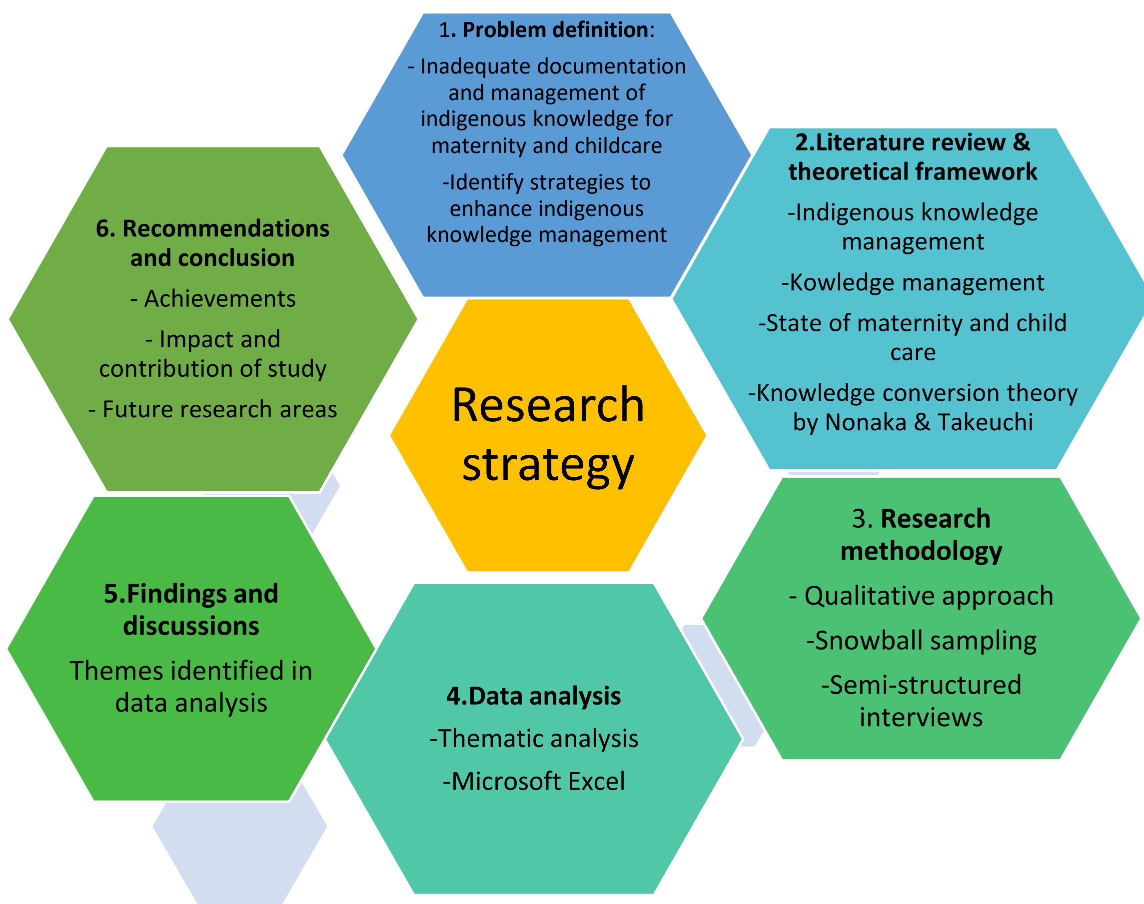

Figure 2.4 Research strategy

1. **Problem definition**: This section provides background information and an outline of the research phenomenon being investigated. The phenomenon in this study is the management of indigenous knowledge in maternity and childcare,

the lack of documentation of this type of knowledge and the identification of strategies that can enhance the management of indigenous knowledge.

2. **Review of the literature and theoretical framework**: A review was carried out of the literature of available research associated with the phenomenon being studied. The literature review conceptualised and discussed indigenous knowledge management and the concept of indigenous knowledge, knowledge management and knowledge, the state of maternity and child health globally and nationally, and linked available literature with the research objective. A theoretical framework that underpins this study as identified and applied to the study. The theory of knowledge conversion identifies socialisation, externalisation, combination and internalisation as processes of knowledge management.
3. **Research methodology**: Outlines the methodology that was applied in conducting this study. A qualitative research approach was applied using the methods applicable in this approach. Snowball sampling was used as the sampling method, and semi-structured interviews were used as the data collection method.
4. **Data analysis**: Data were analysed by identifying themes using the thematic analysis method. Microsoft Excel was used to organise the data as it was transcribed.
5. **Findings and discussions**: The findings were presented in the form of tables and narrative discussions. The discussions in this study were guided by identified themes from the collected data.
6. **Recommendations and conclusion**: The researcher provided the achievements realised by the study and some recommendations based on the findings and in line with the research objectives and questions. The contribution and impact of the study in the field of knowledge management were outlined and discussed based on the findings of this study.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 INTRODUCTION

The previous chapter reviewed the literature of the study. This chapter outlines and discusses the methodology that was applied and provides the motivation for selecting the said methodology. Research methodology is defined by Birks and Mills (2015:44) as a set of assumptions and ideas that advises on the design of a research study. It envelopes the decisions that the researcher takes concerning the kinds of cases that can be studied, the methods of research that can be used, and the tools of gathering and analysing data during the process of any research project (Silverman, 2017:188). The research methodology is discussed in line with research paradigms, research approaches, research design, population and sampling, data collection methods, data collection tools, data analysis methods, ethical considerations, as well as the validity, reliability and trustworthiness of this study.

3.2 RESEARCH PARADIGMS

A research paradigm is a collection of beliefs that are shared by scientists that encompass ethics, epistemology, ontology and methodology (Denzin and Lincoln, 2017:195). There are mainly four paradigms recognised in research: positivism, interpretivism, participatory and pragmatism.

Positivist paradigm: Researchers believe that authentic knowledge is obtained through experiments and observations and is also referred to as the scientific method or quantitative research (Rahi, 2017:1). This research approach is established on the premise that absolute truth is independent of the observer (Aliyu, Bello, Kasim and

Martin, 2014:81). Scientists believe that with appropriate measurement tools, absolute truths about cause and effect relationships in the physical world and human experiences can be uncovered (Leedy *et al.*, 2019:7). These authors recognise that the understanding of social, physical and psychological phenomena is gradual and probalistic; therefore, they identify that instead of concluding that an absolute truth has been proven, social scientists may conclude that the probability of a phenomenon has been increased.

Interpretive paradigm: Researchers recognise the need to understand and explore the world in which they live by developing subjective meaning of their experience or objects of interest and it is also known as constructivism or qualitative research (Rahi, 2017:1) This research paradigm emphasises subjectivity in research, focuses on in-depth factors and recognises the fact that research that studies humans is different from studies of physical phenomena because human studies create further depth into meanings (Alharahsheh and Pius, 2020:41). These authors further elucidate that constructivism considers factors such as cultures and various circumstances that inform different social realities. Furthermore, interpretivist research pays close attention to perceptions and interactions of different phenomena, including individuals' behaviour, group processes and cultural practices (Leedy *et al.*, 2019:8).

Advocacy or participatory paradigm: Researchers believe that inquiry should be incorporated into political and social issues and it is also known as the critical realism paradigm (Rahi, 2017:1). Followers of this paradigm argue that the most important task in research is to aim to establish casual mechanisms at the level of "real life" and mechanisms manifested at an empirical level of reality as demi-regularities or broken empirical patterns observable as events (Lennox and Jurdi-Hage, 2017:32). This paradigm combines the conviction that there is a real world that exists outside of our perceptions and constructions with our understanding of the world (Flick, 2017:19). This means that our understanding of reality is essentially mediated by our conceptual lens.

Pragmatism paradigm: The researcher identifies the weakness in the research and uses a mixed-method approach to strengthen it (Rahi, 2017:1). The pragmatism philosophy emerges out of actions, situations and consequences rather than pre-existing conditions (Creswell and Creswell, 2017:332). The authors explain that, in

essence, followers of this paradigm underline the research problem and identify methods of understanding it, rather than focusing on methods. Pragmatism is based on the position researchers ought to utilise methodologies that better address the phenomenon being researched and it is often associated with mixed methods research methods (Kaushik and Walsh, 2019:3).

3.2.1 Research paradigm applied in this study

This study followed the interpretive research paradigm. This paradigm is based on the belief that the concept of a study should be deeply understood and explored (Rahi, 2017:1). The objective of this paradigm is to try to understand the interpretations of individuals on a social phenomenon as they interact with it, rather than discover, a universal truth that is free of context and value (Rehman and Alharthi, 2016:55).

The aim of this study was to investigate a distinct human behaviour from a community whose practices and beliefs are mostly marginalised, not well understood and well documented. The investigation was largely dependent on the perceptions of the unique experiences of the individuals in the communities of Matatiele in the Eastern Cape province, and was therefore subjective. The concepts in this study on indigenous knowledge and maternal and childcare are based on perceptions, beliefs and experiences of individuals and therefore are subjective. The researcher, therefore, relied on methodologies that are meaning oriented such as observations and interviews, as opposed to measurement instruments.

3.3 RESEARCH APPROACH

A research approach is defined by Creswell and Creswell (2017:3) as a strategy that informs the steps of a research project, which include procedures, broad assumptions, data collection methods, analysis and interpretation. The authors identify three main research approaches as qualitative, quantitative and mixed methods research, which are discussed in the subsequent paragraphs

Qualitative research is an approach used to explore and understand the meaning and understanding attributed by individuals or groups to a social problem (Creswell and

Creswell, 2017:3). These authors further clarify that qualitative research is characterised by emerging questions and procedures, with data analysis inductively building from particulars to general themes. Qualitative researchers usually interpret the meaning of the collected data as they analyse it. Qualitative research is typically applied to investigate in-depth understanding of attitudes, motivations and behaviours in the research phenomenon (Barnham, 2015:837). The researcher enlightens those qualitative researchers who usually attempt to answer the "why" questions in research.

Quantitative research is an approach used to assess objective theories by examining the relationship between specified variables that can be measured on instruments so that enumerated data can be analysed using statistical procedures (Creswell and Creswell, 2017:3). In quantitative research, the main focus is on the measurements, calculations and percentages of numbers that can produce facts within a given sample (Barnham, 2015:837). This researcher states that quantitative researchers are usually attempting to answer the "what" questions, and gives an example of a retail company trying to ascertain the number of people that prefer one product to another product in the same company. Quantitative researchers attempt to understand the world using numbers and measurements, and in most instances, these numbers and measurements represent aspects of the observable physical world (Leedy *et al.*, 2019:221).

The mixed methods research approach uses both qualitative and quantitative approaches to collect data, integrating the two data forms and using specific designs that may involve philosophical assumptions and theoretical frameworks (Creswell and Creswell, 2017:3). This research approach involves collecting, analysing and interpreting data from both the qualitative and the quantitative research approaches, as well as an integration of the conclusion from the data into an organised and connected whole (Leedy *et al.*, 2019:311). These authors admit that the mixed methods research approach can be time consuming for the researcher, but one of its benefits is that it allows triangulation. They define triangulation as a process through which a researcher is able to present a convincing case for conclusions if both qualitative and quantitative data lead to the same conclusions.

3.3.1 The research approach applied in the study

This study followed a qualitative research approach because its interest was in lived experiences of a community. The data collection process allowed for the expression of opinions and experience of individuals in a community. Qualitative research focuses on the interpretation of people's experiences and emotions in the world. Creswell and Creswell (2018:181) indicate that the qualitative methods rely on text and image data, have unique steps in data analysis and draw on diverse designs. It is characterised by objectives that attempt to explore the phenomenon and try to understand the reasons behind certain occurrences.

This approach was suitable for this study because the objective of this study was to investigate not only activities, but also perceptions, experiences and attitudes of individuals. The researcher engaged and interacted with the participants on a phenomenon of which the researcher has no prior knowledge to explore and understand the phenomenon in accordance with the objectives of the study. The participants of this study were women who have used indigenous methods for maternity and childcare, as well as traditional midwives, each one of them with unique insights and experiences that were invaluable to this study. The tools to collect and analyse data were selected based on the qualitative research approach. Qualitative research is suitable for studying indigenous knowledge because it allows the researcher to engage and study participants who may not be literate. Data were collected by oral or narrative means in cases where participants cannot read or write.

3.4 RESEARCH DESIGN

A research design is a plan for the research and must take into account the expectations and context of the researcher (Thomas, 2017:89). This study adopted the phenomenological study research design. Phenomenological research gives a descriptive meaning of a concept from the perspective of several individuals. Maree (2016:23) describes one of the characteristics of phenomenological research as hermeneutical phenomenology, which describes research as centred on documenting and interpreting the lived experiences of individuals. It is not only a descriptive

process, but also an interpretive process in which the researcher makes an interpretation of the lived experience.

The study applied the hermeneutical phenomenology approach because it allows for a greater understanding of a phenomenon by not only documenting experiences, but also interpreting them as they happen. The main objectives of the study were to explore indigenous practices of maternity and childcare and to explore the strategies used to manage this type of knowledge in terms of acquisition, preservation and sharing it within the community and beyond. The researcher sought to understand the lived experiences of the communities in Matatiele situated in the Eastern Cape province of South Africa and interpret these to find deeper meaning. The phenomenological research design allows for an interactive dialogue of sharing experiences and beliefs about the world and realities of the participants being studied.

3.5 POPULATION AND SAMPLING

This section provides definitions of population and sampling in research and provides a discussion of how population was identified, and sampling conducted in this study.

3.5.1 Population

Population in research refers to any group that is identifiable with definitive features and characteristics (Brynard, Hanekom and Brynard, 2014:412). The population for this study consisted of practitioners and consumers of indigenous knowledge and practices of maternity and childcare. It comprised of women who have received care in and advice on indigenous practices during pregnancy, childbirth and childcare, and traditional midwives who give care and advice to pregnant women from 26 municipality wards in the town of Matatiele, Eastern Cape. The town is in the Alfred Nzo Municipal district and consists of 26 wards and a total of 249 villages. According to the census statistics published by the Alfred Nzo Municipality (2016), the population in Matatiele consists of about 219 448 people. The table below depicts the 26 municipality wards, the main villages that fall in each ward as well as the approximated population in each ward, as published by (Matatiele Local Municipality, 2018).

Table 3.1: Matatiele Ward summary

Source: (Matatiele Local Municipality, 2018).

Municipality ward number	Villages under ward	Approximated population number
1	Maluti, Thalong, Motsekuwa, and Skiti	6435.
2	Malubalube, Nkululekweni, Rockville, Maritseng, Hardenberg and Ramohlakoana	13575
3	Tsepisong, Masakala, Khohlong, Mdeni, Dikgutlwaneng, Hebron and Madimong	7595
4	Tiping, Bethel, Zikhalini, Maphokong, Zazingeni, Mazizini, Newstance, Nkasele, Tsitsong and Sehlabeng	8328
5	Goxe, Vikinduku, Lubaleko, Mnceba, Santombe, Cibini, Pamlaville, Lufefeni village and Mosta	8475
6	Bhakaneni, Botsola, Polokong, Protea, Dengwane, Taung, Mahangwe, Matsetseng/Nobhaca and Zwelitsha	7 398
7	KwaManzi, Esifolweni, Mafube Mission, Belford, Le-Grange, Hillside,	7 608

	Dumisa, Thembalihle, Matewu, Mafube, Corchet, Nkosana, Umngeni and Pote	
8	Outspan, Nchodu, Magema and Zwelitsha	6 675
9	Afzondering, Newrest, Sphola, Matiase, Rantsiki, Khashule, Mbombo, Gudlintaba, Manderstone and Makoaseng	9009
10	Lunda, Sijoka, Hlomendlini Silindini Caba and Magonqolweni	8862
11	Lehata, Tholaneng, Penong, Tsenola, Qilwane, Motjatjane, Phephela, Pontsheng, Khoale Madlangala, Nkonoane, Mbua and Mapfontein	11418
12	Khubetsoana, Queensmercy, Kotsoana, Nkau, Mampoti, Sera/Potlo, Sekhulumi, Mafaesa/Moqhobi and Sekhutlong	6 624
13	Masopha, Likamoreng, Letsoapong, Thotaneng, Thabaneng, Chere, Mahareng, Ramaqele, Thaba-bosiu, Mohapi, Tlhakanelo, and Kholokoe	8 394

14	Fatima, Lekhalong, Liqalabeng, Mahasheng, Mapoleseng, Mangopeng, Letlapeng, Mateleng, Motseng, Moiketsi Reserve and Nice field	6582
15	Qhobosheaneng, Mahlabatheng, Mapoleng, Pontsheng, Free state, Pholile, Semonkong, Paballong, Lihaseng and Lekoentlaneg	6711
16	Mehloloaneng, Sketlane, Moeaneng, Mechachaneng; Likhetlane, Khoarai, Majoro, Mbobo; Maloto, Sprinkaan, khutsong and Tsekong	6402
17	Mgubo, Mbizeni, Nkalweni, Luxeni, Lugada, Sigoga, Mango, Polile and Nyanzela	10800
18	Tshisa, Bubesi, Moyeni, Hillside, Nkungwini, Zipampirini, Kwaqili, Mwrabo, Myemaneni, Sidakeni, Fiva and Kesa	7 254
19 (Matatiele central business district)	North End, West Side, New J, Dog Street/Central and Buxton Avenue	4 124
20	Itsokolele Location, Njongweville,	9550

	Njongweville Ext, Mountain View, Harry Gwala and Park Harry Gwala Park Ext	
21	Mathafeni Machi, Mdeni Mabheleni, Tyiweni Magxeni Nkawuleni Gwadane, Rasheni, Ntlola and Sithiweni village	7143
22	Elukholweni, Mpofini, Small-lokishi, Ezitapile, Phalane, Epiphany, Upper Mkhemane and Rolweni	6 285
23	Good hope, Matolweni, Thafa, Fobane, Sekhutlong, Bethesda and Mangolong	6 339
24	Ramafole, Moriting, Maqhatseng, Linotsing, Zimpofu, Purutle, Mahlake, Soloane, Mdeni and ZIngcuka	5 319
25	St Paul, Jabulane, Ned, Malosong, Khauoe, Thabang, Magogogong, Nkosana 2, New stance, Jabavu	7068
26	Cedarville Town, Black Diamond, Khorong Koali Park, Shenxa, Gobizembe/Magasela, Khorong Koali Ext. Mzingisi Location,	8892

	Sandfontein Farm, Matshemula Farm, Bultfontein Farm	

The above information is further presented on a map that shows the 26 municipality wards.

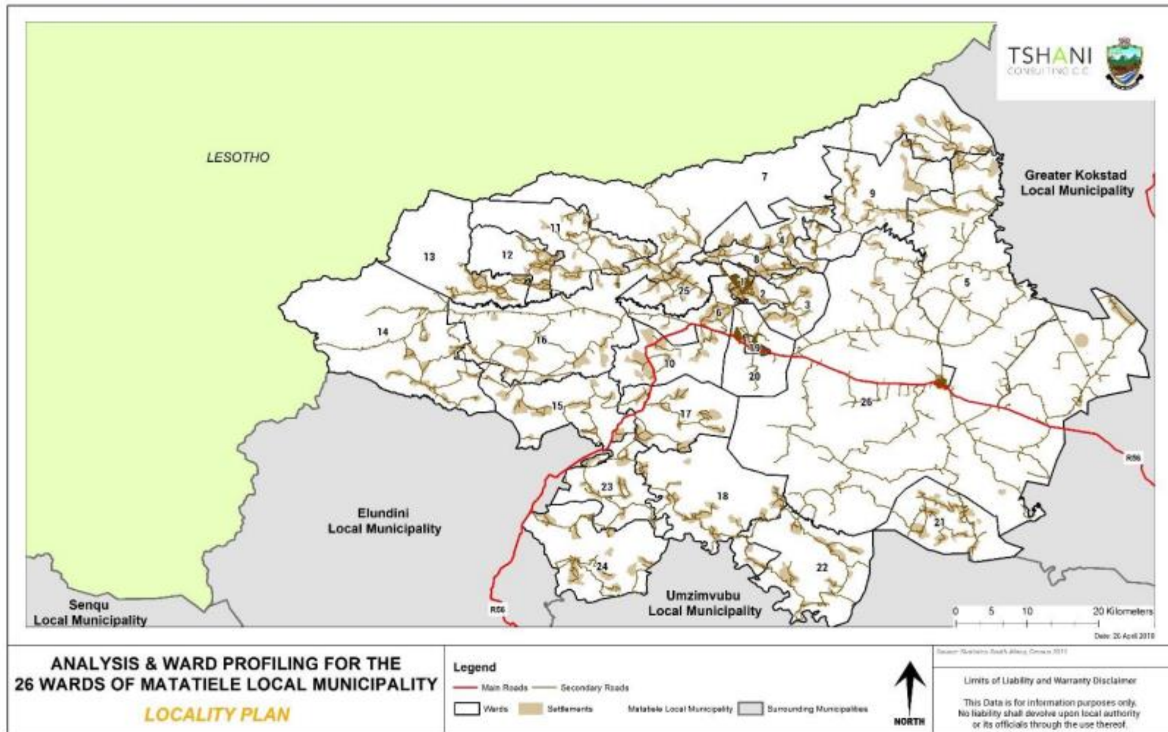

Figure 3.1: map of Matatiele wards
Source: (Matatiele Local Municipality, 2018).

The above table and figure give a presentation of the overall population and geographical locations that make up the town of Matatiele. However, this information does not give the exact number of the study population, which consisted of women who have experience with using indigenous knowledge for maternity and childcare, as well as traditional midwives. It is difficult to provide exact numbers for the study population because the practices are not recorded and there is no registration prerequisite for indigenous knowledge practitioners. The next section discusses sampling procedure, which defines the target population of this study.

3.5.2 Sampling

A sample is a representation of the population and should include all the elements of the said population (Brynard *et al.*, 2014:409). Non-probability sampling was used for this study and is defined by Leedy *et al.* (2019:164) as a sampling method whereby the researcher cannot guarantee the full representation of each element of the population. The researcher used their knowledge of the population as they (the researcher) are from the community, to identify known individuals that are appropriate for the study. The researcher also consulted strategic community members such as community leaders and ward counsellors to recommend individuals that are suitable for this study. The study applied the snowball sampling form of non-probability sampling. Leedy *et al.* (2019:242) explain that snowball sampling is a type of sampling method in which the researcher obtains referrals from existing participants of other individuals that have knowledge and experience of the phenomenon being studied.

The sample for this study was drawn from women between the ages of 18 and 50 who have used indigenous knowledge during their pregnancy and/or cared for their children using this knowledge, as well as known traditional midwives from the 26 municipality wards in Matatiele, Eastern Cape. The snowball sampling method was appropriate for this study because it works on a referral system by which participants refer the researcher to other individuals in the community that may be suitable for the study.

The intention of the researcher was to obtain a sample size composed of participants from all 26 wards; however, the final sample was ultimately drawn from 14 municipal wards due to a lack of participation in some targeted wards. The reasons for the lack of participants in other wards included the researcher not being able to identify or locate suitable participants and identified individuals not being interested in participating in the study. The researcher established contact with ward counsellors and tribal leaders to request permission to conduct the study, where necessary, as well as assistance with identification and introduction to traditional midwives and women that fit the study requirements. The researcher also used prior knowledge and established contacts with some women, as well as traditional midwives in some communities in the 26 wards in Matatiele, as the researcher also hails from Matatiele.

The first participant was a local woman with strong community ties whom the researcher knew. The researcher approached the participant at her place of work where a brief discussion of the study and its processes followed. The participant granted the researcher an appointment for the interview, which took place the following evening at the participant's home. It is at this meeting that full details of the study, including permissions from the university in the form of ethical clearance, permission letter from the Matatiele municipality and the consent form for the study were given to and discussed with the participant. The researcher also provided the voluntary and confidentiality assurances to the participant. At the end of the interview, the participant suggested two potential participants and provided the researcher with phone numbers for each one.

Collaboration with community leaders provided the researcher with information of traditional midwives, as well as women who have used indigenous knowledge to care for pregnancies and children in their communities. The researcher used snowball sampling method until they were satisfied that the interviews did not produce any new information. When data collection and analysis no longer yielded any new information, the researcher accepted this as the point of data saturation and ended the sampling. Data saturation is a stage in qualitative research where no new data are identified and all research concepts are well developed during sampling and data analysis (Aldiabat and Le Navenec, 2018:247). This point was reached at 39 participants. The below table depicts the number of participants that were interviewed per ward.

Table 3.2: Number of participants reached in municipality wards

Municipality ward	**Total number of participants**
Ward 1	**4**
Ward 3	**2**
Ward 4	**2**
Ward 5	**6**
Ward 6	**6**
Ward 7	**3**
Ward 9	**3**

Ward 11	**4**
Ward 13	**1**
Ward 14	**1**
Ward 17	**2**
Ward 18	**1**
Ward 23	**3**
Ward 26	**1**
Total	**39**

The above table shows that a total number of 39 participants were interviewed from 14 out of 26 municipal wards. The 14 wards that produced successful interviews were ward 1 with 4 participants, ward 3 with 2 participants, ward 4 with 2 participants, ward 5 with 6 participants, ward 6 with 6 participants, ward 7 with 3 participants, ward 9 with 3 participants, ward 11 with 4 participants, ward 13 with 1 participant, ward 14 with 1 participant, ward 17 with 2 participants, ward 18 with 1 participant, ward 23 with 3 participants and ward 26 with 1 participant. When the researcher realised that the interviews were not producing new information, but rather observed that the same information kept coming up from new participants, the researcher was satisfied that data saturation had been reached. The researcher further identified this point of data saturation because the wards that were interviewed shared proximity with some of the wards that could not produce participants. Furthermore, during snowballing, participants referred the researcher to other known participants in other wards who were midwives that they themselves have consulted. This demonstrated to the researcher that the practices and knowledge are most likely similar in other wards and villages.

3.6 DATA COLLECTION TOOLS

Data for this study were collected through interviews. An interview is defined by Maree (2016:87) as a conversation between the researcher and the participant, in which the researcher asks the participants questions to learn about their beliefs, ideas, opinions and behaviours. According to Creswell and Creswell (2018:356), qualitative interviews

are characterised by semi-structured and open-ended questions that are usually few in number and aimed at gaining the views and opinions of the participants. Interviews allow the researcher to have a better understanding of the experiences and views of the research participants in a narrative conversation.

The study applied the semi-structured interview type. Bryman (2016:465) explains that with semi-structured interviews, the researcher prepares fairly specific questions that will guide the interview. This method allows the researcher to guide the conversation, at the same time, it offers flexibility for the participant to tell their story and for the interviewer to change or amend the questions. The semi-structured interviews were guided by an interview guide that was designed by the researcher to address the objectives of this study and to find answers for the research questions. The interview guide consisted of six sections, from section A-F, and a total of 20 questions. **Section A** was designed to collect general information about the participants in relation to the study, age and whether the participants had experience with indigenous knowledge on maternity and childcare. The other five sections were designed to probe answers to the research questions as follows:

- **Section B**: What are the different types of indigenous knowledge for maternity and childcare in Matatiele?
- **Section C**: What methods do women and traditional midwives use to acquire indigenous knowledge on maternity and childcare in Matatiele?
- **Section D**: Which methods do women and traditional midwives use to preserve indigenous knowledge on maternity and childcare in Matatiele?
- **Section E**: Which methods do women and traditional midwives use to disseminate, indigenous knowledge on maternity and childcare in Matatiele?
- **Section F**: What are the strategies that can be used to enhance the management of indigenous knowledge?

3.6.1 Data collection procedure

Participants were identified using the snowball sampling method. The researcher used their prior knowledge of suitable participants to commence the data collection process. One known participant was approached at their place of employment and this

participant recommended two other suitable participants to the researcher. In other cases, the researcher contacted the ward counsellor using the details provided on the municipality website. In these cases, the ward counsellors were able to refer the research to either potential participants or community members who have knowledge of possible suitable participants such as traditional healers and community members who have been living in the community for a long time. These recommendations were in the form of directions to the location of a potential participant or a phone number.

The researcher used these methods to make contact with the participants and arrange an appointment for the interviews. Table 3.2 under subsection 3.5.2 provides details on the total number of participants that were finally interviewed in this study, as well as the wards from which these participants came or which they represented. The interviews were conducted by the researcher in a setting that was convenient for the participants, such as their homes and other places suggested by the participants. The interviews were done on a one-on-one basis, with the researcher using a tape recorder and notebook to record the sessions. The researcher developed and used an interview guide that was prepared to guide and direct the interview process and questions.

3.7 DATA ANALYSIS METHODS

Qualitative data analysis is described by Leedy *et al.* (2019:292) as an interactive process in which researchers perform data collection and data analysis simultaneously. Data for this study were collected by means of audio recordings and transcripts of notes taken during interviews. Thematic analysis was then used to analyse the themes and patterns that were identified during the data analysis stage. The analysis was conducted with Microsoft Excel. Braun, Clarke, Hayfield and Terry (2019:844) define thematic analysis as a method that is used to systematically analyse, organise and offer insights into patterns of meaning across data sets. Ngulube and Ngulube (2017:130) identify the following thematic data analysis steps for phenomenological studies:

- transcribing the interviews
- taking note of items of interest
- coding across the entire data

- searching for themes
- reviewing themes by mapping provisional themes
- checking for relationships among themes
- defining and naming the themes.

The interviews for indigenous knowledge practices on maternity and childcare were conducted primarily in Sesotho and isiXhosa, which are the primary languages of communication in the communities of Matatiele. The researcher then translated the responses in Sesotho and isiXhosa into English during the transcription stage. The responses were then grouped and divided in line with the research objectives, and thematic analysis was used. The findings of the study are presented in the form of tables as well as descriptive discussions.

3.8 ETHICAL CONSIDERATIONS

Ethics are defined by Hornby, Deuter, Turnbull and Bradbury (2015:480) as moral principles that influence a person's behaviour. According to Bryman and Bell (2016:129), researchers need to consider the following ethical issue in research: whether the studies pose harm to participants, a lack of informed consent, invasion of privacy and deception of participants. In addition to these, Leedy *et al*. (2019:102) identify the following ethical considerations:

- ✓ Participants are protected from abuse and exploitation.
- ✓ Participants become involved in the research out of their own free will.
- ✓ Participants are guaranteed privacy and confidentiality.

Before carrying out any research, tribal chiefs or tribal leaders, and community counsellors need to be consulted and permission granted by them. This is done to demonstrate a sign of respect and recognition of their positions as community leaders, and to gain access and cooperation in the community. During the conduct of this study, permission was requested from all involved and affected stakeholders, which were study participants, tribal leaders, community leaders, elders and the university's Ethics Compliance Office. Ethical clearance was applied for and obtained from the department of information science's ethics review committee as the policy dictates.

Furthermore, the researcher took time and effort to explain the procedures of the research to ensure informed consent and the identity of the participants was kept to the highest confidentiality. The information of all participants was kept anonymous, and none of their responses revealed their identity. Plagiarism was avoided by ensuring that all consulted sources were accurately acknowledged using the prescribed referencing style.

3.9 VALIDITY, RELIABILITY AND TRUSTWORTHINESS

According to Du Plooy-Cilliers, Davis and Bezuidenhout (2014:291), the terms 'validity' and 'reliability' are ineffective in a qualitative study because the aim of a qualitative study is to provide an in-depth understanding of a phenomenon, rather than to generalise the results. Trustworthiness is used to measure validity and reliability in qualitative studies.

Bryman and Bell (2016:276) identify four trustworthiness criteria:

Credibility – ensures that a research project is carried out correctly and the studied population can confirm the findings, which is an indication that the researcher understood the perception of their world.

Transferability – emphasises the production of elaborated, in detail accounts of the perceived social world, rather than the coverage thereof.

Dependability – focuses on recording and filing the different stages of the research in order to determine the fact that appropriate procedures were followed in the research.

Confirmability – ensures that the researcher keeps objectivity by ensuring that their personal feelings and perceptions do not influence the research process and results.

Trustworthiness for this study was ensured by collecting data from individuals who had first-hand experience in using indigenous methods for maternity and childcare, as well as credible and experienced traditional midwives. The researcher used a voice recorder and took notes during the interviews to ensure that the responses were

captured accurately. During the research process as well as the data collection and analysis procedure, the researcher ensured that their personal feelings, biases and perceptions did not influence the research process and results in any way.

3.10 SUMMARY OF CHAPTER THREE

Chapter three outlined the research methodology applied in this study. This included the research paradigm, research approach, research design, population and sampling, data collection tools, data analysis, ethical considerations, as well as validity, reliability, and trustworthiness.

CHAPTER FOUR
DATA ANALYSIS AND DISCUSSION

4.1 INTRODUCTION

The previous chapter outlined the research methodology applied in this study. The purpose of this chapter is to present, analyse and discuss the data that were collected for this study. The study was conducted to investigate the management of indigenous knowledge for maternity and childcare in the communities of Matatiele, in the Eastern Cape province. Data were collected in line with the study objectives, which were to:

1. Identify the different types of indigenous knowledge for maternity and childcare in Matatiele, Eastern Cape
2. Explore methods used by women and traditional midwives to acquire indigenous knowledge for maternity and childcare in Matatiele, Eastern Cape
3. Establish methods used by women and traditional midwives to preserve indigenous knowledge on maternity and childcare in Matatiele, Eastern Cape
4. Explore methods used by women and traditional midwives to disseminate indigenous knowledge on maternity and childcare in Matatiele, Eastern Cape
5. Establish strategies that can be used to enhance the management of indigenous knowledge.

The study applied qualitative research methods, using semi-structured interviews for data collection. The presentation of data is discussed in detail in the next section.

4.2 DATA PRESENTATION

A semi-structured interview was conducted with individual study participants that consisted of local traditional midwives and local women who have experience in using indigenous knowledge for maternity and childcare. Traditional midwives in this study were identified as individuals who provide care to women during pregnancy, birth, postpartum and the care for babies. The interviews were guided by an interview guide that was designed by the researcher to address the objectives of this study and to find answers for the research questions.

The interview guide consisted of six sections, from section A-F, and a total of 20 questions. **Section A** was designed to collect general information about the participants in relation to the study, age and whether the participants had experience with indigenous knowledge on maternity and childcare. The other five sections were designed to probe answers to the research questions as follows:

- **Section B**: What are the different types of indigenous knowledge for maternity and childcare in Matatiele?
- **Section C**: What methods do women and traditional midwives use to acquire indigenous knowledge on maternity and childcare in Matatiele?
- **Section D**: Which methods do women and traditional midwives use to preserve indigenous knowledge on maternity and childcare in Matatiele?
- **Section E**: Which methods do women and traditional midwives use to disseminate, indigenous knowledge on maternity and childcare in Matatiele?
- **Section F**: What are the strategies that can be used to enhance the management of indigenous knowledge?

These questions were designed to gather information that would answer research questions and fulfil study objectives.

The interview guide was used only as a guideline to probe and direct the interview; otherwise, the interviews followed a casual and narrator style of conversation. The researcher obtained appointments with times and venues selected by the participants on the dates that the researcher suggested. The data collection process for this study took place in the months of July and August 2021. The interviews were conducted in the residential homes and places of work of the participants primarily in Sesotho and isiXhosa.

The researcher took time to explain the purpose and procedure of the interview to each participant, reassuring them that the interviews were voluntary and that they could leave at any time, or stop the process should they need to or feel uncomfortable at any point of the interview. The participants were also reassured of the strict confidentiality process that the researcher would apply in the study to protect their anonymity. The information of all participants was kept anonymous, and none of their responses revealed their identity. All participants in the study granted the researcher permission to record the interviews using a voice recorder. The interview recordings

were then transcribed into Microsoft Excel and themes emerged from this process that addressed the study objectives. The next section provides descriptions of backgrounds of the participants in this study.

4.3 DESCRIPTION OF PARTICIPANTS

A total of 39 participants in the study were interviewed from 14 out of 26 wards of the Matatiele Municipality, targeting traditional midwives and women who have used traditional knowledge and practices during pregnancy and for childcare. The researcher made first contact with the ward counsellors of some wards by telephone, as their details are available on the municipality's website. In other wards, the researcher had prior knowledge of individuals that would be suitable in this study and approached them. The ward counsellors were instrumental in connecting the researcher with relevant people such as tribal leaders who had sound knowledge and good relations with community members that would be suitable for this study.

The snowball method was used to collect data in that once the researcher established contact with a suitable study participant, the researcher then asked the participant to recommend other women and/or traditional midwives with whom they have worked or knew of. This process was applied until the research arrived at a point of data saturation. Data saturation is a stage in qualitative research in which no new data are identified, and all research concepts are well developed during sampling and data analysis (Aldiabat and Le Navenec, 2018:247). The recognition of data saturation is an indication that there is likely not much different information in other wards and the researcher is confident that all the necessary information was obtained.

Of the 26 wards in Matatiele, the interviews for the study were conducted successfully in 14 wards, as indicated in the table below. The reasons for non-participation in other wards included the researcher not being able to identify or locate suitable participants and identified individuals not being interested in participating in the study.

Table 4.1: Study participants

Municipality ward	Women	Traditional midwives	Age range	Total
Ward 1	3	1	36-61	**4**
Ward 3	2	0	42-62	**2**
Ward 4	2	0	49-62	**2**
Ward 5	5	1	30-61	**6**
Ward 6	4	2	24-84	**6**
Ward 7	1	2	38-53	**3**
Ward 9	3	0	27-65	**3**
Ward 11	3	1	34-44	**4**
Ward 13	1	0	49	**1**
Ward 14	1	0	61	**1**
Ward 17	1	1	47-69	**2**
Ward 18	1	0	59	**1**
Ward 23	2	1	36-46	**3**
Ward 26	1	0	63	**1**
Total	**30**	**9**	**-**	**39**

The above table depicts the total number of participants, their role in the study, age range, the municipal ward they came from and how many participants were interviewed in each ward. The above table shows that a total number of 39 participants were interviewed from 14 out of 26 municipal wards. The 14 wards that produced successful interviews were ward 1 with 4 participants, ward 3 with 2 participants, ward 4 with 2 participants, ward 5 with 6 participants, ward 6 with 6 participants, ward 7 with 3 participants, ward 9 with 3 participants, ward 11 with 4 participants, ward 13 with 1 participant, ward 14 with 1 participant, ward 17 with 2 participants, ward 18 with 1 participant, ward 23 with 3 participants and ward 26 with 1 participant. Thirty of the participants were women who had experience in indigenous knowledge and maternal care, and nine were traditional midwives.

The ages of the interviewed participants ranged from 24 to 84 years and all the participants interviewed were women. The age range of the participants was captured

to determine whether there were reasons to believe that the use of indigenous methods during pregnancy was prevalent in certain age groups and not others.

The municipal wards that produced more participants were mostly the wards that are made up of more villages than the wards with more urban areas such as townships and suburbs. The data showed that there were fewer people in these communities that were regarded as traditional midwives. It might be argued that this was indeed a dying tradition, or it could be the result of secrecy that encompasses traditional practices and mistrust of outsiders, which resulted in individuals not agreeing to participate in the study.

Furthermore, the data showed that the majority of women in these communities who have experience in indigenous knowledge and practices in maternity and childcare are older women. There were only two participants in their 20s, and no participants in their teenage years were interviewed. The next section discusses the findings of the collected data as they relate to the study objectives.

4.4 TYPES OF INDIGENOUS KNOWLEDGE FOR MATERNITY AND CHILDCARE

The first objective of the study was to identify the types of indigenous knowledge used by women and traditional midwives in the Matatiele communities. This objective was addressed by section B of the interview guide. The participants were asked to describe the different kinds of indigenous knowledge practices that they have used during pregnancy and childcare as well as their significance. This question was designed to encapsulate knowledge and practices women in these communities possess on indigenous maternity and childcare. Furthermore, traditional midwives were asked to add the indigenous knowledge and practices they prescribed to their clients. Traditional midwives are believed to have more experience and more knowledge in this subject matter, this question was asked in the hope of finding additional knowledge and practices that are unique to traditional midwives than ordinary women. Two themes were identified from the interview responses in terms of the identification of different practices of indigenous knowledge for maternity and childcare: indigenous

medicinal practices and cultural beliefs practices. Several sub-themes were identified for each theme discussed in detail in the next section.

4.4.1. Theme 1: Indigenous medicinal practices for maternity and childcare

Theme 1 described indigenous medicines used in Matatiele communities for maternity and childcare. Four sub-themes were identified under this theme. These subthemes described the typical conditions that prompt the use of indigenous medicine as well as the type of medicine used. These subthemes are presented in Table 4.2 below.

Table 4.2: Indigenous medicinal practices for maternity and childcare

Subtheme	Indigenous medicinal practice
1. Solve fertility problems	- Tlhoritlhori (herbal drink ingested orally)
2. Prevent miscarriage	- Dipitsa/Imbiza/Isihlambezo (herbal drink ingested orally) - Vimbela (paste mixture of herbs and crocodile skin oil) - Lethapo/intabo (a belt made with cloth filled with traditional herbs) - Ostrich egg powder
3. Prevent difficult, painful and prolonged labour process, and promote postpartum healing	- Dipitsa/Imbelekisane (herbal drink ingested orally) - Vaginal steaming
4. Wellbeing of the child	- Dipitsa/Imbelekisane (herbal drink ingested orally) - Vimbela (paste mixture of herbs and crocodile skin oil) - Burning of herbal incense

4.4.1.1 Subtheme 1: Solve fertility problems

Fertility problems that were reported under this subtheme referred to any challenges a woman encounters with conceiving children at any stage of their life. The participants in this study mentioned a specific medicine that is recommended and used to address this problem. The medicine is commonly known as *Tlhoritlhori.* It is described as a mixture of herbs, plants and roots, diluted in water and ingested orally. In some instances, women take this medicine when they are ready to have children, without necessarily knowing that they have any infertility problems, so as to fall pregnant faster. This is highlighted by a woman participant who explained that:
"My mother-in-law made me drink tlhoritlhori almost immediately when I got married, she wanted grandchildren as soon as possible." [Participant 16]

Participant 4 also shared her experience of the effectiveness of this particular medicine in solving fertility problems.
"I got married in 1983, no children; '84, '85, '86, then in 1987 my neighbour and close friend took me to a traditional healer who gave me tlhoritlhori. I have four children now." [Participant 5]

The use of traditional medicine to treat infertility has also been reported in other parts of the world. A study conducted in Baham, Cameroon by Telefo, Lienou, Yemele, Lemfack, Mouokeu, Goka, Tagne and Moundipa (2011:184) identified a total of 46 indigenous medicinal plants that are used in this region to treat infertility in women. These traditional methods are used mainly by women in rural communities. These findings were also shared by Abdillahi and Van Staden (2013:593) in their South Africa, study that found that there are numerous indigenous plants that are used as medicine to treat infertility. These indigenous medicines are used to treat fertility disorders that range from polycystic ovarian syndrome, premature ovarian failure and blocked fallopian tubes. The main methods of administering the medicine are orally and vaginal douches. Women and traditional midwives in Matatiele may not know the English medical terms of specific infertility problems in women, but they demonstrate some knowledge of the female reproductive system and how it functions.

4.4.1.2 Subtheme 2: Prevent miscarriage

Community members interviewed in this study regarded pregnancy as a sensitive and fragile process that warrants protection against possible termination. They mentioned that there are several traditional medicines that are used to prevent miscarriage and increase the chances of carrying the pregnancy to term. Miscarriages are believed to be caused by physical and spiritual ailments and, therefore, the mother-to-be must be protected against both causes. To this end, participants mentioned *dipitsa* (Sesotho*)* or *imbiza* (IsiXhosa), a concoction of water mixed with various herbs, plants and roots that are indigenous to the areas in and around Matatiele. All interviewed participants referred this herbal medicine, which highlighted its significance and relevance in these communities. This is captured in their responses in the following excerpts:
"When I told my mother that I am pregnant, she told me that I should start drinking dipitsa tsa lecoloured to protect the baby and prevent miscarriage." [Participant 1]

"I drank dipitsa in all my pregnancies because they make you have healthy babies and also clean your womb so that you don't lose the baby." [Participant 11]

"I prescribe imbiza that we call iyeza le plate for the first six months of pregnancy, a mixture made of a root from a plate that grows on a hill not far from my house to strengthen the pregnancy and ensure that it does not abort." [Participant 3]

The use of medicinal herbs for maternal and childcare is a practice that is prevalent in other communities in South Africa as well as other parts of the world. For instance, traditional birth attendants in Northern Ghana prescribe herbal concoctions to pregnant women for cleaning of the reproductive system (Bassoumah and Adam, 2018:34).

Study participants reported that they also used *vimbela*, a paste made of crocodile skin fat and herbal plants found within their regions. *Vimbela* is applied on the body, sometimes mixed with the body lotion and applied daily to protect the woman against witchcraft, evil spirits or *umeqo* – bad medicine left by ill-intentioned people to cause harm. The use of *vimbela* was encapsulated in the following statements:
"When I was pregnant, I applied vimbela to the bottom of my feet before leaving the yard to protect myself against meqo." [Participant 22]

"I mixed vimbela with my body lotion when I was pregnant, and vaseline for my baby to apply on the body to protect against witches and evil medicine that people carry or use that can destroy my pregnancy or make my baby very sick." [Participant 9]

A pregnancy is also protected from miscarriage using *intabo/lethapo*. This is made from a stretching cloth that has dried herbal medicine sown into it and tied around the waist of a pregnant woman. A woman participant described the use of *intabo/lethapo* thus:
"My grandmother gave me lethapo for my second pregnancy because I miscarried my first. It is a string with traditional medicine sown in that was tied around my waist until I gave birth, it protected me from miscarriage I really believe." [Participant 23]

Study participants also reported that they used ostrich eggshell powder to prevent miscarriage. The ostrich eggshell is ground to a fine powder and then mixed with medicinal herbs. This powder is poured into the shoes or feet of a pregnant woman to break evil spells such as *umeqo* that can lead to the loss of pregnancy. A traditional midwife elaborated on *umeqo*:
"I give pregnant women in my care a mixture of ground ostrich eggshell and herbs as fine powder to put on their feet or in their shoes when they leave the house, because this will protect them against evil spirits and break any spells tied against them." [Participant 32]

The use of traditional medicine designed to offer protection against forces that are not of a physical nature, but rather spiritual, is reported in other studies conducted in other South African communities and beyond. In a study conducted by Abrahams *et al.* (2002:79) in Cape Town it was reported that women in this region use traditional medicine because it offers protection against witchcraft and evil spirits that may cause the pregnancy to terminate or severe illness in a child. This study also mentions *umeqo* and *intabo* and gives a similar description of these concepts to the one identified in Matatiele communities. Another report of the use of indigenous medicine for protection against evil spirits, particularly in the context of South Africa, was one referenced by Shewamene, Dune and Smith (2017:8) where they discuss the use of traditional medicine called *kgaba*. *Kgaba* is used by some communities in Limpopo to protect a pregnant woman against evil spirits and offer spiritual cleansing.

4.1.1.3 Subtheme 3: Prevent difficult, painful and prolonged labour process

Dipitsa/imbiza is used to ensure that the labour process is not difficult, prolonged, or unnecessarily painful. A traditional midwife gave the following exposition:
“When the woman is six months pregnant, I give Imbelekisane, a type of imbiza that prepares her for the birth now, ensures that she does not suffer, and she will not need an operation (caesarean section).” [Participant 8]

This is in line with other practices that have been reported, such as in Limpopo, South Africa, where pregnant women ingest herbal drinks to speed up the labour process (Mogawane *et al.* (2015:6). The participants in this study mentioned other medicines designed for the protection of the mother and the unborn baby against ailments of a spiritual nature, such witchcraft and evil spirits.

Postpartum care was regulated and facilitated by the use of traditional herbs and herbal medicine in the Matatiele communities, as reported by the participants in this study. Participants explained that once the baby is born, the woman is given herbal medicine to accelerate the healing process. A traditional midwife in this study explained:
“I mix specific plants with a healing effect. Some include common household plants like onion, grind them into a paste, mix with boiling water in a large bucket. The woman sits on this bucket a few times a day to help heal in the reproductive organs” [Participant 19]

Participant 12 explained this process and her experience of it:
“My mother mixed boiling water and some herbs in a 25-litre bucket and told me to sit on it in the morning and evening every day. It really helped me with pain. I would feel relief, and the stitches were out quickly.” [Participant 12]

In some areas and with some ethnic groups, particularly amaXhosa communities, *umchamo wemfene* (monkey’s urine) is a common *imbiza* for this purpose.

"I used umchamo wemfene after the birth of all my children to help me heal my womb, and also for protection against witchcraft because we are in a weak state after giving birth." [Participant 4]

4.1.1.4 Subtheme 4: Wellbeing of the child

Special traditional medicines are prepared for the health, protection and wellbeing of children after they are born, as reported by the participants in this study. Children are protected against childhood illnesses that are known in these areas as dangerous and sometimes fatal in children. These illnesses are called by different names in different ethnic groups in the communities of Matatiele. The researcher observed that when engaging members of the Xhosa-speaking community, they mentioned *iplate*, and members of the Basotho community mentioned *kokwana*. The use of *moya* or *umoya omdaka* is prevalent in different ethnic tribes and communities. All these names, when defined, refer to the same illness. A traditional midwife participant of this study gave the following description:

"Once the baby is born, I wait one month and start preparing pitsa ya bana, and the mother must give the baby one teaspoon every day. This will prevent the baby from being attacked by kokwana. Kokwana is very dangerous in small children, very old people and very sick people because it can look like many illnesses." [Participant 39]

This participant explained that symptoms of *kokwana* in children can include excessive diarrhoea, vomiting, a lack of appetite, epilepsy, sleepy eyes, rapid weight loss, unusual opening of the vagina and anus, and fatigue. Participant 17, a mother of three children explained:
"When a baby is drinking iyeza le plate, you will notice that their poop gets dark and has strings; that is how I know it is working. The medicine gives my children healthy and beautiful skin, with no rashes." [Participant 17]

The participants further elucidated that these children's medicines help strengthen the baby's fontanel, which is believed to make them vulnerable to evil spirits and witchcraft. *Vimbela* and ostrich eggshell powder are also used to protect infants and children from evil spirits, witchcraft and bad spells. Participants reported that they also

burned incense made from dried herbal medicine to chase away evil spirits. Participant 1 stated:

"I use mokubetso (incense) at night when I have a baby, especially if we had many visitors in the house. That smoke will break any bad medicine that was brought into the house, intentional or otherwise." [Participant 1]

Participant 9 shared that she used *mokubetso* when the baby cries non-stop at night:

"… because sometimes you don't know if the baby is just being fussy or if there is evil in the house." [Participant 9]

The use of indigenous medicines to protect and strengthen a newborn baby was reported by Mogawane *et al*. (2015:7) in their study conducted in Limpopo, South Africa. The study reported that a traditional medicine called *dupa* is used to treat childhood illnesses and strengthen the baby. *Dupa* is applied on monkey skin and burnt like incense.

During the interviews, the conversations led to the discussion of ingredients of these medicines that are used. The ingredients or components of these herbal drinks are, in most instances, –not known by the women who consume them. Women reported that they drank the medicine because it was recommended or given by the people they trust the most. Participant 2 stated:

"I do not know a lot about traditional medicine and don't believe wholeheartedly in it, but I drank dipitsa for both my pregnancies because that's what women in my family and community do. And I know that my mother and aunts would never give me something that would harm me or my children." [Participant 2]

On the other hand, the traditional midwives in this study were very knowledgeable about the ingredients of the herbal mixtures. The most common ingredients are plants and roots that are indigenous to the areas and are known only by their Sotho or Xhosa names. For example, *kgomoyabadisana, idumbe lomtwana, imbelekisane, umsuzwane*, *sehalahala sa matlaka* and *lengana* are common plants that were mentioned by traditional midwives as *dipitsa* or *iimbiza* ingredients. In other instances, the mixtures include common medications that are found in pharmacies, such as

Lennon products like Haarlemensis and Entressdruppels. One traditional midwife interviewed stated that the following:

"To make umthi we plate, I get roots from a plant from a hill not far from my house, mix it with idumbe lomtwana, a plant that grows by the riverbank, as well as Haarlemensis and Entressdruppels that I get from any pharmacy in town." [Participant 10]

The participants in this study shared that they no longer participated in homebirths because the Department of Health did not allow it. The traditional midwives agreed that they supported this and referred the mothers in their care to the hospital to have their babies there. They also did not object to these women doing antenatal visits to the hospital and receiving care from the clinics. However, they did state that the clinic staff were against the use of traditional herbal medicine for maternity and childcare. The women participants corroborated these sentiments and shared that they did not disclose the use of traditional medicines because the nursing staff were against it. The second theme identified during data analysis is discussed in the next section.

4.4.2 Theme 2: Cultural beliefs practices

The second theme identified in the data pertained to indigenous beliefs and practices of maternity and childcare. The theme was organised further into three subthemes and the significance of the practice. The subthemes are presented in table 4.3 below.

Table 4.3: Indigenous beliefs practices

Subtheme	Indigenous belief and practice
1. Prevent difficult, delayed and painful labour process.	- Do not stand on the doorway when pregnant - Do not sleep during the day when pregnant - Avoid sitting on rocks or on chairs when pregnant

2. Protect mother and baby from evil spirits, evil spells, bad luck and witchcraft.	- Keep pregnancy a secret in the first trimester - Mother and baby isolate for three months after birth - Do not travel at night when pregnant - Do not attend funerals - Do not eat meat prepared for traditional celebrations
3. Labour process and postpartum healing: - Delay the progression of labour - Prevent defecation during labour - Connect the baby with the home	- Father of the baby is not allowed in the isolation room for the first three months - Avoid sexual intercourse - Tie a stone to the back of a pregnant mother - Avoid eating while walking - Umbilical cord and hair buried in bedroom

The data collection and analysis process revealed that indigenous knowledge for maternity and childcare incorporates not only medicinal care, but also a variety of beliefs and practices that are believed to influence the health and well-being of both the pregnant mother and the baby. These practices are widely known in these communities, and they are observed with conviction because they are believed to have serious consequences.

4.4.2.1 Subtheme 1: Prevent difficult, delayed and painful labour process

Participants in this study shared that when pregnant, one of the greatest fears is having labour that is difficult, painful, lasts long and that may possibly result in complications that could lead to a caesarean section or the death of the mother or child. This particular fear was mentioned in a study conducted in Ugandan communities where it

was found that women are prohibited from planting potato stems during pregnancy as this could cause prolonged labour that could cause the umbilical cord to be wrapped around the neck of the baby (Beinempaka, Tibanyendera, Atwine, Kyomuhangi, Kabakyenga and MacDonald, 2015:899). In Matatiele, participants shared some of the practices and beliefs that are acknowledged to prevent challenges during labour.

It is said that a woman must never stand in a doorway when pregnant. They should rather exit fully as this would result in the baby being stuck in the birth canal during birth. Participant 23 shared:
"My mother would always reprimand me for standing in the doorway when I was young, but she never told me why. It was only after I was pregnant that she told me that the baby would do the same thing when born, take a break, and not leave my body." [Participant 23]

Participant 19, a traditional midwife, shared:

"A woman must never stand at the door. You enter, or you exist; otherwise, childbirth will be very painful for you." [Participant 19]

Participant 6 stated that*:*

"My mother-in-law told me that standing on the door for any reason is a big problem, even poking your head out and returning will make childbirth very painful." [Participant 6]

Another practice that was reported by the participants in this study was that it is taboo for a pregnant woman to take frequent naps during day, because the baby will also sleep during the labour process, which will cause prolonged and painful labour. This was explained by participant 20:
"My sister is the one who would always tell me not to sleep during the day because my baby will fall asleep during labour and that will be very painful for me." [Participant 20]

Participant 39, a traditional midwife shared:

"I always tell women in my care to avoid sleeping during the day, they can rest or lie down when necessary, but that sleeping will result in a tired and sleepy baby during birth." [Participant 39]

It is also believed that a pregnant woman must not sit on a rock or a chair. They should rather use a mat because it is believed that this will cause prolonged labour. Participant 13 explained:
"In my family, pregnant women do not sit on a chair; they only sit on isicamba (grass mat) because we believe that giving birth will be painful and long." [Participant 13]

A similar practice was mentioned in the villages of South West Uganda by (Beinempaka *et al.*, 2015:900). The authors state that in these communities, a pregnant woman is discouraged from staying seated at the eating place so that the baby can cry easily after birth.

4.4.2.2 Subtheme 2: Protection of mother and baby from evil spirits

The data for this study revealed that the protection of the mother and her baby before and after birth is important and, to this end, deliberate steps are taken to ensure their safety. The study participants revealed that women are regarded particularly vulnerable when pregnant, as well as when they are new mothers with babies. Deliberate and specific measures are taken to protect them not only from physical harm, but also from evil spirits, witchcraft, bad luck, bad spells and bad medicines carried by other people.

It is reported that a pregnant woman should avoid walking or travelling at night because it is believed that this is when evil is most perverse. Pregnant women are also encouraged to keep their pregnancy secret because jealous people may cast dangerous spells. Furthermore, they are discouraged from attending funerals or dealing with dead bodies, as well as eating any meat that is prepared for *mekete* (traditional gatherings or functions). Participant 8, a traditional midwife explained that:
"It is a big taboo to see a pregnant woman in a funeral, particularly by the grave site because that dark cloud of death will follow her and her unborn child." [Participant 8]

Participant 7 shared her experience:

"I was pregnant in December, and you know that is when we have mekete. I was not allowed to go or eat any meat from there, I really missed out." [Participant 7]

The association of bad luck during pregnancy with death and funerals is not unique to the communities of Matatiele. According to Beinempaka *et al*. (2015:899), indigenous women in some villages in South West Uganda have similar practices. The study mentioned that during pregnancy, a woman must avoid seeing or burying a dead person or a dead animal, as this is believed to cause bad luck and could negatively affect the pregnancy.

Participants in this study shared that after the birth of a child, a woman is isolated in one room in the house with her child, only a handful of women are allowed in to assist her. This practice is believed to afford the new mother the opportunity and space to heal from the birth process, and to protect her form bad medicine and spells that may be brought about by other people, intentional or otherwise.

"... we use that hut there as ntlo ya motswetse (new mother's house). It is kept warm with a heater or paola (indigenous heater), and only women in the family are allowed to enter, help the other with bathing, feeding, and cleaning. She stays there for three months." [Participant 1]

Participant 29 explained that:

"No man is allowed in the room, not even the father. The father must not stay there with the mother because they are not allowed to be intimate. The mother must heal properly first." [Participant 29]

The practice of isolating a new mother with her new baby is common in other parts of South Africa. In the province of Limpopo, a new mother and her baby are isolated and only elderly women are allowed to assist her (Ngunyulu and Mulaudzi, 2009:53). According to the findings of this study, this is done to protect the new mother from bad medicines and spells that may be brought to the house by jealous people. This practice is also observed by Koya women in Turkey, whereby a new mother is isolated with her baby for 40 days after birth (Okka, Durduran and Kodaz, 2016:502)

4.4.2.3 Subtheme 3: Labour process and postpartum healing

Participants of this study shared other indigenous practices that are common in the communities of Matatiele as practices that are believed to delay the progression of labour, prevent defecation during labour and connect the newborn baby to the family and the community.

For instance, it is believed that, during labour, tying a small stone to the back of a woman in labour can slow down labour progression and allow the woman to reach the hospital and not give birth on the way. It is also believed that a pregnant woman should not eat and walk at the same time because this will cause her to defecate during labour. The belief is that if a mother defecates on her baby during labour, that baby will have bad luck and will not be liked by people.

The Matatiele communities believe that a newborn baby must be connected to the family home by burying the umbilical cord in the yard or in the bedroom. This is believed to ensure that the baby will always return to his family home. These practices are reported by indigenous women in Turkey and Iran, according to Katabi (2008:297).

Participant 28 shared her experience:
"My mother-in-law picked a stone from the yard and used a cloth to tie it to my lower back as we waited for my husband to organise transport to the hospital. I was already in labour, but my baby did not arrive until we were in the hospital." [Participant 28]

Participant 21 who is a traditional midwife also contributed:
"*Lejwe la moralla is usually used to delay the baby from coming until the mother is in the hospital, but any small stone can be used."* [Participant 21]

Participant 6 shared her experience:
"The hospital is very far, and we usually ask neighbours with cars to accompany us. My second baby was almost born at home because we were waiting for a car to transport me to the hospital. I was helped by my neighbour; she tied a stone on my back, and my baby waited." [Participant 6]

The findings of this study identified the role of traditional midwives in supporting and caring for women during pregnancy until labour, then postpartum and caring for the newborn child until about age seven. Traditional midwives no longer participated in the delivery of children or homebirths and referred all their clients to hospitals for the birth of their babies.

The participants in this study shared that they used indigenous medicine to treat and prevent a number of ailments during pregnancy as well as to protect the pregnancy and the child against harm. Indigenous medicine is used to treat and address fertility problems, prevent miscarriages, prevent difficult and prolonged labour, and to look after the overall wellbeing of the child after it has been born. These findings are in line with the findings of Ahmed *et al*. (2020:3) who state that women in Pakistan use a variety of herbal remedies to treat common symptoms associated with pregnancy.

Other specialised medicines are used to protect pregnancy and prevent miscarriage and are administered using methods other than ingestion; for instance, the use of *vimbela*, which is applied on the body, and the use of *lethapo,* which is tied around the waist. These medicines protect the pregnant woman against evil spirits and witchcraft that can cause miscarriage. These practices are similar to those reported in other parts of South Africa. In Limpopo, for instance, Ngomane and Mulaudzi (2012:33) report on the use of *ritlagi*, a specialised grass that is tied around the waist of a pregnant woman to protect her from witchcraft and evil spirits.

Specialised indigenous knowledge is also used for the care and management of labour. There is specialised medicine that is prepared to ensure that labour is not difficult, prolonged and with excruciating pain. The use of indigenous medicine for labour management is also observed in other communities such as Limpopo where a woman is given herbal remedies to manage the labour process and offer protection against evil spirits (Ngomane and Mulaudzi, 2012:33).

Specialised indigenous medicine is also prepared for the caring for children from birth to about seven years of age. These medicines are administered in various formats such as oral ingestion, body creams, incense and enemas. Indigenous medicine for

children typically prevents known children’s illnesses that are dangerous, at times fatal. This is in line with Mogawane *et al.* (2015:7) who report that in Limpopo, the children's illnesses that are common in these communities are treated by burning an incense called *dupa.*

The second theme identified under the types of indigenous knowledge used in maternity and childcare by Matatiele communities was cultural beliefs practices. These practices include behaviours that are considered taboo, and certain beliefs that are said to influence the outcome of a pregnancy. The main objective of these practices and beliefs were broken down into three subthemes, namely: to prevent a difficult, prolonged and painful labour; to protect the mother and the baby from witchcraft and evil spirits; and to facilitate safe labour and speedy postpartum healing.

These beliefs and practices are central to maternity and childcare because they are strongly associated with the outcomes of a pregnancy as well as a healthy child sprouting from the pregnancy. These beliefs can be viewed as mere superstitions by people that are not part of these communities, especially people with western ideologies, but they are interwoven into the fibre of the realities of these communities and are practiced and accepted as fact.

These practices and beliefs are not unique to the communities of Matatiele; other indigenous communities also have practices that are linked to their cultural beliefs and identities. An example of such communities can be drawn from M'soka *et al.* (2015:3) in their study of rural communities of Zambia where it is a common belief that a pregnant woman will experience prolonged and difficult labour if they eat bones from any meat dish and drink alcohol. This study also mentions that sexual intercourse is limited to the expecting parents only; they ought to be faithful to each other because failure to do so may result in obstructed labour.

The findings in this study draw some parallels to the study of M'soka *et al.* (2015) by identifying some restrictions with regard to sexual intercourse during pregnancy. According to the study findings, sexual intimacy is prohibited for at least three months after the birth of a baby because the new mother is believed to need this time to fully heal from the process of delivering a child.

Some of these practices may not be understood and appreciated by people who are not part of these communities or people who subscribe to the Western way of thinking, but it is important to note that these practices form part of knowledge systems in these communities and are regarded as part of their realities. Furthermore, the findings presented several practices that draw parallels to maternity and childcare practices that are observed in western medicine. For an example, practices such as avoiding crowds during pregnancy and abstaining from sex after birth are practices that are found or recommended in western maternity care practices as reported in studies such as those done by (Alum, Kizza, Osingada, Katende and Kaye, 2015), and (Li, Xie, Yang, Rainey, Song and Greene, 2018).

Section C of the interview guide is discussed in the next section. Its main aim was to address the second objective of the study, which was to identify the methods used by women and traditional midwives in Matatiele to acquire indigenous knowledge on maternity and childcare.

4.5 ACQUISITION OF INDIGENOUS KNOWLEDGE

The second objective of this study was to explore methods used by the women and traditional midwives of Matatiele to acquire indigenous knowledge on maternity and childcare. To this end, section C of the interview guide was designed to identify the methods that traditional women and midwives use to acquire indigenous knowledge on maternity and childcare. To this end, the participants were asked how they acquired the knowledge they had on indigenous methods of maternity and childcare. This question was asked in order to identify knowledge management practices within these communities as they relate to the acquisition of indigenous knowledge for maternity and childcare. The responses of the study participants revealed that indigenous knowledge is acquired mainly by oral means. This was in line with the definition of the tacit nature of indigenous knowledge that is acquired predominantly through oral traditions (Chisenga, 2002:16). Data from this study highlighted three main methods of acquisition of indigenous knowledge for maternity and childcare, as well as main sources for each method. These methods and their sources are presented in Table 4.4 below.

Table 4.4: Acquisition of indigenous knowledge

Methods of acquisition	Source
1. Verbally	- Mother - Grandmother - Mother-in-law - Sister - Other women in the community
2. Observation	- Family practices - Community practices
3. Participation	- Consulting traditional midwives - Consulting traditional doctors

Participants in this study revealed that the knowledge they possessed on indigenous methods of maternity and childcare was acquired through verbal communication and instruction, observation and participation.

4.5.1 Verbal method

This verbal communication is said to take place primarily at home and from members of the nucleus family. The women who participated in the study shared that they were told about indigenous practices during their pregnancies, and sometimes even before they fell pregnant. The main sources of this knowledge were their own mother, grandmother (maternal or paternal), mother in-law once they were married, older sisters and other women in the family and community, for instance aunts and neighbours. This is affirmed by Coleman (2013:57) who states that indigenous knowledge for maternity and childcare is acquired verbally from relatives such as mother, aunt or grandmother. These are some of the utterances of participants of this study on how they acquired their knowledge:

"I was in standard nine when I had my fist pregnancy and my mother kicked me out of the house. I went to live with my grandmother. She is the one who taught me how to use traditional ways to take care of my pregnancy and my child, and I was able to do that with all my pregnancies." [Participant 4]

"My mother and my mother-in-law told me what to do when I was pregnant. They would get me dipitsa, tell me other things I can and cannot do, and how to take care of the baby." [Participant 11]

4.5.2 Observation method

In some cases, participants reported that they acquired their indigenous knowledge through observations. Observing family practices over time on how pregnancies and children are taken care of, and observing community practices in this context, were given as a method of acquiring indigenous knowledge. Observation as a method of indigenous knowledge is acknowledged by Patrick (2019:378) in some fishing communities of Uganda where knowledge is acquired when male relatives perform fishing activities in the presence of young boys, such as father, brother or uncle.

Participants in this study shared:
"My knowledge of using traditional methods during pregnancy and when the baby is born comes from watching the people in my family, my mother, aunts, sisters. Sometimes they will ask me to help, that's how I know what to do." [Participant 12]

Participant 17 shared an interesting community practice:
"When there is a newly pregnant woman in my village, young, married mothers organise a gathering at her home mostly, especially towards giving birth, and just talk about what to expect, what to do and not to do, how to look after herself and the new baby. Those kinds of things." [Participant 17]

This practice is rather interesting because it has traits similar to the modern baby shower. A modern-day baby shower can be described as a party for a pregnant woman, typically by female friends and family, where they give her presents for the baby (Cambridge University, 2021).

4.5.3 Participation method

The data also revealed that indigenous knowledge is acquired through direct participation in information-seeking behaviour of participants.

"I learnt about these things from a traditional healer we went to consult. You see, I thought I was sick from sejeso (poisonous traditional medicine) because I couldn't eat without vomiting; only to be told that I am pregnant. And from there, I was given dipitsa and I continued to go to the healer because she knew how to also take care of pregnant women." [Participant 18]

Participant 21, a traditional healer participant shared her experience:
"I am traditional healer, for many years now. I was told by my guiding ancestor through dreams that I can specialise with pregnancy and childbirth; I have the gift. That's how I started." [Participant 21]

Participant 38, who was also in training to become a practicing traditional midwife, said:
"My mother is teaching me about the plants and roots that are used in making dipitsa from children, and where to find these plants. I am currently not working, so this will help me make a living." [Participant 38]

Participant 22 explained:
"My mother took me to a traditional midwife for my first pregnancy. That is how I got to know how things are done, and for all my other children, I use the knowledge I was given then, and continue to go to tradition midwives when I am pregnant or have a new baby." [Participant 22]

Responses to the acquisition of indigenous knowledge for this particular study affirmed that this type of knowledge is rarely recorded; practitioners and consumers of this knowledge rely on oral traditions as a method of acquiring it. Makhura (2004:66) confirms this observation that indigenous knowledge relies primarily on oral traditions as a means of knowledge management.

The findings of this study indicated that indigenous knowledge is acquired primarily through oral traditions. This was in line with the definitions and characteristics of indigenous knowledge identified by other studies in the literature review, where it was recognised as a system of knowledge acquired by oral traditions (Bruchac, 2014;Chisenga, 2002;Magni, 2017;The World Bank, 1998). Indigenous knowledge on

maternity and childcare is acquired mainly through maternal relations. It can be argued that the reason for this is because of its gender-specific nature. The findings revealed that consumers and practitioners of this knowledge acquired it primarily from the mother, mother-in-law, grandmother, aunt, sister and other female relations. Coleman (2013:57) concurs that women who use indigenous knowledge for maternity and childcare acquire that knowledge informally from elderly relatives, such as a mother, an aunt or a grandmother.

The study identified three central methods through which indigenous knowledge is acquired. These are verbal instruction, observations and participation. Verbal instruction takes place at any given time as advice and teachings from the caregivers of pregnant women and mothers. In other instances, these teachings occur before pregnancy and throughout childhood and different developmental stages. The study shows that indigenous knowledge is also acquired by observing family practices and practices in the community. The knowledge and practices of caring for pregnancies and children are gained, in some instances, by observing how these activities are conducted in the community and families. In addition, traditional midwives acquire indigenous knowledge through daily interactions and observations and importing it from other communities. In this study, the acquisition of indigenous knowledge through direct participation was also identified by seeking treatment from traditional midwives and/or other traditional practitioners.

Documentation and recording of indigenous knowledge is very poor, particularly in developing countries. Ebijuwa and Mabawonku (2015:63) posit that one of the reasons for the poor documentation of indigenous knowledge is the fact that the custodians of this knowledge are primarily the elderly with a limited western education background that will allow for literacy skills. This predicament was evident in the findings of this study. The majority of participants were elderly women and they confirmed that they had not acquired their knowledge from any written documents. The findings of this study further indicated that the nature of the indigenous knowledge being investigated was personal and not easily discussed. Maternity and childbirth are still regarded as private and intimate topics that are not discussed openly outside the selected or affected communities and, to this end, documenting and recording it is still a challenge.

The third objective of this study was to determine the methods used by women and traditional midwives in Matatiele to preserve indigenous knowledge on maternity and childcare and, to this end, section D of the interview guide was aimed at fulfilling this objective. This is discussed in the next section.

4.6 PRESERVATION OF INDIGENOUS KNOWLEDGE

Objective three of this study was to establish methods used to preserve indigenous knowledge by women and traditional midwives in Matatiele. Therefore, section D of the interview guide was aimed at identifying methods used in Matatiele to preserve indigenous knowledge on maternity and childcare. Participants were asked to share how they preserved this type of knowledge individually or as a community. This question was asked in order to identify knowledge management practices within these communities as they relate to the preservation of indigenous knowledge for maternity and childcare. The responses of the study participants were in line with what the research conducted in this subject area revealed; that preservation of indigenous knowledge occurs mainly through passing it on from the older generation to the younger generation. Mpofu and Miruka (2009:86) encapsulate these sentiments when they state that elders in the community are the primary custodians of indigenous knowledge. The findings of this study identified three methods used by the communities of Matatiele to preserve indigenous knowledge in maternity and childcare. The table below depicts the methods used and the number of participants that use such methods.

Table 4.5: Preservation of indigenous knowledge

Preservation method	Number of participants
Verbally transmitted from older to younger generation	34
Written records	4
Songs	3

Of the 39 participants who were interviewed in this study, 34 reported that the method they used to preserve indigenous knowledge was sharing what they knew with the younger generation, in the same way as their elders had done for them. Custodians of indigenous knowledge are mainly the elderly in the community and the primary method of preservation is by transferring the knowledge and the skills to the younger generation. This preservation method was also observed by Msuya (2007:7) in the medicine men of Tanzania, where the indigenous knowledge and skills are preserved by the father and then transferred to the son. Some participants in the study encapsulated these sentiments by stating:
"We are not given books to read about these things, my mother taught me, like her mother taught her and I am teaching my children. That is how knowledge survives." [Participant 23]

"My responsibility is to make sure I don't leave my children without knowing how to survive I tell them what I know, they must tell their children, pass it along like that." [Participant 19]

"I tell the young women in my family and my community also about the importance of teaching young women these things, they listen when they start making babies." [Participant 10]

"I believe that by helping other women in this way, I preserve this knowledge, especially because these women, in turn, help other women." [Participant 26]

Four study participants stated that they wrote down their knowledge about indigenous knowledge on maternity and childcare as a method of preserving it. They encapsulated these sentiments thus:
"I have a notebook where I write recipes for medications used for pregnancy and babies. My daughters told me to do that." [Participant 39]

"I wrote some of the things my family told me when I was pregnant, especially the ones I found very useful. This way I will be able to use them in the future." [Participant 12]

"I have started writing down ingredients and locations of popular plants my grandmother uses to help pregnant women and new mothers. I do this during December holidays." [Participant 13]

The writing down of indigenous knowledge and practices, particularly for maternity and childcare, was also reported by (Ebijuwa and Mabawonku, 2015:66). Three respondents mentioned songs as a preservation method for indigenous knowledge.
"There are songs we sing during dipitiki (traditional functions to welcome a new baby into the family) that have a lot of messages on traditional practices." [Participant 22]

An example of such songs was demonstrated by participant 16:
Song: *Ha re ya meketeng ho sala batswetse, batho ba mona, ba imela masea* [Participant 16]

Translated: When we go to traditional functions, we leave new mother behind. People are jealous, they are heavy on children (using traditional medicine and spells that are dangerous on children)

These types of songs are passed down from generation to generation in families and in community gatherings, enabling the preservation of messages in practices and lessons to reach future generations. Adams *et al.* (2018:86) support these findings in their study conducted in indigenous communities of Australia where 'birthing songs' are taught in communities so that when women marry and move between cultural and language groups, these songs become a tool to carry their knowledge about birth with them.

The responses of the participants in this study elucidated the fact that they relied on oral traditions to preserve indigenous knowledge because that is how it has always been done. It is encouraging to note that consumers and practitioners of indigenous knowledge in these communities are aware of the potential dangers of extinction of this knowledge due to oral methods of preservation. In some instances, some respondents displayed discouragement when it came to the need to preserve indigenous knowledge because in many families, the opportunity to share this knowledge from older to younger generation did not exist. Older family members are

left on their own when the younger generation relocates to other provinces and cities for work and school opportunities.

The study established that the leading preservation method is orally transmitting indigenous knowledge from the older generation to the younger generation. Elders pass on the knowledge and practices by sharing and teaching them to the younger generation, and this cycle continues through each generation to ensure the survival of their knowledge. Similar findings are reported in a study by Khumalo *et al*. (2018:3) in which they articulated that community elders are custodians of indigenous knowledge and they ensure its preservation by passing it on to the younger generation.

This method of preservation is not durable and is encompassed by an array of challenges. Firstly, elders do not have prolonged and sustained access to the youth in Matatiele because the family structure has changed; in most cases, elderly parents no longer live with their children and grandchildren in most cases, so opportunities to pass on indigenous knowledge are limited. Secondly, young people show a lack of interest in indigenous knowledge and are not always receptive to participating in practices that require their participation in preservation efforts. Lastly, young people in Matatiele typically migrate to bigger cities after completing matric and return during December holidays. This presents a challenge in terms of their sustained availably and access to elders who can transfer indigenous knowledge for preservation purposes.

The study discovered that there were a handful of community members that deliberately wrote down their knowledge of indigenous maternity and childcare practices. In these instances, it is through the encouragement of younger family members who express the value of writing down knowledge so that it can be accessed in future. In some cases, the younger generation assists elders with writing down their knowledge and practices. In other cases, a younger family member writes down the knowledge that is shared with them so that they can access it at a later stage, even when they are away from their primary sources of this knowledge. For an example, a young working mother will write down the advice and recommendations shared with her during maternity leave, so that she may consult her documents when her maternity leave ends and she has return to her primary residence, which is usually in another city. Other studies, such as the study done by Iwata and Hoskins (2018:175), observed

and reported on the practice of writing down indigenous knowledge by custodians so that it could be accessed by family members in the future.

Indigenous knowledge is also preserved using songs that are passed down from generation to generation. These songs are laden with messages and lessons on indigenous practices of maternity and childcare. They are mostly sang in celebratory gatherings such as weddings, traditional baby showers and bridal showers, as well as other celebratory gatherings with women themes as focus. It is through these songs that knowledge and practices are passed down through generations and survive for years. The study by Adams *et al*. (2018:86) indicated that this practice of preserving indigenous knowledge through songs has been reported in some indigenous communities in Australia. This study found that Australian women use "birthing songs" to preserve indigenous knowledge when a woman gets married and relocates to another community. The next section discusses responses on the dissemination of indigenous knowledge on maternity and childcare in Matatiele communities.

4.7 DISSEMINATION OF INDIGENOUS KNOWLEDGE

The fourth study objective was to explore methods used to disseminate indigenous knowledge on maternity and childcare by women and traditional midwives in Matatiele. This section therefore discusses the responses collected from section C of the interview guide, which addressed the methods used by women and traditional midwives in Matatiele to disseminate indigenous knowledge on maternity and childcare. This question was asked in order to identify knowledge management practices within these communities as they relate to the dissemination of indigenous knowledge for maternity and childcare. The responses from interviewed participants indicated three methods that were used within these communities to disseminate their knowledge on indigenous practices for maternity and childcare. Table 4.6 below portrays these different methods and the number of participants who mentioned using them.

Table 4.6: Dissemination of indigenous knowledge on maternity and childcare

Method of dissemination	Number of participants

Verbally	31
Community events/gatherings	5
Social media	3

The table above shows that 31 participants used oral traditions to spread indigenous knowledge within their communities. This was in line with the findings of other studies conducted on the management of indigenous knowledge and how it is shared or disseminated. For instance, according to Bruchac (2014:3814), indigenous knowledge and beliefs are usually shared within families and communities through social encounters, oral traditions and ritual practices. Participants in this study mentioned that the knowledge was passed down to them verbally and in turn, they pass it down using verbal transmission.

"My mother would tell me stories, even before I had my own children, about how important it is to drink herbal medicine for pregnancy. That is how she shared the knowledge." [Participant 4]

Participant 26, a traditional midwife explained why knowledge is disseminated orally.

"The people who know these things did not go to school, so how would they write them? They tell us by showing and teaching us only." [Participant 26]

Participant 3, another traditional midwife concurred:

"I do not know how to read or write very well, so all this is stored in my head. I tell my clients how to take the medicine and when. I show my children where to find medicinal plants. I tell them how to behave, the way I was told." [Participant 3]

Participant 15 shed some light:

"You must remember that some women make money with this knowledge, so if they write it down and show it to the world, they think we will no longer need them" [Participant 15]

Another view from participant 33:

"Traditional knowledge is surrounded by a lot of secrecy and confidentiality, you know this. Most of these things you will only be told when you are pregnant, and you must not tell just anyone, that's why they are not in books." [Participant 33]

The findings of this study identified community gatherings or events as another platform for sharing knowledge. Five study participants mentioned this platform. They mentioned weddings, traditional bridal showers and *dipitiki* (ceremonies to welcome a newborn into the family) as examples of such gatherings or events.
"Wedding speakers talk about such things, how to behave as a wife, as a mother, you can pick some of this information from there." [Participant 25]

Participant 17 shared her experience:
"Before my wedding, there was a ceremony, like a bridal shower, where women only came with food and small gifts. I learnt a lot about traditional practices of motherhood there, even the songs taught me something and I make it a point to attend whenever I am invited." [Participant 17]

Three participants in this study mentioned the use of social media platforms to share indigenous knowledge. Interestingly, this platform was mentioned by the younger participants interviewed for this study. Participant 31 said:
"I posted a lot about my pregnancy journey on Facebook. I have pictures and videos of some of the stuff I used, stuff I was told. I would share this on Facebook, and it was interesting to see how similar our cultures are as Africans from the comments." [Participant 31]

Participant 20 mentioned that:
"There are many mommy and baby groups on Facebook. I was very active in them when I was pregnant and this is where I would share what I am learning at home. Some people would agree; some would disagree with traditional practices." [Participant 20]

Participant 16 stated that:

"I post on Facebook and WhatsApp status the things I am learning; especially things I have never heard before. I send pictures to my friends who are pregnant of the medicines I used that helped me." [Participant 16]

The use of social media is not very popular with the older generation, particularly in Matatiele, but these responses demonstrated that the younger generation uses it as a method of sharing indigenous knowledge. The use of social media to preserve and disseminate indigenous knowledge was also reported by Botangen, Vodanovich and Yu (2018:2306) in their study of the Igorot Migrants from the Philippines where they used social media platforms such as Facebook groups to share indigenous knowledge.

The findings of this study demonstrated that indigenous knowledge is disseminated primarily through oral means within the family and close relations, as well as during community gatherings. These findings correlated with the literature review of this study which states that indigenous knowledge is disseminated mainly through oral traditions (Abrahams *et al.*, 2002;Bruchac, 2014;Ebijuwa and Mabawonku, 2015;Lwoga *et al.*, 2020;Morris, 2010;The World Bank, 1998).

Women and traditional midwives share indigenous knowledge orally under different circumstances; for instance, a mother advising a pregnant daughter on the ways to preserve and protect a pregnancy or a traditional midwife advising a pregnant woman during a consultation. This study established that the sharing of indigenous knowledge in these communities, particularly for maternity and childcare is continuous and can take place at any stage of life, not necessarily during pregnancy, because it is regarded as part of survival and life skills that women need to possess. To this end, the sharing of this information and knowledge take place in the family as children grow into young women. It is shared also when young women attend social gatherings such as weddings and other woman-centred gatherings that are unique to these communities.

A small percentage, particularly young women, use social media to share their experiences with indigenous knowledge for maternity and childcare. This study identified Facebook and WhatsApp as the most frequently used social media platforms. Social media as a platform to disseminate indigenous knowledge was also

identified in the study by Botangen *et al.* (2018:2306) where they reported the use of such platforms to share and preserve the knowledge of the Igorat people from the Philippines. Young mothers in Matatiele alluded to the fact that they used platforms like Facebook to share their pregnancy journeys, which included the indigenous knowledge they were learning and using and to find other virtual communities with similar content.

WhatsApp was identified as another commonly used social media platform to share information, including pictures and videos about indigenous practices they were learning and using. It is the researcher's opinion that using social media to share experiences on indigenous knowledge can also demystify and destigmatise indigenous knowledge, particularly among the young people.

The study also discovered that, in some instances, custodians of indigenous knowledge are sceptical about documenting and disseminating this knowledge for public access and use because of its personal and private nature, as well as the possibility of misunderstanding and misinterpretation by people who are not native to the community of origin of such knowledge and practices. They are also sceptical to share because this knowledge is their livelihood, especially in the case of traditional midwives who make a living with this knowledge. This is an indication that knowledge management strategies need to be sensitive and cognisant of issues such as these that may present challenges and hinder cooperation from the holders of this knowledge. This means that knowledge management strategies must take such issues into account and some of these strategies are discussed in the next section.

4.8 INDIGENOUS KNOWLEDGE MANAGEMENT STRATEGIES

This section aims to discuss findings that address the fifth objective of this study, which was to establish strategies that can be used to enhance the management of indigenous knowledge. To this end, participants were asked in section F of the interview guide to identify initiatives that can be implemented in their communities to improve the management of indigenous knowledge. They were also asked to identify organisations that can play a role in the improvement of indigenous knowledge management, as well as to share their knowledge of any projects that are currently

taking place in the community aimed at improving indigenous knowledge management. In addition to fulfilling the study objective, these questions were designed to identify awareness and overall views of communities in terms of opportunities that can enhance indigenous knowledge management, establish their willingness to collaborate with organisations and institutions for this purpose and to design a knowledge management strategy. The responses of the study participants are presented in a table format below.

Table 4.7: Strategies to enhance indigenous knowledge management

Possible indigenous knowledge management initiatives	**Organisations or institutions**	**Current community projects for indigenous knowledge management**
Incorporate into the school curriculum	Department of Basic Education	None.
Collaboration of herbal pharmacists and modern pharmacists	Department of Health	
Research on indigenous medicines and plants	Department of Health	
Radio programs	Media and broadcasting	
Positive portrayal of indigenous knowledge on media (TV, radio, social media)	Media and Broadcasting Social influencers	
Cultural organisations and government collaboration	Department of Cooperative Governance and Traditional Affairs	
Document and record indigenous knowledge from communities and publish books	Universities Researchers Department of basic Education	

The above table shows that participants in this study believed that the incorporation of indigenous knowledge in the school curriculum could be one of the strategies used to enhance the management of indigenous knowledge. They further indicated that this knowledge could be recorded, preserved and disseminated with more efficiency if it forms part of the curriculum. Teaching indigenous knowledge in schools, where the younger generation spends most of their time, can increase their exposure and remove the stigma of indigenous knowledge being viewed as backward and primitive. Mpofu and Miruka (2009:87) posit that incorporating indigenous knowledge into the school curriculum can increase the interest of the youth, which can improve the chances of survival of indigenous knowledge. The following are some sentiments from interviewees in this study:

"Children don't take our ways seriously because they don't read about it in books. They see it as backwards." [Participant 21]

"If schools can be made to teach this to children, then they can produce books. This will make sure that the knowledge is always available and is written somewhere." [Participant 8]

"Young people are always at school, unlike us who spent a lot of time with our parents and grandparents, learning from them, schools influence our children now and can be used to teach them about these things." [Participant 3]

The data also revealed that the collaboration of herbal pharmacists, who form part of the sources of indigenous medicine providers, and western pharmacists could enhance the management and preservation of indigenous knowledge. Participants in this study were of the view that this collaboration could transform the handling of indigenous medicines by establishing correct measurements and eliminating harmful products. Participant 38 shared her experience:

"When I get medicine from a caretaker, they tell me to drink half a cup every morning. What is half a cup my sister? I have all sizes of cups, so there is a chance of overdosing or underdosing; the measurements are not precise." [Participant 38]

The participant went further to say that this collaboration can change the way medical staff view the use of traditional medicine, especially during pregnancy, because it will

be backed by science that is familiar and acceptable to them. Participant 36 highlighted that:

"Herbal pharmacists and western pharmacists can work together to identify what is used to make dipitsa and vimbela, so that they can also write about them and make them available and acceptable." [Participant 36]

The Department of Health is recognised as a potential role player in indigenous knowledge management in that they could roll out research that can identify these methods that are used to care for pregnant women and children, identify the harmful and acknowledge the harmless practices.

Participant 26, a traditional midwife participant stated:

"Hospitals can learn the plants we use, the practices we use, and why we use them. They can say what is dangerous, and why. That way we both learn, that is how it was done with home births." [Participant 26]

The general sentiments of the study participants were that healthcare workers are disrespectful and dismissive of indigenous methods, which contributes to them not being adequately managed. If the major role players and institutions are dismissive of it (indigenous knowledge), management strategies will not succeed. Mothiba *et al.* (2015:88) concur by stating that healthcare workers should acknowledge and understand indigenous practices because they play a major role among pregnant women.

Radio stations play a major role as information and knowledge sources, particularly in rural areas. The contribution of radio stations as support structures for information dissemination is also recognised by Fombad and Jiyane (2019:47), particularly for women in rural communities. Participant 13 stated:

"We listen to the radio, especially at night and on weekends. They can have programmes that talk about mothers and children and traditional ways." [Participant 13]

"There are many programmes on the radio about traditional things. They can add shows that address women and motherhood issues there." [Participant 5]

Respondents further added that TV programmes and social media platforms could also be used to positively portray indigenous knowledge and practices. Participant 10 stated:

"Young people these days spend their time watching TV and using their phones. These platforms can include programmes and information that talks about indigenous knowledge." [Participant 10]

Cultural organisations within the community can work with the designated governmental office, in this case, the Department of Cooperative Traditional Affairs to establish projects and programmes that enhance indigenous knowledge. Programmes such as the Durban Ulwazi Program collects, disseminates and compiles indigenous knowledge in an online digital library in the format of a website made available to communities through web and mobile technologies (Khanyile and Dlamini, 2021:6). The participants of this study believed that indigenous knowledge could be documented collectively from cultural groups by the relevant government offices to be preserved and made accessible according to established agreements.

"The government must bring field workers to villages, talk to people in cultural groups, in coops, in tribal houses, known people with rich heritage, write their stories, make books and videos." [Participant 1]

The data from this study also revealed that indigenous knowledge could be managed through the recording and documenting of experiences and stories by community members for the purpose of publishing books. These strategies could be a collaboration between universities and communities that have indigenous knowledge.

"… like you are here now, universities must send people to villages, use technology to record our stories, make books that can be used by everyone." [Participant 19]

The study findings recognised government institutions such as universities and libraries as role players in the management of indigenous knowledge. This was in line with findings by Padmasiri (2018:475) which recognised that government institutions such as libraries, archives, museums and universities have a moral responsibility to

identify, collect, preserve and disseminate indigenous knowledge for the local and global benefit. Participant 12 commented that:

"Universities have money and people who have the necessary skills for research, they can make projects and record the knowledge people have." [Participant 12]

In some instances, while conducting this study, participants admitted that they did not think that strategies for managing indigenous knowledge would succeed because the world has been modernised to such an extent that indigenous knowledge was not recognised at all. Furthermore, the younger generation through whom indigenous knowledge has survived has no interest to learn about it. This is through no fault of their own but rather the way the world has changed. Participant 24 who is a mother of two young children conceded:

"I don't see how this can be achieved because the world sees indigenous knowledge as a non-factor, young people are ignorant and the elderly have no one to tell stories to." [Participant 24]

These sentiments highlight an important factor in the placing a threat on the survival of indigenous knowledge – the inaccessibility of young people who must inherit indigenous knowledge because they spend less time with the custodians of this knowledge. What is encouraging is the fact that the majority of people as observed during this study still hold indigenous knowledge to a high regard and they are aware of the evolution and transformation that need to happen to ensure that indigenous knowledge not only survives, but also thrives.

This study found that indigenous knowledge users believe that successfully managing indigenous knowledge begins with acknowledgement and recognition by the government and policy makers. This acknowledgement and recognition can stand in the way of incorporating indigenous knowledge into the education programmes by including it in the school curriculum and in research projects through institutions of higher learning, the Department of Health and pharmacies. Media and broadcasting can be involved in indigenous knowledge management, as well as a collaboration between community cultural organisations and the Department of Cooperative Governance and Traditional Affairs. ICT applications and infrastructure must be utilised to ensure sustainability of all indigenous knowledge management initiatives.

4.9 SUMMARY OF INDIGENOUS KNOWLEDGE MANAGEMENT STRATEGIES

The overall aim of this study was to establish strategies that can be used to enhance the management of indigenous knowledge for maternity and childcare. The findings presented in the previous section established this strategy drawing from the findings in section 4.8. This strategy is further explained and presented in figure 4.1 below. Drawing from the findings it is clear that an indigenous knowledge management strategy includes the six aspects presented in the diagram below and explained in the sections that follow.

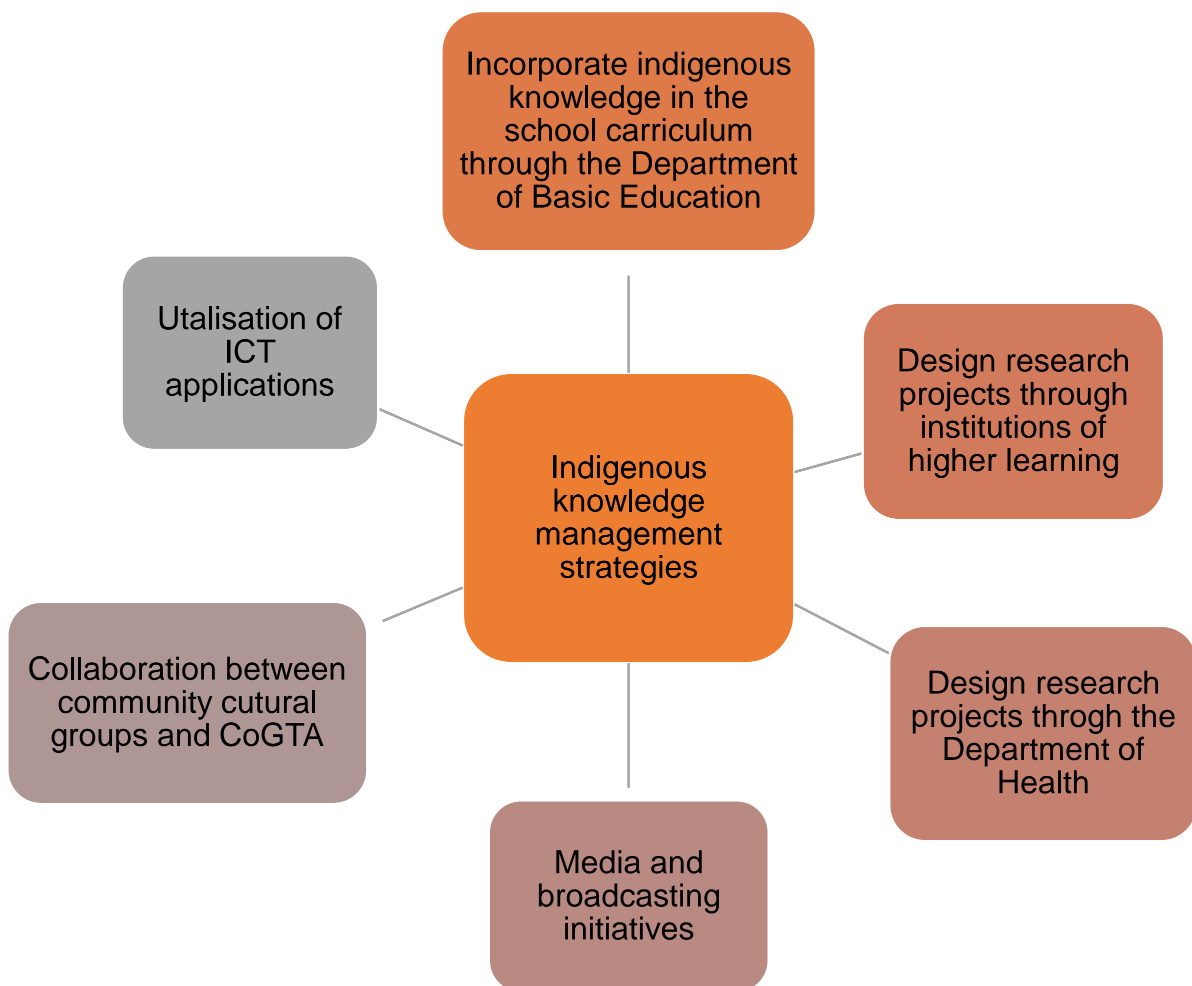

Figure 4.1: Indigenous knowledge management strategy

The incorporation of indigenous knowledge into the education system and school curriculum is crucial for knowledge management strategy for maternity and child health. It would mean that deliberate initiatives of documenting and recording indigenous knowledge would be undertaken. Furthermore, by teaching this knowledge openly along the current knowledge system being taught in schools will destigmatise indigenous knowledge, making it more acceptable to the younger generations. This strategy will further address one of the major challenges of indigenous knowledge, which is the unavailability of young people to elders to receive this knowledge. The younger generation is central to the preservation of indigenous knowledge because elders transmit it to them, but they are often not available, spending most of their time at school. If indigenous knowledge is incorporated into the curriculum and taught in school, younger generations not only receive the knowledge, but also still play a part in preserving and disseminating this endangered knowledge. This can be systematically rolled out from the foundation phase up to institutions of higher learning, which include universities.

Institutions of higher learning also play a central role in this strategy that can enhance indigenous knowledge management. These institutions can contribute through research projects focusing on documenting and recording indigenous knowledge from communities, as well as preserving and sharing strategies through libraries and other information centres. An example of such a strategy would be the pioneering of the Indigenous Knowledge Systems Centre and the North-West University, which offers programmes that are designed to recognise, develop, protect, promote and affirm indigenous knowledge as a knowledge system that is relevant in the knowledge economy (North-West University, 2021). This centre further provides a link between the researchers in the institution with the holders and practitioners of indigenous knowledge within local communities.

It is important to design research projects through the department of health to enhance the management of indigenous knowledge for maternity and child health. The Department of Health can contribute to the destigmatisation of indigenous knowledge, particularly as it relates to maternity and childcare. Antenatal and postnatal programmes that are offered by healthcare practitioners can recognise and affirm indigenous knowledge by incorporating it in such programmes. The training that is

offered to healthcare practitioners can be designed to be sensitive to, and inclusive of, African practices and spirituality. The South African government already has laws that support the collaboration of healthcare professionals and traditional health practitioners, for example the Traditional Health Practitioners Act No 22 of 2007 (South Africa, 2007). This Act can be a foundation for designing programmes that support and promote indigenous knowledge, as well as the management thereof in maternal and childcare. Furthermore, the Department of Health, through research and collaboration with pharmacies, can help regulate the use of the plants and other ingredients of indigenous medicine, and identify the use of harmful plants and other particulates that are used to make these medicines. This collaboration of the health department and custodians of indigenous knowledge can also help to change the negative views of healthcare professionals. These collaborations will naturally include systematically recording, preserving and sharing indigenous knowledge.

Media and broadcasting initiatives are crucial and significant in the knowledge management strategy. Media and broadcasting are recognised as a substantial source of information; therefore, they have a big role to play in knowledge management strategies. Radio is a major role player as a source of information, particularly in rural communities. This was also recognised by Fombad and Jiyane (2019:47) as the found that radio is widely used and easily accessible by women in rural communities. Radio stations can include programmes and shows that address indigenous knowledge. This way they can be disseminated and accessible in local communities and beyond. This will also help demystify and destigmatise this type of knowledge. Television and social media can also be used as a tool to share indigenous knowledge. A notable number of households and young people spend much time watching TV and using their phones. These platforms can employ deliberate strategies to find and broadcast content that addresses indigenous knowledge. By so doing, documentation, preservation and dissemination of indigenous knowledge can increase and be sustainable.

The collaboration of community cultural groups and relevant government agencies such as Cooperative Governance and Traditional Affairs is also crucial for this strategy. Research projects aimed at identifying and managing indigenous knowledge in the communities can be designed and rolled out through this collaboration. The

literature of this study identified similar projects already implemented in South Africa such as the Durban Ulwazi Program, which collects, disseminates and compiles indigenous knowledge in an online digital library in the format of a website made available to communities through web and mobile technologies (Khanyile and Dlamini, 2021:6).

The emphasis on the success of all these initiatives that inform this strategy is that ICT must be central to all indigenous management projects because it can offer durable and lifelong solutions. ICT can be used in all stages of indigenous knowledge management strategies. For example, documenting of indigenous knowledge can include recording of oral history using digital audio-visual recorders and digitisation of existing written documents through scanning. These can be preserved in repositories and digital libraries in relevant departments, for instance within Cooperative Governance and Traditional Affairs, public libraries, archives and museums. These repositories and digital libraries can be made available and accessible to the general public as well as researchers who are working on the development and promotion of indigenous knowledge.

4.10 SUMMARY OF CHAPTER FOUR

The purpose of this chapter was to present, analyse and discuss the findings of this study. The findings were presented in line with the study objectives. The chapter commenced with a review of the objectives of the study and how the data collection instrument was designed to find answers to the research questions. A brief profile of the participants of the study was also presented.

The main findings of this study indicated that indigenous knowledge for maternity and childcare plays a central part in the communities of Matatiele and that this knowledge is confronted with the threat of vanishing because it is not managed adequately. There are no systematic strategies of documenting and preserving indigenous knowledge other than the traditional oral methods, which are proving to be less effective with each generation. Globalisation and modernisation hinder connections between the different generations and these connections are the main methods of preservation. These communities are aware of the challenges faced by indigenous knowledge

management and have identified possible solutions to these challenges. Furthermore, communities are willing and prepared to partner with various stakeholders and government agencies to implement strategies that can improve indigenous knowledge management. The next chapter deliberates on the conclusion and recommendations of this study.

CHAPTER FIVE
CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

The previous chapter provided the findings of the study, as well as discussions thereof. This chapter presents a summary of the major findings, conclusions and recommendations of this study. The purpose of this study was to investigate the management of indigenous knowledge for maternity and childcare in the communities of Matatiele. The study also identified methods that can be used to enhance the management of indigenous knowledge. This investigation, as outlined through the study discussions was directed by the study objectives, which were to:

1. Identify the different types of indigenous knowledge for maternity and childcare in Matatiele, Eastern Cape
2. Explore methods used by women and traditional midwives to acquire indigenous knowledge on maternity and childcare in Matatiele, Eastern Cape
3. Establish methods used by women and traditional midwives to preserve indigenous knowledge on maternity and childcare in Matatiele, Eastern Cape
4. Explore methods used by women and traditional midwives to disseminate indigenous knowledge on maternity and childcare in Matatiele, Eastern Cape
5. Establish the strategies that can be used to enhance the management of indigenous knowledge.

5.2 SUMMARY OF MAJOR FINDINGS AND CONCLUSIONS

This section presents a summary of the major findings of the study and the conclusions reached in pursuance of this study. These findings and conclusions will be presented in sub-sections according to the study objectives.

5.2.1 Different types of indigenous knowledge for maternity and childcare in

The first objective of the study was to identify the types of indigenous knowledge for maternity and childcare that are used in the communities of Matatiele. The study found

that these communities use indigenous medicine made from plants and roots indigenous to their areas, as well as other ingredients that are uniquely identified for this purpose. In addition, these communities observe a number of cultural belief practices that are believed to be crucial to the outcome of a pregnancy and a healthy child. These different types of indigenous knowledge and practices are used to address several maternity and childcare issues that may cause harm through the physical or spiritual realms.

5.2.2 Acquisition of indigenous knowledge for maternity and childcare

The second objective of this study was to explore methods used by women and traditional midwives to acquire indigenous knowledge on maternity and childcare. The study found that documentation of indigenous knowledge is very poor in these communities and they rely primarily on oral means acquiring this type of knowledge. Indigenous knowledge is acquired primarily by oral means in the form of verbal instruction, observation and participation in indigenous knowledge activities. These means of acquisition are typical in the maternal lineage and relations such as the mother, grandmother, mother-in-law, sister or aunt.

5.2.3 Preservation of indigenous knowledge for maternity and childcare

The third study objective aimed to establish methods used by women and traditional midwives to preserve indigenous knowledge for maternity and childcare in Matatiele. The study established that indigenous knowledge is principally preserved by orally transmitting it from the older generation to the younger generation through verbal instruction as well as songs. A minimal number of participants reported that they write their down indigenous knowledge in order to preserve it; this was mainly done through the influence and assistance of younger people. The current preservation methods of indigenous knowledge face challenges in these communities such as the changing family structure that does not allow the different generations to share space in the form of living together or in close proximity. This then means that these generations are not available for the necessary sharing of knowledge, which is crucial to indigenous

knowledge preservation. Additionally, young people demonstrate a lack of interest in indigenous knowledge.

5.2.4 Dissemination of indigenous knowledge for maternity and childcare

Objective four of this study was to explore methods used by women and traditional midwives to disseminate indigenous knowledge on maternity and childcare in Matatiele. The study established that indigenous knowledge is disseminated primarily by oral means within the family and community practices such weddings and woman-centred community events. A handful of people, particularly young women use social media as a dissemination platform of indigenous knowledge. The challenge with indigenous knowledge dissemination is the scepticism that arises from the private and intimate nature of maternity and childcare processes, as well as the fear of losing livelihoods, particularly by traditional midwives who make a living from the practice.

5.2.5 Indigenous knowledge management strategies

The fifth objective of the study was to establish strategies that can be used to enhance the management of indigenous knowledge. Participants identified several strategies and collaborations that are detrimental to improving the management of indigenous knowledge. Amongst these strategies are the incorporation of indigenous knowledge within the school curriculum, designing research projects through the department of health, as well using media and broadcasting to positively portray indigenous knowledge. These strategies identify the collaboration of custodians and practitioners of indigenous knowledge with government offices such as the Department of Education, Department of Health, media and broadcasting, and Cooperative Governance and Traditional Affairs. These strategies need to centralise the use of Information and Communication Technology applications by identifying platforms and infrastructure that supports codifying and digital management of indigenous knowledge, such as electronic databases and repositories. The next section discusses recommendations based on these conclusions.

5.3 RECOMMENDATIONS

This section presents the recommendations based on the conclusions outlined by the researcher. These recommendations present what the researcher recognises as necessary steps that will enhance and improve the management of indigenous knowledge, particularly in the field of maternity and childcare in the communities of Matatiele.

5.3.1 Recommendations on the types of indigenous knowledge

The findings of this study demonstrated that indigenous knowledge is central to the caring for pregnant women and children. In this understanding of the perceived benefits of the types of indigenous knowledge used for maternity and childcare in these communities, which included indigenous medicine and cultural belief practices, the researcher identified recommendations that are perceived to be necessary to improve, promote and protect this knowledge and its practitioners.

There is a need for intensive research into the pharmacological properties of indigenous medicine used for maternity and childcare. This research needs to include practitioners of indigenous knowledge to encourage cooperation and understanding of findings, and ensure that it is fair, unbiased and not dismissive. The research should emphasise the health and wellbeing of pregnant women and children, while also recognising the importance of indigenous practices among these communities. To this end, medical practitioners and related communities should play an active role in acknowledging indigenous knowledge in maternity and childcare because it plays a major role, particularly in many developing countries, and directly affects the high maternal and child mortality rates.

The study calls for the involvement and inclusion of men in maternity and childcare practices. Indigenous knowledge practitioners need to be prepared to redefine some beliefs and practices in order to make room for males in caring for women and raising children. The involvement of men in this regard can be a possible strategy to address the alarming gender-based violence culture in South Africa. In his discussion of the

four aspects of gender-based violence, Le Cordeur (2019) identifies patriarchal attitudes and absent fathers as some of the major contributors to this crisis. It is with this knowledge that the researcher recommends the redefinition of beliefs and practices to include men in the conversation and practices that affect pregnancy and childcare, because they are directly involved and affected.

5.3.2 Recommendations on the acquisition of indigenous knowledge

The most pressing challenge with the acquisition of indigenous knowledge is the lack of documentation and the reliance on oral traditions. The most important factor, therefore, is to externalise indigenous knowledge into explicit knowledge in the form of recording and documenting it.

Information and knowledge management institutions such as libraries, archives, museums and publishing houses can be major role players and contributors in documenting indigenous knowledge from local communities. These institutions need to incorporate indigenous knowledge management into their strategic plans, operational plans and funding models. At an operational level, these institutions can roll out community outreach projects whose primary aim is to document indigenous knowledge with the cooperation and collaboration of indigenous knowledge practitioners and community members.

5.3.3 Recommendations on the preservation of indigenous knowledge

The arrival of the World Wide Web has demonstrated the importance of digitising information. Digitisation enhances preservation and access. The preservation of indigenous knowledge has always relied on the participation of the younger generation, but this study and other studies demonstrate that young people are no longer playing a big part in preserving indigenous knowledge. Digitising indigenous knowledge provides lifelong preservation solutions as well as easy access, regardless of the location of users and practitioners.

Once this knowledge has been acquired through various means, including those mentioned in section 5.3.2, it can be stored in digital repositories and digital libraries.

These digital libraries and repositories can form part of information management institutions such as libraries, archives and museums. Furthermore, indigenous knowledge should be available through open access practices. Access to databases is notorious for high access fees, while open access provides sustainable solutions to providing communities with access to information without the financial burden.

5.3.4 Recommendations on the dissemination of indigenous knowledge

Documentation and digitisation of indigenous knowledge will provide sustainable solutions to dissemination of indigenous knowledge. This study calls for the publication of books that are based on indigenous knowledge and written in indigenous languages. This recommendation calls upon publishing houses to adopt their policies to accommodate and include indigenous content in indigenous languages. This type of support from publishers will encourage established and emerging researchers and authors to write and publish content with indigenous knowledge as central theme. This study further proposes that libraries dedicate spaces and digital platforms for the dissemination of indigenous knowledge. This can be achieved in the form of the promotion of books, journals and databases on indigenous knowledge that are available in the library, as well as the utilisation of websites and LibGuides. An example of such platforms is the Setswana LibGuide developed by the North-West University Libraries, which is presented in Setswana and showcases books, history, culture and community events of the Batswana people (North-West University, 2021). The study further recommends the development and adoption of open access community databases dedicated to the acquisition, preservation and dissemination of local indigenous knowledge. Lastly, the portrayal of indigenous knowledge, practices, languages and stories in a positive manner can be a powerful tool to change the narrative around indigenous knowledge, particularly among young people. This can be achieved by incorporating content on TV, radio, social media and other media and broadcasting platforms that positively portray indigenous knowledge.

5.3.5 Recommendations on indigenous knowledge management strategies

This study calls upon the protection of indigenous knowledge and its custodians through intellectual property laws as well as patent and copyright laws. These laws will

protect indigenous knowledge owners against exploitation and ensure that knowledge holders are compensated fairly in the event of the commercialisation of their knowledge. Indigenous knowledge needs to be incorporated into the school curriculum along with other knowledge systems. By so doing, indigenous knowledge will be elevated to the same level as other knowledge systems in terms of recognition and management thereafter. The study recommends the involvement of libraries and other memory institutions at a strategic level to enhance indigenous knowledge management. This can be achieved by incorporating indigenous knowledge management strategies, goals and initiatives in the institutional policies and funding models.

The study proposes deliberate and robust government-initiated and -funded projects that will focus on documenting and preserving indigenous knowledge and ensuring access to it by local indigenous communities. This can include recording of oral histories, digitising documented memorabilia and storing of rare artefacts in museums and research centres with the permission of the owners. Lastly, the study calls for media and broadcasting creatives to embark on projects that deliberately enhance indigenous knowledge management and dissemination by designing TV and radio programmes, podcasts and other platforms that discuss and portray indigenous knowledge positively. These can be in the form of documentaries, cartoons, movies and other forms of entertainment media. Young people spend much time on these platforms and are influenced by the content they consume.

5.4 SUGGESTIONS FOR FUTURE RESEARCH

The primary focus for this study was the Matatiele communities in the Alfred Ndzo district in the Eastern Cape. The Eastern Cape province is vast and diverse, rich in culture and heritage. It is suggested that other studies be conducted on indigenous knowledge for maternity and childcare and management strategies of this knowledge in other regions and municipalities in the Eastern Cape.

This study applied snowballing as a data collection method that is known to have some limitations, such as the limited control the researcher has over the sampling methods because the identification of new participants relies on previous participants. The study

of indigenous knowledge management in maternity and childcare may benefit from using observation as a data collection method because the researcher will have first-hand account of the practices and knowledge due to immersing themselves in the communities and observing practices as they happen.

Furthermore, studies done on the management of indigenous knowledge management of maternity and childcare is limited in South Africa. It is suggested that more studies should be conducted in the field of indigenous knowledge for maternity and childcare nationally, covering all nine provinces in South Africa, to document and preserve a heritage that is at risk and to add to the body of knowledge in the field of information and knowledge management.

Lastly, studies in indigenous knowledge management in maternity and childcare are limited in the field of information and knowledge management. These studies are more prevalent in the fields of health and ethnopharmacology. It is suggested that information and knowledge managers conduct more studies that focus on the management of indigenous knowledge in maternity and childcare to contribute to the body of knowledge in the field of information and knowledge management.

5.5 FINAL CONCLUSIONS

The purpose of this study was to investigate the management of indigenous knowledge of maternity and childcare in the communities of Matatiele in the Eastern Cape province in South Africa, as well as to identify strategies that can be used to enhance the management of indigenous knowledge. The study found that the use of indigenous knowledge for maternity and childcare is prevalent, widely practiced and respected in these communities. Indigenous knowledge in these communities is managed mainly through oral traditions and this brings about several challenges that pose a threat to the survival of this knowledge. The study further established that these communities are aware of these challenges and are willing to accept support and fully participate in initiatives that aim to improve the management of their indigenous knowledge. The researcher recommended collaborative projects between the communities of Matatiele, the Departments of Education and Health, and other government offices to document, preserve and ensure access to indigenous

knowledge. The communities of Matatiele are rich with culture, tradition and heritage, and further research into other areas may uncover further knowledge that will contribute further to the knowledge management strategies and frameworks of indigenous knowledge in maternity and childcare.

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ANNEXURE A: INTERVIEW GUIDE

INTERVIEW GUIDE

THE MANAGEMENT OF INDIGENOUS KNOWLEDGE FOR MATERNITY AND CHILDCARE IN THE COMMUNITIES OF MATATIELE, EASTERN CAPE

<table>
<tr><td colspan="2">Section A: General information</td></tr>
<tr><td colspan="2">Age:
Experience with indigenous knowledge on maternity and childcare:
Yes ☐ No ☐</td></tr>
<tr><td colspan="2">Section B: Types of indigenous knowledge on maternity and childcare</td></tr>
<tr><td>Question number</td><td>Question</td></tr>
<tr><td>1.</td><td>What are the different kinds of traditional knowledge practices that you have used during pregnancy, and childcare?</td></tr>
<tr><td>2.</td><td>What is the significance of these traditional knowledge practices?</td></tr>
<tr><td>3.</td><td>What traditional knowledge and practices do you prescribe to your patients during pregnancy and childcare,
what is their significance?</td></tr>
<tr><td>4.</td><td>What is the knowledge on traditional medicines (herbs, roots, potions, other)</td></tr>
</table>

	that you have used during pregnancy and childcare? Please elaborate on their significance.
5.	What is the knowledge on traditional medicines (herbs, roots, potions, other) that you recommend or prescribe to your patients? Please elaborate on their significance.
6.	Are there any other indigenous practices and knowledge on maternity and childcare that you are aware of but have not used?
Section C: Acquisition of indigenous knowledge of maternity and childcare Matatiele, Eastern Cape	
7.	How did you acquire the knowledge that you have used during pregnancy and childcare?
8.	Is there any other information that you can add on how you acquired your knowledge of indigenous maternity and childcare?
Section D: Preservation of indigenous knowledge of maternity and childcare in Matatiele, Eastern Cape	
9.	How do you ensure that the traditional knowledge you have on maternity and childcare is preserved for future use?
10.	How is indigenous knowledge preserved within your community?
11.	What are the strategies that are used by you and other traditional midwives to preserve knowledge?

12.	Is there any other knowledge that you can add on how indigenous knowledge on maternity and childcare is preserved?
Section E: Dissemination of indigenous knowledge on maternity and childcare in Matatiele, Eastern Cape	
13.	How do you disseminate or share indigenous knowledge on maternity and childcare within your community?
14.	How is the knowledge shared amongst you?
15.	Are there any strategies that are used by traditional midwives to share knowledge with the community?
16.	Is there any other knowledge you can add on the sharing of indigenous knowledge on maternity and childcare?
Section F: Strategies to enhance indigenous knowledge	
17.	What are some of the strategies to improve to improve the management of indigenous knowledge in the community ?
18.	Which are some of the institutions and organisations that can play a role in facilitating the enhancement of indigenous knowledge management?
19.	Are there currently any projects in the community that are aimed at

	enhancing the management of indigenous knowledge?
20.	Is there any other information and knowledge on the strategies that can be applied to enhance indigenous knowledge management?

Thank you! Your participation is greatly appreciated.

ANNEXURE B: UNISA ETHICAL CLEARANCE

COLLEGE OF HUMAN SCIENCES RESEARCH ETHICS REVIEW COMMITTEE
14 December 2020
Dear Ms Boitumelo Masilo
Decision:
Ethics Approval from 14 December
2020 to 31 November 2023

Researcher(s): Ms Boitumelo Masilo (35415002@mylife.unisa.ac.za)
Supervisor: Prof MC FOMBAD (fombamc@unisa.ac.za)
Title: ***Management of indigenous knowledge for maternity and child Care in the communities of Matatiele, Eastern Cape.***
Degree Purpose: MINF

Thank you for the application for research ethics clearance by the Unisa College of Human Science Ethics Committee. Ethics approval is granted for three years.
The ***low risk application*** *was* ***reviewed*** by College of Human Sciences Research Ethics Committee, on **14 December 2020** in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.
The proposed research may now commence with the provisions that:
1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the College Ethics Review Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
NHREC Registration # :
Rec-240816-052
CREC Reference # :
2020-CHS -35415002
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.
5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data require additional ethics clearance.
7. No fieldwork activities may continue after the expiry date **(31 November 2023).** Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.
Note:
The reference number ***2020*****-CHS-35415002** *should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.*
Yours sincerely,
Signature : Signature : PP
Dr. K.J. Malesa Prof K. Masemola
CHS Ethics Chairperson Executive Dean : CHS

Email: maleskj@unisa.ac.za E-mail: masemk@unisa.ac.za
Tel: (012) 429 4780 Tel: (012) 429 2298

ANNEXURE C: PERMISSION TO COLLECT DATA IN MATATIELE COMMUNITIES

102 Main Street,
Matatiele
P.O. Box 35,
Matatiele, 4730
Tel: 039 737 3135
Fax: 039 737 3611

OFFICE OF THE MUNICIPAL MANAGER

Person dealing with the matter: Ms Nosisana Mbaku *DATE: 16th February 2021*

Ms Boitumelo Masilo
P.O. Box 1313
Matatiele
4730

Dear Madam

RE: PERMISSION TO CONDUCT A STUDY RESEARCH: INDIGENOUS KNOWLEDGE MANAGEMENT OF MATERNITY AND CHILDCARE IN COMMUNITIES OF MATATIELE

Your email of request to undertake the study on the above subject bears reference.

Matatiele Local Municipality takes pleasure to inform you that your request to undertake the research study is approved, taking into account the objective of the research study, ethical consideration, the timelines of the study that you promised to observe and can withdraw from the study at any time. You may proceed interview any member of community, however, please schedule an appointment with the Ward Councillor for directive.

We further give you permission to anonymously use the data collected from the institution.

The municipality wishes you success in your research study. The municipality will appreciate if the final product could be shared with the Municipality

Yours in developmental local government

....
MR L. MATIWANE
MUNICIPAL MANAGER

Where Nature, Agriculture, Tourism are Investments of Choice.

Electrical Services: 079 522 9770 Prepaid Sales: 079 523 322 Finance Office: 039 737 3565 Disaster and Fire: 039-2560610/079 [illegible]
Police(SAPS): 039-7379904/9905 Water: 082 520 1476 Ambulance: 10177 Traffic: 079 522 9774