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**FACULTY OF HEALTH SCIENCES,
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**INFANT FEEDING KNOWLEDGE, ATTITUDES AND PRACTICES OF MOTHERS IN
PRIVATE HEALTH FACILITIES IN ALICE TOWN, EASTERN CAPE, SOUTH
AFRICA**

BY

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**A MINI DISSERTATION SUBMITTED IN PARTIAL FULFILMENT FOR THE
DEGREE OF MASTER'S IN PUBLIC HEALTH**



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SUPERVISOR: PROF D. T. GOON

2022

DECLARATION

I, Aderonke Adepeju Oyeniran, declare that this thesis, “**INFANT FEEDING KNOWLEDGE, ATTITUDES AND PRACTICES OF MOTHERS IN PRIVATE HEALTH FACILITIES IN ALICE TOWN, EASTERN CAPE, SOUTH AFRICA**” is my original research work. The reported research has not been previously accepted or simultaneously submitted to any other university for any degree awards or examination purposes.



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Date



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DEDICATION

I dedicate this mini dissertation to God Almighty for making it possible to complete. To my husband, Philip for his immeasurable support, commitment, perseverance, and love throughout the course of this programme. Thanks for believing in me.

To my son Olumide, for his understanding and endurance while mummy was busy with the thesis. To my wonderful twins, Mokolade and Mobolade, your entrance into this world at the commencement of this Master's degree made it all worthwhile. You were a gift and you guys rock my world.



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LIST OF ACRONYMS AND ABBREVIATIONS

WIC	Women, Infant and Child
IYCF	Infant and Young Child Feeding
EBF	Exclusive Breast-feeding
LMICs	Low- and Middle-Income Countries
IYCN	Infant and Young Child Nutrition
TRA or ToRA	Theory of Reasoned Action
PMTCT	Prevention of Mother-to-Child Transmission of HIV
CARMMA	Campaign on Accelerated Reduction of
Maternal	and Child Mortality in Africa
MNCWH	Newborn, Child and Women's Health and Nutrition
SADHS	Demographic and Health Survey
NFCS	National Food Consumption Survey
SIDS	Sudden Infant Death Syndrome
MBS	Marketing of Breast Milk Substitutes
MTCT	Mother to Child Transmission
IYCN	Infant and Young Child Nutrition
NFCS	National Food Consumption Survey
NFCS-FB	National Food Consumption Survey- Fortification Baseline
PIF	Powdered Infant Formula
BFHI	Baby-Friendly Hospital Initiative

ABSTRACT

Background and aim of the study: Within the global field of health education, it is generally accepted that the topic of breast-feeding is a crucial discussion due to its maternal, infant, and communal benefits. However, certain African countries, such as South Africa, experience certain challenges related to both predictive factors and maternal attitudes to breast-feeding. To improve public awareness and promote the implementation of breast-feeding, these factors should be investigated to highlight the importance of this practice among young mothers.

Method: The study utilised a cross-sectional survey by means of a self-administered questionnaire, which was completed by the carefully chosen participants. The collected data were then analysed using a statistical package for social sciences (SPSS) (frequency, percentages, mean and standard deviation) and inferential statistics (logistic regression). The level of significance for the inferential statistics was set at 0.05.

Results: A total of 377 infant mothers participated in the study with median age of 30. Most infant mothers that participated in the study were well educated with infant mother 189 having a bachelor's degree. The findings revealed that mothers of 40 years above are 1.51 times more likely not to breastfeed exclusively compared to mothers of less than 40 years of age (95% CI, 0.75-2.25). The odds ratio of the incidence of decision in breastfeeding for participants with breastfeeding and formula milk was 1.66 (95% CI, 0.87-2.53). In term of family support, mothers who don't receive family support were 3.43 times more likely no to breastfeed. The result also revealed that mothers with breast pain were 0.98 more likely not to breastfeed.

Conclusion: This study concludes that infant mothers are well informed about breastfeeding. This study also revealed that factors such as infant mothers' knowledge about breastfeeding, medical health of both mother and infant and cultural norms can go a long way in influencing the decision of mothers to breastfeeding their infant or not.

Keywords: infant, exclusive breast-feeding, attitude, biomedical factor, environmental factor, psychosocial factors.



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CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 INTRODUCTION

As a concept, breast-feeding is a very crucial component in health education due to the advantages it offers babies, mothers, and communities. For instance, breast milk provides the basic nutrition requirement for infants which assists their immune system. After pregnancy, breast-feeding practices also assists women to lose weight and allows their uterus to return to their normal position (Horta, 2013). Moreover, communities also derive benefits from it; for instance, breast milk does not contain waste or pollutant and according to Women, Infant and Child (WIC) food support program, reducing the use of formula and supporting breast-feeding is associated with lowered financial costs (Horwood et al., 2018; Horta, 2013). In addition, studies have also shown that EBF lowers the occurrence of baby illnesses and conditions that render infants more susceptible to death, such as acute otitis media, infections of upper respiratory, gastrointestinal tract infections, and atopic eczema (Renfrew et al., 2012; Martin-Wiesner, 2018).

From the global public health nutrition perspective, the present optimal infant and young child feeding (IYCF) best-practice guidelines remain unchallenged in that their goals include the early introduction of breast-feeding, breast-feeding exclusively for six months, and the continuation of infant breast-feeding for two years and more (Becker, Remington & Remington, 2011; Martin-Wiesner, 2018; Kramer & Kakuma, 2012; World Health Organization, 2020). Nevertheless, despite the global push advocating exclusive breast-feeding as the most adequate and appropriate feeding method to provide infants with the sufficiently high levels of nutrients they require, many countries still fall short of meeting these goals (International Food Policy Research Institute, 2014). Subsequently, to create more globally relevant nutritional goals, the

World Health Assembly (WHA) has aided six (6) new targets of nutrition for 2025 (World Health Organization, 2020), including the increase and expansion of the widespread practice of EBF within the first six months of life to nothing less than 50%, which is presently at 38%. These targets are presented in Table 1.1, below.

Table 1.1: Nutrition Targets for World Health Assembly 2025

World health assembly goal	Baseline years	Baseline status	goals for 2025
There should be 40% reduction of children under five who are stunted	2012	162 million	~100million
There should be 50% reduction of anaemia in non-pregnant and pregnant women of reproductive age	2011	29%	15%
30% reduction in low birth Weight	2008-2011	15%	10%
No increase in childhood Overweight	2012	7%	7%
There should be at least 50% increase rate of exclusive breast-feeding in the first six months	2008-2012	38%	50%
Reduce and maintain childhood wasting to less than 5%	2012	8%	<5%

Source: World Health Organization, 2015

A literature review study by Rollins et al., (2016) on breast-feeding in nations that make a statement on the World Health Organization's Infant Young Child Feeding index reveals that regardless of their economic level, not all countries follow the practice of EBF and early introduction. In addition, it stated that only 37% of babies were breastfed exclusively for six months in middle- and low-income nations. The report also highlights the decrease in breast-feeding practices associated with the increased wealth of countries and how this leads to a shortening of the breast-feeding period (Rollins et al, 2016). Remarkably, countries such as Togo, Cuba, Brazil, and Bangladesh, where there is fast and quick amelioration in EBF, work together among sectors and stakeholders in discoursing factors contributing to the general outcome of nutritional interventions (International Food Policy Research Institute, 2014).

In light of this, it is recognised that communities and families must take responsibility for making dietary decisions for their children. Therefore, the most effective aids of best IYCF practices include the protection against illness, nutritional status, child health, development, and growth (Sinhababu, Mukhopadhyay, Panja, Saren, Mandal, & Biswas, 2010). Optimal IYCF practices also aid against infant obesity and other health-related problems (Eckhardt, Lutz, Karanja, Jobe, Maupome, & Ritenbaugh, 2014). Exclusive breast-feeding of a child for the first six months of its life has been generally accepted in the public health sector as the best start for development and good health (Rollins et al., 2016). The concept of EBF forms part of a wider explanation of optimal IYCF practices and includes the introduction of breast-feeding to infants within their first hour and continuing breast-feeding for two years with the introduction of appropriate, adequate, and safe complementary foods from six months onwards (World Health Organization, 2020).



However, regardless of its advantages to infant life, mothers, and communities, EBF has not been appropriately practised on a national level in South Africa. Also, studies on a global scale indicate that the percentage of EBF infants' risk of death is 12% lower than that of infants who are not breastfed (Martin-Wiesner, 2018). Researchers have further established that the practice of EBF will prevent the death of close to 13.8% of children under two years of age. Encouragingly, the South Africa National Survey reveals that in infants not up to 6 months, the mean rate of the EBF has risen from 7% to 32% (National Department of Health, 2016).

According to Trafford (2020), most studies on infant feeding, especially in South Africa, have revealed that around thirty-five to fifty per cent (35%-50%) of lactating mother do not breast-feed after 3 months postpartum and complementary food are given at an early age of six weeks. Like many developing countries, South Africa is facing an increase in its urban population (with

people moving from rural to urban areas). Noticeable, the size and number of disadvantaged urban communities has increased noticeably, because of this widespread migration (Ratnasari, Paramashanti, Hadi, Ygistyowati, Asiti, & Nurhayati, 2017). Thus, this research study seeks to examine the attitudes to and practices of mothers in terms of infant feeding in the specific context of Alice Town in the Eastern Cape Province of South Africa.

1.2 BACKGROUND TO THE STUDY

As a fundamental human activity, breast-feeding is important to infants' and mothers' health and not subjected to society and household economic value. The World Health Organization recommends that infants be exclusively breast-fed for the first six months after birth to achieve optimal health, development, and growth. Thereafter, they should be given nutritionally safe and adequate complementary foods while continuing to breast-feed breast-until 2 years of age or even later (World Health Organization, 2018).

Elyas et al. (2017) stated that due to global goals related to ensuring optimal child and maternal health, every mother should be adapted to practising EBF. In addition, infants should be breastfed exclusively from the day of birth to six months of age. However, it is estimated that one out of three infants are only breastfed exclusively for the first 6 months their lives, despite research evidence upholding exclusive breast-feeding (EBF) as the most optimal option (World Health Organization, 2018).

Mensah, Acheampong, Anokye, Okyere, Appiah-Brempong, and Adjei (2017) however states that nutrition and hormones are the two main biological factors that affect the growth of an infant. Infant feeding improvements has made significant progress. Historically, prior to the development of feeding bottles and formula feeding, the usual feeding was wet nursing, in which the mother's breast milk is replaced with that of another in cases where she cannot breast-feed

due to death or ill-health (West, Schwartz, Yende, Schwartz, Parmley, Gadarowski, Mutunga, Bassett & Van Rie, 2019).

The issue around maternal practices of and attitudes to breast-feeding continues to be a challenge to communities around the world. Consequently, related discussions are unpacked in this study through a global synopsis of the health profession. This provided the theoretical underpinning, which motivated the research by highlighting some of the challenges influencing breast-feeding practices. In 2011, the government of South Africa was obligated to advocate EBF for mothers, whether they are HIV positive or not, according to the recommendations of World Health Organization (Nieuwoudt et al., 2019). This policy was a bit different from predecessors and its application helped raised the EBF mean rates from below ten per cent in 2011 to thirty-two per cent in 2016 (10%-32%) (Nieuwoudt et al., 2019).

According to a Lebanese study by Batal, Boulghourjian and Akkik (2010), within 60 minutes postpartum, 18.1% of caregivers start implementing EBF of their child, while the percentage who started it later was 55.9%. Although caregivers who commence EBF comprise of over 70%, more than 40% of these nursing mothers break off the continuation of this practice before their babies are 6 months of age. According to another study by Hanif (2011), it was recorded that 65.5% (95% CI: 64.3–66.8) of nursing mothers breastfed their children within 60 minutes postpartum in Pakistan. A survey analysis by Issaka, Agho, Burns, Page, Stevens and Dibliey (2015), using health surveys and secondary demographics data, was carried out in Liberia, Nigeria, Ghana, and Sierra Leone, and concluded that sub-optimal complementary feeding (CF) practices are the downside to the well-being, growth, and health of infants between 0–2 years of age. This study further stated that infant malnutrition is caused by sub-optimal CF practices,

which resulted in a rate of 28% underweight and 38% stunting in reviewed infants less than 5 years old in these West African countries (Issaka et al., 2015).

According to Du Plessis, Peer, Honikman, and English (2016), studies on breast-feeding practices and information are limited in South Africa. Du Plessis, Peer, Honikman, and English (2016) indicate that 88% of infants' mothers introduce breast-feeding immediately after delivery. Nonetheless, they report an 8% exclusive breast-feeding rate from birth to the age of six months with more than 70% of infants being given solid foods before six months of age. Introducing liquids and food to infants prematurely (younger than six months) has a harmful effect on health and IYCN (Nieuwoudtet al., 2019).

In December 2012, South Africa legislated Regulation 991 that governs the Code of Marketing pertaining to certain foodstuffs for young children (DuPlessis, Peer, Honikman, & English, 2016). The support, promotion, and protection of breast-feeding have also been given a higher ranking in some policy documents, which includes the Women and Child Nutrition And Health 2012–2016, the National Strategic Plan for Maternal, New-born, (South African National Department of Health, 2012); the National Department of Health (NDoH) Roadmap for Nutrition in South Africa 2013–2017 (South African NDoH, 2013); and strategy and policy on National Health and Promotion 2015–2019 (South African NDoH, 2015). Likewise, nutrition is also documented in the National Development Plan (NDP), concentrating on the state of health and happiness of children and women and interventions during the first1000 days of life, using breast-feeding as an instrument to gain development results in the country (duPlessis et al., 2016).

However, it is estimated worldwide that EBF may forestall an estimated 13.8% of deaths among children below the age of two. Similarly, Victoria et al. (2016) argues that infants who are

exclusively breastfed risk of death is 12% of the infants who are not breastfed. Thus, the context of such decisions changes over time, as do guidelines on what is the best for babies (Du Plessis et al., 2016). Such supports the idea of an EBF policy, practice, and influences in South Africa. Based on this, the researcher seeks to explore the attitudes towards and practices of mothers of infants in Alice town, South Africa.

The purpose is to investigate the above and to identify the possible factors affecting/influencing mothers' feeding choices. The downward movement in EBF rates, despite endeavours made by government and private organisations that call attention to the importance of establishing the causes of this alarming percentile. Furthermore, research has shown that new mothers and their infants should be regularly followed up to build confidence and recognise and promote the importance, of the shortcoming, and values of EBF to the populace.

The main goal of this research is to provide knowledge that would be accessible to professional teams and nurses to assist them understand the attitudes of infants' mothers, and factors affecting their feeding choices, and, thus, highlight a better way of increasing EBF among women.

1.3 STATEMENT OF THE PROBLEM

Just like other developing nations, South Africa is facing declining levels of breast-feeding due to urbanisation and mothers being employed far from home (Nieuwoudt et al., 2019). Similarly, to other African nations, South Africa faces various challenges concerning the predictive factors and attitudes of mothers to breast-feeding.

While religious, social, and cultural beliefs strongly influence the practice of breast-feeding, the attitude of an infant mother towards breast-feeding has also been revealed as a powerful, independent variable of breast-feeding introduction (West et al., 2019). Studies conducted have assisted in identifying attitudes that emerge to hinder mothers from breast-feeding their infants.

Factors that negatively relate to breast-feeding include independence and a lack of freedom (West et al., 2019), the influence of family support (West et al., 2019), the understanding that mothers should not breast-feed in public (Mensah et al., 2017) and the lack of privacy for breast-feeding mothers at public facilities (Elyas et al., 2017).

While more recent studies have examined the attitudes of mothers to and practices of the breast-feeding of infants in certain parts of the world, including South Africa (West et al., 2019; Horwood et al., 2018; Yalcin, Berde & Yalcin, 2016; Gejo et al., 2019), there exists, nevertheless, few studies on this topic within the specific context of Alice Town in the Eastern Cape. Therefore, given that the practices and attitudes of mothers to breast-feeding vary between countries and sub-populations, it is crucial to understand the attitudes and practices of mothers in terms of breast-feeding.

This study examines the factors responsible for a mother's decisions concerning breast-feeding with the aim to improve breast-feeding awareness and increase and foster its practice among young mothers. Hence, the study seeks to investigate mothers' practices and attitudes to infant breast-feeding in Alice Town in the Eastern Cape Province, South Africa.

1.4 PURPOSE OF THE STUDY

The main purpose of this study is to investigate mother's attitudes and practices towards infant breast-feeding in Alice town, Eastern Cape Province, South Africa

1.5 OBJECTIVE OF THE STUDY

To examine mothers' attitude and practices towards infant breast feeding in Alice town, the study investigated:

- i. Practices and attitudes of mothers towards continuing breastfeeding beyond six months after birth.

- ii. Factors responsible for mother 's decisions concerning breast feeding in Alice town.

1.6. MAIN RESEARCH QUESTION

What are mothers' attitude and practices towards infant breast feeding in Alice town, Eastern Cape Province, South Africa?

1.7 SUB-RESEARCH QUESTIONS

To investigate mothers' attitude and practices towards infant breast feeding, the following sub research questions were raised:

- i. What are the attitudes and practices of mothers towards continuing breastfeeding beyond six months after birth?
- ii. What are the factors responsible for mothers' decision concerning exclusive breast feeding in Alice town?

1.8 SIGNIFICANCE OF THE STUDY

This study may prove helpful to clinicians and nursing professionals when designing interventions to promote breast-feeding practices. The study will also be useful to policymakers when analysing predictive factors and attitudes of mothers to breast-feeding in Alice Town. Lastly, it can be used to enhance EBF the research skills of future researchers and assist them to glean comprehensive information on the effectiveness of the EBF policy in South Africa.

However, this study is not significant solely to EBF mothers but rather, to all current and potential mothers. Therefore, it is hoped that it will contribute new knowledge that assists South African medical health authorities to rethink the best practice of motivating infant mothers to continue breast-feeding for the first six months and beyond. The gleaned knowledge may be used by health providers and educators to gain more insight into the opinions, beliefs, and attitudes of mothers in terms of their decisions around breast-feeding. The study could direct the government to be more focused on education concerning attitudes, beliefs, and opinions on breast-feeding

and this may assist to encourage breast-feeding throughout several socio-economic groups, ethnic cultures, and groups.

1.9. DELIMITATIONS/SCOPE OF STUDY

This study is limited to first 6months of EBF in South Africa and involves a case study of Alice Town. Thus, it focused on the predictive factors and attitudes of mothers to breast-feeding up to six months in Alice town, Eastern Cape Province, South Africa.

1.10. DEFINITION OF KEY TERMS

The researcher defines various key terms applicable during the study. In this study, a number of terms were used throughout. They are summed up, as follows:

Exclusive Breast-feeding (EBF): Infants taking breast milk only without oral rehydration solutions (ORS) drops or syrups (World Health Organization , 2008; 2017).

Infant and Young Child Feeding (IYCF): Optimal infant and young child feeding (IYCF) practices, involves introduction of breast-feeding within the first hour and continued breast-feeding for two years with the introduction of appropriate, adequate, and safe complementary food from six months (World Health Organization , 2018).

Malnutrition: A condition in which an infant or young child lacks appropriate nutrition and is present when there is imbalances, inadequacies, and surplus in consumption of child food (WHO, 2018).

Maternal age: Infants' mothers' age at the time of giving birth (Shiel, 2018).

Mixed feeding: The merging of both breast milk and breast milk options/ alternatives.

1.11. OUTLINE OF THE STUDY

Chapter One- provides an introduction and background of the study. This includes its problem statement, research purpose, research questions and objectives, its significance, its delimitations, definition of key terms and an outline of the entire study.

Chapter Two- presents the theoretical framework for the study and a literature review. The review covers aspects such as the conceptual understanding of breast-feeding; EBF rates in terms of global and South Africa perspectives; studies related to EBF; South African breast-feeding policies; mothers' attitudes to and practices of EBF; the benefits of breast-feeding to infants, mothers, and the larger community; and, lastly, factors affecting mothers' feeding choice are discussed.

Chapter Three – the research methodology of the study is described in this chapter. This includes its research design, the population, samples and sampling procedure, the chosen instrument, data collection, its reliability and validity, ethical considerations, and data analysis.

Chapter Four– presents a demographic analysis, an analysis of research Questions one and two and a summary of its findings.

Chapter Five - discusses the findings that emerged from the research. Finally, it draws conclusion, based on the study's findings, limitations, and recommendations.

CHAPTER TWO

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

2.1 INTRODUCTION

This chapter discusses the literature review, which is two-fold in nature. Firstly, it locates the study within its theoretical framework and context, and, secondly, it places it within national and international literature on EBF. This study is guided by the theory of reasoned action (ToRA or TRA) proposed by Ajezen and Fishbern, and the theory of attitude proposed by Gagne. The literature review is, thus, conducted in a manner consistent with the following headings: The breast-feeding policy in South Africa; EBF trends; mixed-feeding, and formula-feeding; the benefits of breast-feeding; and studies on EBF.

2.2 THEORETICAL FRAMEWORK

The role of theory in ascertaining the nature of educational practices and research cannot be understated. It is, therefore, essential to acknowledge the relevant theories that guide this study. A theoretical framework is a metaphorical and literal foundation from which research stems and is, thus, one of the most critical aspects of any research (Lysaght, 2011). In other words, a theoretical framework is the guide which provides structure and form to any research (Luse, Mennecke, & Townsend, 2012). This study uses a two-pronged framework: Firstly, it addresses the behaviour of infant mothers in terms of EBF, and secondly it focuses on the aspect of these mothers' attitudes towards EBF. In an attempt to comprehensively understand the practices and attitudes of this demographic and the related hypotheses, this study is underpinned by two theories, namely: (i) the theory of reasoned action (ToRA or TRA), as proposed by Ajezen and Fishbern, and the theory of attitude, as proposed by Gagne.

2.2.1 Theory of reasoned action (TRA or ToRA)

This theory is used to discuss the correlation between human internal behaviour and attitudes. It maintains that the intention of an individual to execute behaviour foretells whether they will ultimately perform that behaviour or characteristic. As postulated by Ajezen and Fishbern in 1980, it focuses on human behavioural purpose, stating that voluntary action is a post-cursor of intention. The theory also indicated that the purpose behind a specific behaviour interacts with other factors that influence behaviour. As stated, it can apply to the actions of an individual since it has to do with individual normal opinion and attitude. Normal opinion of a person is controlled and influenced by individual situation, demographics, economics, society, and their environment. Typical opinion relies on a set of beliefs that an individual think that friends or relatives think, in addition their own willingness of action to conform to these people (Nickerson, 2022).

Researchers further make use of TRA to explain several health behaviours which include use of condoms (Montano & Kasprzyk, 2015) also the use of seat belts in cars (LaCaille, 2020). Nevertheless, only a limited number of studies make use of it to describe intention and behaviour related to breastfeeding (LaCaille, 2020; Montano & Kasprzyk, 2015; Nickerson, 2022). This present study upholds the concept of using theory to assist the understanding of breast-feeding behaviour and intentions.

Furthermore, it also establishes the identity of normative and attitudinal beliefs which make it possible to identify and compare mothers who do not breast-feed with those who intentionally do. This, thus, will help the researcher to identify and render the most appropriate breast-feeding intervention framework. During educational communications which encourage breast-feeding, health education can provide access to the differences in communal beliefs between mothers who breast-feed and those who do not. Even though both norms and attitudes influence the intentions

of behaviour, their comparative benefits frequently change, relying on the population and behaviour, which is a relevant consideration for breast-feeding educational strategy development.

2.2.2 Theories on attitude

Attitude is defined as either a pessimistic or optimistic reaction of thought, behaviour, occurrence, substance, people, and things in an environment (Nickerson, 2022). Within the field of social psychology, attitude is, therefore, an important and relevant concept since it is linked to varied results: firstly, it influences individuals' and communities' verbalisations, performance, and perceptions; secondly, it controls both their physical and mental-emotional well-being, and lastly, it relies on an individual's ability to accomplish their objective.

Attitude is the main internal state that influences personal action choice in some set of events, persons, or things (LaCaille, 2020). Cognitive, behavior and affective are the three most important components of real notion of attitude (Kwon & Vogt 2010). Affective 'A' strengthens emotional ideas and the way a person feels the influence of an object. Behavioural 'B' ascertains the way an individual conducts themselves after reacting to the contact force. Cognition 'C' translates how a person's belief is determined and accepted after the impact of gathered knowledge. The ABC success attends to the way a person behaves towards a subject (Kwon & Vogt, 2010; Mc Leod 2010).

There are division of positive and negative components of attitudes, the negative consisted of languid, irresponsible, rage, hasty, lethal, sarcasm, over poise, unawareness and laxity whilst the positive consisted of preciseness, vigilance, forecast in advance, supportive, shows positive reception, attentive, contentment and heartening (Kwon & Vogt 2010; LaCaille, 2020). What distinguish the difference between negativity and positivity entirely relies on the emotional aspect of attitude that individual reflect statement based on past events in a circuitous and candid manner (Kwon & Vogt, 2010).

Attitude assists an individual to outline their environment utilising functional and function knowledge. Likewise, it helps to sustain and expand societal association. In the functionalist theory of attitudes, Wang (2012) states that a person's the goals and objectives depend on a particular individual's attitude to the latter. This specific theory is divided into four categories of attitude, which are: ego-defensive, value-expressive, knowledge, and instrumental.

The importance of attitude is favoured by the object whose desired result is fulfilled. Theoretical stability and clarity in a situation where there is structured system environment favour knowledge. Knowledge theory gives individuals reliability and confidence. The complicated nature of life can cause it to occur in an accepted way. (LaCaille, 2020). Value-expressive to make simply is approving individual rituals and values. Society and culture could be included but relied on only ease and self-reflection. The ego-defensive theory provides a defence process system in a person to guide against self-injury and revengeful actuality in the rejuvenating world (Wang 2012).

Attitude is studied and does not need full clarification, so it is adapted. Learning through observation is the ability to stimulate learned behaviour that has been strengthened (Montano & Kasprzyk, 2015). On the other hand, the cognitive dissonance theory is an oxymoron of behaviour, belief, and other existing options. (Metin & Camgoz, 2011).

In summary this theory assisted in identifying the functional and function knowledge of infant mothers. The positive and negative attitude of infant mothers toward breastfeeding will be revealed through their action towards breastfeeding. The attitude of infant mothers shows the perception of mothers in breastfeeding. This theory also reveals infant mothers' emotional ideas strength and the way they feel and behave towards breastfeeding.

2.3 FINDINGS FROM LITERATURE REVIEW

2.3.1 Exclusive breast-feeding: Conceptual Understanding

Breast-feeding is a method of providing much-needed nutrients to infants for better health development and growth (Elyas et al., 2017). According to WHO, “exclusive breast-feeding is feeding where only breast milk is given to infants”. Except for breast milk, solids and liquids are not to be given to babies, although medicines, vitamins, and minerals in the form of syrups can be given, as necessary. Breast milk is the only accepted and approved food for babies because it gives the needed nutrient and energy for better growth and development (Mensah et al., 2017).

According to WHO (2018), a mother should breast-feed her infant exclusively for the first six months at least to ensure the better development, health, and growth of the child. Thereafter, infants can receive complementary, safe, and adequately nutritious foods with the addition of breast milk for children 2 years or older. The following is recommended by UNICEF and WHO to allow mothers to sustain and practice EBF for 6 months:

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- i. Breast-feeding on-demand – the mother should breast-feed whenever the infant wants it, during the day or at night.
 - ii. Breast-feeding should be introduced within the first hour of the infant’s life.
 - iii. Exclusive breast-feeding is recommended (feeding baby with breast milk and nothing more); and
 - iv. No use of bottles, teats, and pacifiers.

2.3.2 Breast-feeding policy in South Africa

The guideline released by the World Health Organization on regulations that guide the prevention of mother-to-child transmission of HIV makes it necessary that the country assesses the role of breast-feeding (WHO, 2018). The guidelines introduced a renewed endeavour to bring back breast-feeding on the worklist as an important strategy for child survival.

During a meeting held by the National Breast-feeding Consultative in August 2011, South Africa declared itself as being energetically supportive, protective, and promotive of EBF as a necessary public health intervention to improve the lives of children. Consequently, relevant stakeholders were encouraged to act decisively to demonstrate their commitment and intensify global efforts to encourage breast-feeding in the WHO 2010 guideline on infant feeding. In addition, an HIV-related approach was adopted at this meeting, and it was recommended that due to the present death rate of young children and infants in South Africa, health services would mainly support and advise mothers with HIV (taking prescribed antiretroviral treatment) to exclusively breast-feed their infants up to the age of twelve months with the addition of appropriate complementary foods (West et al., 2019). Moreover, the Global Strategy for Young and Infant Child Feeding stated that HIV-negative mothers should breast-feed exclusively for 6 months, after which they can use appropriate complementary baby foods (WHO, 2018).



Consequently, the National Department of Health issued a national policy directive aimed to eliminate the giving of free formula for infants as a component of PMTCT after the above-mentioned 2011 Consultative Meeting (Department of health, 2017). This policy is applicable to several national programmes, strategies, and policies; in addition, it is also relevant to various global initiatives., including the child rights practices, which acknowledge the crucial role of breast-feeding in the attainment of an improved level of infant health. The key component of the new 2013 young and infant feeding policy includes the duties of health care givers implementing child, neonatal, women, mother's health facility, district, provincial and national level, breast-feeding the young and infant child in a difficult situation, commercial formula, feeding the infant in the context of HIV, EBF, and early initiation of breast-feeding in health facilities (NDoH, 2017).

Importantly, the widespread occurrence of HIV in South Africa alters the situations in which mothers make choices in the manner they breast-feed their infants, based on an assessment of the various risks related to a host of diverse feeding techniques (West et al., 2019). In the early days of the pandemic, this widespread mother-to-child occurrences brought about the introduction of several policies that led to a fast, and broadened departure from breast-feeding only to feeding baby with complimentary and substitutes (West et al., 2019). As a result, actions have been taken to avoid mother-to-child transmission of HIV, which has been put into practice since 2001 and updated yearly between 2008 to 2015. The policies have been supplemented with transitions based on evidence presented in the recommendations of the IYCF (NDoH, 2015; NDoH, 2017), namely: ceasing the practice of EBF and rather giving commercial formula to infants if particular factors (such as safety, sustainability, acceptability, feasibility, and affordability) were adequately addressed (Luoga, 2017; Nieuwoudt & Manderson, 2018).

Mothers were advised in every first set of recommendations to choose either formula feeding only, and free formula will be provided or breast-feeding exclusively and weaning as early as four to six months (WHO, 2018). As a result, the practices of breast-feeding have been applied to HIV-negative mothers due to the ripple impact of mixed messages, not only on HIV-positive mothers' newborns, but also on non-HIV-infected babies born to HIV-negative mothers, causing HIV-negative women to select other options (WHO, 2018). The following are examples of the issues/damage associated with this approach to breast-feeding in South Africa:

- i. The disruption of the socio-cultural context within which feeding occurs.
- ii. The interruption between recommendations for infant feeding.
- iii. Inadequate skills in counselling.
- iv. Inadequate support for counsellors of infant feeding; and

- v. Confusion among healthcare providers about the risks of HIV transmission and infant feeding through breast-feeding (West et al., 2019).

The criteria recommended by WHO (2012) for infant feeding practices is presented below (Table 2.1).

Table 2.1: criteria for infant feeding practices by WHO

Feeding practice	Require that infant receive	Allow the infant to receive	Does not allow the infant to receive
Bottle feeding	Any liquid (including breast milk) or semi solid food from a bottle with nipple/teat	Anything otherwise: any liquid or food including non-human formula and milk	N/A
Breast-feeding	Breast milk (including milk from wet nurse or expressed)	Anything otherwise: any liquid or food including non-human formula and milk	N/A
Complementary feeding	Breast milk (including milk from wet nurse or expressed) and semi-solid solid food	Anything otherwise: any liquid or food including non-human formula and milk	N/A
Predominant breast-feeding	Breast milk (including milk from wet nurse or expressed) as the common source of nourishment	Certain liquid (fruit juice, water, and water-based drinks), drops, ORS, syrups (medicines, minerals, and vitamins) and ritual fluid	Anything otherwise (in particular, food-based fluid, non-human milk)
Exclusive breast-feeding	Breast milk (including milk from wet nurse or expressed)	Drops, ORS, syrups (medicines, minerals, and vitamins)	Anything otherwise

The aforementioned table refers to the EBF guidelines and practices related to early introduction of food and fluids immediately after birth (Luoga et al., 2017). Ten years after the first change, and, in the light of new evidence of the benefits of exclusive and continued breast-feeding in both HIV-negative and HIV-positive settings, South Africa has embarked on the process of restoring breast-feeding. It is important to note that a great deal of work has been done in South Africa by various researchers, who have focused specifically on breast-feeding in HIV-infected mothers (Luoga et al., 2017; Nieuwoudt & Manderson, 2018; West et al., 2019).

To this end, the NDoH has strongly committed to promoting both the causes of IYCF and maternal nutrition, culminating in its landmark statement, namely the Tshwane Declaration of Support for Breast-feeding in South Africa (West et al., 2019). This declaration was signed in August 2011 by Dr Aaron Motsoaledi, the National Minister of Health, following the convention of the National Advisory conference. This meeting brought together a wide range of nutrition stakeholders, including non-government, government, academic and research institutes, and independent experts (Jama et al., 2020). This proved to be a positive step towards fostering cross-sectoral collaborations by various nutrition stakeholders and demonstrates their commitment, protection, and support of breast-feeding in South Africa (Jama et al., 2020).

2.3.3 Exclusive Breast-feeding Rates in South Africa and other part of the World

Due to the indispensable nature of EBF pertaining to infants' prolonged existence strategies, deed has been investigated into comparing the ascending rates of malnutrition and mortality in developing countries. Though, there have been immediate increasing successes in the levels of EBF. The section below discusses EBF studies both in South Africa and other parts of the world.

2.3.4 Exclusive breast-feeding rates (Global perspective)

Globally, the number of infants that were exclusively breast-fed is 40% and this is expected to rise to 50% by 2025 (Jama et al; 2020). Recent research by Jama et al. (2020) reveals that there is a wax rank of EBF between 34% - 39% among infants younger than 6 months, and the EBF rate was 46% to 53%. There was a higher level of growth recorded in cities with 30% - 46% more than in rural areas with a record of 42% - 48%. The study recorded that in all the regions where the study was carried out there were increases, namely: East Asia/Pacific (57% to 65%); South Asia (49% - 56%); the Middle East/North Africa (29% to 34%); lastly, the maximum

increment was then found in Sub-Sahara Africa, where the rate nearly doubled from 18% in 1990 to 38% in 2000.

Study by Hossain et al. (2018) on the global incidence, also reported a prevalence of exclusive breastfeeding in the Southern and Eastern Africa 55%, North America 35%, 54% for South Asia, Caribbean and Latin America 38%, Central Asia and Eastern Europe 33%, Pacific and East Asia 30%, North and East Africa 30% and globally 42%. Although the record is still low in Africa compared to other part of the world, the liveliness rise in Central and West Africa was once among the countries with the lowest breastfeeding rates in countries that are still developing where efforts were made to increase breastfeeding in the last twenty years (Jama et al., 2020).

Over the past few decades, while the number of breast-feeding women has increased over the last decades, the global transition to EBF, including 90% in 1994, remains daunting (Mensah et al., 2017). This is evidenced by the current low incidence rates in many developing countries, especially Central and West Africa. This is not surprising since countries in this specific part of the continent have the highest malnutrition rates in the world (Jama et al., 2020). However, an explanation of the modest benefits achieved in the 1990s and the early twenty-first century is not simple as one might imagine, but some are global and widespread, considering a supervised improvement for childcare and monopoly. Efforts in the 1980s included international codes, such as alternative breast milk marketing, and hospital and child-friendly initiatives (Jama et al., 2020).

A 2020 study in Bangladesh indicated that maternal knowledge and practice of EBF are extremely poor at 34.5% and 27.9%, respectively. The study also reveals that mothers older than 21 years of age were likely to have more knowledge of EBF and less likely to have practices of EBF than mothers' years of age or younger (Rana, et al., 2020). Furthermore, a study by Akadri

and Odelola (2020) indicates that 58.8% of mothers breast-feed their infants exclusively because they believe that breast milk is better for infant health, while 41.2% believed that breast-feeding was the natural thing to do.

However, by Nabunya, et al. (2020) in Kampala on dominant of EBF revealed that 42.8% of mothers exclusively breastfed their child. In total the study showed pre-lacteal feed was received by 30.6% of the children, 40.5% received mainly warm water or 35% received glucose. The mothers noted that their job at work, intention to breastfeed, nursing interfered with their personal believe influence their feeding decision. And this can result in emotional good health and wellbeing of the child, though some mothers believed that breastfeeding created a pleasurable mother-child bond which enhanced the emotional wellbeing of both child and mother. Study in Tanzania showed that mothers stated that insufficient breast milk and child rejection of breast milk deny them to practice EBF (Mgongo et al., 2018). In Yemen it was revealed that two fifth of the mothers have poor knowledge about breastfeeding and followed up more than two fifths of them have average knowledge level. And this was due to the mother's low education and leaving environment (local area) (Hassan, Maroof, Daud & Rani, 2020).

2.3.5 Exclusive Breast-feeding rate in South Africa

Breast milk plays an important role in mortality reduction since it contains all the nutrients that infants/babies need in their first 6 months of life. In 2016, 67.3% of infants initiated with breast-feeding within 1 hour of birth were recorded in South Africa with only 31.6% being breastfed exclusively (DHS Program STAT complier, 2021). There is a reduction in child mortality rates with under 5 and infant mortality rates of 3.5% and 2.8% live birth compared to Sub-Saharan Africa's rates of 7.6% and 5.2% respectively.

Studies and records of the 2003 South Africa Demographic and Health Survey reveal that although the practice of early post-delivery breast-feeding initiation is common in South Africa,

the practice of mixed feeding is preferred over EBF (Horwood et al., 2018). It is reported that close to 70% of infants have been given complementary foods before six months of age (Jama et al., 2017; Myer et al., 2018; Trafford et al., 2020). The same survey reported that the percentage of children between the age of 0-3 months that were exclusively breastfed stood at 11.9%, while those that were not breastfed at all was 20.1%. In order to clarify this seeming lack of advancement in rates of infant feeding, the breast-feeding rates of the 1998 SADHS will now be compared to breast-feeding rates of the previously mentioned 2003 survey. This is shown in Table 2.2 below.

Table 2.2: The reported Infant feeding rates in 1998 and 2003 SADHS.

Breast-feeding Practices	1998 SADHS	2003 SADHS	2008 HSRC
Exclusive breast-feeding 0 to 3 months	10.4%	11.9%	8%
4 to 6 months	1%	1.5%	25.7%
0 to 6 months			
Not breastfed 0 to 3 months	16.6%	20.1%	
	1998 SADHS	2003 SADHS	
Inappropriate complementary feeding practices (less than six (6) months)/ mixed feeding	70%	Not reported	51.3%

Source: South Africa National Department of Health, 2013

A study conducted by the HSRC in 2008 focused on South Africa's national HIV incidence, communication, prevalence, and behaviour and its results indicated that the percentage of children between the age of 0 to 6months who were exclusively breastfed were only 25.7%; furthermore, the study also revealed that the percentage of children aged 0 to 6 months who were exclusively breastfed was 22.5%, while the percentage of children in this age group that were mixed fed was 51.3% (Nieuwoudt & Manderson, 2018).

A large and combined study in South Africa investigating HIV guidelines and comparing EBF with other forms of infant feeding indicated that 6 months of infant age the rate of breast-feeding is 40%. This study also implied that if sustainable and adequate home-based peer counselling visits are made to HIV-positive mothers who chose to breast-feed, there is a possibility for these mothers to practice EBF (Trafford et al., 2020).

The role of health service practices in the establishment of breast-feeding cannot be underestimated. A review of the Baby-Friendly Hospital Initiative (BFHI) was conducted in 2008 in eight (8) provinces, excluding the Western Cape, reveals that 493 (73%) mothers believed that breast-feeding should be introduced not long after delivery. Nevertheless, by the age of 10 weeks, close to half of the population study (46%) indicated that they had been giving their infants formula milk, despite the increase in breast-feeding rates after the implementation of BFHI, the continuation of breast-feeding was not encouraging, i.e., still low. Their reasons for the early introduction of other feeds included the following factors: infants that were not interested in breast-feeding; health workers and family members' advice; and milk insufficiency (Trafford et al., 2020).

The policy of infant feeding in South Africa was changed in 2011 to include EBF for all mothers, whether HIV-positive or negative (South Africa-DOH, 2021). This policy change was accompanied by the Tshwane declaration. This was consistent with the 2010 WHO guidelines for infant breast-feeding, which coordinate breast-feeding guidelines for HIV-negative and HIV-positive women as long as ART is available (South Africa-DOH, 2021). The Tshwane statement also called on the government to enact legislation to enforce the WHO International Codes on the marketing of breast milk alternatives. This code provides specific guidelines for supporting,

encouraging, and protecting breast-feeding by regulating the sale and advertising of teats, bottles, and breast milk substitutes.

Despite the code being considered by WHO since 1981, the violation of the code continues to be extensive worldwide because of inadequate enforcement and poor monitoring mechanism throughout nations (Robinson et al., 2019). Consequently, infant formula sales have increased exponentially in low-to-middle-income-countries, including South Africa, resulting in higher rates of mortality and morbidity (Lake et al., 2019; Robinson et al., 2019). In South Africa, the outcome of breast-feeding is sub-optimal (Ogbo et al., 2017, Lake et al., 2019). Researchers have attributed it to families and mothers' easy access to infant formula due to infant formula distribution programmes designed to prevent mother-to-child transmission (MTCT) of HIV.

Data available in South Africa shows that almost all mothers begin breast-feeding after childbirth (Jama et al., 2017). Nonetheless, studies indicate that very few infants were breastfed for only 6 months of age (Horwood et al., 2019). Most babies received complementary feeding within a few months, and in some cases even within a few days after birth (Horwood et al., 2019). This sub-optimal early nutrition profile exposed South Africans to poor health in both infancy and adulthood. According to the data available, 88% of mothers start breast-feeding shortly after giving birth. However, according to reviews, there was an 8% breast-feeding rate between the age of 0 to 6 months, with more than 70% of babies consuming solids 6 months ago (Jama et al., 2017). Premature introduction of water and food into infants under 6 months of age adversely affects the nutrition and health of infants (Jama et al., 2017; Horwood et al., 2019).

2.3.6 Mixed Feeding and Formula Feeding

Mixed breast-feeding is the most well-known type/method of breast-feeding an infant (Yapa et al., 2020), but it is recommended that mothers breast-feed their infants for 6 months. Mixed

feeding is an issue, and most mothers are of the opinion that their infants need the vitamins in the formula and the healthy benefits of breast-feeding (Adeniyi et al., 2019). Infant risk of being affected by HIV AIDS if HIV-infected mother mix-feeds her infant with drinks, other food, and breast milk. Some mothers do mixed feeding after exclusively breast-feeding their infant for six months (Mensah et al., 2017). A combined study that was carried out in Durban showed that the percentage of transmission rates of HIV in infants that are mixed fed is 32%, which is higher compared to infants that are fed using formula feed.

Comparison data from the ministry of health's 2005 National Food Consumption Survey Enhancement Baseline (NFCSFB) (2007) and Faber and Benade's (2007) The National food Consumption Survey (NFCS) show that vitamin A is a serious public health issue in South Africa. Others include overeating (obesity), wasting, age-related underweight, stunting, and malnutrition. The prevalence of this disorder is reported in this study in Table 2.3.

Table 2.3: Nutritional status of children in South Africa in 2005

Indicator	Population of children	Prevalence (%) 1999 (7)	Prevalence (%) 2005 (48)	Comment
Stunting	12 to 108 months (1 to 9 years)	21.1%	18%	Younger children (1 to 3 years of age) still the most intensely affected and also those living in rural areas and on commercial farms. The level of mother's education was crucial determinant for these nutritional orders
Underweight	12 to 108 months (1 to 9 years)	10.35%	9.3%	
Wasting	12 to 108 months (1 to 9 years)	3.7%	4.5%	

Overweight in formal urban areas	12 to 108 months (1 to 9 years)	7.7%	4.8%	Children from well-educated mothers have the highest prevalence.
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A 1999 analytical study of NFCS using the 2006 WHO reference criteria found that the prevalence of stunting was 20.1% between the age of 12 -60 months. According to the analysis, 30% of infants are both obese and overweight, and researchers found that obesity/overweight and followed by stunting are the serious nutritional problems for twelve to sixty months old South African children (Mnyani et al., 2017).

In a disadvantageous setting, the implementation of free formula milk programmes is very difficult to carry out. There are small groups in some countries that have essential and basic services that allow for the preparation of formula feed hygienically but with little resources (Trafford et al., 2020). Generally, except for the child population, the advocacy of formula feeding would be damaging eventually because the formula milk that is supplied to households does not meet the requirement and criteria of the World Health Organization (WHO) (Trafford et al., 2020). Having resources such as electricity and water that is clean water, children will have the advantages of choosing formula feeding by mothers who are HIV positive (Yapa, 2020).

In areas where there are high infant death rates, it is essential that formula feeding should not be suggested for infants whose mother is HIV-positive (WHO, 2020). These infants are already disadvantaged, and their situation might get worse if formula is given. Mothers who are HIV-positive but meet the criteria of WHO's guidelines can decide whether to use formula feeding (Yapa, 2020). Where formula feeding is safe, sustainable, affordable, feasible, and acceptable, WHO states that mothers who are HIV-positive should use formula feed for their infant (WHO, 2020). This means that necessities like proper sanitation, clean water, and a home environment are required.

Botswana has witnessed the harmful effect of formula feeding where there was a massive outburst of diarrhoea in areas where breast-feeding had been the routine before (Ajibola, et al., 2018). Dried infant formula is not a germless product and may contain foreign matter that can potentially cause diarrhoea, even though when all other resources are available for its safe preparation (Ajibola, et al., 2018). Despite the possibility of formula feeding preventing transmission of HIV from mothers to infants, this does not eliminate the risk and danger that still exists when practising formula feeding (WHO, 2020).

According to WHO, the risk of feeding an infant with formula feeding only (without breast-feeding_) is that infants have two and a half times (2.5-fold) the increased risk of dying for those four to five months of age, times four-fold increased risk of dying for two to three months and times six (6-fold) increased risk of dying in the first two months of life compared with those who are breast-fed (WHO, 2020). Infants who are fed formula f have a slightly increased risk of developing acute respiratory infection or diarrhoea (Trafford et al., 2020). One of the reasons why mothers introduce infant formula is the perception of breast milk insufficiency.

An earlier study in South Africa investigated the effectiveness of preparatory management in kitchens and other preparatory areas for producing new infant formulae. It investigated *Enterobacter (En.) sakazakii* and other numerous pathogens at 18 public hospitals and established that some samples of sealed canned milk powder were positive for pathogens. However, most tests indicated that positive samples appeared only after the food was prepared in an improperly disinfected environment (National Department of Health, 2016). Studies on the preparation and use of infant formula in a medical setting and at home have shown that infants are often given bacteria-contaminated formula feed, which could contribute to the increase in death rates among both HIV-positive and negative infants (Huang et al., 2018).

2.3.7. The Benefits of Breast-feeding for Infants, Mothers and Community

Breast-feeding has many advantages, not only for the infant, but the mother. The benefits may be financial or emotional; moreover, the infant will also experience better health throughout her/his life. Present and past mothers have made breast milk their first choice when feeding their infants due to the nutritious benefit of breast milk for the baby. The available literature agrees that the number one choice for feeding infants between the age of 0 to 6 months is breast milk. The sections below discuss in full the advantages of breast-feeding to communities, mothers, and infants, and provide statistics and evidence that supports how important breast-feeding is.

2.3.7.1 The Benefits of Breast-feeding to Infants

The WHO has stated that infants who are breastfed do not have a possible adverse events of childhood disease and infections. Breast milk gives good, adequate nutrition for infants since it consists of appropriate mixtures of fats, proteins, and vitamins. Furthermore, there are some antibodies in the mother's breast milk, which boost the immune system of infants that enables them to fight infections and diseases (WHO, 2019). Infant digest and absorb breast milk components easily due to the presence of enzymes, hormones, and living growth factors that aid digestion. According to Cleveland Clinic Medical Professional (2018) breastfed babies have a lower possible adverse event of type 2 diabetes, certain childhood cancers, SIDS (sudden infant death syndrome), chronic conditions, respiratory infections, obesity, vomiting, diarrhoea, and asthma.

The formation of breast milk begins as colostrum (small in quantity) and later becomes copious (vast in quantity). The first milk is essential in giving the child the necessary antibodies and nutrition for his/her development (Powe et al., 2011). Breast-feeding protects children from obesity, according to a report from the WHO (2010). Furthermore, 6-month-old infants are

thought to have reduced risk of allergic and gastrointestinal disorders and improved growth (Horta & Victora, 2013).

Breast-feeding report card from Centres for Disease Control and Prevention (CDC) (2021) in the USA revealed that at birth, 77% of mothers begin breast-feeding in the United States. However, in the year 2011 data showed that at 12 months of age 27% were breast-feeding and at 6 months of age only 49% of infants were still breast-feeding. In some instances, infant mothers prefer to breast-feed because their infants are healthier when doing so and they save hundreds of dollars which would have been used to buy formula feed. Scholars think that the United States would save \$13 billion annually in health care costs if 90% of infants were breastfed for at least six months (Radzynski & Callister, 2015).

The United Nations International Children's Emergency Fund (UNICEF) and the WHO launched the Baby-Friendly Hospital Initiative (BFHI) in 1991 to increase and promote breast-feeding rates around the world (UNICEF, 2021). This initiative consists of 10 steps. In addition, the Baby-Friendly Hospital Initiative (BFHI) promotes breast-feeding as standard for the first 6 months of life (WHO, 2020).

2.3.7.2 Breast-feeding Benefits for mothers.

Although there are a number of variables that influence this decision, mothers also benefit from breastfeeding. These include professional encouragement, partner support, personal preference, and personal attitude to maternal knowledge (Cleveland Clinic Medical Professional, 2018). In addition, the bond that develops between baby and mother during the early days of breastfeeding is fulfilling and comforting to baby and mother. Mothers always feel and view themselves as a contributor to the growth of their baby when breast-feeding.

Also, breast-feeding was chosen by mothers due to the convenience enjoyed, as breast milk has a perfect temperature, economical, sanitary, nutritious, and readily available. One of the several health benefits of breast-feeding to mothers is that it causes the uterus to contract and assists them to lose more weight rapidly than mothers who do not breast-feed. Mothers have a lower risk of osteoporosis because more calcium is absorbed by their bodies when lactating and pregnant. In addition, there is a lower risk of premenopausal ovarian and breast cancer in mothers who breast-feed. Studies have revealed that breast-feeding reduces the risk of ovarian cancer, breast cancer, and type 2 diabetes (Cleveland Clinic Medical Professional, 2018). Moreover, regular breast-feeding assists in the delay of fertility and assists women against anaemia through iron conservation. Breast-feeding gives stimulus to the developing brain of the baby, a sense of protection, parental care, emotional bonds and regular interaction between infant and mother (WHO, 2020).



Nurses' Health Study (NHS), a cohort study which analyzed the relationship between incidence of type 2 diabetes and lactation duration (Radzyninski & Callister, 2015). Nurses' Health Study started in the year 1976 which is made up of two cohorts of women engaged in longitudinal studies on the health of women. Mothers between the age of 30 to 55 years was the first set, who had no gestational diabetes history. For every additional year of breastfeeding, there is 15% reduction in the risk of developing type 2 diabetes from the first set of mothers. In the second set of mothers, who are between the age of 25 to 42 years had a gestational diabetes background. For every additional year of breastfeeding, there is 14% reduction in the risk of developing type 2 diabetes from the second set of mothers. Scholars who conducted this study revealed that a longer duration of breastfeeding had relationship with reduction of risk of developing type 2 diabetes in middle age and young women (Radzyninski & Callister, 2015).

Cost saving is another advantage of breastfeeding. Researchers think that United States would save up to \$13 billion dollars every year in health-care costs if 90% of infants were breastfed for at least six months (Radzynski & Callister, 2015). Mothers decided to breastfeed just because of savings, as formula can cost hundreds of dollars yearly compare to breast milk which is free. Breastfeeding permits faster return infant mother to her pre-pregnancy condition (Dukuzumuremyi et al., 2020). Breastfeeding has a very important contraceptive effect (Dukuzumuremyi et al., 2020) and this effect is very crucial in developing nations where we have a very low acceptability and awareness of modern family planning.

2.3.7.3 Breast-feeding Benefits for Community

The benefits of breast-feeding are not only for mothers and infants but also include the community. The community benefits of breast-feeding include 1) breast-feeding mothers will have a less absence from their job and have no reason to stay at home because they have healthy and strong babies; 2) breast-feeding reduce the cost of living and reduce the use of formula through food supporting programmes; and 3) no pollution is harmful to the environment and community or waste in breast milk (NIH, 2018). Furthermore, it is estimated that if 50% of babies were breastfed exclusively, the USA government might save up to four (4) million, this shows that EBF is very cheap and adds economically to the growth of a nation. The amount of formula used is reduced by EBF; therefore, the money can be spent on food supporting programmes by the government (NIH, 2018).

2.3.8. Studies on Exclusive Breast-feeding

For several years now, breast-feeding has been a subject of discussion following its proceeding decrease in most parts of the world. Nevertheless, several scholars have carried out different studies on mothers' intentions to breast-feed and encourage mothers to do so. However, objectives of the public health have not been met numerically especially in the western region of

the world with the lowest record in terms of value as the period of breast-feeding increases. (Dukuzumuremyi et al., 2020).

A reviewed study by Dukuzumuremyi et al. (2020) on the practices, attitudes, and knowledge connected to EBF and was carried out using an extraction form, which had been predetermined and include sixteen (16) studies. The study revealed that the percentage of mothers that had heard about EBF is close to 96.2%, while those that are aware of EBF is 84.4%, and those who are aware that EBF was only the first six months is 49.2%. Furthermore, it was recorded that the percentage of mothers who disagree that giving breast milk to a new-born immediately and within an hour after birth is crucial is 42.1% while the percentage of mothers who strongly disagree is 24.0%, and those that believe that colostrum is very essential is 47.9%. However, the percentage of mothers who preferred to feed their infants for the first six months with breast milk only is 42.0%. Differently, 55.9% of mothers had practised EBF for at least six months.

A cross-sectional study in Ethiopia on attitude and knowledge of mothers on exclusive breast-feeding by Alamirew et al. (2017). The data used in the study was structured interview-based questionnaires and pretested. The number of respondents were 384 with 100% rate of response with most falling in the age categories of 20 to 30 years (66.9%). In addition, their average age was 27.65 years; almost all 325 (84.6%) participants were followers of orthodox Christianity and the majority, 370 (96.4%), were of Amhara ethnicity. This study revealed that 268 respondents (69.8%) possessed sufficient knowledge; moreover, 92 (24%) of them were categorised as having negative attitudes to EBF, while the remaining 292 (76%) demonstrated positive attitudes.

Another relevant study by Wana (2017) on the assessment of mothers' attitude to, practices and knowledge of EBF was a community-based descriptive cross-sectional study in Boditi town in

Southern Ethiopia that used a systematic random sampling technique. In addition, the population was comprised of 351 respondents while the instrument used to collect data was a questionnaire and a face-to-face interview. The findings revealed that although 331 (94.3%) participants knew what EBF was, 298 (85%) of them did not believe that breast-feeding reduces mothers' activities. Furthermore, it was established that more than half (197 or 56.1%) of respondents had breastfed their babies exclusively for the first six months.

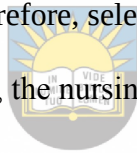
In Mexico, a low-resource country, a study by Swigard et al. (2017) investigated breast-feeding social norms, beliefs, and practices. A secondary analysis was conducted using planned behaviour theory. The study was cross-sectional, and the instrument used was individual semi-structured interviews; the population was comprised of fathers (n=10) and mothers (n=50) in eight focus groups, and women community leaders (n=44) in eight focus groups with an overall total of 104 participants. Its findings revealed that women added teas and water to their breast milk within a short time of birth, and, in addition, introduced a little solid food only a few months after birth. The study also showed that social norms seem to encourage breast-feeding, although not EBF or for a long time (about a year).

Warillea, Onyango, and Osano (2017) also examine mothers' practices and knowledge of EBF. In their study, three hundred and eighty-four (384) mothers who attended paediatric and immunisation outpatient clinics with children aged between 9 and 12 months were interviewed. The collected data were analysed using univariate logistic regression and descriptive statistics and revealed that most participating mothers were aged between 21 and to 25 (43.5%) with the majority (48.2%) of them having primary education and 2 to 4 children (55.5%). Most participants (76.8%) knew that breast-feeding was nutritious for their babies and had started

breast-feeding within the first hour of delivery. There is a significant relationship between a mother's level of education and EBF ($P < 0.05$).

2.3.9. Predictive Factors of Exclusive Breast-feeding Mothers

UNICEF and WHO recommended that infants be breastfed for a period of at least six months followed (without delay) by adequate complementary feeding (WHO, 2017a); regrettably, the majority of nursing mothers do not follow these recommendations (Warillea, et al., 2017; West, et al., 2019). Globally, many strategies and rules have been developed to support breast-feeding and the design and operation of child-and-mother health nutrition, according to WHO (WHO, 2017). Furthermore, the yearly infant death rate has been characterised by the absence of EBF, which is approximated to 1.3 million, and established that the six hundred thousand (600,000) death rate was due to the interruption of breast-feeding with the right family complementary diet (World Health Organization, 2020). Therefore, selecting and deciding upon the most appropriate feeding practice strategy is, by and large, the nursing mother's choice to make (Dukuzumuremyi et al., 2020).



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In accordance with the outcome of Trafford's (2020) research on the positive effects of social support systems and family unit involvement on infant breast-feeding by a nursing mother, Nieuwoudt et al. (2018) investigated several elements that influence a mother's decision to breast-feed and that may encourage those who have used bottle feeding to reconsider breast-feeding instead. The results reveal that 245 of mothers of infants participated and were asked various questions, such as different categories of feeding practices, information sources concerning breast-feeding, factors that affect their decision-making, infant feeding concerns, and the timing of the choice of infant feeding (Nieuwoudt et al., 2018; Horwood, et al., 2018). According to the study, the preference of the individual mothers' spouses was the foundational factor, which influenced their decision to not breast-feed their infants (Horwood, et al., 2018).

The findings also revealed that the factor that contributed most positively to their motivation to breast-feed was assistance from their close relatives, grandmothers, and spouses (Horwood et al., 2018).

The obstacle of mothers' working condition was a factor that added to breast-feeding practice discontinuation; this is mostly manifested in workplaces without designated areas for caregivers and nursing mothers (Martin-Wiesner, 2018). Alyousefi et al. (2017) indicated that imposed feeding-practice opinions, coupled with no/little support from spouses has the power to affect their infant feeding behaviours. Furthermore, mothers who are always outdoor due to their work are often not comfortable breast-feeding their infant outside their own home, which, in turn, discouraged them from breast-feeding. Another obstacle involved medical and physical problems, i.e., nipple soreness and illness (Afzal, et al., 2020; Ratnasari, 2017; Alyousefi et al., 2017).



According to Salim and Stone (2020) and Mangrioet al. (2017), the following are factors that discourage the practice of EBF: low socio-economic status, younger maternal age, and low educational status. The influence of marital status was also identified as a negative factor to EBF. There was a relationship between the prevalence of breast-feeding and single motherhood, meaning that single mothers did not exclusively breast-feed their infants (Salim & Stone, 2020; Mangrioet al. (2017). The effects of this do not rely solely upon introducing breast milk soon after delivery but is based on the EBF practices and interval. Studies have further revealed that the risk of having unhealthy babies is limited when they are breast fed due to the antibodies transmitted from mother to child (Trafford, 2020; WHO, 2017). IYCF are open to attack by micro-organisms, such as protozoa, bacteria, and viruses if they are not breastfed because they do not have antibodies that can fight against them (Stuebe, 2009).

Another hindrance to EBF was identified by Inano et al. (2021). This research focused on previously established information relating to factors influencing EBF rates until 6 months postpartum; subsequently, it was identified that any hindrance such as early skin to skin contact and early initiation of breast-feeding influence EBF. The researchers also found out that smoking after pregnancy and extreme overweight at the early stage of pregnancy influence EBF in mothers.

2.3.10 Attitudes and Practices of Mothers towards Continuing Breast-feeding beyond six Months after Birth

World Health Organization defines EBF as breast-feeding only to nourish a baby, except for breast milk, no solid or liquid ingredients, other than oral rehydration solutions or minerals, vitamins, and drug drops/syrups, are given. Breast milk is the first original and natural food for babies. It provides all the nutrients and energy that babies need from their first month of life and continues to provide more than half of their nutritional needs in the second half of the first year (Mensah et al., 2017).



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Globally, the deaths of about one million four hundred thousand babies below the age of 5 can be prevented through optimal breast-feeding (Bhattacharjee et al., 2021). Thus, Dukuzumuremyi, Acheampong, Abesig and Luo (2020) stated that the continuous breastfeeding of mother for a long time is associated with the attitudes of mother towards exclusive breastfeeding and have better opportunity to breastfeed successfully. Nevertheless, mothers who have a positive attitude toward breastfeeding were more possibly to breast feed their babies exclusively.

Mothers with a positive attitude were possibly more open to breast-feeding their babies exclusively and this play an important role in the breast-feeding process (Hamze, Mao, & Reifsnider, 2019).

Swigart, et al. (2017) also researched breast-feeding beliefs, attitudes, and intentions, according to norms/standards. This study was carried out in southern and central Mexico among communities with low resources. Secondary data were used to analyse the study with the theory of planned behaviour as the theoretical framework. This is a cross-sectional study where data were collected from fathers, using individual semi-structured interviews and focus groups are used to collect data from female community leaders and mothers of a total of 104 respondents.

A quantitative survey was also used to collect data from both mothers and pregnant women. Research findings revealed that immediately after birth, breast milk was supplemented with teas and water; likewise, a few months after a birth little amount of solid food was given to the infants. Social standards seem to encourage breast-feeding, although they do not encourage breast-feeding for more than a year and EBF. This could be due to normative beliefs that it is not right/proper for a nursing mother to breast-feed in public and behavioural beliefs that breast milk is not solely adequate for the infant within the period of first six months of birth and that adding water to breast milk is required to hydrate a baby (Swigart, et al., 2017).

In China, Ouyang, Su, and Redding (2016) investigated the interest and difficulties of breast-feeding mothers in Wuhan. The sample population for the study was seventy-six (76) selected from three hundred and seventy-five (375) mothers from two communities in Wuhan using two randomised clusters. The instrument used for the study was a semi-structured, face-to-face interview to collect data from the respondents about sources of support for lactation, difficulties encountered, reasons for stopping, the duration of EBF, and their infants' feeding status. Findings from the study revealed that at six months, the EBF rate was 6.2% and that 93.6% of mothers-initiated breast-feeding. The major reason given by the mothers (not breast-feeding exclusively) was inadequate breast milk. Mothers believe that there should be more individual and

professional awareness of EBF from the following resources: (1) Telephone hotline; (2) Relatives, friends, and peers; (3) breast-feeding website; (4) Qualified cuirushi, and; (5) lactation consultants in communities and hospitals.

Maonga et al., (2016) further examined various factors affecting EBF. The study was cross-sectional and carried out in the Muheza District of Tanga, in North-East Tanzania and made use of both quantitative and qualitative methods. The population for the study was three-hundred-and-sixteen (316) mothers whose infants were aged between the ages of 6-12 months. Data were collected from them using a questionnaire and an in-depth interview guide was used for collecting twelve (12) important informants.

Qualitative data was analysed using multivariate logistic regression and bivariate logistic regression to find out the relationship between predictor variable and EBF. These findings revealed that their reason for mixed feeding among mothers was their perceptions that can be summed up as follows, namely that it is necessary to give an infant local medicine, that a child was thirsty, and that they had inadequate breast milk to support infants' growth and development; lastly, they mentioned cultural purposes. Therefore, perceptions potentially have a negative influence on mothers' attitudes to breast-feeding continuously.

A more recent study by Dukuzumuremyi, Acheampong, Abesig and Luo (2020) examined the mothers' practices, attitudes, and knowledge of EBF in East Africa. This was an orderly review of literature, which utilises six (6) electronic databases. The electronic databases included Cochrane library, Embase, Science Direct, Google Scholar, Web of Science, and Pub med. The results indicated that mothers' attitudes towards breast-feeding was very low, and, in turn affected their practice of breast-feeding.

In South Africa, a recent study by Trafford et al. (2020) investigated mothers' feeding practices and the factors influencing breast-feeding. Mothers who registered with the application, Mom connect, were interviewed to ascertain their decision-making process and breast-feeding practices. Semi-structured interviews were used to collect data in Gauteng, KwaZulu-Natal, and the Free State provinces. Findings indicated that mothers breastfed their babies, even a few hours after birth, and that most mothers affirm their breast-feeding decision believing themselves to be well-equipped to make such decisions in terms of their babies. Information resources regarding breast-feeding were reported by mothers that influence the feeding choices. These include school and family, returning to work, advice given by the health system, and social media.

Similarly, Goon, Ajay, and Adeniyi (2021) investigated mothers' lifestyles and socio-demographics in relation to their EBF practices. The geographical scope was the Eastern Cape in South Africa. Correspondents were interviewed and asked if they exclusively breast-fed their baby from birth; and, if they did so, they were asked to explain how long they breast-fed for. For the study, the relevant mothers' lifestyles, and socio-demographic information were collected using interviews. Multi-variable logistic regression and bivariate analyses were used to then identify the relationship between the practice of EBF and lifestyle and socio-demographic factors. Findings revealed that the prevalence of EBF was significantly higher among those who had never drunk alcohol, non-smokers, those without a job, and married women. The study also revealed that those with fewer educational qualifications and/or without a job had a high-level prediction to practice EBF from birth to 6 months, while those who drank alcohol had the lower chance of possibly doing so from birth (Goon, Ajay, & Adeniyi, 2021).

2.4. SUMMARY

In this chapter, the theoretical framework was discussed, and related literature was reviewed, including South Africa's breast-feeding policy, the conceptual understanding of EBF, breast-

feeding rates in South Africa (and globally), attitudes and practices of infant mothers to EBF, and other factors influencing their feeding choices. The next chapter will discuss the research design and methodology of this study.



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

Research methodology is a guide, technique, or algorithm used to select, identify, process, and analyse research information. While the previous chapter discussed the reviewed literature on infant feeding attitudes and practices of mothers in Alice town, this chapter will discuss and justify the methodology used in this study that aimed to explore the attitudes to and practices of infant mothers in terms of breast-feeding and factors that influences their breast-feeding choices. This chapter further clarifies the research method chosen in this study; likewise, it justifies the favoured method. In addition, the suitability of the research process for the study is explained. It discusses how the researcher gained access to the respondents, it explains the selection process of the case study and summarises the research orientation. It also demonstrates the adopted procedure of data analysis and collection of data and indicates how ethical issues were considered and addressed. The main research question is supported by the following sub-research questions, namely:

- i. What are the predictive factors of EBF mothers in Alice Town?
- ii. What are the mothers' practices of and attitudes towards continuing breast-feeding beyond six months after birth?

3.2 RESEARCH PARADIGM

Research paradigm is defined by Kivunja and Kuyini (2017) as a world view made up of principles and abstract beliefs that inform researchers' view of the world, and the way researcher behaves and interprets within the scope of the lens. It requires an intent of beliefs which is usually action guides, especially seeking information on disciplined more broadly, developing concepts that permit the study and understanding of a particular phenomenon (Kivunja and

Kuyini, 2017; Neuman, 2011). The following are the functions of paradigm: it describes how knowledge has been drawn from this world, how an individual talks, writes, and thinks about this knowledge, and how the world functions (Denzin & Lincoln, 2011). Thus, the paradigm includes accepted methodologies, the body of research, the frame of reference, models, approaches, tradition, and theories (Creswell, 2014; Rubin & Babbie, 2010; Babbie, 2011).

The root approaches of quantitative stretch to various research paradigms of philosophy, specifically post-positivism, and positivism (Creswell, 2013). The following determine the characteristics of the research paradigm: (i) Ontology – what is reality? (ii) Epistemology – how can we know reality? (iii) Methodology – what procedure should be considered to attain knowledge? Thus, Rehman and Khalid Alharthi (2016) state (in simple and clear terms) that the three major paradigms are post-positivists, pragmatism, and interpretivism (or constructivism). Positivism requires an assumption-based belief that models procedures effect-and-cause, methods, generalisations, and trends issues relevant to the social sciences (Denscombe, 2010; Lincoln et al., 2011). On the other hand, post-positivism “is an extension of positivism, since it represents the thinking after positivism, challenging the traditional notion of the absolute and objective truth of knowledge in the social sciences” (Creswell, 2014:6). Post-positivism makes up the reasoning following positivism, objecting knowledge that is usual the thought of complete truth which state that when studying humans’ behavior, it is not possible to be positive knowledge demand (Creswell & Creswell, 2017).

According to Creswell et al. (2014), post-positivism possesses a philosophy of determinism in which outcome and effects are determined by a cause. Behavioural change theories are middle-range theories that accommodate the consistency of interpersonal and intrapersonal relationships, in this case, the accommodation concerns health care professionals and adolescents regarding

adherence to ART. The researcher, therefore, based this study on the Health Belief Model by testing the constructs concerning adolescent adherence to ART.

“Post-positivists approved method to research is that “an individual begins with a theory, collects data that either support or refutes the theory, and then makes the necessary revisions before additional tests are done” (Creswell, 2014).

Thus, this present study is underpinned by a positivist paradigm. This is because the main objective of the researcher is to better understand mothers’ attitudes to and practices of infant breast-feeding. As such, the researcher employed a quantitative research approach in which questionnaires were used as a data-gathering instrument.

3.3. RESEARCH APPROACH: QUANTITATIVE

A research approach is the lay-down plan and process followed by research (Creswell, 2014). Generally, there are three approaches employed in research, namely qualitative, quantitative, and mixed approaches. Research approaches are types of investigation done through the use of mixed- method, quantitative and qualitative approaches which give precise procedures guide in a research approach (Denzin & Lincoln, 2011). This study used a quantitative research approach to investigate the attitudes to and practices of mothers towards breast-feeding of infant in Alice town, Eastern Cape Province, South Africa. According to Hannigan (2018), the objective of quantitative research is to make an exact, impartial parameters appraisal that is of total population attention that calls for a randomly selected and large sample. Quantitative research is a research type that measures problems through the use of numerical or statistical data (Yin, 2014).

The advantages of using quantitative research method outweighs the disadvantages thereof. The qualitative research approach involves the expression of respondents feeling, perceptions and

opinions in detail and their expressions are interpreted (Tsushima, 2015). Through the use of qualitative research approach different events, meanings and voices of the people are understood. The design of these types of research is very flexible in nature, which means it can be constructed and reconstructed (Maxwell, 2012). According to Cohen, Manion and Morrison (2011) qualitative research data collection is detailed and opened. However, apart from the numerous advantages, some limitations are obvious. Wilson (2014) and Tuohy et al. (2013) state that more attention is given to experiences and meanings than sensitive context in qualitative research approach. Thus, the quantitative study was conducted in two (2) private health facilities in Alice town, Eastern Cape Province, South Africa.

3.4. RESEARCH DESIGN: A CROSS-SECTIONAL STUDY

Research design is all the plan the researcher used in getting answers to the research questions of the study (Yin, 2018). A research design reveals how every important aspect of the study work together such as programs or treatments, measures, group, or samples work in terms of the research questions. Thus, the research design utilized for this study was a cross-sectional survey to assess the infant feeding knowledge, attitude, and practices of mothers in 2 private health clinics in Alice Town, Eastern Cape.

3.5. RESEARCH INSTRUMENT

The instrument used in generating data in this study was researcher's design questionnaire. Data collection instrument for the study was a structured questionnaire. This study investigated mothers' attitude and practices towards infant breast feeding.

3.5.1 Questionnaire

A research instrument, which consists of several types of questions for the purpose of collecting data from respondent is known as questionnaire, an instrument in which items indicating respondents' responses were marked or there are written responses to questions from the

respondents is called questionnaire (Katrina, 2015). The most identifiable use of questionnaire is to discover the thinking of the populace. This research includes social science research, opinion polls, customer service feedback evaluations, political polling, and market research (O’Leary, 2014).

A questionnaire is an efficient way of measuring opinions, attitudes behaviour, and intention of consideration number of issues and is very quick and cheap than any method research instrument. They can be either devised by the researcher or they can be based upon some ready-made index. A questionnaire has a uniform and design that support standardized data collection and it also includes clear instructions that guide respondents as they complete the survey.

As previously mentioned, a questionnaire was used to gather data; this is because using a questionnaire renders the answer to the research questions more organized. There are three (3) categories of questions:



- i. Open-ended questions – this type of question requires the respondents to give their own answers to the question without response options
- ii. Close-ended questions -in this question the researcher asks a question and gives pre-set response options for the respondents
- iii. semi-closed-ended questions: this question poses closed-ended question but expected more responses in an open-ended question (Cresswell, 2012).

Weaknesses of Questionnaire

O’Leary (2014) identify some problems/issues with using a questionnaire as a research instrument, and these range from difficult sampling to being expensive and time consuming. O’Leary (2014) further stated that questionnaires are very cumbersome, hard to manage and that sometimes they do not go as originally intended.

Strengths of Questionnaire

O'Leary (2014) propose certain number of visible qualities of using questionnaire as research instrument, as questionnaire make researcher to propose unavailable perceptions and create data limited to their own research (O'Leary (2014). These qualities are summed up as:

- it is anonymous and confidential
- data that are empirical, quantifiable, and standardized can be generated
- comparison is allowed
- bigger population can be represented
- large number of participants can be reached

Consequently, closed-ended questions were used in this study. Yes/No, Disagree and Agree are the options provided in the close-opened questions. These questionnaires were administered to mothers with infants whether breast-feeding or not. The questionnaire is made up of demographic factors including, marital status, level of education, family annual income, employment status and occupation. It also asks the number of live birth and previous infant feeding outcome. The English language was used for the question to ensure effective communication. In addition, the questions included psychosocial factors, which influence the feeding choice of the mothers (nine questions); biomedical factors (six questions); and in addition, environmental factors (five questions). The mothers were given an option to respond to possibly factors that determined their feeding choices by marking any of the following options: strongly disagreed, disagreed, agreed, and strongly agreed. As such, participating mothers were handed a hardcopy of the questionnaire to complete and return after a week. The reason for a hardcopy questionnaire is because most of the participating mothers are from the rural community and may not be able to access the electronic copies. The questionnaire used for this study was developed and designed by the researcher. The questionnaire was administered by the researcher and two research assistants. The questionnaire was given to infant mothers who

attended the two private facilities, and they are expected to return the questionnaire a week after collection. The infant mothers were handed a copy of the questionnaire in the waiting room, either before or after consultation with doctors at the selected clinics.

Two enumerators (data collectors) with a minimum of a Diploma in Health or Nutrition qualification were recruited from those residing in the study area. The enumerators also had previous experience in survey data collection. The enumerators underwent 2 days of training to cover the following: the explanation of the study objectives and research ethics.

3.6. STUDY SETTING

The study was carried out in Alice, South Africa, in the Eastern Cape. Alice is a small town situated at the confluence of the Tyume and Gqama Rivers in the Amathole District of the Eastern Cape Province in South Africa. It is under Raymond Mhlaba Municipality with a population of 15,142 (Census 2011). Alice town still has a high unemployment rate with most residents living below the living salary. Alice accommodates University of Fort Hare which became the first black university institution in 1916. There are 4 clinics, 4 private health facilities in Alice and one Provincial Hospital (Victoria Hospital) which serve as referral centre for cases requiring further management.

3.7. STUDY POPULATION

The population of this study is the overall number of all the respondents the researcher was able to make inferences from. The target population on which inferences were made comprises of all mothers, whether breast-feeding or not in Alice town, South Africa. Questionnaires were distributed to mothers who met the inclusion criteria

3.7.1 Inclusion Criteria

Every mother with children of age six to twenty-four months attending the selected two (2) private clinics in Alice town, Eastern Cape Province, South Africa was part of the study.

3.7.2 Exclusion criteria

1. Mothers who did not give consent to whatever purpose.
2. Mothers with children who need urgent or emergency care.
3. Mothers whose children are with a defect or malformation.
4. Mothers with a child who was not 6 months in age and those older than 24 months.
5. Mothers less than 18 years.

3.8. SAMPLING

Sampling is a technique of selecting a group within a large group that take part in a study; it is also a set of procedure to choose a group of participants for research purpose, where the selected participants to a certain degree represent the large where they are selected (Katrina, 2015). Sampling is carried out due to the difficulty of obtaining data from all respondents as a result of geographical distance, cost, and constraint of time (Katrina, 2015). Thus, the process of sampling that was employed in this study is a sampling technique that is systematic.

A list of 1, 050 infant mothers attending the two private clinics was obtained from clinic managers of the two clinics. Of those, 650 infant mothers met the inclusion and exclusion criteria. Thus, a new list of eligibility study participant was made, and simple random sampling was applied to the list. The calculated sample size was 302 and after considering 20% drop out rate, the total sample size was 377 participants. Therefore, the number of sample in this study was three hundred and seventy-seven (377) mothers whose children are between the ages of 6-24 months, attending two (2) selected private health facilities in Alice town.

3.9 DATA COLLECTION PROCEDURE

The data collection was obtained during Covid 19 pandemic. All Covid 19 protocols were duly observed which included wearing of mask, social distancing, and hand sanitization. Due to Covid 19, participants were allowed to take the questionnaire home and return it to the clinics within a

week. The researcher visited the research sites a month before data collection to set up a relationship with participants. During this visit, the researcher provided participants with thorough and clear verbal information explaining the aim of the study and procedures involved. All eligible women attending the two (2) selected private facilities in Alice town were approached to participate in the study. The objective of the research was discussed completely in isiXhosa and English language, the participants who understood were allowed to complete a consent form. After obtaining informed consent, they were handed a copy of the questionnaire in the waiting room, either before or after consultation with doctors at the selected health facilities. Questionnaires were distributed to mothers who met the inclusion criteria. The duration for the data collection was 6 weeks between the period of June and July 2021 and it requires the researcher and the two research assistants to spend three weeks in each health facility.



3.10 RELIABILITY AND VALIDITY

Reliability is the level of regular occurrence of findings for some time and an exact extent to which results are consistent over time and an accurate likeness of the general population under study and the extent to which the outcome of the research can be produced when the same methodology is being used (Denzin & Lincoln, 2011). Validity is when research of a certain range value accurately determines what it was planned to determine or accuracy level of the research outcome. Thus, questionnaires were validated for diagnosis, disorder, setting and an explicit population (Nestle Nutrition Institute, 2017).

For validity, the researcher herself took part in the collection of data procedure and the supervisor monitored and supervised the researcher. In this study, the researcher employed various moderation to ensure the reliability of the study. This was done as follows: by using

multiple data sources, activities in the field, member checking, peer debriefing, mechanically recorded data, transferability, dependability, and Confirmability.

3.10.1. Activities in the Field

According to McMillan and Schumacher (2014) keeping a diary of the field activities heightens the credibility of research findings. Diary of records that happened in the field was kept such as dates, times, decisions taken and reasons for those decisions.

3.10.2. Member Checking

Braun & Clarke (2013) posited that the best and most relevant way of confirming the credibility and quality of analysis is through member checking. Braun & Clarke (2013) further stated that member checking is the exercise of checking your analysis of the data with your participants. This was done through the preparation of a written report of the research to all the participants requesting them to comment on the accuracy of what has been written. The researcher provided the data analysis for their comments and feedback.

3.10.3 Peer Debriefing

The researcher interacted and discussed her research continuously with her supervisor as it progressed, in turn, her supervisor provided her with verbal and written feedback. These interaction and discussions with the supervisor gave her a privilege to learn from his experience. The researcher's discussion with her supervisor further assisted her to strengthen her arguments. Peer debriefing was also conducted with health givers from the participating clinics.

3.10.4 Confirmability

Confirmability "refers to the degree to which results could be confirmed or corroborated by others" (Maree, 2010: 45). According to Kumar (2011) and it can only be achieved if both researchers follow the procedure in the same way to ensure their findings are comparable. Thus, the instrument for data collection and the source of data for this research were unambiguously reported to make certain the suitability of the study.

3.10.5 Pilot study

According to Thabane et al., (2010), a pilot study is regarded as a first step of a research procedure and is research on a smaller scale that aims to assist in the planning and modification of the real study. Pilot studies precede the main research and is carried out to analyse the validity of the study (Shumba, 2012). Such a study allowed the researcher to familiarize herself with the procedure that will be involved in the main study (Thabane et al, 2010; Mouton et al., 2015).

In this study, researcher make use of pilot study to reflect the procedures to be followed in the main research and validated the possibility of the research by appraising the exclusion and inclusion of respondents, making ready of the instruments (questionnaires) and intervention strategies to address and clarify issues of ambiguity within the questionnaires. This enabled the researcher to correct mistakes and errors in the questionnaires and to ensure that all questions from the questionnaires were entirely understandable to the participants. The pilot study also allowed the researcher to modify and reframe the research questions to be more comprehensible to participants.



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A pilot study was carried out by the researcher with respondents from another health care centres which shared the same characteristics with the participants of the main research. About fifty (50) respondents were involved in the pilot study. The data for the pilot study was collected by the researcher and one research assistant and the data were collected in two (2) days. The finding of the pilot study revealed that infant mothers have adequate knowledge about breastfeeding. Also, the finding shows that infant mothers have good practices and positive attitude towards exclusive breastfeeding. Furthermore, the pilot study revealed that infant mothers age, level of education and socio-economic status have influence on their breastfeeding decision.

3.11 ETHICAL CONSIDERATION

In expressing the significance of ethical considerations, Brink et al (2012) stated that a researcher should be accountable for carrying out research in an ethical way, starting from the conceptualization and planning stages, through the implementation stage, and the dissemination phase.

In carrying out this study, ethical clearance was applied for from the University of Fort Hare Higher Degrees Research Ethics Committee, which was approved. Ethics Certificate Reference Number: Ref #2021= 06 = 13 = Oyeniran A. In addition, permission for data collection was granted by the clinic managers of each of the two private health clinics. This study was carried out during COVID-19 pandemic, so the researcher ensures that all COVID -19 protocols were followed during data collection. All participants were told to keep 5 meters distance. Nose masks of and hand sanitizer was mandated for researchers, the two research assistants and the participants.



The study assure that adequate procedures are put in place for the welfare and human right of respondents is protected and the research participants are guided from being harmed by observing recommended ethical procedures of University of Fort Hare Higher Degrees Research Ethics Committee. The respondents are humans; therefore, their voluntary informed consent as well as the rights of individual which include right to withdraw, risks and benefits and right to complete information on purpose and nature of the research was maintained. The following were considered when conducting the study.

3.11.1. Human dignity

The principle of human dignity required getting approval to conduct research; requesting access to clinics; seeking informed consent from participants; adhering to participants' rights to privacy; confidentiality and anonymity; and avoiding betrayal and deceitfulness throughout the research

process (Brink et al, 2012). The researcher made it clear to them that their participation in the research is optional, voluntary and their willingness or unwillingness would always be respected. Consent forms given out to the participants and their anonymity and confidentiality were guaranteed. The participants and the researcher signed consent forms which were stored in a safe place. The researcher guaranteed the respondents of non-disclosure of their identity, and their responses would remain confidential (Denscombe, 2010).

3.11.2. Non-Maleficence

According to Rule and John (2011), non- maleficence relates to protecting participants from physical and psychological injury during the research process. Non- maleficence a fundamental duty of every researcher is to promise that respondent in a study is “guided from physical or psychological injury, discomfort or danger that may arise due to research procedures” (Fraenkel et al., 2012)

To avoid injury to the respondents in this research, the researcher refrained any form of humiliation towards the participants. As mentioned, the researcher protected the privacy of participants through use of anonymized data, for example, use of pseudonyms and code.

3.11.3. Beneficence

Beneficence is the benefits the research will bring and to whom the research is benefiting (Cohen et al, 2011). The idea is that of protecting and defending others' right from discomfort and harm. In this study, there is no direct benefits to the respondents as disclosed by the researcher. But the researcher believed that the two clinics and participants would indirectly benefit from the research educationally. The respondent's attitude and practices towards breast-feeding were revealed and the importance of breast-feeding to mothers, infants, and the larger community.

3.12 DATA ANALYSIS

Data analysis is a procedure that involve in extracting raw data using different methods and techniques focusing on the information that is suitable for the study and narrowing the

information to transform figures, facts and metrics, facts into a fresh approach for advancement (Durcevic, 2020). Hennink et al (2011: 204) define data analysis is that “process which is responsible for the synthesizing of data which has been collected”. For this study, descriptive statistics were employed for categorical data, namely percentage and frequencies. The data were analysed by statistician and the findings were presented in a table format. Data were analyzed by SPSS software was used to analyze the data, mean, standard deviations and percentages were used to examine the practices and attitudes of mothers in exclusive breastfeeding and also factors influencing the decision of mothers in exclusive breastfeeding while inferential statistics (regression analysis) was employed to find out the relationship between mothers’ variables (age, marital status, education) and their attitudes and practices in exclusive breastfeeding.

To determine factors associated with the practice of EBF, logistic regression analysis was executed. The dependent variable of the logistic regression model was EBF practice while the independent variables are mother’s age, mother’s academic qualification and marital status. Only variables that were significantly associated with the practice of EBF in the cross-tabulation analysis were included in the logistic regression model. The findings are presented as odds ratios and their respective confidence intervals at 95 %. The p-value < 0.05 was considered statistically significant in all analyses.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 INTRODUCTION

This chapter discusses the findings from the analysis carried out based on the study's objectives.

Tables are used to present the findings, which are then interpreted. This chapter also explains the implications of the results in the form of discussions.

4.2 SOCIO-DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS

Table 4.1: Socio-demographic characteristics of participants

	Frequency	Percentage
Age		
18 – 22	20	5.31
23 – 27	140	37.13
28 – 32	137	36.34
33 – 40	50	13.26
Above 40	30	7.96
Marital status		
Single	30	7.96
Married	190	50.40
Cohabiting	72	19.10
Separated/ divorced	44	11.67
Widowed	31	8.22
Infant age		
6 – 9 Months	80	21.22
10 – 12 Months	97	25.73
13 – 18 Months	90	23.87
19 – 24 months	110	29.18
Infant gender		
Male	176	46.68
Female	201	53.32
Academic qualification		
Grade 12	75	20.0
Diploma/Certificate	75	20.0
Bachelor's Degree	189	50.0
Postgraduate	38	10.0

Most of the respondents fall within the age categories of 23-27 (140; 37.13%) and 28-32 (137; 36.34%) and were married (190; 50.40%). Most of the respondents have infants between 19-24

(110; 29.18) and 13-18 (90; 23.87%) months, respectively; and most of the infants were females (201; 53.32%). In addition, most of the participants had a bachelor's degree (189; 50.0%).

Table 4.1 revealed that more young infant mothers participated in the study. Moreover, married mothers were involved in the study more than single, separated, and widowed mothers. Furthermore, it showed that the infant mothers who were educated participated more in the study than less educated mothers.

4.3 PRESENTATION AND ANALYSIS OF DATA

4.3.1 Attitudes and Practices of Mothers Towards Continuing Breast-feeding Beyond Six Months After Birth

Table 4.2: Attitude of lactating mothers about breast-feeding

S/ N	Statements	SA (%)	A (%)	SD (%)	D (%)	N (%)	Mean	Standard deviation
1	Discarding the first milk or colostrum is very important?	102 (27.1)	50 (13.3)	140 (37.1)	35 (9.3)	50 (13.3)	3.32	0.79
2	Do you think starting complementary foods before 6 months is important?	191 (50.7)	67 (17.8)	50 (13.3)	47 (12.5)	22 (5.8)	3.95	0.99
3	Do you believe that exclusive breast-feeding is beneficial to the child?	207 (54.9)	100 (26.5)	40 (10.6)	20 (5.3)	10 (2.7)	4.26	1.12
4	Breastfeed babies are healthier than fed babies	210 (55.7)	90 (23.9)	47 (12.5)	25 (6.6)	5 (1.3)	4.26	0.88
5	Formula feeding is more convenient than breast-feeding	126 (33.4)	102 (27.1)	50 (13.3)	69 (18.3)	30 (7.9)	3.60	0.94
6	Do breast-feeding increase mother infant bonding?	300 (79.6)	20 (5.3)	30 (7.9)	20 (5.3)	07 (1.9)	4.55	0.68
7	Do you agree that exclusive breast-feeding should be	277 (73.5)	10 (2.7)	20 (5.3)	40 (10.6)	30 (7.9)	4.23	0.65

	given to a child for more than 6 months?							
Grand Mean							4.02	0.86

SA=strongly agree; A=agree; SD=strongly disagree; D=Disagree; N=Neutral

Table 4.2 present the mean and standard deviation of mothers' attitude about breast-feeding pertaining to feeding of colostrum, starting complementary food before 6-months of age, mother-infant bonding, formula feeding, and EBF. The infant mother disagrees that rejecting the first colostrum is very relevant with a mean of 3.32 and beginning with complementary foods before six (6) months is crucial with a mean score of 3.95. Most concurred that EBF is beneficial to the child with a mean score of 4.26. Furthermore, they also agreed that breast-fed babies are healthier than formula-fed babies with mean 4.26. Another point of agreement is that it is easier to implement formula feeding than breast-feeding with a mean of 3.60. Most mothers agreed that breast-feeding increases mother-infant bonding with mean of 4.55 and, further agreed that EBF should be done for more than six months with a mean of 4.23. In summary, most infant mothers have good, positive attitudes to breast-feeding with a mean of 4.02 and standard deviation of 0.86.

Table 4.3: Breastfeeding practices of breastfeeding

(n = 377)

Statements	Yes (%)	No (%)
Do you breastfeed your baby exclusively?	209 (55.44%)	168 (44.56%)
Do you use dilution of top milk for your baby before 6 months?	176 (46.68%)	201 (53.32%)
Did you give colostrums to your baby?	290 (76.92%)	87 (23.08%)
Do you start breastfeeding within one hour after delivery?	199 (52.79%)	178 (47.21)
Have you giving your last baby anything before introducing breast milk	171(45.36%)	206 (54.64%)

The practices of EBF (Table 4.3) focused only on EBF, dilution of top milk, colostrum, initiation of breast-feeding and prelacteal food; the study revealed that majority of the mothers exclusively breast-fed their babies (209; 55.44%), while 168 (44.56%) of them do not. Likewise, the majority do not use dilution of top milk before the infant is six months of age (201; 53.32%), they gave colostrum to their baby (290; 76.92%), had started breast-feeding within one hour after giving birth (199; 52.79%), lastly it established that 54.64% of participant do not introduce prelacteal food before breast milk.

Table 4.4: Simple logistic regression analysis for factors influencing mother's breastfeeding
(n = 377)

Variables	Crude odds ratio (95% confidence interval)	Wald statistic	p-value
Age			
Below 40	1		
Above 40	1.51 (0.75-2.25)	0.51	0.591
Marital status			
Single	1		
Married	0.79 (2.1-2.89)	0.55	0.767
Cohabiting	0.89 (0.88-1.77)	0.45	0.546
Separated/ divorced	0.95 (0.35-1.30)	0.61	0.453
Widowed	0.43 (0.84-1.27)	0.72	0.687
Academic qualification			
Grade 12	1		
Diploma/Certificate	2.11 (0.68-2.79)	0.68	0.320
Bachelor's Degree	0.53 (1.21-1.74)	1.43	0.531
Postgraduate	0.75 (0.21-0.96)	0.91	0.562
Breast pain			
Yes	1		
No	0.98 (1.45-2.43)	0.74	0.841
Mothers preference towards feeding			
Breastfeeding	1		
Formula milk	1.66 (0.87-2.53)	0.79	0.898
Support from family			
Yes	1		
No	3.43 (0.89-4.32)	0.44	0.326

The result from the simple logistic regression analysis used to evaluate factors associated with mothers' decision in breastfeeding. Simple logistic regression showed an association between mothers' age, marital status, academic qualification, breast pain, mothers' preference towards feeding, support from family and mothers' decision in breast feeding. Table 4.4 revealed that mothers aged 40 years and above are 1.51 times more likely not to breastfeed exclusively compared to mothers of less than 40 years of age (95% CI, 0.75-2.25). The odds ratio of the incidence of decision in breastfeeding for participants with breastfeeding and formula milk was 1.66 (95% CI, 0.87-2.53). In term of family support, mothers who don't receive family support were 3.43 times more likely not to breastfeed. The table 4.4 also revealed that mothers with breast pain were 0.98 more likely not to breastfeed.

4.3.2 Predictive Factors Influencing Mothers Exclusive Breast-feeding

Table 4.5: Statistical Analysis on Psychosocial Factors That Influenced Exclusive Breast-Feeding Mother

Psychosocial factors that influenced exclusive breast-feeding mother								
	Items	SA (%)	A (%)	SD (%)	D (%)	N (%)	Mean	Standard Deviation
1	It was my intention not to Breastfeed exclusively	110 (29.2)	69 (18.3)	100 (26.5)	48 (12.7)	50 (13.3)	3.37	0.88
2	Breast-feeding will decrease my independent	104 (27.6)	75 (19.9)	80 (21.2)	63 (16.7)	55 (13.6)	3.29	0.76
3	Pain/discomfort of breast-feeding discourage me to breast-feeding	150 (39.8)	110 (29.2)	67 (17.8)	40 (10.6)	10 (2.7)	3.93	0.94
4	I will not/was able to breastfeed am to smoke/use alcohol	141 (37.4)	111 (29.4)	75 (19.9)	45 (11.9)	5 (1.3)	3.90	0.54
5	Breast-feeding will make my breast sag (loss of shape)	134 (35.5)	87 (23.1)	23 (6.1)	73 (19.4)	60 (15.9)	3.43	0.77
6	My breast milk will not have the optimum composition	120 (31.8)	130 (34.5)	47 (12.5)	30 (7.9)	50 (13.3)	3.64	0.73
7	I am/was unable to milk out or use breast pump	145 (38.5)	111 (29.4)	71 (18.8)	40 (10.6)	10 (2.7)	3.91	0.82

8	I had a bad experience with breast-feeding previously and therefore do not want to breastfeed	200 (53.1)	50 (13.3)	60 (15.9)	40 (10.6)	27 (7.2)	3.94	0.86
9	The benefit of using formula milk is equal to breast-feeding	110 (29.2)	100 (26.5)	97 (25.7)	30 (8.0)	40 (10.6)	3.56	0.65
Grand mean							3.67	0.75

SA=strongly agree; A=agree; SD=strongly disagree; D=Disagree; N=Neutral

Table 4.5 indicated the psychosocial factors influencing EBF mothers. The study revealed that psychosocial factors influence mothers feeding choices with a grand mean of 3.67. The table indicated that most mothers disagree that it was their intention not to breastfeed exclusively, EBF will decrease their independence, and breast-feeding will make their breast sag (loss of shape) with a mean score of 3.37, 3.29 and 3.43 respectively. While most mothers agree that pain/discomfort of breast-feeding discourage them from breast-feeding, smoking and drinking of alcohol lower their chance of breast-feeding, their breast milk won't have the best configuration when breast-feeding, they won't be able to milk out or use breast pump, they previously had negative experience with breast-feeding, thus avoid breastfeed and the benefit of using formula milk are equal to breast-feeding with a mean score of 3.93, 3.90, 3.64, 3.91, 3.94 and 3.56, respectively. This showed that psychosocial factors such as attitudes, knowledge, and bad experiences about breast-feeding influence infant mothers' EBF decision.

Table 4.6: Analysis on Biomedical Factors Influencing Mother Feeding Choices

biomedical factors that influence mother feeding choices								
S/N	Items	SA (%)	A (%)	SD (%)	D (%)	N (%)	Mean	Standard deviation
1	Baby medical conditions, may have influence on mother feeding choice	116 (30.8)	98 (25.9)	82 (21.8)	30 (8.0)	51 (13.5)	3.51	0.65
2	Mother medical conditions can influence her feeding choice	107 (28.4)	120 (31.8)	70 (18.6)	50 (13.3)	30 (7.9)	3.59	0.76
3	The weight of infant can affect mothers feeding choice	110 (29.2)	80 (21.2)	80 (21.2)	70 (18.6)	37 (9.8)	3.41	0.86
	Baby with less than 32	100	141	60	46	30	3.62	0.48

4	weeks of gestational age may need other food in addition to breast milk	(26.5)	(37.4)	(15.9)	(12.2)	(8.0)		
5	Newborn infant do not need to be breastfeed	113 (29.9)	90 (23.9)	54 (14.3)	70 (18.6)	50 (13.3)	3.39	0.59
6	Mother with sepsis could consider bottle feeding instead of breast-feeding	141 (37.4)	50 (13.3)	87 (23.1)	79 (20.9)	20 (5.3)	3.57	0.72
	Grand Mean						3.52	0.68

SA=strongly agree; A=agree; SD=strongly disagree; D=Disagree; N=Neutral

Table 4.6 revealed that mothers agree biomedical factors influence mothers' EBF with a grand mean score of 3.52. The table further confirms that mothers agree that babies' medical conditions may have influence their feeding choices, that their own medical conditions can affect feeding choice, and, that other food maybe added to breast milk for baby > 32 weeks of gestational age. Lastly, mothers with sepsis could consider bottle feeding instead of breast-feeding with a mean score of 3.51, 3.59 and 3.62 and 3.52 respectively. However, they disagreed that the weight of infant can affect their feeding choices and that new-born infant do not need to be breastfed with a mean score of 3.41, and 3.39 respectively.



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Table 4.7: Analysis on Environmental Factors Influencing Mother Exclusive Breast-feeding

Environmental factors that influence mother feeding choices								
S/ N	Items	SA (%)	A (%)	SD (%)	D (%)	N (%)	Mean	Standard deviation
1	Breast-feeding outside is accepted by culture	115 (30.5)	101 (26.8)	80 (21.1)	52 (13.8)	29 (7.7)	3.59	0.65
2	My mother do not accepted or preferred not to breastfeed	117 (31.0)	120 (31.8)	70 (18.6)	40 (10.6)	30 (8.0)	3.67	0.76
3	Absent of professional support influence my feeding choice	100 (26.5)	100 (26.5)	97 (25.7)	50 (13.3)	30 (8.0)	3.50	0.86
4	Returning to work influence my feeding choice	120 (31.8)	110 (29.2)	70 (18.6)	37 (9.8)	40 (10.6)	3.62	0.76
5	Commercial incentive to bottle feed influence my choice of feeding	200 (53.1)	100 (26.5)	30 (7.9)	40 (10.6)	07 (1.9)	4.18	0.85
	Grand Mean						3.71	0.68

SA=strongly agree; A=agree; SD=strongly disagree; D=Disagree; N=Neutral

Table 4.7 showed the environmental factors influencing mothers' EBF. Environmental factors influenced their feeding choices with a grand mean score of 3.71, while participants agreed that culture does not permit public breast-feeding or in the presence of others with a mean score of 3.59. Also, most mothers agree that their mother preferred they do not breastfeed with a mean score of 3.67. Furthermore, participants agree that absence of professional support, the pressure of returning to work, and commercial incentive to bottle-feed influence their feeding choices with a mean score of 3.50, 3.62 and 4.18 respectively.

4.4 DISCUSSION

Attitudes to and practices of mothers towards continuing breast-feeding beyond six months after birth

From the study's findings, EBF practices are crucial to babies' nutritional status, development, growth, and health, and assist them fight sickness (Dukuzumuremyi et al., 2020). The study also indicates a full knowledge of mothers about EBF which supports WHO's claim that EBF includes introducing breast-feeding around the first hour of birth until two years of age before adding appropriate and safe complementary foods starting from 6 months (World Health Organization, 2017). Public healthcare generally agrees that starting EBF between the age of 1-6 months or more is good for children's healthy development (Dukuzumuremyi et al., 2020).

A study in Ethiopia on attitude to and knowledge of EBF among women (Alamirew et al., 2017) revealed that 268 (69.8%) women had good level of knowledge and that 92 (24%) of them had a negative attitude to EBF while those with a positive attitude were 292 (76%). This indicates that breast-feeding women have a better attitude and knowledge of EBF supporting the present study.

This present study revealed very good practices from most of the mothers on exclusive breast feeding. This shows that young child and infant feeding practices are important to protect child

against diseases. Good feeding practices in addition help in hindering obesity of a child and other health issues that are related. This finding agrees with the study of West et al. (2019) who examine practices and knowledge of mothers concerning breastfeeding. From the study most mothers have good knowledge about breastfeeding and about 41.5% mothers had begun breastfeeding with < 1hour of birth.

Also, this study revealed that mothers' age, educational level, and marital level are factors influencing mothers' decision in breastfeeding. This study agrees with the study of Mangrio et al. (2017) which revealed that mothers exclusively breastfeed for first six months of infant life. The study also shows that mothers' age, educational level, and marital status have a significant relationship on attitudes and practices on exclusive breastfeeding. This means that mothers' age, educational level and marital can predict mothers' attitudes and practices (positive or negative) towards exclusive breast feeding. This study was also in agreement with the study of Salim et al. (2020), Dukuzumuremyi, Acheampong, Abesig and Luo (2020) and Hamze, Mao, and Reifsnider (2019) who reported a significant correlation between age of mothers and their attitudes and practices towards EBF, mothers' educational level and their attitudes and practices towards EBF, and mothers' marital status and their attitudes and practices towards EBF.

In summary, the findings revealed that participants have better knowledge and practices of and positive attitudes to breast-feeding. For instance, they agreed that exclusively breast-fed infant is healthier than formula-fed infant, that breast-feeding increases mother-infant bonding and that EBF is beneficial to the child. Also, most initiate breast-feeding within one hour after delivery and do not use dilution of top milk for their baby before 6 months. This could be a result of their age, breast-feeding experiences, and their level of education as a mother.

Predictive Factors Influencing Mothers Exclusive Breast-feeding

This study further reveals that mothers' psychosocial such as marital status, maternal age, attitudes, and knowledge about EBF influence their EBF with a mean score of 3.67. This supports several previous studies (Trafford et al., 2020; Warillea, et al., 2017; Nieuwoudt et al., 2018). Breast-feeding knowledge is gotten from various sources such as articles, books, internet, physicians and from mother to mother (Trafford, 2020). Health caregiver's EBF attitudes and belief may also affect mother's choice to breastfeed (Trafford, 2020). Mothers tend to believe their health caregivers' view concerning a certain issues like breast-feeding. Mangrio et al. (2017) believe that deciding on highly adequate infant feeding practice method is foremost the individual decision of mothers.

Also, this study showed that medical/health conditions of mothers and babies could influence mothers feeding choice with a mean score of 3.52. This was supported by earlier study of Horwood, et al., (2018); Bentley Nieuwoudt et al., (2018) and Inano et al. (2021). Finally, this study revealed that environmental factors such as family support, workplace, and public facilities influence mothers' EBF choices with a mean score of 3.71. This is supported by the findings of several researchers (Salim & Stone, 2020; Mangrio et al., 2017; Afzal, et al., 2020; Ratnasari, 2017; Alyousefi et al., 2017). Literature also reveals that while samples of the commercial formula correlate with the decrease in the duration of EBF, the duration of non-exclusive breast-feeding is not affected (Martin-Wiesner, 2018). However, employers are advised to create a secluded location for breast-feeding workers to give breast milk to their children. This could motivate a greater number of working mothers to breast-feed their children at work. In addition, family culture also influences the choice of exclusive breast feeding as does the stigma that mothers are not permitted to breast-feed in front of others or in public (Inano et al. 2021). Multiple other factors influence the EBF of women in this study. These include medical

condition of babies and mothers like illness and even nipple soreness, as well as social factors such as the availability of private areas designated to breast-feeding, mothers' early return to work, family support, and their own attitudes, knowledge, and experiences pertaining to breast-feeding.



CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

The research findings and results were interpreted in the previous chapter. The discussion of the findings, research limitations, conclusion, and the study recommendations are presented in this chapter.

5.2 SUMMARY OF FINDINGS

This study sought to determine the mothers' infant feeding attitudes and practices visiting private health facilities in Alice Town. Its findings indicated that mothers have an overall positive attitude towards EBF. The research further confirmed mothers' agreement of the following, namely that: EBF is beneficial to their child, breast-feeding increases mother-infant bonding and only EBF is enough for a child up to 6 months. This shows that the participants have positive attitude and practices towards breast-feeding their infant. Though some of the participated infant mothers agreed that they feel convenient when feeding an infant with formula feed but disagree that colostrum is very important, which could be attributed possibly to the health condition of the mothers.

5.2.1 Attitudes of Mothers Toward Exclusive Breast-feeding

Exclusively breast-feeding for the first 6 months, or even longer, is recommended by the WHO and UNICEF (WHO, 2017a); however, this recommendation is not fully implemented/utilised by nursing mothers in Africa and, specifically, South Africa, and is also not exclusive (Dukuzumuremyi et al., 2020; Swigart, et al., 2017). This study, therefore, sought to examine mothers' infant feeding attitudes to and practices of EBF within the context of private health facilities in Alice Town, Eastern Cape, South Africa. Surprisingly, most mothers agreed that complementary foods before 6 months are important with a mean score of 3.95 and the majority

agreeing that EBF is beneficial to the child, although some agreed that formula feeding is more convenient than breast-feeding. This may be a result of time consumption and their jobs. Consequently, these findings (in a South African context) corroborate the study of Trafford et al. (2020), Acheampong, Abesig and Luo (2020) conducted in East Africa and the research done outside the continent in Mexico and China (Swigart, et al. (2017) (Dukuzumuremyi, Ouyang, Su & Redding 2016).

It is well-known that during the first 4 days of lactation, a small amount of colostrum (rich in protein and immunoglobulins), should be fed to a baby. However, it is very clear in this study that mothers do not discard the first milk or colostrum with a mean score of 3.32. This differs from a previous study conducted by Goon, Ajay, and Adeniyi (2021) establishing that two-thirds of mothers discard the colostrum. Also, Ben Slama et al (2010) reveal that 43% of women know nothing about colostrum. The present study further revealed that EBF up to 6 months or more is considered very good. This finding is similar to that of Hossain, et al.(2018), Bhattacharjee et al. (2021), and Hamze, Mao, and Reifsnider(2019). Similar research was done in Ethiopia to identify the attitudes to, knowledge, and practice of mothers in terms of EBF, which discovered that 59.3% of mothers believe that EBF is enough up to six months of age, 89.5% preferred feeding their children breast milk only, while 59.6% are not comfortable with giving their infants additional food to their breast milk (Wana,2017).

This study showed that mothers had higher level of positive attitudes to EBF with a grand mean score of 4.04. This could be due to their academic level and exposure to EBF. This study corroborated with the study of Goon, Ajay and Adeniyi (2021) who investigated the relationship between breast-feeding practices, lifestyle, and socio demographic among mothers on HIV treatment. The findings from the later research revealed that EBF's level were higher among

women who never drank alcohol, non-smokers, unemployed women, and married women. However, this differs from findings of Dukuzumuremyi, Acheampong, Abesig and Luo (2020) which indicated that women who had a low level of attitude affects their breast-feeding practices.

5.2.2 Practices about Breast-feeding

Present research often emphasises mothers' use of colostrum and diluted animal milk. However, the current study revealed that 201 (53.32%) of participants use a dilution of top milk while 176 (46.68%) do not use a dilution of top milk for their baby. This corroborates Bhattacharjee et al.'s (2021) research that reported that diluting milk practice is almost general (95.3%). The majority of mothers choose milk dilution, trusting that it makes digestion of milk easy. The truth, however, is that it is better for them to avoid practising animal milk dilution because it reduces the content of nutrients in the milk and has a high risk of contamination.

Furthermore, the present study showed that 209 mothers breast-feed their baby exclusively (55.44%). This agrees with the study of Acheampong, Abesig, and Luo (2020), Hamze, Mao, & Reifsnider(2019), and Swigart, et al. (2017), although it contradicts the findings of Ouyang, Su, and Redding (2016) and Maonga et al., (2016) that investigated mothers' desire to and difficulties in breast-feeding. Findings revealed that the initiation rate in breast-feeding was 93.6%, and EBF was 6.2% at 6 months of age. Insufficient breast milk was the reason given for not breast-feeding exclusively. This may be because of differences in socio-cultural status, economic status, and participants' health care delivery. Furthermore, the research indicates that 290 (76.92%) mothers gave colostrum to their baby, 199 (52.79%) mothers started breast-feeding an hour after giving birth, and 171(45.36%) gave their last baby something before introducing breast milk.

A similar study by Goon, Ajay and Adeniyi (2021) aimed to address the practices and knowledge of infant mothers regarding breast-feeding. Research outcomes revealed an hour after delivery, 41.5% had begun to breast-feed. In addition, a study conducted by Aliyu (2016) in Nigeria to investigate attitudes to breast-feeding among multigravida women revealed that 47.2% of participants breast-fed exclusively for the first six months.

5.2.3 Factors That Influenced Mother Exclusive Feeding

As mentioned, there are several factors that influence a mother's decision regarding EBF, formula feeding, or even mixed feeding. In developing countries, mothers who experience serious breast swelling, infections, and pain are less likely to breast-feed exclusively. Previous bad experiences with breast-feeding also exert influence on their decisions. (Salim & Stone, 2020). The prime sources of infant mother breast-feeding influences are spouses, families, peers, health caregivers, and environmental influencers. Infant mothers' attitudes about breast-feeding, societal cooperation, the belief of the mother in terms of breast-feeding on her own, as well as the attitude of family produces and shapes her desire or aversion to breast-feed (Mangrioet al., 2017). Studies by Salim and Stone, (2020), and Mangrio et al. (2017) concur with this research and suggests that psychosocial, biomedical, and environmental factors all influence infant mothers' feeding decisions.

5.2.3.1 Psychosocial Factors

Previous experiences, attitudes, knowledge, and demographic (psychosocial factors) are one of the factors that influence an infant mother's breast-feeding choices (Salim & Stone, 2020; Mangrioet al., 2017). This study revealed that psychosocial factors like experiencing pain/discomfort from breast-feeding discourage mothers to breast-feed exclusively with a mean score of 3.93. This supports the earlier study of Reeta (2016) that explored breast-feeding in

developing countries. Those findings showed that mothers do not breast-feed exclusively due to experience of breast pain and infections.

The present study also showed that mothers' previous bad experiences with breast-feeding discourage them from breast-feeding again. Participants agree that the benefit of using formula milk is equal to that of breast-feeding with a mean score of 3.56. Smoking or consuming alcohol also influences breast-feeding choices with a mean score of 3.9. This study corroborated research carried out by Salim and Stone (2020) and Mangrioet al. (2017) indicating that initial breast-feeding experiences and mothers' ages were independently associated with their feeding choices. This could also be related to privacy and the environment. The outcome further reveals smoking plays a role in their feeding choices. Such people should also avoid breast-feeding. The intention to breast-feed can predict the duration of breast-feeding accurately (Alyousefi et al., 2017).

This study revealed that mothers of 40 years above are 1.51 times more likely not to breastfeed exclusively compared to mothers of less than 40 years of age (95% CI, 0.75-2.25). The odds ratio of the incidence of decision in breastfeeding for participants with breastfeeding and formula milk was 1.66 (95% CI, 0.87-2.53).

5.2.3.2 Biomedical Factors

This study has indicated that biomedical factors influence mothers' feeding choices with a grand mean score of 3.52. For instance, babies' medical conditions, mothers' medical conditions, and the infant/baby weight with a lower gestational age can influence their choices with the mean score of 3.51, 3.59, 3.41, 3.62, 3.39, and 3.57 respectively. This study supports the WHO's (2020) report, which listed several health conditions of babies and mothers that influence breast-feeding choices. World Health Organization (2020) further reported that mothers with sepsis, breast abscesses, mastitis, hepatitis B| and C, tuberculosis, or herpes simplex (caused by viruses and/or medication that could affect the health of the babies), should temporarily avoid breast-

feeding and consider bottle feeding instead. This study revealed that mothers with breast pain were 0.98 more likely not to breastfeed their infant.

Furthermore, WHO has reported that babies with health conditions like maple syrup urine disease, classic phenylketonuria, and galactosemia should only be given doctor-prescribed formula and should avoid breast milk. In addition, infants with a weight lower than 500g, newborn babies with a risk of hypoglycaemia, and babies who are birthed between 0-32 weeks of pregnancy might need breast-feeding as well as the addition of any other food for a short period of time (WHO, 2016). Medical and physical issues, for instance, nipple soreness and illness, are various hindrances to continuous BF (Afzal, et al., 2020; Ratnasari, 2017; Alyousefi et al., 2017).

5.2.3.3 Environmental Factors

Environmental factors could either have a negative or positive effect on mothers' breast-feeding decisions. Cultural practice, a poor supply of milk, and an absence of professional support influence their choices. Even though the advantages of breast-feeding are surplus to both parties, a lot of environmental factors may be a stumbling block to a woman's BF choices. This study has revealed that culture does not accept breast-feeding outside the home or in public with a mean score of 3.59. Indeed, participating mothers indicated that breast-feeding separates them from societal gatherings (Trafford (2020)).

A study by Trafford (2020) revealed that maternal employment plays a role in mothers' feeding choices, especially where their jobs are of a public nature (away from home). This indicates that the longer their maternity leave, the longer the period of breast-feeding (at least six months). The study also corroborated an earlier study of Nieuwoudt et al. (2018) that aimed to assess whether mothers' working duration correlated with their decision in terms of breast-feeding. Those results revealed mothers' returning to their work correlates with paid leave granted and their unpaid leave afforded.

A study conducted by Rojjanasrirat, and Sousa (2010) examined the view of low-income breast-feeding and pregnant mothers to establish what their plans were when they went back to school or work. The findings indicated there is no encouragement to breast-feed at their workplace, and that pumping, and breast-feeding caused them excessive stress (mothers). It is understood that inadequate facilities to breast-feed at a place of work and in public places influence their decisions pertaining to whether to breast-feed publicly (Nieuwoudt et al., 2018; Horwood, et al., 2018; Martin-Wiesner, 2018).

The study also revealed that the absence of professional support, returning to work, and commercial incentives to bottle feed influence their feeding choice with a mean score of 3.50, 3.62 and 4.18 respectively. One of the hindrances to EBF practice in the workplace, this is manifested in a workplace that has no special area created for breast-feeding mothers (Martin-Wiesner, 2018). In term of family support, mothers who don't receive family support were 3.43 times more likely not to breastfeed their infant.



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5.3 STUDY LIMITATIONS

Although this study provides relevant data to the body of knowledge on mothers' attitudes to and practices of EBF, the findings should be interpreted within certain limitations. This study's limitations are listed below:

- i. Only a quantitative approach was carried out in private health facilities in Alice Town, Eastern Cape in South Africa; thus, the generalizability of the findings was limited. However, this study provides rich data on mothers' attitudes and practices towards breast-feeding using a questionnaire in the specific context of the Eastern Cape.
- ii. Not all questionnaires were completed privately because the participants were allowed to take the questionnaire home and return within a week; as such, there is a possibility of mothers not giving wholly accurate answers.

5.4 CONCLUSION

This study revealed that mother have overall positive attitude towards breastfeeding, mothers agreed that EBF is beneficial to the child, EBF increase mother-infant bonding and EBF is enough for a child up to 6 months. The positive knowledge of the mother could be due to their academic level, exposure, and knowledge about breastfeeding. This study shows that mothers of 40 years above are 1.51 times more likely not to breastfeed exclusively compared to mothers of less than 40 years of age (95% CI, 0.77-2.25). The odds ratio of the incidence of decision in breastfeeding for participants with breastfeeding and formula milk was 1.66 (95% CI, 0.97-2.53). In term of family support, mothers who don't receive family support were 3.43 times more likely no to breastfeed. Also, this study revealed that mothers with breast pain were 0.98 more likely not to breastfeed.

In summary, the study showed that there are some factors which influence mothers feeding choice which is categorized into three: (1) psychosocial factors which include mothers' knowledge and attitudes (2) biomedical factors which include mother and infants' health conditions (3) environmental factors which include cultural norms, professional support, returning to work and commercial incentive to bottle feed. Hence, this study concludes that infant mothers are well informed about breastfeeding and are aware of the outcome of not breastfed of their infants. This study also revealed that factors such as infant mothers' knowledge about breastfeeding, medical health of both mother and infant and cultural norms can go a long way in influencing the decision of mothers to breastfeeding their infant or not.

5.5 RECOMMENDATIONS

Mothers should be encouraged to practice breast-feeding. The importance of this should be discussed with mothers even after they return to work. Furthermore, health workers and society should provide right support concerning the mother's decision in breast-feeding. As indicated in

this research, mothers have positive attitudes to and practices of breast-feeding. It is, therefore, essential to foster and spread these attitudes and practices among all mothers in Alice Town, Eastern Cape Province, to improve both infant and mother health within this context.

For further studies, it will be necessary to expand this research by including mothers accessing public health facilities to establish the rate of breast-feeding and the factors influencing breast-feeding choice in that specific sphere of Alice Town. Furthermore, additional studies should be done to compare mothers who breast-feed exclusively between working and non-working mothers.



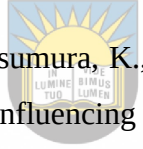
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ANNEXURE A



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Infant feeding attitudes and practices of mothers in Alice town, Eastern Cape Province, South Africa

Section A: Biographic information

Date:

Kindly respond to the following questions that relate to your biographic information

1. How old are you? 18 – 22 { }
23 – 27 { }
28 – 32 { }
33 – 40 { }
Above 40 { }

2. What is your highest level of education?
Grade 12 { }
Diploma/Certificate { }
Degree { }
Postgraduate qualification { }

3. What is your marital status?
Single { }
Married { }
Cohabiting { }
Separated/divorced { }
Widowed { }

4. What is the age of your youngest infant/child?
6 – 9 months { }
10 – 12 months { }
13 – 18 months { }
19 – 24 months { }

5. What is the gender of the infant?
Male { }
Female { }

Section B: Likert scale questionnaire

Please read each of the following statements in the table and tick the one which reflects your view with regards to the extent on how you agree or disagree to the statement:

RESPONSES: STRONGLY AGREE (SA), AGREE (A), STRONGLY DISAGREE (SD), DISAGREE (D) AND NOT SURE (NS)

Attitude of lactating mothers about breast-feeding

S/N	Statements	SA	A	SD	D	N
1	Discarding the first milk or colostrum is very important?					
2	Do you think starting complementary foods before 6 months is important?					
3	Do you believe the exclusive breast-feeding is beneficial to the child?					
4	Breastfeed babies are healthier than fed babies					
5	Formula feeding is more convenient than breast-feeding					
6	Do breast-feeding increase mother infant bonding?					
7	Do you agree that exclusive breast-feeding should be given to a child more than 6 months?					

SA=strongly agree; A=agree; SD=strongly disagree; D=Disagree; N=Neutral

Breast-feeding practices of breast-feeding

Statements	Yes	No
Do you breastfeed your baby exclusively?		
Do you use dilution of top milk for your baby before 6 months?		
Did you give colostrums to your baby?		
Do you start breast-feeding within one hour after delivery?		
Have you giving your last baby anything before introducing breast milk		

Psychosocial factors that influenced exclusive breast-feeding mother						
	Items	SA	A	SD	D	NS
1	It was my intention not to Breastfeed exclusively					
2	Breast-feeding will decrease my independent					
3	Pain/discomfort of breast-feeding discourage me to breast-feeding					
4	I will not/was able to breastfeed am to smoke/use alcohol					
5	Breast-feeding will make my breast sag (loss of shape)					

6	My breast milk will not have the optimum composition					
7	I am/was unable to milk out or use breast pump					
8	I had a bad experience with breast-feeding previously and therefore do not want to breastfeed					
9	The benefit of using formula milk is equal to breast-feeding					

SA=strongly agree; A=agree; SD=strongly disagree; D=Disagree; N=Neutral

biomedical factors that influence mother feeding choices						
S/N	Items	SA	A	SD	D	NS
1	Baby medical conditions, may have influence on mother feeding choice					
2	Mother medical conditions can influence her feeding choice					
3	The weight of infant can affect mothers feeding choice					
4	Baby with less than 32 weeks of gestational age may need other food in addition to breast milk					
5	Newborn infant do not need to be breastfeed					
6	Mother with sepsis could consider bottle feeding instead of breast-feeding					

SA=strongly agree; A=agree; SD=strongly disagree; D=Disagree; N=Neutral

Environmental factors that influence mother feeding choices						
S/N	Items	SA	A	SD	D	NS
1	It is culturally unacceptable to breastfeed in the public or in front of other					
2	My mother could not or preferred that i do not breastfeed					
3	Absent of professional support influence my feeding choice					
4	Returning to work influence my feeding choice					
5	Commercial incentive to bottle feed influence my choice of feeding					
	Grand Mean					

SA=strongly agree; A=agree; SD=strongly disagree; D=Disagree; N=Neutral

ANNEXURE B



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Informed Consent Sheet in English

I am Dr Aderonke Adepeju Oyeniran, a postgraduate student of the faculty of Health Science, University of Fort Hare. I am going to conduct a study on ***infant feeding attitudes and practices of mothers in Alice town, Eastern Cape Province, South Africa***. The objectives of this study are to investigate mothers' attitude and practices towards infant breast-feeding, what are the predictive factors of exclusive breast-feeding mothers in Alice town, what are the attitudes of mothers towards continuing breast-feeding beyond six months after birth and if there are any difference in mothers infant breast-feeding in relation to feeding outcome?

It is hoped that this study will bring forth new knowledge that will help the South African medical health authorities to rethink the best-practice of motivating mothers to continue in breast-feeding for the first six months and beyond.

I.....am willingly participating in the study and I have been explained to fully about the details, its purposes, and its possible implications in the future. I have had opportunity to ask questions about it and any questions that I asked have been answered to my satisfaction.

I consent voluntarily to participate as participant in this research and understand that I have the right to withdraw from the research at any time without in any way affecting my medical care from the hospital.

Dr Aderonke Adepeju Oyeniran

The Researcher.....

Participant.....



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ANNEXURE C

DR. J.M MBETE

**B.Sc(S.A) M.B. Ch.B.(Natal) DCH(S.A) M.F.G.P.(S.A)
M. (Prax) Med (Natal)**

(Practice No. 1442767)

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Alice, 5700**

**20 McNab Drive
Alice, 5700**

**Telefax : 040 653 1718
Cell No : 082 879 4109**

DATE : 01-07-2021

Dear Sir

re: Oyeniran ADERONKE

I, J.M. MBETE - have given

Oyeniran permission to
use my practice for her
Studies

DR. J.M MBETE
B.Sc(S.A) M.B. Ch.B.(Natal) DCH(S.A) M.F.G.P.(S.A)
M. (Prax) Med (Natal)
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ANNEXURE D

DR N. ANJUM

BSc. M.B., B.S,
Practise No. 1536117

ALICE

2, Old Teba
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Alice, 5700
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Fax: 040 653 0026

MIDDLEDRIFT

Bokwe Street
Middledrift, 5685
Tel: 040 657 3103

POSTAL ADDRESS

P.O BOX 3214
King Williams Town, 5600
e-mail: alicesurgery@gmail.com

29 June 2021

TO WHOM IT MAY CONCERN

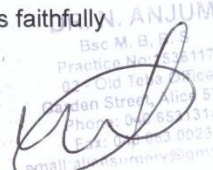
Re: Permission to conduct research

Dear Sir/Madam

This letter serves to confirm that Dr Aderonke Adepeju Oyeniran with student number: 202001553 who is currently enrolled to do her Master's degree in Public Health at University of Fort Hare. She has been given the permission to conduct research under the project "Infant Feeding Attitudes and practices of mothers in private health facilities in Alice town, Eastern Cape, South Africa.

Should you have any queries, kindly contact the writer hereof.

Yours faithfully,


The stamp contains the following text: DR N. ANJUM, BSc M.B., B.S., Practise No. 1536117, 2, Old Teba, Garden Street, Alice, 5700, Phone: 040 653 1314, Fax: 040 653 0026, email: alicesurgery@gmail.com

Manager: Dr Anjum Surgery

ANNEXURE E



HEALTH RESEARCH ETHICS COMMITTEE

P.O Box 1054
East London 5200
Tel: +27 (0) 43 704 7368
E-mail: dgoon@ufh.ac.za

ETHICAL CLEARANCE CERTIFICATE REC-100118-054

Certificate Reference Number: **Ref #2021=06=13=OyeniranA**
Project title: Infant feeding attitudes and practices of mothers in private health facilities in Alice town, Eastern Cape, South Africa
Nature of Project: Masters of Public Health
Principal Researcher: Oyeniran A
Student Number: 202001553
Supervisor: Prof DT Goon
Co-Supervisor: Mrs N Bokolo

On behalf of the University of Fort Hare Health Research Ethics Committee (HREC), I hereby give ethical approval in respect of the undertakings contained in the above-mentioned project and research instruments(s). Should any other instruments be used, these require separate authorization. The Researcher may therefore commence with the research as from the date of this certificate, using the reference number indicated above.

Please note that the HREC must be informed immediately of

- Any material change in the conditions or undertakings mentioned in the document
- Any material breaches of ethical undertakings or events that impact upon the ethical conduct of the research

The Principal Researcher must report to the HREC in the prescribed format, where applicable, annually, and at the end of the project, in respect of ethical compliance.

The HREC retains the right to

- Withdraw or amend this Ethical Clearance Certificate if
 - Any unethical principles or practices are revealed or suspected
 - relevant information has been withheld or misrepresented
 - regulatory changes of whatsoever nature so require
 - the conditions contained in the Certificate have not been adhered to
- Request access to any information or data at any time during the course or after completion of the project.



- In addition to the need to comply with the highest level of ethical conduct principal investigators must report back annually as an evaluation and monitoring mechanism on the progress being made by the research. Such a report must be sent to HREC monitoring@ufh.ac.za.

The Ethics Committee wishes you well in your research endeavours.

Yours sincerely



Professor DT Goon
Chairperson: HREC
28th June 2021