



**Why variations in breastfeeding rates in rural and urban South Africa?: The case
of Valencia and White River, Mpumalanga**

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of a Masters Degree in Development Studies**

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Declaration

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Abstract

Breastfeeding plays a pivotal role in the baby's growth and development. Following the benefits of breastfeeding to both the mother and the child, the World Health Organization (WHO) recommended that infants be exclusively breastfed for the first six months of their lives before introduction to other foods. Despite this recommendation and the government's effort to promote breastfeeding, South Africa remains one of the countries characterized by low (exclusive) breastfeeding levels worldwide. Low levels of breastfeeding are most evident in urban areas than in rural areas. This thesis examined the factors underpinning why there are variations in breastfeeding rates between rural and urban areas in South Africa.

The study followed a sequential explanatory-mixed methods design, combining both qualitative and quantitative methods. Quantitative data derived from the 2017 South Africa Demographic Health Survey (SADHS) was used to establish differentials in breastfeeding between rural and urban areas in South Africa. Following the quantitative approach was a qualitative comparative case study of Valencia - an urban area and White River - a rural community in *Ehlanzeni District* in Mpumalanga Province. Fourteen semi-structured interviews with women from White River and Valencia provided an in-depth understanding and reasons explaining the differences in breastfeeding perceptions between rural and urban women in South Africa.

The study's overall findings indicated that women in rural areas were more active in breastfeeding than women in urban areas due to several factors. Demographically, quantitative results showed a relationship between breastfeeding, mother's location, education, and age. Evidence suggested that older women (≥ 30) were most likely to be experienced in breastfeeding, which further enhanced their confidence in breastfeeding, as indicated by the Self Efficacy theory. In terms of location, bivariate logistic regression confirmed that women in rural areas

breastfed more than women in urban areas. One of the reasons was that most women in urban areas were employed, which meant they spent daytime hours away from home. Results further indicated that the practice of breastfeeding was more prevalent among women who had attained above primary education level, as they were presumably aware of the importance of breastfeeding.

Qualitative findings also revealed that due to the rapid urbanization in South Africa, most women's lifestyles, especially in urban areas, were highly influenced by the media and the western modernized culture. On the contrary, women in rural areas still possessed traditional lifestyles where women, were strongly expected to breastfeed soon after giving birth. Moreover, most rural mothers were stay-at-home mothers, allowing them more time to breastfeed. Rural areas also had support organizations such as the Home-Based Care (HBC), which conducted home visits to the new mothers in rural areas to provide them with maternal support. Unemployment and unpaid maternity leave also posed a threat to working mothers in urban areas, who felt more extended maternity leave, placing them on the verge of being replaced at work.

The government, therefore, needs to invest more in breastfeeding campaigns, especially in urban areas. Resources should be made available to support working mothers to acquire breast pumps and pumping stations at work. Finally, breastfeeding facilities should be provided in public spaces, especially in urban areas to ensure that women can freely breastfeed at any time.

Keywords: breastfeeding, exclusive breastfeeding, children, women, rural-urban, breastmilk, formula milk, self-efficacy, behavior change.

Chapter 1: Introduction

1.0 Background

Breastfeeding plays a critical role in the growth and development of infants, helping them grow to their optimum (Qui et al., 2009). According to Majambozi (2015), infants' emotional, physical, and cognitive abilities are developed during breastfeeding. As such, the World Health Organization (WHO) has urged mothers to exclusively breastfeed, thus giving the infants nothing other than breastmilk for the first six months of their lives, with continued breastfeeding alongside complementary feeding up to two years (Grant, 2016).

There are several benefits associated with exclusive breastfeeding for six months (Ryan et al., 2017). As argued by Ryan et al., (2017), infants who are exclusively breastfed for at least six months are less likely to be affected by conditions such as respiratory diseases, ear infections, diarrhea, eczema, and being underweight. These are some of the life-threatening diseases that cannot be survived by infants' immune systems due to their fragility (Oommen et al., 2009).

Breastfeeding is not only beneficial to the infant but to the mother as well. Tapping into Blyth et al., (2002)'s wisdom, breastfeeding helps women burn excess calories and fat that might have accumulated during pregnancy, thereby helping them revert to their pre-pregnancy bodies. However, this might not apply to low-income women facing food insecurity challenges as breastfeeding can take a toll on their bodies. Breastfeeding also helps the mother release the oxytocin hormone associated with many benefits including; reduced urinary bleeding after birth, low chances of contracting osteoporosis, ovarian cancer, and breast cancer (Blyth et al., 2002). In this regard, the WHO proposed a global recommendation urging women to engage in exclusive breastfeeding for at least the first six months of the infant's life, not only to achieve the optimum

development and growth of the infant but to enhance their health too (Kimani-Murage et al., 2011).

Despite the cited incentives of breastfeeding and the WHO's global recommendation, low breastfeeding rates continue to persist globally, with high prevalence in urban areas (Oche et al., 2011). According to Qui (et al., 2009), more than 65% of mothers in the United States are not active in breastfeeding, one of the reasons being that they need to return to work soon after giving birth as they are only entitled to unpaid maternity leave (Oche et al., 2011). Additionally, some Western cultures perceive breastfeeding as an old-fashioned way of feeding the baby (Oche et al., 2011). In such cases, women switch to breastmilk substitutes such as formula milk, which have been argued to put children at a higher risk of contracting diseases such as pneumonia, diarrhea and even shorten their lifespan (Qui et al., 2009).

Moreover, the high pronouncement of the HIV; AIDS pandemic has also contributed to the low breastfeeding rates especially in developing countries (Majambozi, 2015). The misconception that women affected by the HIV/AIDS pandemic cannot engage in breastfeeding has negatively affected women's breastfeeding choices with the fear of Mother-To-Child-Transmission (MTCT) (Alemayehu et al., 2009). However, mothers on antiretroviral treatment can breastfeed without transmitting the virus to their babies, provided they are on the recommended medication, keeping up with the dosage, and monitoring their viral load (Tjale, 2001).

Several scholars have shown that breastfeeding remains even lower in urban areas than in rural areas (Shirima et al., 2001; Oche et al., 2011 & Arfeen et al., 2001). A study conducted by Shirima (et al., 2001) concluded that women who live in rural areas tend to breastfeed more than women who live in urban areas. Several factors such as the influence from the media, stereotypes

leveled against breastfeeding women, and cultural beliefs have significantly contributed to the low breastfeeding rates in most urban parts of South Africa (Shirima et al., 2001).

Therefore, this study will investigate factors accountable for the persisting differences in breastfeeding rates in urban and rural Mpumalanga, using the case of Valencia (urban) and White River (rural). The paper will first focus on the general factors that have led to the low breastfeeding rates in South Africa before arguing on the discrepancies between rural and urban breastfeeding practices. After that, the paper will present the empirical findings from the data collected, which will inform the recommendations and possible measures that can be considered to promote breastfeeding, particularly in the urban areas of South Africa.

1.1 Problem Statement

To curb the low breastfeeding rate, South Africa's government, in partnership with other stakeholders, conducted several campaigns countrywide, such as Normalize Breastfeeding and Grow Great Campaign (Mphego et al., 2014). However, the implemented campaigns have had limited impact in convincing women to breastfeed (Mphego et al., 2014).

Despite the increase in exclusive breastfeeding over the past two decades, evidence suggests that more than 60% of mothers mostly from urban areas are not exclusively breastfeeding their infants in South Africa (SADHS, 2017). According to Ryan (et al., 2017), only 21% of urban mothers-initiated breastfeeding within the first hour after giving birth, compared to 35% of rural mothers. Similarly, children in urban areas were breastfed for three months less than those in rural areas (median duration of 10.3 months in urban areas and 13.5 months in rural areas (SADHS Report, 2017). These figures suggest that women in rural areas engage more in breastfeeding on average than women in urban areas. Therefore, it is in the interest of this paper

to investigate the factors underlying the low levels of breastfeeding in South Africa and why women in the rural areas are more active in breastfeeding compared to women in urban areas, using Mpumalanga as a case. The study focused on Mpumalanga Province as it is one of the Provinces with a low breastfeeding rate and is less research regarding this subject.

1.2 Research Justification

The subject of breastfeeding has gained much attention from scholars and disciplines worldwide (du Plessis et al., 2016 & Majambozi, 2015). As mentioned above, South Africa has been classified as one of the countries with a low rate of exclusive breastfeeding at 32%, pronounced more in urban areas than rural areas (SADHS Report, 2017). The subject of breastfeeding also formed part of the 2030 Agenda of the Sustainable Development Goal number (SDGs) 2, 3, and 4, as it is considered one of the plausible ways of boosting the health of children and protecting them from non-communicable diseases (Women Watch United Nations Report, 2012).

The outcome of this study will provide insights for addressing the rural-urban gap on breastfeeding in South Africa. Beyond addressing the gap, it will also provide recommendations for combating the low breastfeeding rates in South Africa, to ensure that it remains on the policy agenda.

1.2.1 Research Aims and objectives

This study explored the reasons for variations in breastfeeding rates and practices between rural and urban mothers in South Africa, using a comparative case study of Mpumalanga Province.

The specific objectives of the study are;

1. To describe differences in breastfeeding rates between rural and urban areas in South Africa.
2. To explore the different perceptions that women in urban and rural Mpumalanga have concerning breastfeeding.
3. To investigate the reasons underlying the discrepancies in the breastfeeding rates in rural and urban South Africa.
4. To investigate the different factors accounting for the low breastfeeding rates in South Africa.
5. To provide possible recommendations and strategies that can be implemented to scale up breastfeeding in South Africa.

1.2.2 Research questions

The study aims to answer the main research question; Why variations in breastfeeding rates between rural and urban areas in South Africa?

The above research question will be addressed through the following sub-research questions:

1. What are the main issues underlying the low breastfeeding rate in South Africa?
2. Why are there variations in breastfeeding rates among rural and urban women in Mpumalanga Province?
3. What are the strategies and recommendations that can be implemented to scale up exclusive breastfeeding in South Africa?

1.3 Research Methodology

The study followed a sequential explanatory mixed methods design, combining quantitative and qualitative data to answer the research question and achieve the study objectives. This methodology is designed to explain the differences in the breastfeeding rates between rural and urban women in South Africa. The paper uses the SADHS (2017) data on breastfeeding, which was processed on Stata 12 for the analysis. The study's quantitative component focused on five variables from the data set, namely breastfeeding and exclusive breastfeeding, location, age, and level of education. The breastfeeding variables were treated as independent variables, and all the other variables were dependent variables. Qualitative data was collected through fourteen semi-structured interviews in rural and urban Mpumalanga. The qualitative component was dominant in the study, as it answered the main research question and elaborated further on the quantitative findings.

Definition of key phrases.

Breastfeeding - a process that takes place after birth, where the baby feeds by sucking milk from the mother's breasts (Majambozi, 2015).

Exclusive breastfeeding - a process of feeding the baby with nothing other than breastmilk for the first six months of life (Majambozi, 2015).

Mixed feeding - feeding the baby with breastmilk and formula milk interchangeably (Majambozi, 2015).

Complementary feeding - introducing other foods after six months when breastmilk alone is no longer adequate to meet the nutritional demands of the infants (Majambozi, 2015).

Breastmilk substitutes - any food used as a replacement for breastmilk (Majambozi, 2015).

1.4 Scope and limitations

The paper provides an in-depth discussion of different factors contributing to the low levels of exclusive breastfeeding in South Africa and the reasons accompanying the differences in breastfeeding rates between rural and urban areas in South Africa. The study was conducted in an urban and rural area, located in the Mpumalanga province, namely Valencia and White River. Over a period of two months, in-depth interviews were conducted with fourteen women who had children aged 3-11 months from both Valencia and White River. Snowball sampling and purposive sampling were used to select mothers with children from 3-11 months in White River and Valencia. Data from the SADHS (2017) was also incorporated in the study to provide the statistical nature of the breastfeeding trends in the rural and urban areas of South Africa. The study did not solely focus on exclusive breastfeeding; thus, women who gave their children nothing other than breastmilk for the first six months, but rather breastfeeding in general.

Like any other study, this research was not without limitations. One of the study's limitations is that the results are less likely to be generalized to South Africa as a whole because of the small sample size and the number of areas of focus. Moreover, engagement with health workers in rural and urban areas on the subject of breastfeeding would have been ideal to capture diverse perceptions on breastfeeding. Lastly, interviews were conducted in the participants' native language and then transcribed into English for analysis which might have caused some information to be lost in the process

1.5 Chapter outline

This paper is sectioned into six chapters namely; i) introduction ii) literature review, iii) theoretical framework, iv) methodology, v) analysis chapter and vi) summary of findings and recommendations.

The introductory chapter is set to present; the study's objectives and research question to be addressed by the study. Following the introduction is chapter two; the literature review chapter discussing the status quo on factors contributing to the low levels of (exclusive) breastfeeding in South Africa. This chapter also discusses some of the factors influencing breastfeeding discrepancies between rural and urban women in South Africa.

The study is supported by two theories developed by Albert Bandura, namely the Social Cognitive Learning Theory (SCLT) and the Self-efficacy framework for breastfeeding, which are jointly discussed in chapter three. This part of the paper mainly provides a theoretical understanding of some of the cognitive, emotional, and behavioral factors involved in child-feeding decisions among women. Chapter 4 presents the different research techniques used in the study. The chapter contains information from the collection of the quantitative and qualitative data to the processing of the data for analysis. The chapter concludes by highlighting the study's different challenges, their influence on the study, and how the effects were controlled.

Chapter five presents empirical evidence in response to the research objectives and questions. The chapter discusses the quantitative and qualitative findings of the study in conjunction with the existing literature and the theoretical frameworks on breastfeeding in the rural and urban areas of South Africa. The chapter concludes the paper by summarizing findings and recommendations to promote breastfeeding in rural and urban areas in South Africa.

Chapter 2: Literature Review

2.1 Introduction.

The subject of breastfeeding has gained global attention, particularly in the field of development, health, and social sciences. This chapter aims to investigate the health and socio-economic factors contributing to the different trends of breastfeeding between the rural and urban areas of South Africa. This chapter will first introduce different terms that are dominantly used in the study and their definitions. Thereafter, the paper will discuss the practice of (exclusive) breastfeeding from a global perspective, narrowed down to the rural and urban levels.

2.2 Breastfeeding, exclusive breastfeeding, and complementary feeding

The word breastfeeding is associated with terms such as complementary feeding, exclusive breastfeeding, and mixed feeding. The concept of breastfeeding and exclusive breastfeeding carries a similar definition. However, they differ in whether the baby is only given breastmilk during the first six or not. Breastfeeding refers to feeding the baby milk from the mother's breasts (WHO Report, 1981). Exclusive breastfeeding on the other hand refers to a feeding method where the infant only depends on the mother's milk for six months without any other food intake such as herbs, tea, or water (Kassier, 2005). Mixed feeding refers to feeding the baby breastmilk and other liquids or solids simultaneously (Majambozi, 2015). Complimentary food refers to any food (solids/liquids) suitable for substituting or balancing breast milk (Majambozi, 2015). During this stage, infants are slowly removed from breastfeeding and introduced to different types of food complimenting their age.

2.3 Importance of breastfeeding to the child and the mother

Women have been urged to engage in breastfeeding as it is associated with several benefits positively contributing to the child's health and well-being. However, studies have also shown

that breastfeeding benefits the child and the mother as well. The following section discusses some of the benefits of breastfeeding to both the mother and the child.

i) Benefits of breastfeeding to the child

Breastfeeding is beneficial to the child in several ways. According to Wall (2001), breastfeeding plays a crucial role in the child's development as it supports their immune system and stimulates the senses, growth, and brain development. This is because breastmilk has been scientifically proven to contain enough nutrients needed for the development of the baby's physiological, cognitive, and emotional health (Olang et al., 2009),.

Studies have suggested that children who are exclusively breastfed grow up healthy and well developed into childhood (Brown, 2015 & Majambozi, 2015). According to Sibeko et al. (2005), the WHO called most developing countries, advising them to engage in exclusive breastfeeding to curb the high rates of child malnutrition, morbidity, and mortality. Taking from the wisdom of Frans et al., (2015), children who are not breastfed have a greater chance of being affected or even dying from respiratory infections and diarrhea than their counterparts. Murphy (1999) further indicated that children who are not breastfed are more vulnerable to eczema, childhood cancer, asthma, and infantile gastroenteritis diseases, which are amongst the top ten infant killer diseases accounting for more than 50% of all infant reported deaths. According to Kassier & Veldman (2013), such diseases and conditions can be easily prevented and treated through breast milk, thereby reducing medical costs and promoting child health simultaneously. With the weak healthcare system in most African countries, breastfeeding serves as a tool for preventing children from seeking medical attention that they may struggle to get (Ryan et al., 2017). Further argued by Kohan et al., (2016), exclusive breastfeeding can decrease the infant mortality rate by

more than one million deaths, globally every year. This is because breastmilk is safe and tailor-made for the baby where all the nutrients needed by the infant's body namely fats, vitamins, proteins, and vitamins are provided in the right quantity (Wall, 2001).

Lastly, Murphy (1999) argued that breastfeeding also fosters communication skills between the mother and the baby through communicating with the infant, whilst breastfeeding. In doing so, the infant's vocabulary, linguistic aspects, and comprehension areas are improved (Murphy, 1999). The communication techniques during breastfeeding give the mother and the child a chance to bond together (Oommen et al., 2009). According to Majambozi (2015), this also helps develop the baby's cognitive abilities and fosters the baby's sense of security, helping the baby adapt to the environment. Similarly, Brown (2015) argued that skin contact between the mother and the baby during breastfeeding helps the child grow with high self-esteem and confidence. The above shows that breastfeeding is beneficial to the child's physiological, emotional, and cognitive areas even in the long run.

ii) *Benefits of breastfeeding to the mother*

Women, like children, also get to benefit from breastfeeding. Breastfeeding puts women at a lower chance of contracting ovarian cancer, and other illnesses such as osteoporosis (Aefeen et al., 2001). According to du-Plessis et al. (2016), breastfeeding protects more than 20 000 women from breast cancer in South Africa every year. One of the reasons is that women are examined before breastfeeding so that even when there are chances of breast cancer, they can be easily detected (Qui et al., 2009). Lactation also helps women shed breast tissue and reduces women's exposure to hormones such as estrogen, which can result in breast cancer cell growth (Ryan et

al., 2017). Moreover, breastfeeding within the first hour of birth helps in contracting the uterus, reducing postpartum blood loss in women (SADHS Report, 2017).

In the school of feminists, breastfeeding is perceived as an empowering tool for women to confirm their power and control over their bodies (Wall, 2001). According to a study done by Schmied & Barclay (1999), women reported feeling happy, superior, and confident that their bodies can produce food for their babies (Schmied & Barclay, 1999). Furthermore, through breastfeeding, a hormone called oxytocin is produced, which boosts well-being and helps the mother socially connect with the baby (Boyer, 2016).

2.4 Breastfeeding trends in the developing and developed world.

The practice of breastfeeding continues to decline in most parts of the world as it has been lately perceived as an old-fashioned practice (Oche et al., 2011). Recent statistics show that less than 40% of infants are exclusively breastfed for six months globally, with only 23 countries having a rate above 55% on exclusive breastfeeding for six months (Lesorogol et al., 2018). These statistics have negatively contributed to infants' undernutrition and stunting, mostly prevalent in developing countries (Lesorogol et al., 2018). Such conditions further contributed to the 40.8% child mortality rate in the world and 40 deaths per 1000 births in children under the age of five in the context of South Africa (Ryan et al., 2017). Moreover, the World Bank issued a report in 2017 stating that more than 15 000 children under the age of five die every day and most of these deaths are caused by malnutrition and insufficient nutrient intake (Ryan et al., 2017).

The low breastfeeding rates have been of concern for at least the past two decades, especially in most developing countries. Mphego et al. (2014), indicate that a significant number of children are deprived of breastmilk in developing countries, making them prone to poor health. This is

also worsened by the poor state of health facilities and services in developing countries (Oommen et al., 2009). As a result, the World Health Assembly (WHA) endorsed a new nutritional charter aimed at increasing exclusive breastfeeding from 35% to at least 50%, particularly in developing countries by 2025 (du-Plessis et al., 2016).

Comparing the developed and the developing world, breastfeeding has mostly been better conserved in developing countries than in the developed world (Blyth et al., 2002). The higher rates of breastfeeding in developing countries are related to cultural reasons and high prices of breastmilk substitutes such as formula milk (Blyth et al., 2002). Most women in developed countries prefer formula feeding their children than breastfeeding due to factors such as the need to return to work and the stereotypes on breastfeeding.

In most developing countries, especially Africa, it is culturally believed that a woman who has given birth should be celebrated and supported throughout motherhood (Dykes, 2005). However, this is not usual in the developed world where mothers are usually expected to revert to their former lives soon after giving birth (Dykes, 2005). Since breastfeeding is not a comfortable experience for most women especially first-time and young mothers, older women in African communities make it their responsibility to teach and support women during breastfeeding (Qui et al., 2009). For example, they help them position the baby or help the baby to latch onto the mother's breast (Qui et al., 2009). According to the SCLT, the younger generations are also mentally initiated into the breastfeeding practice, and this is one of the ways that have helped in keeping the culture of breastfeeding especially in the rural area of the country (Dennis, 1999 & Ryan et al., 2017). Likewise, this was depicted in a study conducted in Nigeria stating that close to 90% of women in Nigeria were knowledgeable and understood the subject of breastfeeding,

showing the likelihood of exclusively breastfeeding their infants up to six months (Frans et al., 2015).

The lowest breastfeeding rates have been noted more in developed countries such as the UK, Canada, and the USA than developing countries (Qui et al., 2009). Studies have confirmed that only 1% of women in the United Kingdom (UK) practice exclusive breastfeeding for six months (Grant, 2016 & Brown, 2015). Similar results were observed in Australia, United States of America (USA) Canada, reporting that 90% of the women initiated breastfeeding with less than 25% exclusively breastfeeding up to six months (Blyth et al., 2002). The reason is that, in contemporary western society, breastfeeding women are likened to machines and stereotyped as uncivilized and negligent of their bodies (Grant, 2016). Dykes (2005) further argued from a classical theory perspective that a woman's body is seen as part of the production process where the breasts and the uterus are the primary functioning machines. These are some of the many factors that have negatively affected women's breastfeeding decisions as they fear being judged and humiliated. Therefore, women feel the need to switch to other breastfeeding substitutes that will pose fewer threats to their being.

However, there are countries such as Norway that have significantly higher exclusive breastfeeding levels, where 98% of women breastfeed from birth as women are offered paid maternity leaves unlike other countries (Brown, 2015). This rate results from the supportive culture and attitude that countries have towards breastfeeding where the practice is still perceived as noteworthy.

2.5 Breastfeeding in South Africa.

South Africa has been deemed one of the countries with concerning exclusive breastfeeding levels in the world (du-Plessis et al., 2016). The current breastfeeding rate for children from 0-5 months is 74.8%, as indicated in the SADHS report (2017). With these statistics, it would be misleading to conclude that close to 75% of children born in South Africa meet the WHO breastfeeding requirements of exclusive breastfeeding for six months. The reason is that the general breastfeeding rate does not only refer to exclusive breastfeeding but also includes mixed and complementary feeding.

However, the rate of exclusive breastfeeding in South Africa has improved in the past two decades. The SADHS Report (2017) confirmed that the percentage of infants who are exclusively breastfed for six months has risen from 8% in 1998 to 32% in 2016. Most improvement has been highly noticed in rural areas more than urban areas. More than 75% of women in rural areas are involved in breastfeeding compared to 64% in urban areas (SADHS Report, 2017).

As noted above, the rate of exclusive breastfeeding has improved in the past two decades in South Africa (SADHS Report, 2017). Despite this improvement, statistics show that approximately two-thirds of children under the age of six months are still not exclusively breastfed as per WHO recommendation (SADHS, 2017). According to du-Plessis et al. (2016), more than 70% of infants in South Africa are introduced to solid food before the age of six months. The low levels of (exclusive) breastfeeding have worsened the mortality rate of children below the age of five years (Frans et al., 2015). One of the contributing factors has been that South Africa is still facing sanitation problems (du-Plessis et al., 2016; Voth-Gaeddert et al., 2019). There is a possibility that the food introduced to the child in their early stages of life

might be prepared in unhygienic environments (du-Plessis et al., 2016). Evidence shows that close to 10% of the deaths among children under the age of 5 years result from water-borne diseases such as diarrhea, the 8th largest cause of death in South Africa (du-Plessis et al., 2016). In that regard, South Africa was categorized as one of the 36 countries with a high rate of poor health outcomes amongst children, including child stunting and underweight globally (Devereux et al., 2019).

In an attempt to promote breastfeeding in South Africa, the Department of Health (DoH) has put in place antenatal and health consultation services in public hospitals where women are taught about exclusive breastfeeding before and after giving birth (Frans et al., 2015). However, according to Shah et al., (2005), these services have not been effective due to poor structuring of the programs, inconsistencies in the implementation, and shortage of health workers.

2.5.1 Existing evidence on breastfeeding practices in rural and urban areas.

As mentioned above, low breastfeeding rates have been argued to be more prevalent in urban areas than in rural areas in South Africa. Statistics confirmed that 23.6% of children in rural areas, and 35.5% of children in urban areas are deprived of breastmilk (SADHS, 2017). In other terms, there are still a significant number of children who are still deprived of breastmilk in both rural and urban areas. According to Shirima et al. (2001), in most developing countries, infants living in rural areas are breastfed three times longer than their counterparts in urban areas. One of the reasons is because women in rural areas have more time to breastfeed as they spend most of their time working within proximity to their homes where they can easily breastfeed their children at any time (Majambozi, 2015). Also, in rural settings, young girls usually grow up with the awareness of the knowledge around breastfeeding (Brown, 2015). This practice is seen as a culture that women are expected to do and is further reinforced by the supporting structures from

other women and even men in the community (Dennis, 1999). Such support is rendered because breastfeeding is associated with several emotional challenges, especially for first-time mothers (Qiu et al., 2009).

Despite the breastfeeding culture in rural areas, most women in rural areas spend most of their time in primary activities such as farming which is not breastfeeding restricting (Qui et al., 2009). Such activities allow them time to breastfeed their children without significantly inconveniencing their day-to-day activities. However, in urban areas, most women can only afford to breastfeed on maternity leave. These factors form part of the reasons why there are discrepancies between rural and urban breastfeeding trends. However, as much as breastfeeding is higher in rural areas, exclusive breastfeeding is still generally low in South Africa (Kimani-Murage et al., 2011).

2.5.2 Factors affecting exclusive breastfeeding in South Africa.

Breastfeeding is a subjective practice that can be pleasurable for some women and unpleasant for others (Schmied & Barclay, 1999). Most women show commitment to breastfeeding before giving birth and intend to exclusively breastfeed their children for the recommended six months (Schmied & Barclay 1999). However, their adjustment to motherhood after birth usually determines their infant feeding choices. The section that follows will discuss some of the social and economic factors contributing to women's breastfeeding choices in South Africa.

i) Sociocultural factors affecting breastfeeding choices.

The practice of breastfeeding involves a complicated relationship between the mother, the baby, the family, and society (Dykes, 2015). In most cases, women's breastfeeding decisions are not entirely autonomous, as they are highly influenced by external factors such as their environment,

culture, and social networks (Mphego et al. 2014). In most African societies, certain cultural norms and rituals are done as a sign of protection of the mother and the newborn from bad spirits and welcoming them into society (Sibeko et al., 2005). For example in Northern Cape Province, infants are introduced to herbal concoctions/traditional medicine as a measure of protecting them from bad spirits and introducing them to their ancestors (du-Plessis et al., 2016 & Sibeko et al., 2005). A similar practice is also done in the Limpopo Province, where babies are given traditional medicine called *tshiunza* made of herbs and maize to strengthen their immune system, and they continue to be breastfed afterward (Lewin et al., 2007; du-Plessis et al., 2016). Infants are administered with traditional concoction immediately after birth by the grandmother or an older adult and are given breastmilk thereafter (du-Plessis et al., 2016). In most cases, this is a decision taken by the elders in the family more than the mother herself.

The other factor is stereotypes projected to women breastfeeding in public spaces that have altered women's confidence to breastfeed. According to Boyer (2016), women who breastfeed their children in public are viewed as lacking self-respect and unattractive. This follows the notion that breastfeeding is deemed an old and uncivilized practice that women need to upgrade from (Boyer, 2016). Secondly, such stereotypes are accompanied by the belief that women's breasts are viewed as an intimate part of the woman's body that is only pleasurable to their partners (Grant, 2016). In such a case, women's partners play an influential role in either encouraging or discouraging women to breastfeed (Boyer, 2016). This leaves women with a dilemma of choosing between being a good mother by breastfeeding or a good partner by reserving their breasts for intimate purposes (Murphy, 1999).

Studies have also shown that women, especially first-time mothers, report feeling overwhelmed and losing their identity when breastfeeding as their world becomes centered on the baby (Wall,

2001 & Marshal et al., 2007). This usually occurs during the postnatal stage, which is known to be a phase that usually decreases most women's confidence in breastfeeding (Dennis, 1999). Referencing different experiences, women reported finding breastfeeding to be negatively affecting their autonomy, sense of self, and independence as they have to put the baby's needs before theirs (Schmied & Barclay, 1999). In such instances, women often struggle to balance taking care of the baby and maintaining a positive image of themselves and their confidence, contributing to depression and other related mental illnesses (Marshall et al., 2007).

Media has also been cited as one of the factors affecting breastfeeding in South Africa. Media is used as a tool that can either promote or dim the practice of breastfeeding. According to Grant (2016), most women use the media to validate their parenting skills and trends at that particular time. Evidence suggests that the marketing strategies used to promote formula milk are more effective than those on breastfeeding (du-Plessis et al., 2016). In other words, there is more media coverage on formula milk compared to breastfeeding. Marketing tools such as the radio and the television should be used to educate pregnant women, mothers, and the family on the ideal feeding practices for infants (du-Plessis et al., 2016).

The last contributing factor is rapid urbanization in South Africa has also facilitated the rural-urban movement (Sibeko et al., 2005). This movement has impacted the preservation of the breastfeeding practice in rural areas and is most likely to be replaced and altered by the change in lifestyles by women moving from rural to urban areas (Sibeko et al., 2005). In addition to the competing ideologies of keeping up with the times, poor training and limited breastfeeding knowledge among health care workers have also contributed to the low breastfeeding rates in urban areas. According to Mphego et al. (2014), 50% of women in urban areas were only knowledgeable about breastfeeding and not exclusive breastfeeding. Therefore when women

move from rural to urban areas, they are most likely to be welcomed in an environment where breastfeeding is not an everyday norm.

ii) Health and economic factors affecting breastfeeding choices

The high unemployment rate of South Africa has recently been declared a national disaster (SADHS Report, 2017). The issue of unemployment has played a significant role in the low breastfeeding rates in rural and urban South Africa. One of the most cited reasons for not breastfeeding or discontinuing breastfeeding is the need to go back to work or start a new job (Brown, 2015). Although women are given maternity leave upon giving birth, most of them prefer introducing bottle feeding to their babies to break the attachment to breastmilk in cases where the mother has to go back to work. The need for employment has led to many children being introduced to complementary feeding, which anyone can do when the mother is at work (Sibeko et al., 2005).

Moreover, the South African maternity policy, Section 25 of the Basic Conditions of Employment Act 75 of 1997 (“BCEA”) argues that women are entitled to four months of unpaid maternity leave (Motsiri & Timothy, 2015). According to Brown (2015), unpaid maternity leaves leave most women with no choice but to go back to work sooner than expected. However, there are countries such as the United Kingdom (UK) where women working in the formal sector are given 39 weeks of paid leave after giving birth (Oche et al., 2011). According to Blyth (et al., 2014), countries where women get paid during their maternity leave usually have a high rate of (exclusive) breastfeeding, as they have time to take care of their babies without worrying about returning to work.

Among other countries, South Africa was significantly affected by the crippling cases of the HIV/AIDS pandemic (Sibeko et al., 2005). The high rate of HIV/AIDS was cited as one factor that has significantly contributed to the low breastfeeding rates in the country (Sibeko et al., 2005). This was accompanied by the then policy that women with HIV/AIDS are not fit to engage in breastfeeding as it could put them at a high clinical risk of Mother-to-child transmission (MTCT) (Sibeko et al., 2005). In that case, women were advised not to breastfeed, but rather, to formula-feed to protect their infants also because treatment was not widely available (Kassier & Veldman, 2013). According to Shah et al. (2005), this policy further affected breastfeeding campaigns' promotion and training in countries with high HIV prevalence like South Africa.

After a number of scientific facts on the issue of breastfeeding and HIV; AIDS, WHO recommended that HIV-positive women should be given counseling and educated on feeding choices by citing the incentives of breastfeeding and risks of breastmilk substitutes to the infant (Kassier, 2005). On that note, it has been argued that the combination of the ARV and the zidovudine drug can significantly reduce the chances and risks of MTCT during breastfeeding (Kassier & Veldman, 2013). Therefore, the mother must be on the proposed treatment before breastfeeding to protect the baby from MTCT and boost milk production (Kassier & Veldman, 2013). There are, however, instances where women are advised against breastfeeding by health workers to avoid MTCT, especially when the mother was not on ARV or zidovudine treatment during pregnancy (Tjale, 2001).

Chapter Summary

The chapter provided a discussion on the benefits of breastfeeding to both the mother and the infant. The evidence above suggests that breastmilk improves infant growth and development, making them less prone to life-threatening illnesses and infant mortality. Equally so, breastfeeding puts the mother at low risk of contracting diseases such as osteoporosis, breast cancer, and ovarian cancer, among others. Hence organizations such as the South African DoH, WHO, and WHA recommend women to exclusively breastfeed their infants for the first six months, then introduce solid food thereafter, whilst still breastfeeding (WHO Report, 2019). Despite these recommendations, it has been observed that low breastfeeding rates are prevalent in developed countries more than in developing countries. Part of the reason is that breastfeeding is treated as a culture, especially in most African societies.

As indicated in this section, South Africa remains part of the countries with a daunting breastfeeding rate due to social and economic factors. These include HIV/AIDS, sexualization of breasts, promotion of formula milk, the adverse public reaction on breastfeeding mothers, rural-urban movement, and unpaid maternity leave. These are some of the factors that need to be considered when forming policies and strategies to improve the low breastfeeding rate in South Africa.

The following part of the thesis further explains and supports the discussed literature through the Self-Efficacy theory and the Social Cognitive Learning Theory. The two theories will help clarify different factors accounting for the differences in the rural and urban breastfeeding trends and discuss different elements influencing people's behavior and choices.

Chapter 3: Theoretical Framework

3.1 Introduction.

In understanding the factors accounting for the discrepancies in rural and urban breastfeeding practices and low breastfeeding rates in South Africa, this study employed two theoretical frameworks; the Social Cognitive Learning Theory (SCLT) and the Self-Efficacy Framework. Both theories were developed by a well-known psychologist, Albert Bandura (Dennis, 1999). The self-efficacy framework posits that confidence plays a pivotal role in determining the initiation and the duration of breastfeeding among women (Dennis, 1999). In addressing the central part of this study, the SCLT argues that a reciprocal relationship between one's personality, behavior, and the environment, further influences their cognitive functioning regarding feeding practices (Bandura, 1977). The self-efficacy framework argues more on the factors accounting for low breastfeeding rates in South Africa, whereas the SCLT explains the possible reasons underlying the differences in breastfeeding rates in rural and urban Mpumalanga.

3.2 Social Cognitive Learning Theory (SCLT).

SCLT was derived from two theories; namely, the Social Learning Theory (SLT) and Social Cognitive Theory (SCT), advocated for since 1960. The SCLT is rooted in the concept that people, through their cognitive function, learn by observing and modeling what others do (Nabavi, 2012). Thus, there is a reciprocal relationship between human beings' cognitive functioning, the environment, and their behavior as demonstrated by the Triadic Reciprocal Principle (TRP) diagram in *Fig 3.1* below (Nabavi, 2012). This reciprocal relationship brings about new behavior in an individual mostly acquired through observational learning (Bandura, 1977). The SCLT draws light to different aspects of understanding and predicting change in

human behavior (Bandura, 1977). According to Edinyang (2016), Albert Bandura's SCLT theory indicates that the cognitive construct of human beings and their behavior have a lot to do with their environmental exposure. The SCLT provides insights into understanding the dynamics underlying people's behaviors and choices (Bandura, 1977). The following sections of the chapter discuss the fundamental principles guiding the SCLT and its justification in the study.

3.2.1 Principles of the SLT in the SCLT.

The SLT comprises three ultimate principles; observation, modeling, and imitation (Nabavi, 2012). These principles have become the base of the SCLT and are essential in understanding human behavior, choices, and personalities (Nabavi, 2012). Social learning theorists argue that behavior can change through learning by observing others (Harinie et al., 2017). After that, the behavior is internalized through imitating and modeling what is observed (Edinyang, 2016). The people from which the behavior is learned or observed are called models, and the imitation of the behavior is called modeling (Nabavi, 2012).

i) Observational learning in breastfeeding.

Through observing others, individuals often start to indirectly master how new behavioral patterns are acquired (McLeod, 2016). Operationalizing this argument to the current study, this means that one's cognitive function internalizes the observed breastfeeding practice before it is modeled. In support of this argument, Albert Bandura conducted a famous experiment to illustrate how observational learning and change in behavior occur, using the Bobo doll experiment (Bandura, 1977). In this experiment, parents were given a stick to beat the Bobo doll, and later on, the children were given the same sticks to see if they will imitate what they

observed from their parents (Bandura, 1977). The experiment's point was to see if the behavior was learned by incentivizing or merely observing the models (Bandura, 1977).

The experiment results showed that children beat up the doll, not because they were incentivized to engage in that behavior, but because they had observed their parents beating the doll (Bandura, 1977). Likewise, women imitate behavior observed by other people, especially their role models. Most women's feeding choices are influenced by what they observe and are exposed to especially from the people they look up to such as their mothers, family, and friends, (Dix, 1991). However, sometimes, observational learning happens subconsciously, especially if women grow up in an environment where breastfeeding is dominant (Shirima et al., 2001). This is practically observed in rural areas where women grow up in an environment where breastfeeding is a norm compared to urban areas. In such cases, it becomes easy to reproduce the behavior due to the environmental effect discussed in the TRP in *Fig 3.1 below*.

ii) *Imitating and modeling the behavior*

Imitation and modeling of the behavior start during the observation stage, where one creates a mental representation of what they are observing (Harinie et al., 2017). In this stage, individuals translate the modeled behavior from their memories to the actual action to match their performances with the models (Nabavi, 2012). During this stage, individuals sync what they have learned from the models, into their pre-existing behaviors to produce the observed and desired action (Nabavi, 2012). According to Dennis (2006), imitation and modeling, in most cases, occur if the individual has been attentive in learning the behavior and has observed a positive and desired outcome from it. Women who are successful in imitating and producing the expected breastfeeding outcome tend to breastfeed for an extended period compared to other

women (Shirima et al., 2001). Negative responses, such as lack of support and failure to imitate the desired behavior, often lead to demotivation and low self-efficacy in breastfeeding (Dennis, 2006).

The modeling and imitation process consists of four components: attention, retention, reciprocation, and motivation (Bandura, 1977). During the *attention* phase, the individuals have to pay attention to how the model demonstrates the behavior (Nabavi, 2012). Following that, the observer needs to remember the witnessed behavior through *retention*, thus retrieving information from the cognitive storage (Harinie et al., 2017). One way of improving retention is by using the rehearsal technique to quickly internalize and memorize the behavior (Harinie et al. 2017). Failure to retrieve or remember the information leads to a negative or relatively poor outcome and low self-efficacy (Dennis, 2006).

The *reciprocation* stage is also referred to as the *motor reproduction process* (Nabavi, 2012). In this stage, one needs to mimic and replicate the behavior that has been learned through demonstration (Dix, 1991). Thus, women have to try to replicate the breastfeeding behavior of their infants. The last stage is *motivation*, one of the essential aspects of modeling (Nabavi, 2012). Motivation is concerned with the persistence of the new behavior and forms part of the cognitive processes (Bandura, 1977). Dennis (1999) also argued that women need the motivation to partake in breastfeeding practices, which can be done through positive feedback and reinforcement.

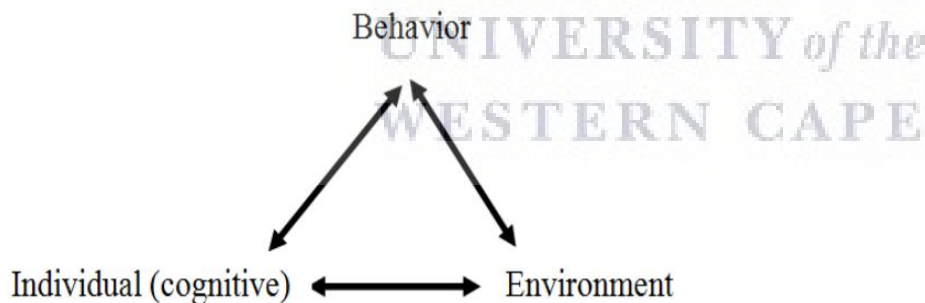
3.3 Application of the Triadic Reciprocal Principle on breastfeeding.

The triadic reciprocal principle states that people are partial products of their environment, which further influences their capabilities, choices, beliefs, and general well-being.

i) *Triadic Reciprocal Principle (TRP) in SCLT.*

According to Dix (1991), women's socio-cultural values and environment have an influential role in determining the infants' feeding practices and the kind of support that women will receive in their behavior choices. The TRP comprises behavior, environment, and cognition (also referred to as the personality) and is rooted in the argument that the individual's behavior can affect their cognitive functioning as indicated in *Fig 3.1* (Harinie et al., 2017). Likewise, the cognitive function can affect the environment to which the individual is exposed, further influencing their behavior and thought process (Harinie et al., 2017). Psychologists have also mentioned that human behavior is a product of the interaction between their personality traits and the environment (Dix, 1991). The TRP has been widely used in the field of development and disciplines that focus on behavioral changes.

Fig 3.1: The Triadic Reciprocal Principle



Source: Santrock (2012)

The TRP is guided by three assumptions, the first one stating that individuals learn through imitating what they observe in their environments (Santrock, 2012). Secondly, there is a close relationship between people and their environment (Santrock, 2012). Lastly, the learned behavior outcome will be manifested through everyday behavior (Bandura, 1977). Individuals observe

behavior in an environment that they store in their cognitive function and imitate after that. According to Bandura (1977), during the learning process, the individual's cognitive abilities transform and internalize what is learned.

Family is perceived as the nearest social environment that significantly impacts behavior (Blyth et al., 2002). For example, women who are successful in breastfeeding are most likely to have grown up in a family where breastfeeding is common (Blyth et al., 2002). This notion is evident in rural areas where young girls grow up observant and informed on the subject of breastfeeding, so much that they internalize it from a tender age (Shirima et al., 2001).

3.4 The Self-Efficacy Framework for breastfeeding.

The 20th century has been marked and dominated by the loss of the breastfeeding culture, with evidence showing a rapid decline in the global breastfeeding rates, particularly in the urban areas (Shirima et al., 2001). One of the major variables that have contributed to the erosion of the breastfeeding culture is maternal self-efficacy. Derived from Albert Bandura's SLCT, self-efficacy is understood to be one's cognitive ability to regulate their thinking process, emotional being, motivation, and social environment to accomplish a particular behavior (Oche et al., 2011). Edinyang (2016) defines self-efficacy as the degree to which a person believes in their ability to achieve a particular task or objective.

The Self-efficacy theory was developed in 1977 after the SCLT and was later operationalized to understand issues related to breastfeeding, depression, and anxiety (Dennis, 1999). In the subject of breastfeeding, self-efficacy refers to the mother's ability to have confidence in breastfeeding, the amount of effort invested in breastfeeding, and the degree to which they can deal with the challenges associated with the practice (Pollard & Guill, 2009). Self-efficacy is a vital variable

playing a significant role in influencing breastfeeding initiation and duration (Dennis, 2006). For example, Dennis (2006) noted that women who doubted their ability to breastfeed; thus, women with low confidence in breastfeeding were three times most likely to prematurely terminate breastfeeding than confident women.

The self-efficacy framework argues that behavior is chosen, performed, and maintained as a product of the expected outcome (outcome expectation) and on how the individual perceives their ability to engage and master the behavior (efficacy expectation) (Dix, 1991). By engaging in a particular behavior such as breastfeeding, individuals extract information from four different sources: performance accomplishment, vicarious experiences, verbal persuasion, and physiological state (McLeod, 2016). The following section will provide a discussion of the four sources of information affecting breastfeeding.

i) Performance accomplishments.

People evaluate their abilities and capabilities, drawing from previous and personal experiences. According to Dennis (1999), personal experiences form a powerful source of efficacy, where poor performance decreases efficacy, and triumphant performances increase self-efficacy. For example, women who had been previously successful in breastfeeding are most likely to continue breastfeeding their babies, even in the future (Majambozi, 2015). Conversely, women who experienced difficulties in breastfeeding might have had their self-efficacy detrimentally affected thereby altering their likelihood to breastfeed (Blyth et al., 2002).

It is also worth noting that self-efficacy is based not only on the individual's perceived performance but also on conditional factors such as the amount of assistance received, the complexity of the task, and other circumstances that might affect performance positively or

negatively (Edinyang et al., 2016). In a study conducted by Oche et al. (2011), women who were not receiving breastfeeding support either breastfed for a short time or did not engage in the practice. The attention invested in successful or improved tasks tends to boost one's self-efficacy, whereas attention given to unsuccessful performances is most likely to lower their self-efficacy.

ii) *Vicarious experience in breastfeeding.*

The second source of self-efficacy is a vicarious experience. Like modeling in SCLT, a vicarious experience is a form of social learning intrinsically based on second-hand experience that occurs by observing a particular behavior (Harinie et al., 2017). This form of observational learning plays a pivotal role in self-efficacy, especially if one does not have firsthand experience with a particular behavior (Dennis, 1999). Bandura (1977) posits that not everyone relies on their previous experiences as their source of self-efficacy; some boost their confidence by observing others succeed in performing tasks they perceive as challenging.

Dennis (1999) suggested that vicarious experience can be useful if the people modeling the behavior are socially and demographically similar to the target audience. For this reason, peer counselors and health workers who are knowledgeable and experienced in breastfeeding have been used as role models, to promote breastfeeding especially amongst young and new mothers (Shirima et al., 2001). During these sessions, breastfeeding complexities are broken down into manageable steps for the mothers to cope, thereby increasing their self-efficacy (Shirima et al., 2001).

iii) Verbal persuasion.

People often assess their abilities through appraisals from others. According to Dennis (1999), verbal persuasion plays an essential role in the individual's self-efficacy and confidence. The purpose of verbal persuasion in self-efficacy is to improve the individual's ability or skills to help engage in a particular behavior (Stajkovic & Luthans, 1998). Verbal persuasion can be effectively done by people who are knowledgeable and have engaged in breastfeeding (Oche et al., 2011). Focusing on the successful aspects of breastfeeding and applauding mothers for the effort they put in breastfeeding can reinforce their self-efficacy (Stajkovic & Luthans, 1998).

iv) Physiological and affective states.

The self-efficacy theory emphasizes the function of emotions, physiological arousal, and their influence on behavior and decision making (Nabavi, 2012). In other words, people often make decisions based on their, dysfunction, vulnerability, past experiences, and emotional states (Dennis, 2006). Positive outcomes of the behavior such as satisfaction, sense of accomplishment, and excitement boost self-efficacy in breastfeeding women, (also known as intrinsic reinforcement) (Dennis, 1999). Whereas, high levels of stress, pain, and fatigue during breastfeeding initiation are most likely to discourage women from breastfeeding (Edinyang 2016). These negative physiological and affective states hinder the release of the hormone oxytocin that may trigger the let-down reflex and may further lead to the low production of breastmilk in women (Dennis, 1999).

3.5 Relationship between Self-efficacy and SCLT.

Behavior in a human being is partially influenced or rather a product of self-efficacy. The reason is that self-efficacy affects the individual's motivational, cognitive, and emotional processes (Dennis, 2006). Thus, self-efficacy determines whether people think pessimistically or optimistically in different situations (McLeod, 2016). Self-efficacy plays a central role in regulating one's motivation through challenges and expected outcomes (McLeod, 2016). It was argued that people with high self-efficacy are less likely to perceive difficult tasks as something to be avoided, but rather something to be learned and mastered (Edinyang, 2016). On the other hand, people with weak self-esteem tend to avoid challenging tasks and instead focus on their failings and adverse outcomes. In other words, women who perceive breastfeeding as a difficult task either based on their past experiences or self-efficacy, are most likely not to breastfeed

Chapter Summary

In summary, self-efficacy plays a pivotal and influential role in determining the initiation and the duration of breastfeeding among women. The different responses that women get from breastfeeding either decrease or enhance their confidence to breastfeed. Negative responses such as stress and anxiety tend to decrease women's confidence in breastfeeding. In contrast, favorable outcomes such as satisfaction, pleasure, and excitement during breastfeeding are most likely to enhance women's breastfeeding confidence.

In addition to the Self-efficacy theory, the study also used the SCLT to understand the possible factors underlying the low rates of breastfeeding in urban areas compared to the rural areas of South Africa. In the SCLT, a human response is seen as a triadic reciprocal relationship comprising the behavior, environment, and cognition. As a result, people learn different

behaviors through modeling, imitating, and observing a particular action. This means that women can learn how to breastfeed when they are in an environment where breastfeeding is highly practiced like in rural areas.



Chapter 4: Methodology

4.1 Introduction.

The purpose of this section is to provide a discussion of the research techniques used to carry out the study. The first part of the chapter provides a brief account of the study's research design and methods. After that, the data collection instruments and analysis will be discussed in the second phase. The last part of the section will discuss the ethical considerations that guided the study and the challenges encountered in the field.

4.2 Introduction to the Case Study: Mpumalanga Province.

Fig 4.1: Three Districts forming the Mpumalanga Province



Source: www.googlemaps.com

Mpumalanga is one of South Africa's 9 Provinces bordered by Mozambique and Swaziland (Stats SA, 2017). The province's geographical location has led to cultural and linguistic

spillovers, with Swati, XiTsonga, isiNdebele, and isiZulu being the dominant languages (Stats SA, 2017). Mpumalanga is a habitat for more than 4 million people, where 51.14% are females, and 48.86% are males, occupying a total surface area of 76 495 square kilometers (Stats SA, 2017). The capital of Mpumalanga is Mbombela (previously named Nelspruit), which is the central part of the province, attracting a plethora of administrative and business opportunities (Stats SA, 2017). Mining forms part of the main economic activities, contributing 22% to the mining industry in South Africa (Stats SA, 2017). Mpumalanga is sectioned into three district municipalities: Ehlanzeni, Nkangala, and Gert-Sibande (Stats SA, 2017). This study will only focus on Ehlanzeni District where Valencia (urban) and White River (rural) are located.

i) *Socio-economic status of Ehlanzeni District.*

According to Stats SA (2017), Ehlanzeni District is located in the capital of Mpumalanga. The district is hosting more than 1.7 million people, and more than 90% of the population comprises black African people. The district has shown some improvements in school attendance from 72, 6% in 1996 to 76, 3% in 2011 (Census Municipal Report, 2011). The increase might be because of the government subsidies in the education sector, enabling education to be accessible to everyone. It also contributed to a slight decrease in the unemployment rate from 36% in 1996 to 34, 7% in 2011 due to better education attainment (Census Municipal Report, 2011). The number of people without any form of education decreased from 30,5% in 1996 to 14% in 2011 and people who have completed Matric increased from 14,9% in 1996 to 30% in 2011 (Census Municipal Report, 2011). Lastly, the number of people who qualify higher than matric increased from 5.5% in 1996 to almost 10% in 2011 (Census Municipal Report, 2011). However, in terms of the subject of the study, Mpumalanga has the second-lowest breastfeeding initiation rate at

55.6 %, yet it is one of the under-studied provinces in the subject of breastfeeding (SADHS, 2017).

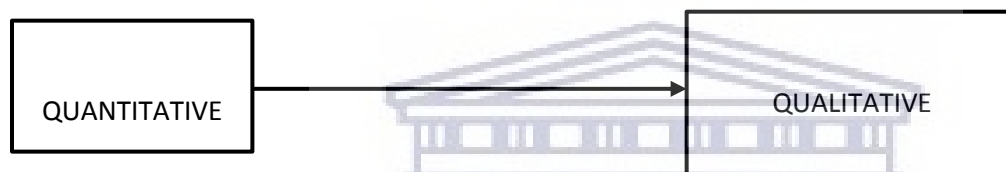
4.3 Research design

The study follows a sequential explanatory mixed-methods design. This approach involves merging the qualitative and quantitative approaches, known as the traditional paradigms (Kelle, 2006). By definition, a mixed-methods sequential design is a type of research design that involves collecting and analyzing data by integrating qualitative and quantitative data within a study (Ivankova et al., 2006). Mixed-methods sequential explanatory design is not aimed at replacing any of the traditional research methods, thus qualitative and quantitative, but rather aimed at maximizing the strengths of each approach across the study (Johnson and Onwuegbuzie 2004). This approach's primary aim is to understand the research problem and take advantage of both methodologies' strengths (Ivankova et al., 2006).

This methodology consists of two phases. The first one is the quantitative data analysis, presented in statistical and numerical form, followed by the qualitative analysis (Ivankova et al., 2006). The qualitative aspect of the study provides an elaborative discussion on the numbers from the quantitative data. In mixed methods, quantitative and qualitative data are collected, integrated, and consecutively analyzed in a specific study. The underlying rationale of using this type of research design is rooted in the notion that qualitative or quantitative methods are on their own insufficient to address the interests of the study (Ivankova et al., 2006). The mixed-methods sequential explanatory design results are intended to enhance and clarify one methodology's results from the other (Caracelli & Greene, 1993).

In sequential explanatory design, the researcher has to decide on the priority between the two methodologies in the study (Ivankova et al., 2006). This study prioritized the qualitative method more than the quantitative method, also referred to as the qualitative dominant mixed-method research, as indicated in Fig 4.2 below (Johnson et al., 2007). This is because the study is more interested in determining why there are discrepancies in breastfeeding rates between women in rural and urban areas.

Fig 4.2: Sequence and priority of the methodologies in the study



Author's Compilation, Fieldwork 2020

4.4 Research methods

The study uses both primary and secondary data in semi-structured interviews and the SADHS, 2017). The following section will briefly discuss how the two methodologies are used in the study.

4.4.1 Quantitative data collection.

The quantitative methodology follows a positivist approach, which involves explaining and analyzing a phenomenon by gathering numeric data and processing it using statistical tools (Apuke, 2017). This type of methodology is regarded as one of the traditional methodologies widely used in research. Despite their complexity, quantitative methodologies are credited for their accuracy, rationality, and forecasting ability (Profillidis & Botzoris, 2018). The primary

purpose of the quantitative approach in this study is to statistically report the demographic nature and differences in the breastfeeding rates between rural and urban areas in South Africa.

Eligible women from the age of 15 to 59 were recruited for surveys and interviews on breastfeeding. Samples in the SADHS were selected independently through a two-stage selection from the Master Sample Frame (MSF) compiled from the Census 2011 data (SADHS Report, 2017). A total number of 1 304 women with children under the age of two years preceding the survey took part in the study, where 750 were from rural areas and 554 from urban areas in South Africa (SADHS, 2017). The overall women response rate (OWRR), thus, interviews that were completed was 78.8% in Mpumalanga, and higher in rural areas (85.4%) than in urban areas (64.0) (SADHS Report, 2017).

The data was collected on; mother's age, sex of the child, assistance at delivery, place of delivery, residence (rural or urban), province, and mother's education from the SADHS (2017). The analysis examined two forms of the breastfeeding variable as dependent variables; exclusive breastfeeding and breastfeeding. *Table 4.1* presents a summary of these variables.

4.4.2 Explanation of variables

Dependent variable

The two forms of breastfeeding were used as continuous variables and reflected the number of months that women breastfed. The first form was exclusive breastfeeding (EBF), where breastfeeding was practiced for six months before introducing other foods (SADHS, 2017). The second form of breastfeeding was measured by simply asking the respondents to state the number of months their baby was breastfed (SADHS, 2017).

Independent variables

The study's independent variables were sociodemographic factors, such as age, education level, location (area of residence), and province. Age was measured by asking respondents to state their age at their last birthday. Mothers' age was defined as "young" if less than 30 years and "old" if 30 years old or older. The respondents were also asked to indicate their highest level of education attained. Education was categorized by "no or low education" for none or lower primary education and "high education" for upper primary, secondary and tertiary education. The location has also used a variable to categorize respondents according to their place of residence. Respondents dwelling in rural areas were coded 1, and those in urban areas were coded 0. The different provinces were also coded 0-8, as indicated in *Table 4.1* below.

Table 4.1: Summary of variables /measures used in the quantitative analysis

Name/label measure	Details	Range
Exclusive breastfeeding	Single continuous measure of the number of months women spent exclusively breastfeeding	0-6 months
Breastfeeding	Single continuous measure of the number of months women spent breastfeeding	0-12 months
Mothers age	Single continuous measure of the age of the mother	15-49 years
Locations	Binary measure indicating if the household of the mother is in the rural or urban area	0-1

Provinces	Categorical indicators of 9 provinces in South Africa	0-8
Education	Binary measure reflecting if the mother had at least primary level.	0-1

Source: Author's computation from SADHS 2017

4.4.3 Qualitative data collection.

The study followed an interpretive approach by collecting qualitative data in the form of fourteen semi-structured interviews. According to Carson et al. (2001), qualitative research seeks to describe, translate, and understand the different occurrences in the social world. This methodology is relevant and widely used in several studies as an exploratory tool for deriving meanings of social phenomena as experienced by people in their natural settings (Hesse-Biber, 2007). The primary purpose of qualitative methods is to understand what the research aims at achieving (Apuke, 2017).

Despite their subjective nature, qualitative methods have been acknowledged for their descriptive approach and the ability to analyze and examine complex matters (Profillidis & Botzoris, 2018). The study's qualitative approach aims to gain a detailed description and in-depth insights into how and why there are differences in the breastfeeding rates among rural and urban women in Mpumalanga (Kelle, 2006). In this study, the qualitative data will provide a detailed description and understanding of the numbers presented in the quantitative analysis. In achieving the study's objectives, a total number of fourteen women from rural and urban Mpumalanga were evenly interviewed for the study, as indicated in *Table 4.2*.

Pseudo names were used in this study to protect the participants' identity as per research ethics. Participants recruited for the study were of colored and African/black ethnicity.

Table 4.2: Interviewees' profiles

No	Name	Age	Language	Location	Level of education	No of children
1	Savannah	35	Swati	Valencia	University	2
2	Amahle	29	Swati	Valencia	College	1
3	Candice	30	Swati	Valencia	Secondary	1
4	Bontle	30	Sotho	Valencia	College	1
5	Natasha	27	Ndebele	Valencia	High School	2
6	Nomazulu	29	Zulu	Valencia	High School	1
7	Pamela	33	Pedi	Valencia	University	1
8	Nobuhle	24	Zulu	White River	Secondary	1
9	Yolanda	29	Zulu	White River	Secondary	2
10	Lindiwe	27	Swati	White River	High School	2
11	Mashia	39	Swati	White River	Secondary	4
12	Sharon	35	Ndebele	Rural	Secondary	2
13	Amanda	42	Ndebele	Rural	Primary	3
14	Lola	25	Swati	Rural	Secondary	3

Author's Compilation, Fieldwork 2020

Interviewing women from both rural and urban Mpumalanga was done to ensure a variation of the study results and that the research draws from the participants' unique experiences as much as possible. The point of saturation marked the sample size as the participants' responses began to be tautological. The in-depth interviews allowed the researcher to read the participants' body language and gestures and access the hidden and rich information regarding the subject of breastfeeding (Oomen et al., 2009). A semi-structured interview guide containing pre-determined questions and possible follow-up questions was used to monitor the study (Grossoehme, 2014).

Women with infants under 11 months of age in Valencia and White River were deliberately sampled for the study (Tongco, 2007 & Etikan et al., 2016). The participants meeting the study's criteria were recruited through snowball sampling, where one participant was a referral from the other (Biernacki & Wadolf, 1981). Snowball sampling is of utmost importance in this study because the subject of breastfeeding has been deemed a sensitive topic which some women might find hard to discuss due to the stigma and misjudgment around breastfeeding.

4.4.4 Qualitative and quantitative data analysis

The study starts with analyzing the quantitative data using Stata 12, statistical software used in quantitative studies. The data extracted from the SADHS (2017) was then processed on Stata 12 and analyzed using descriptive statistics, non-parametric tests, and bivariate logistic regression to understand and give meaning to the study's objectives (Currie & Korabinski, 1984). Pie chart and tables were used in the study to give a clear distinction in breastfeeding between rural and urban areas in South Africa (Currie & Korabinski, 1984). The tables were further elucidated using the qualitative data analyzed in the second part of the analysis chapter.

Following the quantitative analysis is qualitative analysis, which was collected through semi-structured interviews. As mentioned above, the qualitative analysis aims at elaborating on the factors accounting for differences in breastfeeding rates among women in rural and urban Mpumalanga. Qualitative analysis constitutes a large portion of the analysis as this methodology primarily addresses the main research question. Interviews were conducted in English, Swati, and Ndebele as preferred by the respondents. Interviews that were conducted in Ndebele and Swati were further translated and transcribed into English for analysis. The interviews were transcribed to understand and reflect better on the collected data and see if there were any differences and similarities in the participants' responses. The researcher transcribed the interviews herself to minimize information loss and ensure that the respondents' information and identity are protected, secured, and confidential.

In analyzing the qualitative data, responses from the semi-structured interviews were grouped into identified themes in line with the research questions and objectives (Blair, 2015). To come up with themes for the study, data coding was first conducted. Coding is defined as the process of grouping responses from the participants based on their similarities and differences, thereby enabling the data to be explicit and easy to analyze (Blair, 2015). Coding plays a pivotal role in determining the patterns and variations in the study participants' responses (Blair, 2015). This process involves six steps: familiarization of the data, data-coding, theme identification, theme revision, theme defining, and theme naming, which were applied in the study (Olang et al., 2009).

4.5 Challenges encountered in the field.

The issue of breastfeeding has become a controversial topic due to the stereotypes associated with the subject. A number of women have received negative feedback when seen breastfeeding

in public. On the other hand, women who were not active in breastfeeding are sometimes labeled selfish people who were careless about their babies' needs. With all these beliefs and stereotypes about women and breastfeeding, some participants felt uncomfortable engaging in the interview. To tackle this problem, the researcher first initiated a random conversation with the participant to gain their trust and make them feel relaxed before the interviews. Participants were also assured that all interviews remained between them and the researcher. The other challenge was that the qualitative aspect of the study was only carried out in Mpumalanga; hence, the results are not representative of the realities of South Africa's urban and rural breastfeeding practices.

Privacy also posed a problem during interviews, especially in rural areas. There were instances where a family member felt the need to be present during the interviews for a few reasons. Firstly, they also wanted to familiarize themselves with the subject of breastfeeding. Secondly, they thought there was some incentive from taking part in the study. Lastly, people wanted to make sure that the research is not related to any political affiliations. Such instances may cause the participant to feel uncomfortable answering some of the questions forcing them to withhold information that could have been important to the study. In this case, the researcher assured everyone that the research was not affiliated with anything other than academic purposes and also advised the respondents' families on the research's ethics.

Reflexivity

Several strategies are used in qualitative and quantitative studies to improve the value and quality of the study. In conducting this research, the researcher used reflexivity in collecting and analyzing qualitative data. Reflexivity is defined by Jootun et al. (2009) as the degree to which the researcher intentionally or unintentionally influences the findings of the study. Reflexivity

forms part of the critical pillars in qualitative research and promotes congruency, rigor, accuracy, and credibility of the study (Darawsheh et al., 2014). In making sure that the researcher was subjective throughout the study, the researcher first engaged in self-reflection to ensure that none of my personal experiences, thoughts, assumptions, and background on the subject of breastfeeding influenced the results of the study. The researcher made sure that she was transparent to the participants as much as possible to enable the study to draw on the participants' experiences without any outside interference (Jootun et al., 2009).

The events that unfolded during the data collection all adhered to the ethical considerations highlighted in the section that follows. Before the commencement of the study, the researcher thoroughly introduced herself to the participants and made them aware of their rights in the study (Berger, 2015). The researcher also urged them to ask questions at any point in the interview to establish trust and rapport (Berger, 2015). Participants were informed of the information concerning the research and how their responses were essential to the study.

The interview questions were frequently revised after every interview to control the sensitivity of the subject. The researcher also ensured that all participants were treated with equality and respect regardless of their social backgrounds. For example, some participants had higher education qualifications than others, but this did not determine how they were treated in the study (Mauthner & Doucet, 2003). In so doing, the participants became more relaxed during the interviews and even identified the researcher as one of their own from a womanhood perspective. Creating a relaxed environment made the researcher have access to richer and hard-to-reach information. Moreover, the interviews were conducted in the participants' native languages and later translated to English so that everyone could fully express themselves without feeling obliged to respond in a language that they were not comfortable in (Mauthner & Doucet, 2003).

Conducting interviews in local languages also enabled the researcher to shift from an outsider position to an insider where we talked about different social topics after the study.

4.7 Ethical consideration.

In recruiting the participants, the researcher introduced herself, issued information sheets and consent forms, requesting permission from the potential participants. The participants were assured that the information collected was only going to be used for the study. All the information obtained from the study was kept private and confidential, and the participants were permitted to withdraw from the interview at any time. The participants were guaranteed that none of the information from the study was going to put them in any form of danger during and after the research.

The interviews that were conducted were done after written and verbal permission was granted by the participants. All instruments were translated into English, Swati, and Ndebele, to suit the participant's language preferences. The interviews were structured in a way that they could be completed in a single sitting not longer than 60 minutes. Immediate assistance was given, especially in terms of comprehension and clarity concerning the interview questions. The research did not, by any means, include minors or women in vulnerable positions.

4.8 Summary of the chapter

The information above summarized the different approaches encapsulated in this study from data collection to data analysis. In a nutshell, the research employed a mixed-method sequential explanatory approach. This methodology is a product and combination of the qualitative and quantitative approaches. These methodologies were analyzed in sequence, starting with the quantitative aspect, followed by the qualitative analysis. Quantitative data was extracted from the

SADHS 2017 and generated into descriptive statistics using Stata 12 to provide the numerical nature of breastfeeding trends in rural and urban South Africa. Descriptive statistics, non-parametric tests, and logical regression were used to analyze the data and give it meaning in line with the objectives of the study.

On the other hand, qualitative data was attained through fourteen semi-structured interviews from rural and urban Mpumalanga. The study used purposive and snowball sampling to recruit the participants. Data collected was organized into different themes to make it easy to be analyzable. The research was guided by a set of ethical principles that were observed throughout the interviews. This was done to ensure that the participants are protected at all costs during and after the study.

In conclusion, the chapter mentioned a few challenges encountered during the study, particularly in collecting qualitative data. One of the study's challenges was the sensitivity surrounding breastfeeding, which made some of the participants uncomfortable. In addressing this problem, the researcher first initiated a random conversation with the participant to create trust and make them feel comfortable during the interview. Secondly, the scope of the study was only limited to Mpumalanga province, meaning the results cannot be generalized to the whole of South Africa due to the small sample size, particularly on the qualitative data. Lastly, there were instances where the respondents' families wanted to take part in the study because of three reasons namely i) to be informed about breastfeeding; ii) they thought the study has some monetary rewards, and iii) to make sure that the study is not associated with any political affiliations. The researcher took the responsibility of explaining the nature and ethics of the study to the families to ensure that the privacy and confidentiality of the interviews are not compromised.

Chapter 5: Data analysis

5.1 Introduction

This chapter presents an analysis and discussion of the quantitative and qualitative findings of the study. As mentioned in the methodology chapter, the study followed a sequential explanatory mixed-method design consisting of a brief analysis of quantitative data, followed by an in-depth discussion of the qualitative data.

5.2 Quantitative data analysis

Quantitative data was obtained from the SADHS (2017) and processed using the Stata 12 software. The researcher used descriptive statistics to present the numerical nature of breastfeeding in rural and urban areas and investigate demographic factors associated with the breastfeeding practice in South Africa.

5.2.1 Summary of the data

A total number of 1 304 women were sampled by the SADHS (2017) on breastfeeding, where 750 were recruited from rural areas and 554 from urban areas in South Africa. The youngest participant in the sample was 15 years old, whereas the oldest was 48 years old, as indicated in

Table 5.1: Summary statistics of mother's age and education by location

	N	Min	Max	Median	Mean	Standard deviation
Age (years)						
Rural	750	15	42	29	32.6	0.3436
Urban	554	17	48	31	34	0.1297

Total	1304					
Education (0=primary; 1=above primary)						
Rural	750	0	1	0	0.35	0.1746
Urban	554	0	1	1	0.81	0.1163
Total	1304					

Source: Author's computation from SADHS 2017

Regarding the mother's age, the summary statistic showed that the mean age of mothers in a rural location (32.6) was less than the mean age of mothers in an urban location (34), implying that mothers in rural areas were found to be younger than mothers in urban areas (SADHS, 2017). According to the Women Watch United Nations Report (2012), this is because usually, women in rural areas give birth at a younger age compared to women in urban areas.

A dummy variable was created regarding education level where 1 represented mothers who had attained above the primary level of education, while 0 represented mothers who had not attained more than primary education. The results indicated that the proportion of women above the primary level was 81% for women in urban areas and 35% for women in rural areas, concluding that women in urban areas were more educated than women in rural areas. This could also mean that women in urban areas were employed; hence they have limited time to breastfeed.

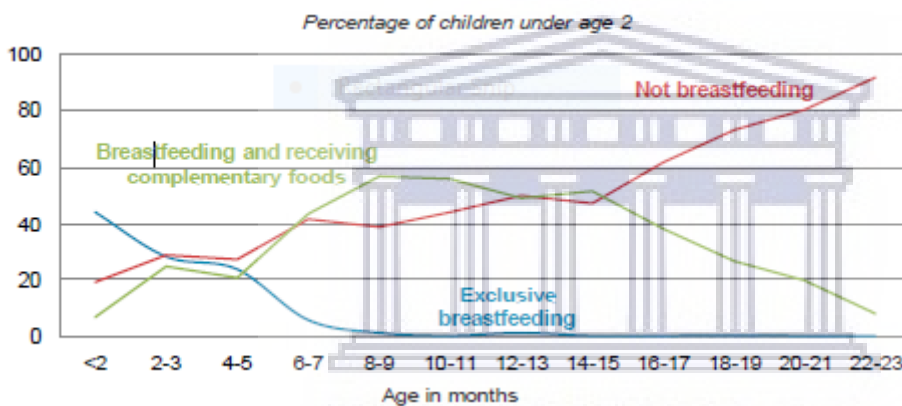
5.2.2 Breastfeeding trends by the child's age

One of the World Health Assembly (WHA) objectives aims to increase the global rate of exclusive breastfeeding for infants under the age of six months to at least 50% by 2025 (WHO

Report, 2019). This follows breastfeeding research, highlighting the importance of breastfeeding to the child's life and its mother. Recent data from the SADHS (2017) has indicated daunting numbers on the practice of breastfeeding in South Africa.

The exponential graph in *Fig 5.1* below indicates that approximately 40% of children under the age of six months are not breastfed, thereby increasing their chances of vulnerability to life-threatening diseases (SADHS Report, 2017).

Figure 5.1: Breastfeeding practices by the age of the mother



Source: SADHS Report 2017

The blue graph representing exclusive breastfeeding indicates a strong inverse relationship between exclusive breastfeeding and the infant's age, where an increase in the infant's age is associated with a decrease in exclusive breastfeeding. Thus, close to 50% of infants are exclusively breastfed during the first month of birth, after that, a decrease from two months of age is noticed, with only 32% of infants exclusively breastfed at six months of age (SADHS Report, 2017).

The number of infants under the age of 6 months who were predominantly breastfed, given breastmilk and non-milk liquid simultaneously, increased from 23% in 1998 to 46% in 2016

(SADHS Report, 2017). This means that a significant number of infants are introduced to either breastmilk substitutes or mixed feeding before reaching the recommended six months. This argument is explained by the green graph in *Fig 5.1*, illustrating that infants are introduced to complementary feeding as early as one month of age.

Despite the concerning statistics mentioned above, South Africa has shown a slight increase in exclusive breastfeeding over the past two decades, where the rate of exclusive breastfeeding for infants under the age of six months increased from 7% in 1998 to 32% in 2017 (SADHS, 2017). Over the same period, breastfeeding initiation within the first hour of birth increased from 39% in 1998 to 67% in 2016 (SADHS, 2017). This shows that the number of infants having access to breastmilk has increased over the past decades, though the growth has been slower.

The low rate of exclusive breastfeeding in South Africa has negatively contributed to the poor nutritional status and development among children (du Plessis et al., 2016). Childhood nutrition plays an essential role in infants' development and growth, all the way up to adulthood (Utoo et al., 2012). The nutritional status of children under the age of five in South Africa indicates that more than 25% of children under the age of five are stunted, 13% are overweight, 3% are wasted, and 6% are underweight (SADHS Report, 2017). These conditions are mainly caused by a long-term nutritional imbalance among children, one of them being the introduction of complementary feeding before six months. According to Majambozi (2015), the above-mentioned conditions are used as predictors of the mortality rate among children under the age of five.

In reducing such undesired cases, the WHO urged women to donate breastmilk to milk banks so that every infant can have access to human milk (SADHS Report, 2017). According to du Plessis et al. (2016), breastmilk contains a fluid called colostrum, which carries nutrients and antibodies

that protect infants from diseases caused by an imbalance of nutrients in infants' bodies. It is only after exclusively breastfeeding for six months that complementary feeding can be gradually introduced as breastmilk alone might not be enough to meet the infant's nutritional needs at that stage (Attanasio et al., 2013).

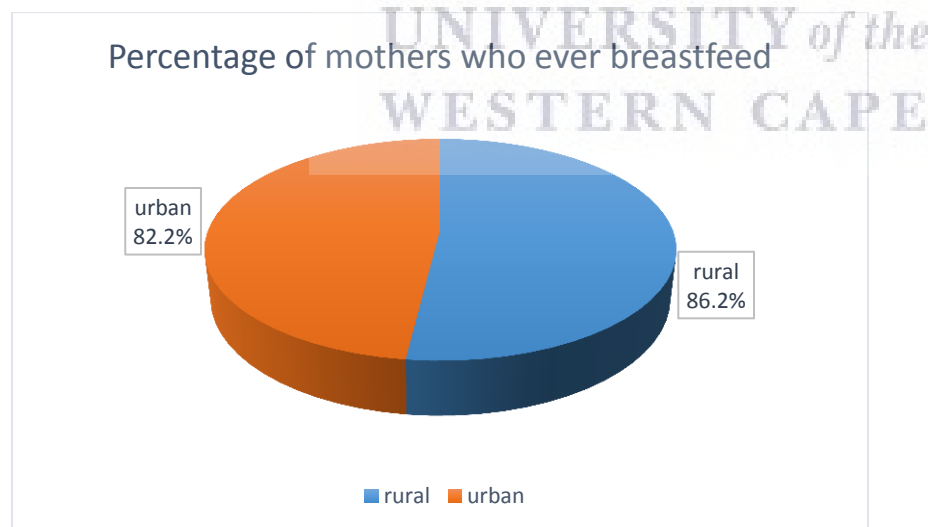
5.3 Demographic factors associated with breastfeeding in South Africa

Breastfeeding attitudes and practices are influenced by many factors, including social, cultural, and demographic factors, among others (Peterside et al., 2013). This section of the paper will discuss the demographic factors associated with breastfeeding in rural and urban South Africa.

5.3.1 Place of residence

The practice of breastfeeding was found to be associated with the location of the mother, as indicated in Fig 5.2 below (Lesorogo et al., 2018).

Figure 5.2: Distribution of breastfeeding in rural and urban areas



Source: Author's computation from SADHS 2017.

According to the SADHS (2017) data collected, the breastfeeding rate is 86.2% in rural areas and 82.2% in urban areas, as indicated in *Fig 5.2* above. Although breastfeeding is very high in rural areas compared to urban areas, the difference is minor, suggesting that the practice of breastfeeding remains a challenge in both rural and urban areas in South Africa. Moreover, the finding suggests that South Africa the issue in South Africa is not breastfeeding, but rather exclusive breastfeeding.

A Chi-square test was also conducted to determine the association between the mother's location (rural or urban) and breastfeeding status (breastfeeding and not breastfeeding). The results are presented in *Table 5.2*. The null hypothesis stated that the mother's breastfeeding status did not depend on their location, and the alternative hypothesis indicated that the mother's breastfeeding status depended on their location. The Pearson chi² pr. (0.002) was found to be less than the significant level (0.05). Hence, the null hypothesis was rejected and concluded that there is a relationship between breastfeeding status and location. Evidence supporting these results will be discussed in detail in the qualitative analysis in section 5.4.

Table 5.2 Chi-square test on the rural and urban rates of breastfeeding

		Mother's location		
		Rural	Urban	Total
Breastfeeding status	Breastfeeding			
	Observed	956	635	1591
	Expected	923.7	667.3	1591.0
Not breastfeeding				

	Observed	348	307	655
	Expected	380.3	274.7	655.0
	Total	1304	942	2246
		1304.0	942.0	2246.0

Pearson chi2(1) = 9.2255 pr = 0.002

Source: Author's computation from SADHS 2017

A bivariate logistic regression in *Table 5.3 below* was conducted to assess the impact of location on the mother's breastfeeding choices. From the results in the table, it can be deduced that dwelling in rural areas increased the odds ratio in favor of exclusive breastfeeding by 1.177 more than dwelling in urban areas (SADHS, 2017). That is to say, breastfeeding mothers living in rural areas have a higher probability of breastfeeding their babies than breastfeeding women in urban areas. The variation between breastfeeding women in rural areas and urban areas is also statistically significant. Likewise, these results were supported by the SADHS Report (2017), arguing that children in rural areas were breastfed three months longer than children in urban areas with a median duration of 13.5 months and 10.3 months respectively.

Table 5.3: Bivariate logistic regression on location and breastfeeding

Breastfeeding	Odds ratio	Std. Error	Wald	df	Sig.	Exp (B)	95% Confidence Interval for Exp (B)	
							Lower Bound	Upper Bound
							Intercept	0.185
Rural	1.177	0.071	278.37	1	.000	0.308	0.268 0.354	

a. The reference category is a non-breastfeeding and urban area.

Source: Author's computation from SADHS 2017

However, in terms of the infant's gender, evidence suggested that girls were breastfed longer than boys with a median duration of 12.2 months and 8.6 months respectively in both rural and urban areas (SADHS, 2017).

5.3.2 Province of residence

Table 5.4: Rural and urban rates of breastfeeding by province

Province	Rural	Urban	Total
Western Cape	94.2	90	92.1
Eastern Cape	88.7	82.7	85.7
Northern Cape	91.1	88.5	89.8
Free State	82.6	77.2	79.9
KwaZulu-Natal	73.5	68.5	71.0
North West	85.4	79.4	82.4
Gauteng	91.7	86.5	89.1
Mpumalanga	77.8	74	75.9
Limpopo	95.4	93	94.2
Total	86.2	82.2	84

Source: Author's computation from SADHS 2017

The variations of breastfeeding between rural and urban areas in all the provinces in South Africa are presented in *Table 5.4*. The overall breastfeeding rate in South Africa is 84%, and this is the percentage of infants that were ever breastfed (SADHS, 2017). As indicated above, breastfeeding is more pronounced in rural areas than in urban areas in each province. What can also be noted is that the differences in the breastfeeding rates between rural and urban areas were

small; hence concluding that breastfeeding remains an issue in both rural and urban areas of South Africa.

Mpumalanga province is classified as one of the provinces with the lowest breastfeeding rate, with 75.9% compared to Limpopo with 94.2%, as shown in *Table 5.4*. According to the SADHS (2017), only 55.6% of infants in Mpumalanga are breastfed within the first hour after birth compared to 84.7% in the Western Cape recording, the highest initiation rate compared to other provinces. The proportion of children receiving prelacteal feed, that is, infants receiving other foods before the initiation of breastfeeding was also observed to be higher in Mpumalanga with 32% compared to Eastern Cape (21%), Northern Cape (10%), and North West (7%) (SADHS, 2017). This indicates that Mpumalanga remains part of the provinces with low statistics on breastfeeding in South Africa.

5.3.2 Mother's Age

Table 5.5 below shows the differences in breastfeeding between older and younger mothers. Evidence indicates that the number of women who practice (exclusive) breastfeeding is higher among mothers who are older than 30 years of age than mothers below the age of 30 (SADHS, 2017). The percentage of women who ever breastfed, breastfed within one hour of birth, breastfeed within one day of birth, and exclusively breastfeeding was proved to be higher among women who were at least 30 years of age by 8% 16% 12%, and 13% respectively, compared to women under 30 years of age. According to the TRP principle in SCLT, this could result from the enabling environment where breastfeeding is more accepted among older women than younger mothers.

Table 5.5: Breastfeeding differences between older and younger mothers

	Percentage of women who ever breastfed (%)	Percentage of women who started breastfeeding within 1 hour of birth (%)	Percentage of women who started breastfeeding within 1 day of birth (%)	Percentage of women exclusively breastfeeding (%)
Mother's age (years)				
≥30	91	69	84	49
<30	83	53	72	36

Source: Author's computation from SADHS 2017.

Table 5.6 below presents statistical results on the strength of the relationship between mothers' age and breastfeeding using a bivariate logistic regression where 1 represents older mothers (mothers who are 30 years and above) and 0 represents younger mothers (mothers who are below 30 years).

Table 5.6: Bivariate logistic regression of breastfeeding and mother's age

Breastfeeding	Odds ratio	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
							Lower Bound	Upper Bound
Intercept	-0.165	0.095	2.987	1	0.084			

Older Mothers	0.005	0.025	0.046	1	0.831	1.005	0.957	1.056
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a. The reference category is non-breastfeeding and younger mothers.

Likelihood Ratio Tests

Effect	Model Fitting Criteria		Likelihood Ratio Tests		
	-2 Log Likelihood of Reduced Model	Log of	Chi-Square	df	Sig.
Intercept	46.765		2.991	1	0.084
Older mothers	43.819		0.046	1	0.831

The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

Source: Author's computation from SADHS 2017.

The odds ratio in favor of older mothers exclusively breastfeeding their babies was 0.005, meaning that the probability of older mothers exclusively breastfeeding was 0.005 percent higher than that of younger mothers (SADHS, 2017). In other words, older mothers were more active in breastfeeding than younger mothers, which according to the Self-efficacy theory might be because they already had prior experience and exposure to the practice compared to younger mothers (Dennis, 1999).

5.3.4 Level of education

The practice of breastfeeding has also been argued to be associated with the education level of the mother. According to Mekuria & Edris (2015), women with higher education have proven to

be more active in the practice of breastfeeding than those with low education attainment. This is because educated women are believed to be knowledgeable about breastfeeding and the cited benefits to the infant and the mother (Garg et al., 2010). According to the SCLT, women store and retrieve information on breastfeeding from their cognitive function and put it into practice after birth (Nabavi, 2012) successfully. *Table 5.7* shows the impact of mothers' education on breastfeeding using a bivariate logistic regression where 1 represented mothers who had attained above the primary level of education while 0 represented mothers who had not attained more than primary education.

Table 5.7: Bivariate logistic regression of breastfeeding and mother's education on breastfeeding

Breastfeeding	Odds ratio	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
							Lower Bound	Upper Bound
Intercept	-0.093	0.057	2.626	1	0.0105			
Above primary	0.2	0.002	1.145	1	0.0284	0.998	0.995	1.002

a. The reference category is non-Breastfeeding and below primary.

Source: Author's computation from SADHS 2017

The results indicated that mothers who had attained above the primary education level had a higher probability of breastfeeding more than mothers who had not attained above the primary education level by 0.2 (SADHS, 2017). According to Colen & Ramey (2014), this shows that there is a need for breastfeeding awareness campaigns where women are educated and

familiarized with the practice of breastfeeding and its benefits, especially among the younger age group.

The results above show that breastfeeding remains a challenge, especially in the urban areas of South Africa. Data has also confirmed that the low breastfeeding rate in South Africa is positively associated with the mother's age, education level, and residence. Older women, mothers who reside in rural areas, and mothers with high education attainment were argued to be actively engaged in breastfeeding more than their counterparts.

The following section will discuss the qualitative findings drawing light to the quantitative analysis briefly discussed above. This part of the paper will provide an account of different factors accounting for the variations in breastfeeding attitudes between rural and urban areas and factors contributing to the low rates of breastfeeding in South Africa.

5.4 Qualitative data analysis

This section draws from the fourteen semi-structured interviews that were evenly conducted in rural and urban Mpumalanga, mapping from the quantitative analysis discussed above. The participants' different responses were all categorized and analyzed into different themes in line with the research question and the objectives of the study, which will be discussed in this section. The first part discusses some of the many factors underlying the low rates of breastfeeding, followed by a discourse on the factors causing discrepancies in the breastfeeding attitudes between women in rural and urban areas.

5.5 Factors underlying the low breastfeeding rates in South Africa

5.5.1 Inadequate knowledge on breastfeeding among women

Women need to be knowledgeable on the subject of breastfeeding before breastfeeding. This is the reason why organizations such as the Grow-Great facilitate breastfeeding role-modeling during their antenatal sessions to familiarize mothers with the knowledge and expectations from breastfeeding (Majambozi, 2015). Studies have indicated that most breastfeeding information is not made available to women, especially in public hospitals (Shah et al., 2005 & Mekuria & Edris, 2015). This is further supported by the two quotes below;

“No, they (health workers) did not tell us much about breastfeeding when we were going for checkups; they mostly focused on the pregnancy checkups more than anything” (Lindiwe, rural).

“I don’t know any benefits of breastfeeding, that why I am not breastfeeding, I was only told that I have to breastfeed” (Candice, urban).

The quotes above represent similar experiences that women in rural and urban Mpumalanga had during their maternal checkups in public hospitals. The challenge was that both mothers did not receive much information and support regarding breastfeeding for the health care workers. According to OlaOlorun & Lawayin (2010), inadequate support from healthcare workers might be caused by factors such as the shortage of healthcare workers due to the migration of skilled labor. Additionally, a study in Nigeria also indicated poor knowledge on breastfeeding among health workers, putting them in an undesired position to educate and support women on breastfeeding (OlaOlorun & Lawayin 2010). This might be due to the argument that breastfeeding training is often inconsistent and poorly structured in most public hospitals (Okolo & Ogbonna, 2002).

Evidence also suggested that women with higher education levels were usually most likely to breastfeed than their counterparts, as supported by statistics in the quantitative analysis (SADHS, 2017). In this study, urban women who engaged in breastfeeding proved to be having higher levels of education and were more informed on breastfeeding than other women, as indicated in the quotes below:

“...the baby gets healthier, and they get to develop well, they don’t just get sick...breastfeeding also helps the mother with getting rid of stress, weight loss and the tummy goes back to normal...” (Amahle, urban).

The participant in the quote above cited several benefits of breastfeeding for herself and the infants from an informed perspective. According to Mekuria & Edris (2015), mothers who had adequate knowledge of breastfeeding were two times more likely to breastfeed than their counterparts.

However, as much as most of the rural participants in this study had lower-middle levels of education, most of them were active in breastfeeding as they are often exposed to the practice of breastfeeding from their environments (observational learning) (Oche et al., 2011). Therefore, it is important that the healthcare workers, be informed on breastfeeding practices to educate mothers on breastfeeding, particularly during maternal checkups (Becker, 1992). In partnership with UNICEF, the WHO implemented the Ten Steps to Successful Breastfeeding (TSSB) initiative to familiarize women with breastfeeding knowledge (Shah et al., 2005). The second step of the TSSB states that the health care workers should be trained with the necessary information to equip women with the required knowledge and skills on breastfeeding (Shah et al., 2005).

5.5.2 Perception that breastmilk is inadequate for children

In South Africa, infants start receiving complementary feeding in less than two months from birth on average, as indicated in the quantitative analysis above (*Fig 5.1*) (SADHS, 2017). According to Sibeko et al., (2005), more than 50% of lactating women withdraw from breastfeeding within the first three months, and more than 30% of these women introduce complementary feeding or mixed feeding as early as two days, as breastmilk is sometimes deemed inadequate for the baby. During complementary and mixed feeding, infants are given food such as porridge, juice, pasteurized, or formula milk and tea (Kassier, 2005). Also, breastmilk substitutes such as bananas, pasteurized milk, glucose, butternut, and yoghurt are introduced as early as six weeks of age, which might threaten the infant's digestive system (Sibeko et al., 2005 & Voramongkol & Phupong, 2010).

Part of the reason women introduce such kinds of food to infants at a tender age is that breastmilk alone is argued to be inadequate to satisfy the baby (Sibeko et al., 2005).

“...breastmilk only is not enough because the child gets hungry and when they get hungry they start crying, so you need to be alternating” (Pamela, urban)

This erroneous belief harms children's health, subjecting them to different illnesses (Utoo et al., 2015). According to Mekuria & Edris (2015), breastmilk serves as a complete and adequate source of nutrition for infants under the age of six months, as also supported by the quote below:

“yes I think breastmilk only is adequate for the child because that's what they tell us at the hospital and even when she is crying, and I give her breastmilk, she keeps quiet, so it shows that breastmilk is sufficient, if it was not sufficient they (health workers) were going to tell us not to breastfeed” (Mashia, rural)

The respondents in the quotes above have different views on whether breastmilk only is adequate for the infant or not. The mother of four from rural Mpumalanga indicated that giving the child breastmilk only for six months is adequate for the infant as all her children were brought up that way. On the other hand, an urban first-time mother believed that breastmilk was not enough; hence her baby was always crying. The belief that breastmilk is not adequate has had a negative impact on the rate of (exclusive) breastfeeding. Such differences in the perceptions have led to discrepancies in the rural and urban breastfeeding practices in South Africa.

5.5.3 Urbanization

There has recently been an increase in rural-urban migration in South Africa (Kassier & Veldman 2013). Women have been migrating from rural to urban areas searching for better opportunities (Shirima et al., 2001). It has been predicted that by 2050, approximately 70% of the world's population will be living in urban areas due to urbanization and technological advancement (Ryan et al., 2017). As a result, most women are likely to switch from breastfeeding to breastfeeding substitutes because of work and the need to adapt to an urban lifestyle (Brown, 2015).

In moving from rural to urban areas, women encounter several challenges that affect their attitudes, including infant feeding practices (Ettarh & Kimani, 2012). Women moving from rural areas are prone to poverty due to the high unemployment in urban areas (Brown, 2015). Such circumstances impact breastmilk production, forcing them to resort to mixed feeding (Brown, 2015). Moreover, breastfeeding in urban areas is not common compared to rural areas, as indicated by the statistics at the beginning of this chapter. This is probably because most urban spaces are highly populated by young people who have been more cultured around formula feeding than breastmilk (Brown, 2015). This is where most rural mothers might feel the pressure

to adapt to the new culture and fit in the society. Therefore, it can be deduced that rural to urban migration has negatively contributed to the low rates of exclusive breastfeeding in South Africa.

5.5.4 Health-related issues

There are inevitable health circumstances that propel women to use breast milk substitutes even before the infant is six months (Otoo et al., 2009). These include sore nipples, breast engorgement, mastitis, fissures, low production of milk, and breast thrush (Kassier & Veldman, 2013 & Kohan et al., 2016).

“...when I gave birth I was able to breastfeed, but when she turned two weeks, I ran out of breastmilk, and the nurses told me that it's normal... and I should switch to formula milk...” (Pamela, urban)

According to Lesorogol et al. (2018), insufficiency of milk is a shared experience, especially among first-time mothers. On the contrary, the mother can have sufficient milk, but the infant might refuse to suckle (Mekuria and Edris, 2015). These are some of the experiences that leave women with no choice but to introduce breastmilk substitutes despite their desire to breastfeed.

The high HIV/AIDS prevalence, particularly in South Africa, also confused women's feeding choices (Shah et al., 2005). Most women have resorted to breastmilk substitutes because of the fear of MTCT through breastfeeding (Kassier & Veldman, 2013).

“...some are not breastfeeding because of their HIV status and so maybe it's hard for them to breastfeed their babies because they fear that they will transmit the virus to the baby” (Amanda, rural)

The respondent was a mother to three children at the time of the interview and indicated that she exclusively breastfed all her children up to six months. She believed that other women were not

active in breastfeeding because they feared the virus's transmission from the mother to the child. This belief propelled her to check her health status before breastfeeding, not to put her infant at risk. In 2016, the WHO recommended HIV-positive women who have been on the right dosage of their ARV treatment and other recommended medication exclusively breastfeed their infants for at least six months as this is safe, affordable, and sustainable for the baby. However, women were advised not to breastfeed if they have not been on the ARV treatment as this might increase MTCT by more than 16% (Grant, 2016).

5.6 Factors causing variations in breastfeeding attitudes between rural and urban areas

The quantitative findings revealed that breastfeeding is more prevalent in rural areas than in urban areas. The section that follows will support this argument by highlighting some of the factors influencing the differences in the breastfeeding rate.

5.6.1 Unemployment and unpaid-maternity leave

Unemployment has been posited to be one of the primary deciding factors on infant feeding practices. With the rising unemployment statistics and a rise in female-headed households, most women prefer to forfeit their maternity leaves and return to work due to the fear of replacement (Grant, 2016). In South Africa, most women are subjected to unpaid maternity, leaving a burden to fend for themselves and their dependents (Sibeko et al., 2005).

As indicated by the Census Municipal Report (2011), the recent rise in higher education attainment has attracted more women to the labor market. This further means that women now spend more time at work, hence having limited time to engage in some activities, including breastfeeding as indicated by one of the urban participants below:

“...many women are now career women [employed] so after birth, you can only spend limited time with your baby depending on when you took maternity leave, however, a few women breastfeed after getting back from work but the time spent breastfeeding is drastically reduced...” (Pamela, urban)

Despite being a mother herself, the participant in the quote chose to refer to other women when discussing how careers can impact the likelihood to breastfeed. This is because she is a stay-at-home mother by choice, though she does have some interactions with working mothers in her neighborhood.

She points to the fact that in contemporary times many mothers are working formally outside their homes. She highlights a tradeoff between working out of home “being a career woman” and time spent with a newborn baby and indicates that this also depends on whether or not the mother took maternity leave. The reference to whether or not a mother took maternity leaves does not refer to a mother’s choice in the matter. However, it is often related to the nature of maternity leave conditions in the workplace. Often mothers are not given their full salaries when they take maternity leave, despite legislative requirements, and are forced to choose between staying home and meeting their newborns' needs.

With the high unemployment rate, especially for women in South Africa, many women opt to return to work soon after giving birth. Pamela, for the quote above, continues to point to the fact that though these women may continue to breastfeed after returning to work, the limited time in the day spent breastfeeding results in a reduction in breast milk production. According to Otoo et al. (2009), the more time women spend away from the infant, the lesser the breastmilk output. A study conducted by Attanasio et al. (2013) also revealed that women who were full-time

employees were less likely to fulfill the intention to breastfeed than women who were not employed exclusively.

With that, breastfeeding is more common among unemployed women, especially in rural areas. According to Mekuria & Edris (2015), unemployed women are 1.98 times most likely to engage in exclusive breastfeeding than employed women.

5.6.2 Influence of media and breastmilk substitutes

In a traditional society, a mother is perceived as the primary source of food through breast milk (Majambozi, 2015). However, the digital era has taken over this role from most women and has become an influential tool for child feeding practices. In other words, most of the decisions that women take on child feeding practices are highly influenced by the media, especially in urban areas. In most modern societies, women have easy access to the internet and multimedia resources, which they also use to familiarize themselves with parenting-related information (Labarere et al., 2011). One of the participants in this study mentioned that she got most of the information on breastfeeding from the internet. However, she sometimes ran out of money to access the internet (*Savannah, urban*). Unfortunately, the media has played a limited role in promoting breastfeeding but has instead been influential in luring women on breastmilk substitutes such as formula milk (Kohan et al., 2016).

Formula milk is regarded as the largest competitor and breastmilk substitute in most parts of the world. The spill-over of breastfeeding replacements such as formula milk has been more common among women in urban areas than rural areas (Shah et al., 2005). A study conducted in rural and urban Saudi Arabia confirmed that breastfeeding was correlated with income and education (Al-Ayed & Qureshi, 1998). Women who earned more money and had higher

education levels were mostly found in urban areas and less likely to breastfeed than women who earned less, with low education levels (AI-Ayed & Qureshi, 1998).

As much as women in urban areas had adequate knowledge of the importance of breastfeeding, the need to return to work was the most cited reason for not breastfeeding (AI-Ayed & Qureshi, 1998). This might be because women who earned more money could easily afford formula milk to substitute breastmilk (AI-Ayed & Qureshi, 1998). Oommen et al., (2009) further supported this argument by highlighting in their study that more than 50% of women in urban areas used formula milk despite it being expensive. This argument was supported by the recent statistics suggesting that urban households are more likely to fall into higher wealth quintiles, where 60% are in the two highest wealth quintiles compared to 6% in non-urban areas (SADHS Report, 2017). More than 60% of the women in urban areas are categorized into the highest quintile and 2.7% in the lowest quintile (SADHS, 2017). Mothers in the lowest quintile breastfed for an average of 12 months, compared to mothers in the highest quintile, who breastfed for an average of 6 months (SADHS, 2017). These differences in wealth distribution indicate that women in urban areas are wealthier than women in rural areas, so they can easily afford formula milk despite being expensive.

Studies have revealed that formula milk is coupled with adverse effects that might harm the baby's health and even result in infant mortality due to hygiene issues (Grant, 2016 & Spatz, 2020). Lesorogo et al. (2018) further stressed that some developing countries still experience poor water and sanitation infrastructure, forcing women to prepare child feeds in unhygienic places (Kakute et al., 2005).

“...sometimes the bottles to prepare the formula milk might not be thoroughly clean and can make the baby sick” (Nomazulu, urban)

The participant in the quote above was a working mother and would often leave the baby with the helper when she is going to work. She would breastfeed the child before leaving for work and when she comes back from work. The child was given formula milk during the day, citing that expressing the milk in the bottle was painful. She showed some concern on how often her child would get sick and assumed that maybe the bottles were not cleaned enough before the preparation or the helper was not following the proper measurements.

According to Kassier & Veldman (2013), preparing formula milk with contaminated water or inaccurate measurements has been responsible for approximately 1.5 million childhood deaths in a year mostly in countries like South Africa where water and sanitation are still of concern. Unclean instruments, including teaspoons, cups, and bottles used in the formula milk preparation, might also trigger some illnesses mostly caused by bacteria (Sibeko et al., 2014).

“...the father of the child is not working, so we don't have money to buy formula milk ...for the formula milk if they say I should put five teaspoons, I would put two teaspoons when the milk is running out and end up over-diluting, so formula milk has a lot of work compared to breastfeeding...” (Lindiwe, rural)

Some of the women in rural areas viewed formula milk as a luxury that they would want their infants to have access to. As much as women in urban areas perceive breastmilk as a second option, women in rural areas only gave formula milk occasionally because of the luxurious belief surrounding formula milk.

“...so when I get paid, I buy her formula milk just so that she can taste it too, but I do it once in a while because it is expensive you know, and I am not working full time” (Nobuhle, rural)

By interacting with the participants above, the researcher realized that formula milk was perceived as a luxury that most women wanted their children to have. This is due to modern societies idealizing formula milk as the best food for the baby. Both women were active in breastfeeding, though they would formula feed their children once in a while as the budget allows. The first participant would go to the extent of under-diluting the formula milk to sustain the baby for an extended period before she could switch back to breastfeeding. It can be concluded that women are not informed enough about the importance of breastfeeding over formula feeding. In this case, it is possible that women might be breastfeeding because it is part of the culture, and they feel obligated to do so, not because they are aware of the many benefits of breastfeeding. Such improper measurements and preparation of formula milk have contributed to the rate of diarrhea and cholera amongst infants (Grant, 2016).

A recent study indicated that in the current Covid-19 pandemic, formula milk has been scarce and offered at a higher price, hence subjecting infants to hunger (Anderson, 2020). In such extreme cases, infants are given tea and coffee in place of formula milk (Kassier & Veldman, 2013).

5.6.3 Negative responses on (public) breastfeeding

Breastfeeding has been perceived as an old-fashioned practice that cannot be done in contemporary society. Most women, particularly in urban areas, have been affected by this notion despite their willingness to breastfeed. According to Grant (2016), concerns and stigma on public breastfeeding have instilled fear of scrutiny by strangers and low confidence particularly in women who desire to breastfeed especially primiparous mothers as indicated by one of the young mothers in the study:

“There was this other time when I was waiting for someone along the street, and he (the baby) started crying, but I told myself that I would not breastfeed him in the public because there were people sitting on the other side of the street, so instead I decided to buy him a purity even though it was not yet time for him to have such food, but there was really nothing I could do because the circumstances did not allow me to breastfeed”
(Savannah, urban)

The above experience suggests that breastfeeding is not welcomed especially in the public spaces of urban areas. In this case, the participant opted to buy purity from a *nearby spaza shop* rather than breastfeeding the baby in public. The participant also highlighted that she felt judged when she was seen breastfeeding in a restaurant. However, luckily the restaurant was in a mall where there were a few baby facilities for nursing mothers.

According to Forbes et al. (2003), people use powerful yet negative expressions such as disgusting, perverse, and animalistic to describe breastfeeding behavior. This shows that parenting in public spaces involves negotiating one's rights with the public (Boyer, 2016). Women seen breastfeeding in public spaces have been seen as outdated and exhibitionist mothers lacking self-respect and engaging in deviant acts (Avery et al., 2000). In contemporary society, breasts have been sexualized as intimate parts of the body meant for the women's partners than nurturing infants (Grant, 2016).

These discourses lead to women's marginalization in patriarchal societies where women's decisions are more based on the public eye than themselves. Forbes et al. (2003) posit that such negative public comments leave women with no choice but to breastfeed only when they are at home or in baby-friendly environments. In most cases, women end up using formula milk as a strategy to escape judgmental and negative comments from the public (Boyer, 2016). This also

justifies why breastmilk substitutes are more common among urban women than in rural mothers (Kishore et al., 2009).

According to the self-efficacy theory, it takes confidence for women to be resistant towards such negative comments as mentioned by one of the participants who had recently migrated from rural to urban Mpumalanga at the time of study:

“Sometimes people just stare at you when you are breastfeeding ...it doesn't move me because it's not like am doing something wrong, so they just have to deal with it because its part of nature, that's what makes me a mother” (Candice, urban)

In the quote above, the participant believed that there is nothing wrong with breastfeeding in public. The participant was drawing from her experience on public breastfeeding where people would stare at her when breastfeeding. According to Kishore et al. (2009), every woman has the right to breastfeed in public spaces without the fear of being judged or dismissed by the public. Such negative reactions are prevalent in urban areas where breastfeeding is not as common as it is in rural areas. As argued by the Self-efficacy framework, a negative response to breastfeeding often results in early breastfeeding termination and the likelihood of not breastfeeding in the future (Dennis, 1999).

5.6.4 Belief that breast is best among rural mothers

Despite the views that breastmilk alone might not be adequate for infants, breastmilk remains the widely recommended and ideal food for infants during the first six months of their lives (Utoo et al., 2015). The idea that breast is best is widely recognized, accepted, and promoted by different medical institutions in the world (Grant, 2016). As mentioned above, breastmilk carries the adequate nutrients required for the infant's growth and development into adulthood (Kown et al.,

2008). Human milk is healthy and carries unique nutrients containing growth factors, immunologic substances, and hormones that help create and strengthen the immune system against infectious agents (Colen & Ramey, 2014).

The argument that breast is best was approved by 70% of the participants, most of which came from rural participants:

“...from my first breastfeeding experience, I realized that my baby was less sick compared to my niece who was formula fed...she (niece) was going to the hospital a lot for fever and high temperatures, unlike my daughter who was always healthy and only gave me issues only when she was teething which is natural among children...” (Lola, rural)

In the quote, the respondent referenced her breastfeeding experiences and acknowledged that it was the best choice that she ever made for her children. At the time of the interview, the respondent was nursing her daughter, who was four months old and showed breastfeeding intentions for the coming two months before introducing solid food. She compared her daughter and her niece who was of the same age who stayed in urban areas, mentioning that her niece would visit the doctor more often compared to her daughter because she was only formula-fed and introduced to solids from birth. The participants expressed interest in breastfeeding even in the future as she was happy with the results, especially regarding the baby's health. The notion that breastmilk is best came more from rural participants than urban participants.

With the ongoing concern on the coronavirus pandemic outbreak, the WHO recommended that women continue breastfeeding their infants as long as their health was favorable and considering all precautions (Fernández-Carrasco et al., 2020). In cases where the mother's health does not

permit, the mother's milk should be expressed and kept unpasteurized to remain accessible for the infant (Fernández-Carrasco et al., 2020). According to Spatz (2020), from the limited studies conducted on coronavirus, findings confirmed that the virus has not been detected in breastmilk. Instead, the nutrients found in human milk can play a pivotal role in protecting infants from the coronavirus (Spatz, 2020). In this regard, women were further urged to donate human milk to breastmilk banks and refrain from breastmilk substitutes such as formula milk to help curb infant morbidity and mortality due to poor immune support (Anderson, 2020).

5.6.5 Women affirmation through breastfeeding

While most women view breastfeeding as a challenging practice, others perceive it as a source of empowerment. This usually happens after the mother has been able to successfully imitate and model the breastfeeding behavior, as suggested by the SCLT (Dennis, 2006). The acquisition of breastfeeding knowledge and skills is considered an essential factor in facilitating women's empowerment (Voramongkol & Phupong, 2010). In this study, the empowerment of women through breastfeeding was dependent on acquiring the skills and knowledge of breastfeeding and the actual practical experience of breastfeeding. Most participants from rural areas indicated that breastfeeding gave them a sense of self and validation that they were parents and could provide food for their infants, which was a function unique to them.

“...the thought of knowing that my baby is dependent on me for food makes me feel worthy and important to my baby's life... (Lindiwe, rural)”

“...if the baby is hungry it is in my power and responsibility to give him food, no one else will be able to do so” (Pamela, rural)

It can be depicted from the above quotes that some women, mostly from rural areas, took pride in breastfeeding. Most women were empowered because their infants depended on them as a source of food, which gave them a sense of being and made them realize how important they were to their babies. In the second quote, the participant argued that breastfeeding distinguished her from other people as she believed she is the only source of food for her baby, hence giving her some form of power as a mother. She was fascinated by the vital role that her breasts had in the health and development of her baby's life. This experience also gave women more confidence in breastfeeding, making them enjoy the practice and even breastfeed for longer.

According to Voramongkol & Phupong (2010), these are some instances that show that the body of a woman can do extra-ordinary functions, from conceiving the baby to nurturing them. Empowering women on breastfeeding encourages them to breastfeed even in the future and improves their maternal roles (Kohan et al., 2016). However, in most cases, such empowerment usually comes after the mother has dealt with all the challenges that come with breastfeeding (Harinie et al., 2017).

5.6.6 Preservation of cultural values

In modern society, the practice of breastfeeding is no longer perceived as a natural action, but rather something that has to be acquired through learning (Lin et al., 2008). In most rural areas in South Africa, breastfeeding is still considered a norm. Culture is one of the influential factors that either inhibit or support a particular behavior (Lesorogol et al., 2018). Breastfeeding is viewed as one of the cultural preservation methods, where one tradition is passed from one generation to another.

“... it is something natural even our grandmothers used to do it so why should I be afraid when that's how I grew up too” (Yolanda, rural)

Due to the traditional environment that the participant grew up in, she saw it normal and natural for her to breastfeed her children. She mentioned that women in society encouraged her to breastfeed, contributing to both her and the infant's lifespan. In such societies, young and first-time mothers are coached through breastfeeding and parenthood in general. This explains why breastfeeding rates in rural areas are often higher than the ones in urban areas. Through such support and beliefs, women in rural can conserve the breastfeeding culture for the coming generations.

It is a common tradition in rural areas that after giving birth, women are shown support by their communities, families, and partners in areas such as breastfeeding, postnatal challenges, and generally taking care of the infant (Kohan et al., 2016). Such a support system provides a strong and positive ground for breastfeeding continuity even in the future. As indicated by the triadic principle in the SCLT, the environment, behavior, and cognition play a vital role in instilling a positive attitude on breastfeeding in women (Santrock, 2012).

Cultural values can also have a negative impact, particularly in promoting exclusive breastfeeding (Kishore et al., 2009). It is ubiquitous in South Africa that sometimes women are advised to introduce herbal remedies which are culturally believed to strengthen the infant's immune system and protect them from evil spirits (Kakute et al., 2005). The same culture was also prominent in Ghana, where infants are given thin and fermented porridge called *koko*, which was believed to provide the baby's energy and proteins (Otoo et al., 2008). According to Sibeko et al. (2005), such remedies represent communication with the ancestors pleading with them to protect and guide the family's new member.

5.6.7 Limited access to postnatal and antenatal programs in urban public hospitals

Antenatal and postnatal programs are essential tools in promoting and providing support to women on breastfeeding. These services equip women with breastfeeding knowledge, diet recommendations, nursing the infant, maternal counseling, mother-infant role modeling, and body exercises (Mrisho et al., 2009). Antenatal and postnatal services are meant to be offered at the hospitals during the maternal checkups to optimise maternal-child health through the early facilitation of health promotion and disease prevention programs (Nichols, 1995 & Spinelli et al., 2003). These services are adequately offered in private hospitals than public hospitals (Spinelli et al., 2003). One of the urban mothers in the study who gave birth in a private hospital supported this notion in the quote below:

“...luckily for me I gave birth in a private hospital because I have a medical aid, so they gave me a few classes on the baby apart from the regular checkups during my pregnancy, and after giving birth, they teach you how to bath the baby, how to nurture the child, and put your nipple inside the mouth of the child without suffocating the child...” (Amahle, urban)

The participant above gave birth in a private hospital where she was given antenatal and postnatal classes separate from the hospital visits. She highlighted that she was informed about taking care of the baby, including bathing and breastfeeding using role-playing when she was pregnant. She also had to stay longer at the hospital, where they practically helped her with breastfeeding, bathing, and understanding the baby's different cues. When asked why she did not go to a public hospital, the participant mentioned that she had medical aid, and was scared by the stories she was hearing from other people on how public hospitals are always full; hence more attention was given to sick people more than anyone else.

Private hospitals offered quality services and were expensive compared to public hospitals, so most women resort to public hospitals. According to Mekuria & Edris (2015), evidence confirmed that women who received breastfeeding information and counseling sessions during pregnancy and after giving birth were more than five times more likely to breastfeed than their counterparts. This shows how essential and effective maternal programs are in promoting breastfeeding.

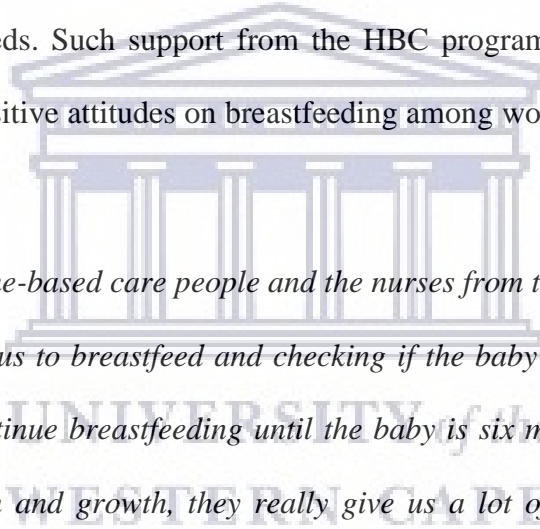
South African public hospitals are still faced with the challenge of offering antenatal and postnatal services to mothers owing to the shortage of health workers due to the migration of skilled medical labor (Mrisho et al., 2009). This was also highlighted by most study participants, both rural and urban, arguing that they were not given much information on breastfeeding during their maternal visits in public hospitals. The gap in offering detailed maternal sessions with mothers in public hospitals allowed private organizations to provide these services at a high cost, making them inaccessible to women from disadvantaged backgrounds.

“...there is a lady who arrived at the clinic when I had gone for my checkups, and she told us that she is offering antenatal and postnatal classes to women, but at a high price, because no one had the money to pay, she ended up offering us the services for free...”
(Amahle, urban)

As indicated above by the participant, apart from hospital visits, women have limited access to antenatal and postnatal services where they are educated about taking care of the baby. The participant mentioned that they were supposed to pay for the antenatal services, but the lady offered them free because no one had the money to pay. According to Mekuria & Edris (2015), less than 20% of women in Sub-Saharan African receive postnatal visits within two days of giving birth compared to 90% in developed countries. These statistics reflect a challenge in the

accessibility and affordability of maternal services among women, affecting breastfeeding practice. According to Okolo & Ogbonna (2002), failure to initiate early antenatal and postnatal sessions with pregnant women may result in conditions like low birth weight, maternal depression, postpartum complications, or even neonatal death.

However, the availability of Home-Based Care (HBC) services in rural Mpumalanga played a positive role by providing antenatal and postnatal services to women who had recently given birth. The services included helping mothers position the infant for breastfeeding, educating mothers on breastfeeding, monitoring for hospital visits, postnatal counseling, and distributing food parcels and infant needs. Such support from the HBC programs has positively impacted promoting and instilling positive attitudes on breastfeeding among women in rural areas (Mrisho et al., 2009).



“...we have the home-based care people and the nurses from the clinic who visit us every month encouraging us to breastfeed and checking if the baby is healthy and they tell us that we need to continue breastfeeding until the baby is six months of age because it is best for their health and growth, they really give us a lot of information and support when it comes to everything to do with the baby, they also give us food parcels here and there...” (Lola, rural).

In rural areas, organizations such as the HBC’s objectives are to ensure that people in poor or rural areas are well taken care of particularly the sick and pregnant women. They do home visits, and telephonic check-ups with their target audience free-of-charge as the government mostly subsidizes them. The participant in the quote above mentioned how the HBC women assisted pregnant and new mothers regarding maternal services and food parcels. These maternal services include general taking care of the baby, maternal awareness, and assistance on breastfeeding,

hygiene, and postnatal counseling. These services are a necessity, especially for young and first-time mothers. HBC programs were nonetheless pronounced more in the rural areas of Mpumalanga compared to the urban areas.

5.6.8 Lack of socio-maternal support

While breastmilk is considered natural and the infant's ideal food, the practice comes with some challenges that are most likely to affect the choice of feeding practices, the mother's health, and that of the infant. In such cases, women need maternal and social support, especially from the immediate family members to help them navigate breastfeeding challenges. Statistics have shown that more than 30% of women who initiate breastfeeding soon after giving birth discontinue the practice within two weeks of the infant's age mostly because of the challenges associated with breastfeeding (Labarere et al., 2011).

In addition to interventions such as the HBC, in most traditional families, a female elder is invited to stay with the new mother to support them during the first days after giving birth to help them with breastfeeding and taking care of the baby (Otoo et al., 2008). In such environments, most women's breastfeeding decisions mainly depend on female elders' presence in the house more than the mother's (Garg et al., 2015). According to Lesorogol et al., (2018), this shows that maternal support, particularly from the family and partners, has a significant impact in encouraging women to engage in breastfeeding as also mentioned by one of the urban mothers:

“I was breastfeeding because my mother was there and she advised me not to give anything to the child because their bodies are not prepared for it, so I was forced to breastfeed with my mother assisting me for six months before introducing my child to some other foods” (Natasha, urban)

The quote above shows the importance of maternal guidance and social support to mothers especially during the first few months after giving birth. However, such social support is more common in rural areas than urban areas where mothers mainly depend on the support given during hospital visits, which is usually not enough (Lesorogol et al., 2018).

A study conducted by Hannan et al. (2005) indicated that women whose partners and families supported breastfeeding were 32 times most likely to breastfeed than their counterparts. Paternal support for breastfeeding is also common in rural areas where men are encouraged to share responsibilities with women to allow them to breastfeed (Kakute et al., 2005).

Conversely, social circles can also negatively impact breastfeeding practice (Hannan et al., 2005). As already mentioned above, sometimes feeding practices are determined not only by the mother but also by the household people (Kohan et al., 2016). Women might have the desire to breastfeed, but practicing that behavior can be a challenge if the family is not supporting that particular practice. According to Otoo et al., (2008), this indicates that the family plays an influential role in determining infant feeding practices hence compromising the autonomy of the mother as also highlighted by one of the urban mothers in the study:

“...my partner wanted me to breastfeed, but my mother and sister didn’t want me to, so since I was staying with them after giving birth they would actually wake me up at 3 am to go bath so that I don’t stink because they said breastfeeding women smell like sour milk, that’s why I ended up formula feeding...” (Pamela, urban)

The quote above indicated that socio-maternal support could either encourage or discourage women from breastfeeding.

In such instances, the health workers' home visits are needed to educate the mother on breastfeeding and encourage the family to be supportive of the behavior, especially in urban areas.

5.6.9 Lack of self-esteem on breastfeeding

The practice of breastfeeding comes with several new experiences, both emotionally and physically. Different scholars have highlighted the importance and role of maternal confidence among women in determining infant feeding choices (Blyth et al., 2008; Lovel & Cook, 1999 & Labarere et al., 2011). According to the Self-efficacy theory, breastfeeding confidence is influenced by different information sources, namely vicarious experience, verbal persuasion, performance accomplishment, and physiological response (Dennis, 1999). Women who have at least one of these four sources of information are most likely to engage in breastfeeding and do so exclusively, compared to women with low maternal confidence (Blyth et al., 2008). That is to say; maternal confidence is one of the significant predictors of breastfeeding initiation and duration among mothers (Kakute et al., 2005 & Henderson et al., 2003). In this study, low confidence in breastfeeding was more prevalent among women in urban areas, particularly young mothers, compared to women in rural areas.

Lack of self-efficacy is associated with feeling unhappy and disturbed during pregnancy, triggering prenatal and postnatal depression among women (Lovel & Cook, 1999). According to Henderson et al. (2003), depression can have adverse effects on both the mother and the infant, causing late initiation and early discontinuation of breastfeeding. Maternal depression affects at least 13% of women who have given birth and can lead to long-term mental illness and low cognitive development in infants (Henderson et al., 2003). It takes high self-esteem for women to continue breastfeeding, having experienced some of these challenges (Dennis, 2006). Women

have also reported discomfort similar to orgasm when the infant suckles the breast, making them feel uncomfortable, leading to breastfeeding termination as indicated in the quote below (Avery et al., 2000).

“...other women are ashamed of breastfeeding especially in urban areas like my friend told me that she is afraid of breastfeeding and doesn't see herself breastfeeding because she feels like the baby is eating her...” (Natasha, urban)

In the quote above, the non-breastfeeding mother mentioned that most of her friends did not positively respond to breastfeeding, which also made her initiate formula milk from when the baby was young. She mentioned that her friend once felt like the baby was eating her, which scared her as she had no breastfeeding experience. According to verbal persuasion in the self-efficacy framework, an unpleasant breastfeeding experience harms maternal confidence, where women end up feeling like they are failing to be good mothers to their children (Dennis, 1999).

Women need a strong support system to help them maneuver these challenges without necessarily losing their breastfeeding confidence. Low self-esteem in breastfeeding usually affects young and first-time mothers and is also argued to encounter more challenges on breastfeeding especially during the first few weeks after giving birth (Blyth et al., 2008). As indicated by Kang et al. (2008), it is important to ensure that women are provided with the necessary post-partum counseling to deal with negativities related to breastfeeding.

On the other hand, some women experience a natural and pleasurable feeling when breastfeeding, helping them bond with their infants (Avery et al., 2000). Most of the rural women cited positive more than negative experiences on breastfeeding, as indicated by one of the participants below:

“breastfeeding the baby is nice because it makes you feel like a mother and you have that pride that you achieving something and the baby also gets to know me better, and I get to know her better, and we bond together which helps her differentiate me from other people, so it is very nice, I enjoy it so much...” (Sharon, rural)

The mother in the quote above enjoyed breastfeeding as it gave her a sense of achievement and helped her bond with her baby. When asked if she would recommend breastfeeding to another mother, the participant agreed and mentioned that she was now experienced in the practice and was willing to help other mothers provided they wanted to. Pleasant experience from breastfeeding enhances maternal confidence which is a good indicator of breastmilk duration and likelihood to breastfeed again in the future. Such positive feedback on breastfeeding might result from having received the necessary support, experience, exposure, and knowledge on breastfeeding, which according to the self-efficacy theory enhances self-esteem among new mothers (Dennis, 2006). This was also supported by a study conducted by Lin et al. (2008), indicating a positive relationship between breastfeeding knowledge and breastfeeding confidence. Kwon’s et al., (2008) findings suggested that empowering women on breastfeeding through knowledge and skills can be one form of improving their confidence in breastfeeding. The integration of self-efficacy strategies during pregnancy and infant check-ups can also enhance breastfeeding confidence among women (Labarere et al., 2011).

5.6.10 Maternal food insecurity in rural areas

Lactating mothers are urged to increase their food and warm beverage intake to enhance milk let-down reflex (Shah et al., 2005). This was supported by one of the participants stating that breastfeeding required her to eat a lot compared to her average food intake due to breastmilk production. According to a study in Ghana, results indicated that breastfeeding was associated

with dietary changes where breastfeeding women consumed more food during lactation than during their pregnancy because of breastmilk production (Otoo et al., 2008).

“now that I am breastfeeding I really eat a lot because for the milk to be produced for the baby, I need to be eating a lot especially drinking tea with milk” (Sharon, rural)

However, it becomes a challenge when pregnant and lactating women have limited access to food quality and quantity to satisfy their increased appetite (Webb-Girard et al., 2012). A study in the Gambia also found that exclusive breastfeeding was compromised in socioeconomically disadvantaged families where food insecurity remained a concern (Lesorogol et al., 2008). This was also revealed in this study where most participants from rural areas were struggling to meet their nutritional needs:

“...we are not working, so we don't usually get enough food, sometimes we receive help from the home-based care people who donate food for us here in rural areas, food is still scarce this side so sometimes I struggle to get the food whenever I need it, I have to compromise and maybe eat twice a day so that we are left with food for tomorrow” (Lola, rural)

“...I don't get enough food because no one is working at home, and it even gets harder when I don't have the milk for the child because then they will cry none stop...” (Mashia, rural)

The participants in the quotes above were not employed at the time of the study and relied on food from neighbors and HBC. They argued that the shortage of food restricted the availability of breastmilk and made them feel weak. In cases where there is no breastmilk produced, the child is forced to eat whatever is available at that particular moment even when it is not appropriate at

that stage, negatively contributing to the low breastfeeding rates in rural areas. Maternal food insecurity was more pronounced in rural areas than urban areas, and it exposed both the mother and the child to conditions such as malnutrition, stunting, and hunger (Webb-Girard et al., 2012). It is also theoretically plausible that maternal food insecurity is significantly associated with stress and depression, which further has a negative impact on milk let-down (Laraia et al., 2015). Conversely, food insecurity can increase breastfeeding practice, especially in urban areas where breastmilk is perceived as a second resort (Lesorogol et al., 2018). According to Webb-Girard et al. (2012), most food-secure women tend to introduce cow milk, porridge, and juices to mention a few, at a tender age. However, if there is no food to give to the baby, women may resort to breastfeeding as a secondary option (Webb-Girard et al., 2012). This shows that food insecurity can be both a negative and positive factor in promoting breastfeeding in rural and urban areas.

Chapter summary

The chapter started by reporting the study's quantitative findings from the SADHS (2017), supported by the qualitative analysis derived from the interviews. The analysis indicated that the low breastfeeding rate in South Africa is pronounced in urban areas more than in rural areas. According to the qualitative results, this is mainly because breastfeeding is perceived as cultural practice in rural areas; hence women are given adequate socio-maternal support from their societies compared to urban areas where breastfeeding is taken as an outdated practice.

A relationship between age, education, and breastfeeding was also noted. Older women and women with higher education levels were more active in breastfeeding than others. This is because these two groups of women were most likely to be knowledgeable and experienced in breastfeeding, making it easier for them to breastfeed for longer. On the other hand, factors such

as unpaid maternity leave and unemployment have forced women to resort to formula milk in most urban areas due to the fear of being replaced. These factors affect the rate of breastfeeding in urban areas, but they significantly contribute to the generally low breastfeeding rate in South Africa.

The following chapters will synthesis these findings concerning the research objectives and research questions. The chapter will highlight some of the recommendations that can be implemented in response to the problem statement and research objectives. The chapter will conclude by discussing how the study contributed to the body of knowledge and proposed further research.



Chapter 6: Synthesis of Findings, Recommendations, and Conclusions

6.1 Introduction

This study examined the factors underlying the differences in breastfeeding between rural and urban areas in South Africa, using Mpumalanga province as a case. In investigating these factors, several objectives were specified. In summary, the study's objectives were to describe and explore factors contributing to the low rate of breastfeeding in South Africa and the different factors accounting for the discrepancies in the rural and urban breastfeeding rates.

The study adopted a mixed-methods exploratory design, where the quantitative and qualitative data are used in sequence to answer the research questions and objectives of the study. Therefore this chapter will conclude the study by; synthesizing quantitative and qualitative findings, making further recommendations on how breastfeeding can be promoted in South Africa, especially in urban areas.

6.2 Synthesis of findings

The quantitative analysis provided a brief discussion of the demographic factors affecting breastfeeding in South Africa using SADHS data (2017). The results indicated that South Africa has a generally low national breastfeeding rate, particularly exclusive breastfeeding for the first six months of the infant's life. The low rates of breastfeeding were noted more in urban areas than in rural areas. In other words, women in rural areas were more active in breastfeeding than women in urban areas. This is because breastfeeding is perceived as a cultural norm that is passed from one generation to another in most rural areas in South Africa.

In rural areas, women give birth at a young age, as indicated by the quantitative data where young mothers were dominant in the rural sample compared to the urban sample. Most young mothers in rural areas grow up observing other women breastfeeding, which they later put into

practice by imitating and modeling as argued by the SCLT (Bandura, 1977). According to the Triadic Reciprocal Principle (TRP), this behavior results from the environment in which mothers grow up exposed (Harinie et al., 2017). In such an environment, women are further given socio-maternal support where they are taken through the different stages of motherhood, including breastfeeding initiation, usually done by older women.

In addition to maternal support from the family, the presence of HBC played an essential role in encouraging women in rural areas to practice breastfeeding. This was indicated by several participants in the study, who appreciated the HBC home visits where they were frequently checked-up before and after birth and assisted in any challenges regarding food insecurity, breastfeeding, and infant care. HBC services act as a bridge between healthcare workers and mothers by providing them maternal support in preparation for parenthood. Home visits by the HBC program have been proven to be a source of maternal support, especially to young and first-time mothers in rural Mpumalanga, who have no prior experience in breastfeeding. These findings are in line with the SCLT, arguing that women need to be given as much support as possible on breastfeeding as this might be an unpleasant experience, especially for first-time mothers (Dix, 1991).

However, initiatives such as the HBC were not common in urban areas at the time of the study (Dennis, 1999). The scarcity of this type of maternal support was deemed a justification for why women in urban areas are more active in formula feeding than breastfeeding. One of the urban participants mentioned that as much as she and her partner wanted to breastfeed, her mother and sister discouraged her from breastfeeding and bought her formula milk, arguing that breastmilk will make her smell like sour milk. In such cases, organizations such as the HBC are paramount in supporting mothers and educating the family on breastfeeding during their home visits. Lack

of socio-maternal support has contributed to women using formula milk in most urban parts of the country, especially among young mothers. According to the Self-efficacy theory, social support plays a pivotal role in enhancing the mother's confidence in breastfeeding, especially those with no prior experience (Pollard & Gruill, 2009).

Results also revealed a correlation between breastfeeding and age, where breastfeeding was more prevalent among older women than young mothers. According to the SCLT, older women are most likely to be knowledgeable and experienced in breastfeeding compared to young and first-time mothers (Nabavi, 2012). A mother of three from the rural areas stated that she was active in breastfeeding drawing from her knowledge and experience. However, she was not given much information on breastfeeding during her maternal hospital visits. It becomes challenging to practice breastfeeding if the mother has no prior experience or knowledge of the behavior. Most of the participants in the study attended public hospitals, and some indicated that they were not given much information on breastfeeding. This signified a gap between healthcare workers and the mother. According to Mekuria & Edris (2015), some studies have indicated the lack of breastfeeding knowledge among healthcare workers in public hospitals, which explains why most of the information related to HIV/AIDS and breastfeeding is hardly made available to pregnant women.

Similarly, the study highlighted the importance of knowledge among women and how education can be used to promote breastfeeding (Mekuria & Edris, 2015). Findings in this study suggested that that on average, mothers who had attained above primary school were most likely to engage in breastfeeding more than women who had lower education levels (SADHS, 2017). Bivariate logistic regression showed that women in urban areas had better educational attainment than women in rural areas (SADHS, 2017).

However, there was also a possibility that women with better education levels were most likely to be working, hence increasing the likelihood of introducing breastmilk substitutes due to less time dedicated to breastfeeding (OlaOlorun & Lawayin, 2010). Moreover, data on the wealth index indicated that women in urban areas were wealthier than women in rural areas (SADHS, 2017). This justifies why urban women could afford to formula feed their children for an average of two years, although formula milk is expensive. This was more common in urban areas where one of the participants mentioned that women in urban areas were educated; hence they had jobs that made it easy for them to afford formula milk.

Most women in urban Mpumalanga were employed and spent most of their time at work. Due to the high unemployment rate and unpaid leave in South Africa, most women opted to return to work soon after giving birth. This has also been fueled by the increase in female-headed households where most women are now primary providers. In such cases, women are left with no choice but to formula feed their children so that they can return to work. In addressing this challenge, Lesorogo et al. (2018) suggested that the introduction of paid maternity and paternity leaves will help provide for the household and ensure that women spend more time breastfeeding and bonding with the infant and their partners (Lesorogo et al., 2018).

The media has also played an influential role in encouraging women to use breastmilk substitutes. Some women feel the need to formula feed their infants, following the Western world's influence as depicted by the media. Formula milk is deemed a modern and civilized way of infant feeding. By formula feeding, women can feed their infants in public without feeling uncomfortable or judged. The formula feeding culture has further spilt over to women in rural, where formula milk is regarded as a luxury form of feeding (Kassier & Veldman, 2013). The findings from a few of the rural women that were interviewed indicated that their infants only

had formula milk on special occasions like month-end because it is expensive. However, the use of formula milk is a challenge in countries such as South Africa where water and sanitation remain a problem. This is because preparing food such as formula milk in unhygienic spaces compromises children's health. One of the rural participants indicated that she would over-dilute formula milk to the last longer, then breastfeed until she can afford it again. In essence, breastmilk is becoming a substitute for formula milk in most South African parts where women would only breastfeed when they ran out of formula milk.

However, there are cases where women cannot practice breastfeeding due to conditions such as sore nipples, and general low production of milk among other medical conditions. One of the participants who had intended to breastfeed was advised to formula feed by the health care workers due to her medical condition. This is an example of an inevitable factor that can force women to use other breastmilk substitutes.

Another factor affecting breastfeeding practice, mostly cited by women in urban areas, was the adverse public reactions when they were seen breastfeeding (Avery et al., 2000). This factor also forms part of the challenges that women have to navigate when breastfeeding. In this study, public judgment on breastfeeding women was more prevalent in urban areas where breastfeeding is not a common practice compared to rural areas. One of the urban participants also mentioned that strangers' negative feedback compelled her to carry a breastmilk substitute whenever she left the house so that she can feed the baby even in public places freely. According to the Self-efficacy theory (Dennis, 1999), such feedback harms breastfeeding confidence among women; hence, propelling them to resort to poor feeding practices. The lack of self-esteem in breastfeeding decreases the likelihood of women breastfeeding even in the future. In such cases,

there is a need for Baby-Friendly Facilities in public spaces where women can freely breastfeed their infants without any emotional judgment (Utoo et al., 2015).

A different case was observed among women in rural areas, where all the participants from rural areas indicated that they would breastfeed in public. This is because breastfeeding is common in rural areas, so women are instead supported to breastfeed rather than be shamed. The practice was also viewed as an empowerment tool that increased the mother's maternal confidence. One of the participants indicated how she was proud of breastfeeding because it gave her a feeling that she was a source of life to her daughter. Most of the rural participants also indicated that breast milk was the best gift for their children and would breastfeed in the future. According to the self-efficacy framework and SCLT, such incentivizing feelings increased women's maternal confidence and positively impacted breastfeeding initiation and duration.

The movement of women from rural to urban areas also posed a threat to the breastfeeding culture in South Africa. Evidence suggests that by 2050, close to three-quarters of the population in South Africa will be living in urban areas due to industrialization and better opportunities in urban areas (Ryan et al., 2017). As a result, the breastfeeding culture is likely to be replaced by formula feeding in moving from rural to urban areas and the need to adapt to an urban lifestyle. At this rate, there is a need to advocate for breastfeeding in both rural and urban areas, so that even when women move to urban areas, there will be no need to adapt to different infant feeding practices.

Maternal food insecurity posed to be one of the factors affecting nursing mothers in rural areas, affecting breastfeeding practice. According to Laraia et al. (2015), breastfeeding is associated with dietary changes where most women's appetite is increased due to milk production. Drawing from the participants' responses, some women resorted to mixed feeding because of the low

production of milk due to a shortage of food in the household. Food insecurity was prevalent among unemployed mothers in rural areas who depended on HBC food parcels which were also not consistent and guaranteed. One of the young mothers in the study indicates how the household was dependent on food handouts from neighbors and how that disadvantaged the availability of milk for her infant. This factor has led to lower breastfeeding rates, especially among rural women. Concerning this problem, the participants stressed the need for the government to assist breastfeeding women with food parcels or subsidies, especially in rural areas, to cater to infants' nutritional needs and milk output.

Another factor that appeared to affect the rural breastfeeding rate is the misconception that women with HIV/AIDS cannot breastfeed, especially in South Africa, being one of the countries with a high HIV infection rate. This was highlighted by several rural participants who stated that they believed other women were not breastfeeding because they feared MTCT. However, the WHO has suggested that HIV-infected women can breastfeed if they have been on constant required ARV and zidovudine treatment which prevents MTCT during breastfeeding. Therefore, women must get educated on the subject of breastfeeding and HIV to be better informed and advised on the feeding practices suitable for their children. Such information can be made available to mothers during antenatal and postnatal sessions, which were also challenging to most women, as they were less offered in public hospitals. Shortage of antenatal and postnatal services has been facilitated by the high rate of migration among healthcare workers, causing most public hospitals to be understaffed. The DoH must increase healthcare workers' capacity in public hospitals so that women are offered antenatal and postnatal service regularly to prepare them for motherhood.

In conclusion, the study highlighted factors accounting for the discrepancies in breastfeeding rates using qualitative and quantitative data from rural and urban Mpumalanga. The findings confirmed that breastfeeding was more practiced in rural areas compared to urban areas. However, the results also indicated that the difference was small; hence confirming that breastfeeding remains a challenge in both rural and urban areas in South Africa. Promoting breastfeeding in South Africa will have to be in line with the challenges mothers face and the different factors indicated in the study that have contributed to the low breastfeeding rates in South Africa. The following section will highlight some of the proposed recommendations according to the study's findings. These recommendations will help inform policies and interventions that can be implemented to promote exclusive breastfeeding, particularly in urban areas.

6.3 Recommendations

The study results have shown that as much as women in rural areas are more actively engaged in breastfeeding than women in urban areas, the difference has been small. Below are the suggested recommendations that can be considered in promoting breastfeeding culture in both rural and urban South Africa.

i) Implementation of Baby-Friendly Initiatives (BFI)

There is a need to normalize public breastfeeding and implement Baby-Friendly facilities in public spaces where women can easily breastfeed their babies with privacy (Shah et al., 2005). Such facilities will certainly protect women's self-esteem from public shaming when they are seen breastfeeding. Baby-friendly facilities also need to be made available in working spaces to cater to working mothers to breastfeed or express breastmilk in their workspaces. The study also

adopted one of the recommendations proposed by Utoo et al., (2015), stating that information on the use of breastmilk expressers and breastmilk banks should be made known to women should they have excess breastmilk that they can donate. This is meant to ensure that every infant under the age of six months has access to human milk for their growth and development.

ii) Incentivizing the breastfeeding practice

The study's findings also revealed that one of the challenges that lactating women in rural areas are facing is food insecurity, which harms their breastmilk production. This issue was raised by some rural mothers who had the desire to breastfeed but could not meet the demands of their increased appetite due to breastmilk production. In tackling this problem, food parcels and other baby essentials should be made available to lactating women to ensure that they have enough food for themselves and the infant. Moreover, as noted above, there has been an increase in female-headed households where women have become household providers, especially in urban areas. In such cases, the government needs to incentivize women by implementing paid maternity leaves for pregnant women as proposed by Mekuria & Edris (2015) to have time to breastfeed and continue providing for the family at the same time.

iii) Breastfeeding awareness programs and the media

Since the world has moved to a digital era, multimedia platforms have been used to communicate tailored information to accommodate a broad range of pediatric populations (Labarere et al., 2011). Most women rely on the influence of the media invalidating their general choices, especially in urban areas, as indicated by one of the participants:

“I just went on these magazines, so I saw no point in attending antenatal and postnatal classes because every time I go on Facebook they are chatting about how mothers should raise their children and what to feed them at a particular stage...” (Savannah, urban)

Therefore, promoting breastfeeding through electronic and printed media platforms such as television programs, pamphlets, magazines, and radio broadcastings to mention a few, can be used as a tool to inform the mother and families on the subject of breastfeeding (Kassier & Veldman, 2013). Media campaigns will also be more impactful if they are done by celebrities and role models from different industries such as movies, sport, and politics, from which people draw inspiration from. In addition to these media platforms, the ten steps to promote breastfeeding proposed by the WHO should also be visibly displayed around health care facilities to familiarize everyone on breastfeeding. Such platforms will help to breastfeed information to reach the different parts of the country.

iv) Mobilization of antenatal, postnatal, and home-based care services

There is also a need for increased breastfeeding awareness programs and MTCT interventions for pregnant women both in rural and urban South Africa. These programs need to be included during (antenatal and postnatal visits) clinic visits, for women to be aware of the information before giving birth. In these programs, women, particularly nulliparous or first-time mothers, need to be informed about the MTCT and the different food that needs to be given to infants at different stages of growth. However, this should be conducted after the health workers have received thorough training on breastfeeding and HIV, as they are the people who are in close and regular contact with pregnant women. The training also needs to be incorporated into the medical school curricula so that student-health workers are already familiar with the subject by the time they go for practice. Such programs will help women with the early planning of child feeding

practices and familiarize themselves with the necessary health precautions that need to be considered before and during breastfeeding.

Mekuria & Edris (2005), indicated that women who attended postnatal and antenatal classes were more likely to engage in breastfeeding and do so for a more extended period than others. Such services are useful and helpful in preparing women for birth and after birth. Antenatal and postnatal services should be made available to women for free at hospitals or affordable if offered by organizations other than the government. Such sessions act as a support system for mothers and help them with depression and other challenges related to breastfeeding. There is also a need for proper mobilization of HBC programs, where women are offered one-on-one support during their maternal period through home visits. These services are helpful in that they help women in overcoming challenges related to taking care of the baby and initiating breastfeeding and boosting maternal confidence.

Breastfeeding remains a right that every infant in South Africa should be able to access. In advocating for this, the study proposed the above recommendations to promote the breastfeeding culture in rural and urban South Africa. The government and related stakeholders are advised to invest in these strategies to ensure that every infant has the right to human milk at least for the first six months of their life. This ensures that the infant grows and develops to their optimum, as highlighted by the WHO.

6.4 Contribution to the knowledge

The study's objective was to explore factors accounting for the low breastfeeding rate in South Africa and understand the different perceptions that women had on breastfeeding, which caused the discrepancies in breastfeeding rates between rural and urban areas. These objectives were

achieved through quantitative and qualitative analysis, thereby contributing to breastfeeding literature. Statistics have indicated concern about the low rates of breastfeeding in South Africa, particularly in urban areas.

The study highlighted the statistical nature of breastfeeding in rural and urban areas through quantitative and qualitative analysis. The results indicated that women in rural areas are more active in breastfeeding than women in urban areas. Following the quantitative analysis, the qualitative discussion supported the quantitative results and highlighted factors causing variations in the breastfeeding attitudes between rural and urban areas. These empirical findings of the study have significantly contributed to the knowledge on breastfeeding in South Africa as there are a few studies of this nature. The results have further informed different strategies and policies that can be put forward to curb the low breastfeeding rate in South Africa, drawing more focus on exclusive breastfeeding for six months especially in urban areas of South Africa.

6.5 Suggestions for Further Research

One of the challenges of this research is the small focus area, particularly on the qualitative aspect. The qualitative results cannot be generalized to South Africa since the study was only limited to Mpumalanga, and the sample size was small. Like the SADHS (2017), there is a need for qualitative studies that will examine the specific cases in other Provinces so that the results can represent the realities of the country. Such studies will help better inform policies and strategies that can be implemented to promote breastfeeding in all parts of the country without using a one-size-fits-all approach.

The study made use of two theories to support and understand the arguments in the study. The challenge in using these theories was that they could not adequately explain the difference

between rural and urban breastfeeding rates. Therefore, just like the Self-efficacy framework on breastfeeding, there is a need for more breastfeeding tailored theories to understand better why women in rural areas are more active in breastfeeding than women in urban areas.



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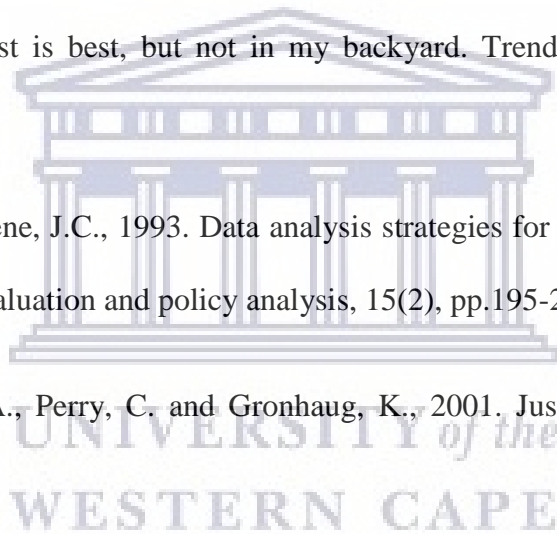
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Appendices

Interview guide

- 1) Are you aware of the difference between breastfeeding and exclusive breastfeeding?
- 2) Have you ever practiced breastfeeding?
 - if NO, why?
 - if YES, did you experience any challenges during the process?
- 3) Concerning the previous experiences that you have had on breastfeeding, would you breastfeed again in the future?
- 4) Are you aware of any Breastfeeding campaigns that were implemented in your community?
- 5) What was your longest duration in breastfeeding?
- 6) Would you substitute breastmilk with anything and why?
- 7) Did you receive any support from the society or your family members on how to breastfeed?
- 8) Are you aware of any benefits that breastfeeding has on both the mother and the infant?
- 9) Would you breastfeed in public? (please give reasons)
- 10) In your own opinion, why do you think most women are hesitant to breastfeed?
- 11) Would you recommend breastfeeding to anyone?
- 12) In your own opinion, how best can we promote breastfeeding in your area?
- 13) Did you attend any Antenatal classes during your pregnancy?
- 14) Did you receive any information or assistance from the health professionals on breastfeeding after you had given birth?

15) Did you give birth in a private or public hospital?

16) Have you seen any changes regarding your diet before initiating breastfeeding and during breastfeeding?



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LETTER OF CONSENT: TO PARTICIPATE IN INTERVIEWS

I,, have had the opportunity to ask any questions related to this study, and received satisfactory answers to my questions, and any additional details I wanted.

I agree to take part in this research.

I understand that my participation in this study is voluntary. I am free not to participate and have the right to withdraw from the study at any time, without having to explain myself.

I am aware that the information I provide in this Interview might result in research which may be published, but my name will not be used.

I understand that my signature on this form indicates that I understand the information on the information sheet regarding the structure of the questions.

I have read the information regarding this research study regarding perception around infant breastfeeding.

I agree to answer the questions to the best of my ability.

I understand that if I do not want my name to be used that this will be ensured by the researcher.

I may also refuse to answer any questions that I do not want to answer.

I agree to the audio recording of my response and its use in this research.

By signing this letter, I give free and informed consent to participate in this research study.

Date: _____

Participant Name: _____

Participant Signature: _____

Interviewer name: _____

Interviewer Signature: _____

This research is being conducted by **MELISA DLAMINI**, a student at the University of the Western Cape. Her contact details are as follows:

Cell: +27 78 337 6579

Email: 3760844@myuwc.ac.za

This research project has received ethical approval from the Humanities & Social Sciences Research Ethics Committee of the University of the Western Cape,

Tel. 021 959 2988

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INFORMATION SHEET FOR INTERVIEWS

Project Title: Why variations in breastfeeding rates in rural and urban South Africa? The case of Valencia and White River, Mpumalanga

What is this study about? Comparison on the breastfeeding habits and perceptions from rural and urban women in Mpumalanga.

What is the interview about?

Understand the factors that drive rural and urban women to breastfeed or not breastfeed through in-depth interviews.

Would my participation in this study be kept confidential?

Yes, all your responses will be kept confidential. The participation of all participants will be treated with confidentiality and integrity. Personal information will be kept confidential. You will be required to sign a consent form before partaking in the study to protect your privacy and confidentiality. The researcher shall not reveal the identity of the participants and will safeguard the confidential information obtained in the course of the study.

What are the risks of this research?

There are no anticipated risks involved in your participation in this interview.

What are the benefits of this research?

There are no material benefits from the interview to either you the participant or myself. However, it is my hope that policy makers will take recommendations from this study and implement new polices to address the low rates of breastfeeding in the country. This study is also part of my Masters degree, and I will upon submitting this be accessed and qualify for my degree.

Do I have to participate in this interview and may I stop participating at any time?

Your participation in this research is completely voluntary. Should you feel the need to withdraw from the study you can do so at any time.

How long will the interview take?

The interview is expected to last anywhere between thirty to 60 minutes. I thank you for your time.

Do I need to bring anything to the interview?

You do not have to bring anything, everything needed will be provided.

Is any assistance available if I am negatively affected by participating in this study?

There are no anticipated negative effects that could arise from participating in this study. Additionally, the study is unfunded and will not be able to provide any further assistance to any participant.

What if I have questions?

This research is being conducted by **Melisa Dlamini**, a student at the University of the Western Cape. Her contact number is **+27 78 337 6579** or email **3760844@myuwc.ac.za**

If you have any questions about the research study itself, please contact **Dr Coretta Jonah** at the Institute for Social Development (ISD), University of the Western Cape, her telephone number **+27 (21) 959 3856** or **cjonah@uwc.ac.za**.

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

Professor Mulugeta Dinbabo

Acting Director

Institute for Social Development

School of Government

University of the Western Cape

Private Bag X17

Bellville 7535



This research project has received ethical approval from the Humanities & Social Sciences Research Ethics Committee of the University of the Western Cape, Tel. 021 959 2988,
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Mar 05, 2020

Melisa Dlamini
University of the Western Cape
South Africa
Phone: +27 78 337 6579
Email: 3760844@myuwc.ac.za
Request Date: 03/05/2020

Dear Melisa Dlamini:

This is to confirm that you are approved to use the following Survey Datasets for your registered research paper titled: "MA Thesis on the breastfeeding trends in rural and urban South Africa":

South Africa

To access the datasets, please login at: https://www.dhsprogram.com/data/dataset_admin/login_main.cfm. The user name is the registered email address, and the password is the one selected during registration.

The IRB-approved procedures for DHS public-use datasets do not in any way allow respondents, households, or sample communities to be identified. There are no names of individuals or household addresses in the data files. The geographic identifiers only go down to the regional level (where regions are typically very large geographical areas encompassing several states/provinces). Each enumeration area (Primary Sampling Unit) has a PSU number in the data file, but the PSU numbers do not have any labels to indicate their names or locations. In surveys that collect GIS coordinates in the field, the coordinates are only for the enumeration area (EA) as a whole, and not for individual households, and the measured coordinates are randomly displaced within a large geographic area so that specific enumeration areas cannot be identified.

The DHS Data may be used only for the purpose of statistical reporting and analysis, and only for your registered research. To use the data for another purpose, a new research project must be registered. All DHS data should be treated as confidential, and no effort should be made to identify any household or individual respondent interviewed in the survey. Please reference the complete terms of use at: <https://dhsprogram.com/Data/terms-of-use.cfm>.

The data must not be passed on to other researchers without the written consent of DHS. However, if you have coresearchers registered in your account for this research paper, you are authorized to share the data with them. All data users are required to submit an electronic copy (pdf) of any reports/publications resulting from using the DHS data files to: references@dhsprogram.com.

Sincerely,

Bridgette Wellington

Bridgette Wellington
Data Archivist

The Demographic and Health Surveys (DHS) Program

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23 May 2019

Ms M Dlamini
Institute for Social Development
Faculty of Economic and Management Science

Ethics Reference Number: HS19/3/2

Project Title: Why variations in breastfeeding rates in rural and urban South Africa? The case of Valencia and White River, Mpumalanga.

Approval Period: 16 May 2019 – 16 May 2020

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

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

Please remember to submit a progress report in good time for annual renewal.

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

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


HSSREC REGISTRATION NUMBER - 130416-049

FROM HOPE TO ACTION THROUGH KNOWLEDGE

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BY MELISA DLAMINI

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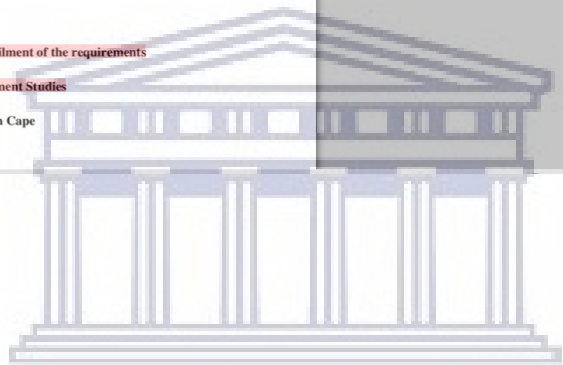
Why variations in breastfeeding rates in rural and urban South Africa?: The case of Valencia and White River, Mpumalanga

By: Melisa Dlamini (3760844)

37 Mini-Thesis submitted in partial fulfilment of the requirements of a Masters Degree in Development Studies
University of the Western Cape

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