THE BREASTFEEDING PRACTICES OF WORKING MOTHERS AND THE LACTATION SUPPORT THAT THEY RECEIVE AT THE FORMAL WORKPLACE

by

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ABSTRACT

Introduction: The promotion of breastfeeding is a strategy for child health and development. The work environment and the availability of infant formula may hinder exclusive breastfeeding of infants for the recommended six months. In order to promote, protect and support breastfeeding, mothers need detailed education to initiate breastfeeding successfully and to continue breastfeeding successfully with support from healthcare workers, family and the workplace. International studies have reported on the successful implementation of breastfeeding policies and the workplace support thereof that assists mothers to successfully continue breastfeeding once they are back at work. The Tshwane Declaration of Support for Breastfeeding in South Africa (SA) was agreed upon by South African stakeholders and aims to promote, protect and support exclusive breastfeeding. It has been suggested that supporting and empowering mothers to breastfeed within the workplace can be achieved through maternity leave policies and supportive workplace policies. It would be beneficial to determine if mothers know if their workplaces have policies regarding breastfeeding in place and if the workplace implements these policies.

Aim: The aim of this study was to determine the breastfeeding practices of working mothers and the lactation support that they receive at the formal workplace, as well as their awareness of the Tshwane Declaration of Support for Breastfeeding in SA.

Objectives: i) To determine the demographic characteristics of breastfeeding mothers working in the private and public sectors in the eThekwini Metropolitan, KwaZulu-Natal (KZN), SA: ii) To determine the breastfeeding practices of working mothers while at the workplace and if they lactate during the workday; iii) To determine the support (physical and technical) that breastfeeding mothers receive from their employers to enable them to express breast milk or lactate at work; iv) To determine if working women who are breastfeeding are aware of the Tshwane Declaration of Support for Breastfeeding in SA with regards to continuing breastfeeding when they return to work.

Methods: A descriptive cross-sectional study using an interviewer-assisted self-administered questionnaire was conducted using breastfeeding mothers who were employed in the private and public sectors in the eThekwini Metropolitan. Convenience sampling was used to select the study participants. The questionnaire was based on a validated and previously used questionnaire regarding the same topic. The questionnaire developed for the current study was validated by a statistician and an expert in breastfeeding and it consisted of three sections. The first section of the questionnaire collected information regarding demographic characteristics

and breastfeeding practices. The second section collected information on the breastfeeding support that working mothers received at work and the third section obtained information on the awareness of mothers regarding the Tshwane Declaration of Support for Breastfeeding in SA. Data were analysed using the International Business Machines Statistical Product and Service Solutions (IBM SPSS) version 25 (IBM Corp, Armonk, NY, USA).

Results: The questionnaire was completed by 134 participants. About 65% (n=87) of the participants were aged 31 to 40 years old. The mean age of the infants that accompanied the participants was 5.9 months. About 37% (n=49) of participants had an undergraduate degree, while 66.4% (n=89) were married and 48.5% (n=65) had only one child. Most participants worked full-time (n=122; 91.0%) and 62.7% (n=84) worked in the private sector. A significant number of participants received maternity leave (n=119; 88.8%) (p=0.000) and 47% (n=63) were planning to return to work after maternity leave. Of those who received maternity leave, 52.2% (n=70) were granted four months maternity leave. Of the participants who were on maternity leave, 63.5% (n=40) were exclusively breastfeeding, while 70.4% (n=50) of those who had returned to work were mixed feeding. A significant number of participants were breastfeeding their infants 1-2 times per day (n=30; 25.9%) (p=0.037). Furthermore, 57.6% (n=68) of the participants were not expressing breast milk at all (p=0.000). About 43% (n=57) of the participants received support from their spouse/partner in order to continue breastfeeding successfully. While breastfeeding, some participants experienced problems such as “low milk supply” (n=17; 29.8%) and “cracked nipples” (n=12; 21.1%). At the time of data collection, a significant number of participants (n=44; 77.2%) were still breastfeeding despite the problems that they had experienced (p=0.000). While pregnant, a significant number of participants did not receive any education regarding the support that they would receive at work, upon their return (n=110; 90.2%) (p=0.000). However, they indicated that they would continue breastfeeding once they returned to work (n=63; 51.6%). Furthermore, the participants were not aware that they could request breastfeeding breaks when they returned to work (n=85; 69.7%). Upon returning to work, 53.1% (n=34) of the participants did not receive breastfeeding breaks and 68.8% (n=44) did not receive any support at work. A significant number of workplaces did not have written policies regarding breastfeeding support once mothers returned to work (n=34; 53.1%) (p=0.000). A significant number of participants (n=128; 95.5%) were not aware of the Tshwane Declaration of Support for Breastfeeding in SA (p=0.000).

Conclusion:

Mothers mostly mixed fed their infants after returning to work as they were unable to sustain exclusive breastfeeding after returning to work. The workplace does not adequately support breastfeeding mothers at the workplace to express breastmilk. This study highlights the need for workplace breastfeeding policies to be in place and communicated in order to support working mothers to sustain breastfeeding after returning to work.

PREFACE

The work described in this dissertation was carried out in the School of Agricultural, Earth and Environmental Sciences, University of KwaZulu-Natal, from January 2021 to November 2024, under the supervision of Dr Nicola Wiles and Prof Kirthee Pillay.

Signed: [redacted] Date: 10 December 2024

Nolwazi Mncwabe (Candidate)

As supervisor of this candidate, I agree to the submission of this dissertation.

Signed: [redacted] Date: 10 December 2024

Dr NL Wiles (Supervisor)

As co-supervisor of this candidate, I agree to the submission of this dissertation.

Signed: [redacted] Date: 10 December 2024

Prof K Pillay (Co-supervisor)

DECLARATION OF ORIGINALITY

I, Nolwazi Mncwabe, hereby declare that:

i. The research reported in this dissertation, except where otherwise indicated, is my original research.
ii. This dissertation has not been submitted for any degree or examination at any other university.
iii. This dissertation does not contain other person's data, graphs or other information unless specifically acknowledged as being sourced from those persons.
iv. This dissertation does not contain other authors' writing unless specifically acknowledged as being sourced from other authors. Where other written sources have been quoted, then:
    a. Their words have been rewritten but the general information attributed to them had been referenced.
    b. Where their exact words have been used, their writing has been placed inside quotation marks and referenced.
    c. This dissertation does not contain text, graphics or tables copied and pasted from the Internet, unless specifically acknowledged, and the source being detailed in the dissertation and in the Reference section.

Signed: Date: 10 December 2024

Nolwazi Mncwabe (Candidate)

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CHAPTER 1: INTRODUCTION, THE PROBLEM AND ITS SETTING

1.1 Importance of the study

Breastfeeding is one of the fundamental factors of child health, development and survival [World Health Organization (WHO) 2016a). It is recommended that breastfeeding must be initiated within the first hour after birth [United Nations Children's Fund (UNICEF 2018)]. Thereafter, infants should be exclusively breastfed for six months with continued breastfeeding up until two years or more and be given safe and nutritious complementary foods (UNICEF 2018). Globally, the breastfeeding rates fall short of the recommended target which is required to protect the health of women and children (UNICEF 2022). The target is set at 70% of mothers initiating breastfeeding within an hour after birth, however, between 2015 and 2021 there was a breastfeeding initiation rate of 47% (UNICEF 2022). Furthermore, between 2015 and 2021, only 48% of women exclusively breastfed their infants under six months old (UNICEF 2022). Horwood, Haskins, Engebretsen, Phakathi, Connolly, Coutsoudis & Spies (2018) conducted a study in the primary healthcare clinics of KwaZulu-Natal (KZN) and interviewed 4 172 mothers and caregivers at their 14-week visit. They reported that 43% of mothers had initiated breastfeeding within one hour after delivery. Furthermore, the same study reported that at the time of data collection in 2015, 30% of the caregivers reported that the infants they came with were being exclusively breastfed, while 73% of mothers were breastfeeding their children but not exclusively (Horwood *et al* 2018).

Once a mother has managed to initiate and maintain breastfeeding, there are factors such as her home and work environment and her previous experience, which affect her decision to prolong breastfeeding for a longer period (WHO 2009). Following childbirth, women continue to need timely and accurate information, encouragement and support to enable them to continue practicing exclusive breastfeeding (WHO 2009). Furthermore, breastfeeding is also affected by the support that women receive from their healthcare professionals during pregnancy and after birth (Horwood, Luthuli, Pereira-Kotze, Haskins, Kingston, Dlamini-Nqeketo, Tshitaudzi & Doherty 2022). The convenience of infant formula affects the decision to maintain breastfeeding due to its ease of use, the need for the mother to return to work and the perception that formula-fed infants gain weight better and sleep better (Horwood *et al* 2022). Throughout most of the twentieth century, the initiation and duration of breastfeeding declined worldwide

as a result of rapid social and economic change, including urbanisation and the marketing of breast milk substitutes (WHO 2009).

The National Department of Health (DOH) in South Africa (SA) has adopted the WHO and UNICEF recommendations of exclusive breastfeeding for the first six months of life, followed by the introduction of nutritionally adequate and safe complementary foods at six months [Department of Health of South Africa (DOH SA) 2013]. Breastfeeding should further be sustained until two years old and beyond (DOH SA 2013). The Tshwane Declaration of Support for Breastfeeding in SA, which was implemented in 2011, is a declaration agreed upon by stakeholders in SA "to actively promote, protect and support, and take actions to demonstrate this commitment" (DOH SA 2011). This declaration was implemented in order to standardise infant feeding messages given by healthcare workers in order to promote exclusive breastfeeding from birth (DOH SA 2011). The Tshwane Declaration of Support for Breastfeeding in SA includes regulating the marketing of breast milk substitutes, reviewing maternity leave policies, promoting human milk banks and implementing baby friendly hospitals (BFHI) (DOH SA 2011). A review done in 2018, reported that 955 of KZN hospitals were accredited as being baby-friendly. It was anticipated that the implementation of this declaration would result in increased breastfeeding rates, especially exclusive breastfeeding, for the first six months of the infant's life (South African Government Gazette 2012).

After birth, mothers prioritise the nutritional care and feeding of their children (Tsai 2014). Returning to work poses a challenge to women who may want to continue breastfeeding. It has been suggested that the workplace should encourage and support a mother's intention to continue breastfeeding after she returns to work (Tsai 2014). A 2012 study conducted in Taiwan, indicated that about half of the study sample of 715 women felt that taking breastfeeding breaks would negatively affect their performance appraisals at work. This may in turn have negatively affected their desire to continue breastfeeding (Tsai 2014).

A woman's employment status is only one of the reasons why breastfeeding mothers who wished to maintain breastfeeding upon their return to work, would stop breastfeeding (Sulaiman, Liamputtong & Amir 2016). A study conducted in Malaysia in 2015 reported that women who sincerely desired to maintain breastfeeding decided with their employers prior to returning to work, that they wished to take breastfeeding breaks when they returned to work

(Sulaiman *et al* 2016). Furthermore, a more recent study also indicated that the return to work had been the reason for the cessation of breastfeeding, while other women did not start breastfeeding at all in some cases because of the need to return to work after maternity leave (Castetbon, Boudet-Berquier & Salanave 2020).

It has been suggested that mothers should be supported and empowered to breastfeed from birth and within the workplace through maternity leave policies, supportive workplace policies and the provision of sufficient time to express breast milk. Furthermore, appropriate spaces should be provided to express breast milk and store it thereafter (UNICEF 2018). Additionally, the national government needs to implement, monitor and communicate these policies in order to have sustainable support (WHO & UNICEF 2018). There also needs to be sufficient resources and ongoing funding towards breastfeeding initiatives (WHO & UNICEF 2018).

With regards to breastfeeding and expressing breast milk, it has been suggested that mothers should receive practical support to enable them to initiate and maintain breastfeeding and furthermore, to be trained to overcome breastfeeding problems (WHO & UNICEF 2018). Mothers need practical, emotional and motivational support to enable them to breastfeed successfully (WHO & UNICEF 2018). Research has indicated that expressing breast milk is associated with mothers being able to produce higher milk volumes, which will result in an ongoing milk supply (Parker, Stellwagen, Noble, Kim, Poindexter & Puopolo 2021). An Australian study reported that 70% of women were expressing breast milk at work in order to maintain their breast milk supply (Burns, Elcombe, Pierce, Hugman & Gannon 2022).

In SA, there are several policies and acts that support and protect breastfeeding. One of them is the Regulations Relating to Foodstuffs for Infants and Young Children (R991), which was implemented to protect and support breastfeeding by creating an environment that does not allow relentless marketing strategies of breast milk substitutes to mothers (DOH SA 2012). This regulation additionally ensures that the healthcare professional who interacts with pregnant women and mothers does not influence their decision to formula feed. Since the release of the Tshwane Declaration of Support for Breastfeeding in SA in 2011, significant work has been done regarding the marketing of breast milk substitutes to support breastfeeding mothers and to prevent the media from influencing mothers to choose infant formula over breastfeeding (Du Plessis & Pereira 2013). However, the provincial and district levels in SA still need to address the barriers that hamper breastfeeding 12 months after birth (Du Plessis & Pereira 2013).

It has been established that breastfeeding has benefits for both the mother and child, and expressing breast milk after returning to work allows for the maintenance of breastfeeding. There has been a decline in the initiation and duration of breastfeeding worldwide, in conjunction with an increase in the marketing of breast milk substitutes. However, in recent years the trend has shifted towards improving the promotion and support of breastfeeding practices. In SA, research has only been conducted on breastfeeding initiation rates and the reasons for the cessation of breastfeeding. Therefore, there is a need to determine all circumstances women possibly face when trying to continue breastfeeding after returning to work and the support they receive. Mothers have suggested that the only way for them to continue to breastfeed after returning to work would be to have support from management and supervisors at work (Mabaso, Jaga & Doherty 2020). Further research is required regarding the knowledge and support that the workplace gives to the working mother, and to further establish practical support within the Tshwane Declaration of Support for Breastfeeding in SA for working women.

1.2 Statement of the problem

The study aimed to determine the breastfeeding practices of working mothers and the lactation support that they receive at the workplace, as well as their awareness of the Tshwane Declaration of Support for Breastfeeding in SA.

1.3 Research objectives

The objectives of the study were:

1.3.1 To determine the demographic characteristics of breastfeeding mothers working in the private and public sectors in the eThekwini Metropolitan, KZN, SA.

1.3.2 To determine the breastfeeding practices of working mothers while at the workplace and if they lactate during the workday.

1.3.3 To determine the support (physical and technical) that breastfeeding mother receive from their employers to enable them to express breast milk or lactate at work.

1.3.4 To determine if working women who are breastfeeding are aware of the Tshwane Declaration of Support for Breastfeeding in SA with regards to continuing breastfeeding when they return to work.

1.4 Hypotheses

The following hypotheses were proposed:

1.4.1 Working women cease to breastfeed their children (both exclusively and mixed feeding upon returning to work.

1.4.2 Women who are working in the private and public sectors do not receive support in line with the Tshwane Declaration of Support for Breastfeeding in SA to support breastfeeding upon returning to work.

1.4.3 Breastfeeding women are not aware of workplace policies and procedures put in place to support them upon their return to work.

1.4.4 Breastfeeding women are not aware of the Tshwane Declaration of Support for Breastfeeding in SA with regards to continuing breastfeeding when they return to work.

1.5 Inclusion and exclusion criteria

1.5.1 Inclusion criteria

The following subjects were included in the study:

1.5.1.1 Breastfeeding women of all race and age groups with any number of children.

1.5.1.2 Breastfeeding women visiting private hospital and private baby clinics in the eThekwini Metropolitan, KZN.

1.5.1.3 Working women employed in both the private and public sectors in the eThekwini Metropolitan who attended private hospitals or clinics in the eThekwini Metropolitan.

1.5.1.4 Breastfeeding women who had initiated breastfeeding and stopped.

1.5.2 Exclusion criteria

The following subjects were excluded from the study:

1.5.2.1 Women attending public hospitals or clinics within the eThekwini Metropolitan.

1.5.2.2 Women who were learners and/or unemployed or not working at the time of data collection.

1.5.2.3 Women who were pregnant and had not given birth at the time of data collection.

1.5.2.4 Women who were exempt from breastfeeding due to medical reasons.

1.6 Assumptions

For the purpose of the study, the researcher assumed the following:

1.6.1 All participants would be able to understand the questionnaire.

1.6.2 All participants would complete the questionnaire honestly.

1.6.3 All participants would be able to read and understand English.

1.6.4 All participants would have initiated breastfeeding at birth.

1.7 Definitions of terms

Antenatal: Care provided by skilled healthcare professionals to pregnant women and adolescent girls in order to ensure the best health conditions for both mother and baby during pregnancy (WHO 2016b).

Baby-friendly Hospital Initiative: An initiative that was launched in 1991 by the WHO and UNICEF, in response to the 1990 Innocenti Declaration on the Promotion, Protection and Support of Breastfeeding. It aims to provide health facilities with a framework for addressing practices which have a negative impact on breastfeeding (WHO 2017a).

Breastfeeding: Breastfeeding is described as infant attachment to and sucking from the mother's breast for nourishment (Emidio, Dias, Moorhead, Deberg, Oliveira-Kumakura & Carmona 2020).

Breast milk substitutes: Any milks or products that could be used to replace breast milk in either liquid or powdered form for children under the age of three years old, including growing up milks or fortified milks (WHO 2009).

Caesarean section: A Caesarean section is an invasive birth procedure that involves making incisions in the abdomen and uterus to deliver a baby (Ulfa, Maruyama, Igarashi & Horiuchi 2023).

Cessation of breastfeeding: Bringing breastfeeding to a complete end (Koura 2019).

Complementary food: Any solid or liquid other than breast milk or infant formula given to infants at approximately six months of age (Muth & Tanaka 2023).

Duration of breastfeeding: The length of time for any breastfeeding, including breastfeeding through the initial stage of exclusive breastfeeding and any period of complementary feeding until weaning (Noel-Weiss, Boersma & Kujawa-Myles 2012).

Early initiation of breastfeeding: Initiation of breastfeeding within one hour after birth (WHO 2017b).

Exclusive breastfeeding: Breastfeeding such that an infant receives only breast milk from its mother or a wet nurse, or expressed breast milk, and no other liquids or solids (WHO 2009).

Expressed breast milk: Breast milk expressed from the breast (either manually or via a pump) (Pang, Bernard, Thavamani, Chan, Fok, Soh, Chua, Lim, Shek, Yap, Tan, Gluckman, Godfrey, van Dam, Kramer & Chong 2017).

Formal workplace: An environment which comprises employees that have obtained an employment contract or agreement. The different work environments depend on the organisations, managers and the qualifications one has obtained (Debus, Körner, Wang & Kleinmann 2022).

Human milk banks: A source of breast milk for mothers who cannot breastfeed (Patel, Sumaraj, Gabler, Grieve, Naidoo, Cronin & Loveland 2023).

International Code of Marketing of Breast-milk Substitutes (The Code): A set of recommendations to regulate the marketing of breast milk substitutes, feeding bottles and teats (WHO 2017a).

Infant: A child from birth to 12 months of age (DOH SA 2021).

Informal sector workers: Workers who received renumerations that are close or below the statutory minimum and sometimes did not get paid for the work that they do beyond their work requirements. Furthermore, their work lacks legal and social protection (Hamid, Aldila & Intan 2022).

Lactation: The process of producing and releasing milk from the mammary glands in the breast (WHO 2009).

Mixed feeding: Feeding both breast milk and other foods or liquids to a child less than six months of age (DOH SA 2013).

Natural birth: Any birth where delivery takes place through the natural birth canal (Mihaylova & Draganova 2023).

Physical Support: Support given to physically assist in the implementation of breastfeeding. This includes successful breastfeeding strategies, how to overcome breastfeeding problems, practical support on how to breastfeed and how to express breastmilk (Page, Emmott & Myers 2021).

Technical Support: Interventions of individual counselling or group education, imparting knowledge of breastfeeding and lactation. Furthermore, the knowledge of healthcare workers regarding relevant and current policies. (Symington 2024).

Tshwane Declaration of Support for Breastfeeding in South Africa: The commitment by the National Breastfeeding Consultative Meeting arranged by the National DOH of SA to

address infant and young child feeding, which was agreed upon in 2011 in Gauteng, SA (DOH SA 2011).

1.8 Abbreviations

BFHI	Baby Friendly Hospital Initiative
DHS	Demographic and Health Surveys
DOH	Department of Health
DOL	Department of Labour
DOS	Department of Statistics
HIV	Human Immunodeficiency Virus
IBM SPSS	International Business Machines Statistical Product and Service Solutions
KZN	KwaZulu-Natal
SA	South Africa
STAT	Statistics
UIF	Unemployment Insurance Fund
UNICEF	United Nations Children's Fund
WHO	World Health Organization

1.9 Summary

The literature has shown that exclusive breastfeeding is the best feeding option for infants and is recommended for at least six months. Women make up a large part of the workforce and most are of child-bearing age. Women who are planning their families need support in making decisions regarding the best recommended feeding choice. Mothers have maternity protection rights regarding breastfeeding which need to be protected by the national and local government together with the private sector. Currently in SA, rights and laws have not been adequately implemented at most of the workplaces regarding maternity leave. Mothers need enough maternity leave to initiate and sustain breastfeeding as long as possible, however, the workplace must also accommodate mothers who choose to breastfeed or express breast milk at work in order to sustain breastfeeding for at least six months. Besides not having these rights implemented, women and their places of work may not have knowledge and awareness of these rights and therefore may struggle to fight for these rights. This study aimed to determine the breastfeeding practices of working mothers and the lactation support that they receive at the workplace, as well as their awareness of the Tshwane Declaration of Support for Breastfeeding in SA.

1.10 Dissertation overview

This dissertation consists of six chapters as follows:

Chapter 1: Introduction, the problem and its setting - Provides information on the problem and its setting, outlining the objectives, hypotheses, exclusion and inclusion criteria, assumptions and definitions.

Chapter 2: Review of related literature - Reviews literature regarding breastfeeding, breastfeeding amongst working women and the social and workplace support women receive to maintain breastfeeding.

Chapter 3: Methodology - Presents the methodology used to conduct the study.

Chapter 4: Results - Presents the results following the statistical analysis of the data.

Chapter 5: Discussion – Discusses the study results in relation to previous studies reviewed in Chapter Two and according to the objectives of the study.

Chapter 6: Conclusion, study limitations and recommendations - Presents the study conclusions, study limitations and provides recommendations for future research.

1.11 Referencing style

This dissertation has been written according to the referencing guidelines used in the Discipline of Dietetics and Human Nutrition at the University of KwaZulu-Natal (UKZN).

The next chapter presents the review of related literature.

CHAPTER 2: REVIEW OF RELATED LITERATURE

This literature review presents an overview of breastfeeding trends both globally and locally and further establishes breastfeeding rates and the reason for the rates. In particular, the literature review evaluates the decisions that working mothers make according to their plans to return to work and furthermore, the support they receive at work to continue with their choice of feeding. Recommendations from the South African National Department of Health are outlined and the support that breastfeeding mothers should receive from healthcare professionals after birth. Furthermore, it includes the rights that breastfeeding women have and how knowledge of these rights can affect their decision to continue or cease breastfeeding due to the support they receive at work.

2.1 Overview of breastfeeding

Breastfeeding is one of the fundamental factors of child health, development, and survival (WHO 2016a). In 2009, the WHO recommended that infants should be exclusively breastfed until six months of age (WHO 2009). However, to achieve optimum breastfeeding, both the mother's desire to breastfeed and a supply of sufficient breast milk are required (WHO 2009). The WHO and UNICEF both recommend that breastfeeding should be initiated within one hour after birth and thereafter maintained for two years and beyond (UNICEF 2018). Factors which affect the duration of breastfeeding, include the home and work environment of the mother and her previous breastfeeding experience (WHO 2009). Furthermore, breastfeeding is also affected by the support from healthcare professionals during pregnancy and after birth (Horwood *et al* 2022). The convenience of infant formula affects the decision to cease breastfeeding due to its convenience, the need to return to work and the perception that formula-fed infants gain weight better and sleep better (Horwood *et al* 2022). Breastfeeding is accepted as the primary strategy to enhance infant and young child nutrition and improve child survival (Siziba, Jerling, Hanekom & Wentzel-Viljoen 2015).

Breast milk contains all the nutrients that an infant requires for growth and development for the first six months of life and breast milk is adaptive to the child's needs as they grow (WHO 2009). These nutrients include carbohydrates, fat, protein, vitamins and minerals, which are easily and efficiently digested (WHO 2009). Breast milk also contains bioactive factors that enhance the infant's immature immune system, providing protection against infection and assisting with digestion and absorption of nutrients (WHO 2009). Furthermore, due to the prevalence of

diarrhoea, pneumonia and undernutrition, which may result in mortality for children under five years, exclusive breastfeeding for the first six months of life is the recommended feeding option that should be continued beyond two years along with appropriate complementary feeding (WHO 2016a). Since 2016, it has been recommended that mothers living with HIV should breastfeed for at least 12 months and may continue breastfeeding for up to 24 months, while adhering to antiretroviral therapy (ART) (WHO 2016a). Therefore, HIV status does not have to be the reason for cessation of breastfeeding prior to six months (WHO 2016a).

2.1.1 Benefits of breastfeeding

The benefits of exclusive breastfeeding for six months or more include no observable deficits in growth in infants and young children, and that mothers are more likely to remain amenorrhoeic for six months postpartum, which delays the return of menses and provides a contraceptive effect resulting in birth spacing (Victora, Bahl, Barros, Franca, Horton, Krasevec, Murch, Sankar, Walker, Rollins & Lancet Breastfeeding Series Group 2016). Exclusive breastfeeding has also resulted in increased protection from symptoms of postpartum depression (Tucker & O'Malley 2022). In this manner, the mother-infant relationship is improved because of reduced fatigue in the mother by promoting a proper sleep-wake cycle and therefore, maintaining the mental well-being of the mother (Tucker & O'Malley 2022).

Breast milk contains antibodies that reduce the prevalence of pneumonia and recurrent diarrhoea in breastfed infants, compared to babies who are exclusively formula fed (Victora *et al* 2016). Beneficial bacteria that live in the infant's gut to assist in fighting disease, digesting food and providing infants with their earliest immune protection, are passed from the mother to the baby during breastfeeding (Pérez-Escamilla, Tomori, Hernández-Cordero, Baker, Barros, Bégin, Chapman, Grummer-Strawn, McCoy, Menon, Neves, Piwaz, Rollins, Victora, Ritcher 2023). Furthermore, breastfeeding provides newborn infants and children with protective antibodies acquired from maternal vaccines and the mother's own exposure to antigens and allergens (Pérez-Escamilla *et al* 2023). Children are protected from chronic illness, whilst mothers are protected from postpartum depression, cancers and diabetes (UNICEF 2022). When breastfeeding is on demand, the mother and baby have the benefit of bonding closely (WHO 2009). Skin-to-skin contact that occurs during breastfeeding further supports maturing mechanisms including, temperature, metabolism and diurnal adaptation (Pérez-Escamilla *et al* 2023). Mothers are encouraged to express breast milk so that the milk supply is not disrupted if the mother and the baby are separated (WHO 2009). Moreover, frequent breast milk

expression is associated with mothers being able to produce higher milk volumes, which will result in ongoing milk supply (Parker *et al* 2021).

A study done in India including 125 child participants aged between one and three years, assessed cognitive development in relation to the duration of exclusive breastfeeding (Malhi, Bharti & Sidhu 2023). The study found that longer breastfeeding duration improved cognitive outcomes among pre-school children (Malhi *et al* 2023). Furthermore, in the same study, children who were exclusively breastfed for six months were significantly less likely to be cognitively delayed, relative to those who were exclusively breastfed for less than six months (Malhi *et al* 2023). With regards to physical well-being of children, a meta-analysis of 113 studies conducted in Brazil showed a 13% reduction in the prevalence of overweight and obesity in children who were breastfed for a period of longer than six months (Horta, Loret de Mola & Victora 2015). Furthermore, appropriate breastfeeding practices prevented child morbidity due to respiratory infections and otitis media (Victora *et al* 2016). Breast milk has been associated with multiple benefits for very low birth weight infants, which include lowering the risk of necrotising enterocolitis, sepsis, chronic lung disease and neurodevelopment impairment (Parker *et al* 2021).

2.1.2 Breastfeeding rates globally and in South Africa

Globally, the breastfeeding rates fall short of the recommended target which is required to protect the health of women and children (UNICEF 2022). In the first two years of a child's life, exclusive breastfeeding is significant to prevent stunting, wasting and micronutrient deficiencies, however, only 49% of newborns globally are initiated on breastmilk (UNICEF 2020). The global target for 2030 is set at 70% for the initiation of breastfeeding after birth, however, between 2015 and 2021, only 47% of mothers had initiated breastfeeding within an hour after birth (UNICEF 2022). Furthermore, between 2015 and 2021, only 48% of women exclusively breastfed their infants under six months old according to global rates (UNICEF 2022). In order to achieve the 70% breastfeeding target rate by 2030, UNICEF supports the development of breastfeeding guidelines together with the successful implementation of the International Code of Marketing of Breastmilk Substitutes (UNICEF 2020). A survey done between 2015 and 2021, from 26 European nutrition societies showed that seven European countries in the region had the lowest exclusive breastfeeding rates for children under six months, with a rate of less than 25% compared to the other European countries (Theurich, Davanzo, Busck-Rasmussen, Diaz-Gomez, Brennan, Kylberg, Baerug, McHugh, Weikert,

Abraham & Koletzko 2019).

A 2015 meta-analysis on breastfeeding rates including 37 high-income countries, indicated a breastfeeding prevalence of 20% from birth to 12 months old (Victora *et al* 2016). A total of 127 low-income and middle-income countries reported that 37% of children who were younger than six months, were exclusively breastfed (Victora *et al* 2016). This confirmed that breastfeeding duration is shorter in high-income countries, however, initiation and exclusive breastfeeding is still unsatisfactory in all countries (Victora *et al* 2016). At the time of the international survey, 63% of children under six months old in low-income countries were not exclusively breastfed, and at the age of six to 23 months in low-income countries, 37% of children were not receiving any breast milk (Victora *et al* 2016).

Data from the 2016 STAT (Statistics) compiler and the Demographic and Health Surveys (DHS) programme, indicated that in SA, 67.3% of infants were initiated on breast milk within one hour after birth (Vitalis, Vilar-Compte, Nyhan & Pérez-Escamilla 2021). STAT compiler is a tool used to compare DHS data across countries and across time (The DHS Programme 2024). The study further reported that the average duration of breastfeeding in SA was 2.9 months (Vitalis *et al* 2021). According to the South African Demographic and Health Survey (SADHS 2016), only 32% of infants under the age of six months were exclusively breastfeeding in 2016. As the infants grew from one month to four months, the exclusive breastfeeding rate decreased to 24% as some mothers had introduced water and infant formula (SADHS 2016).

A study conducted in the North West, Eastern Cape, Gauteng and Free State provinces in SA including 580 women, revealed a breastfeeding rate of 85% after delivery (Siziba *et al* 2015). At the time of the study, 48% of mothers were practicing exclusive breastfeeding; however, only 12% of those who had initiated breastfeeding at birth were breastfeeding at six months (Siziba *et al* 2015). Being born full-term or prematurely did not significantly affect the exclusive breastfeeding rate. However, the mother's HIV status was the most common reason given for not breastfeeding (Siziba *et al* 2015). It should be noted that of the mothers who had stopped breastfeeding, 40% did so within one month after the infant's birth, with the most reported reason for cessation being that the mother had to return to work (Siziba *et al* 2015). Another South African study conducted in the primary healthcare clinics of KZN on 4 172 mothers and caregivers at their 14-week visit, reported that 43% had initiated breastfeeding

within one hour after delivery (Horwood *et al* 2018). Furthermore, the same study reported that at the time of data collection, which was 2015, 30% of the caregivers reported that the infants they came with were receiving breast milk, while 73% of mothers were breastfeeding their children, but not exclusively (Horwood *et al* 2018).

Another factor that affects breastfeeding initiation is the birthing method. In the private sector, mothers have a choice between natural birth and Caesarean section (Solanki, Cornell, Daviaud & Fawcus 2020). Solanki *et al* (2020) reported a high 73% prevalence of Caesarean sections in the private sector in SA. A Japanese meta-analysis reported that because a Caesarean section is an invasive birth procedure that involves making incisions in the abdomen and uterus to deliver a baby, initiation of breastfeeding may not be possible within minutes after birth (Ulfa *et al* 2023). This would affect the mother's self-efficacy to initiate and maintain breastfeeding and further affect exclusive breastfeeding as infant formula may be initiated if there is a delay in initiating breastfeeding after birth (Ulfa *et al* 2023).

2.2 Breastfeeding recommendations from the South African Department of Health

The South African National Department of Health (DOH SA) has adopted the WHO and UNICEF recommendations on exclusive breastfeeding infants for the first six months of life, followed by the introduction of nutritionally adequate and safe complementary foods at six months of age (KZN DOH 2024). In the first six months of life, it is recommended that there should be no introduction of any food or drink, no use of bottles and teats and mothers should be encouraged to practice rooming-in, in order to breastfeed successfully (KZN DOH 2024). Breastfeeding should further be sustained until two years old or beyond (KZN DOH 2024). SA encourages that infants exposed to HIV should be exclusively breastfed if the mother adheres to ART and this should be done for the first six months (KZN DOH 2024).

SA has adopted the 10 Steps to Successful Breastfeeding, which stipulates the need for written policies for healthcare facilities and healthcare staff (KZN DOH 2024). It further recommends that mothers should be given information on the benefits of breastfeeding and should initiate breastfeeding within an hour after birth (KZN DOH 2024). Healthcare staff need to demonstrate and assist mothers on how to breastfeed and to maintain lactation, and furthermore encourage breastfeeding on demand (KZN DOH 2024).

The next three sections will cover the details of the Tshwane Declaration of Support for Breastfeeding in South Africa which entails the purpose and the eleven resolutions pertaining to it. Next, the workplace guide for employers and employees which elaborates on the 10 steps to becoming a breastfeeding friendly workplace will be covered. Lastly, the third section gives details on the R991.

2.2.1 The Tshwane Declaration of Support for Breastfeeding in South Africa

The Tshwane Declaration of Support for Breastfeeding in SA is a declaration agreed upon by stakeholders in SA to promote, protect and support exclusive breastfeeding through the dedication of working together in fulfilling this commitment (DOH SA 2011). The purpose of the declaration was to standardise infant feeding messages given by healthcare workers and to assist healthcare professionals in promoting optimal infant feeding practices (DOH SA 2011). It further ensures regulation of the International Code of Marketing of Breast-milk Substitutes (The Code) and legislated maternity leave for working mothers (DOH SA 2011). The International Code of Marketing of Breast-milk Substitutes was established due to the increased marketing of breast milk substitutes which affect breastfeeding rates (WHO 2009). The Code was developed to regulate the quality of available breast milk substitutes and complementary foods and further regulate their marketing to pregnant women and mothers (WHO 2009). It was anticipated that the implementation of this declaration would result in increased breastfeeding rates, especially exclusive breastfeeding for the first six months (South African Government Gazette 2012).

The Tshwane Declaration of Support for Breastfeeding in SA entails eleven main resolutions which are as follows:

1) “SA declares itself as a country that actively promotes, protects and supports exclusive breastfeeding.”
2) “SA adopts the 2010 WHO guidelines on HIV and infant feeding and recommends that all women living with HIV should breastfeed their infants and receive antiretroviral drugs to prevent HIV transmission.”
3) “National regulations on the International Code of Marketing for Breast-milk Substitutes was planned to be finalised and adopted into legislation within 12 months which it has. This code consequently prevents the marketing of breast milk substitutes, bottles, teats, and complementary foods.”
4) “Resources will be committed by government and other public and private partners, excluding the infant formula industry, to promote, protect and support

breastfeeding. It is still to be confirmed if the desired outcome has been achieved".

5) "Legislation on maternity leave for working mothers will be reviewed to protect and extend maternity leave and ensure that all workers benefit form maternity protection."
6) "Comprehensive services will be provided to ensure that mothers are supported in their decision to exclusively breastfeed their infants for six months, and thereafter to give appropriate complementary foods and continued breastfeeding for either two years and beyond."
7) "Human milk banks should be promoted and supported as a source of breast milk for babies who cannot breastfeed."
8) "Public hospitals and health facilities should be Baby-Friendly Hospital Initiative (BFHI)-accredited by 2015. Private hospitals and health facilities should be partnered to be Baby-Friendly Hospital Initiative-accredited by 2015, and all communities should be supported to be "Baby Friendly". Currently the global statistics report that 14% of countries have more than 50% of their births in baby-friendly facilities (UNICEF 2022)."
9) "Community-based interventions and support should be implemented as part of the continuum of care, with facility-based service to promote, protect and support breastfeeding."
10) "Continued research, monitoring and evaluation should inform the policy development process and strengthen implementation."
11) "Formula feeds will no longer be provided at public health facilities, with the exception of nutritional supplements available on prescription from appropriate healthcare professionals for mothers and infants with approved medical conditions (DOH SA 2011)."

In addition to the implementation of the Tshwane Declaration of Support for Breastfeeding in SA and specifically The Code, which is the third resolution of the Tshwane Declaration of Support for Breastfeeding in SA, the regulation R991 was gazetted in 2012. The regulation was aimed to protect and support breastfeeding by creating an environment that does not allow relentless marketing strategies of breast milk substitutes and prevent conflicts of interest among healthcare staff that consult with pregnant women and mothers (Vitalis *et al* 2021).

Furthermore, the national policy regulations, the Tshwane Declaration of Support for Breastfeeding in SA and the R991 regulations are being violated because of the marketing strategies of infant formula companies (Horwood *et al* 2022). These companies further influence healthcare professionals to dictate messages that influence mothers to consider feeding infant formula (Horwood *et al* 2022). To act against code violators, adequate human and financial resources for monitoring and evaluation is recommended (Vitalis, Witten & Pérez-Escamilla 2022).

Another major violation of The Code is that breast milk substitute products are being advertised, targeting pregnant women (Vitalis *et al* 2021). The breast milk substitute industry is taking advantage of social media platforms for their promotions which violates The Code (Vitalis *et al* 2022). Therefore, experts are calling for The Code to be updated in order to incorporate the digital marketing space (Vitalis *et al* 2022). Moreover, healthcare workers who see pregnant women and mothers are given sponsorships to conferences and scientific meetings, where some information presented on infant formula is misleading (Vitalis *et al* 2021). It is suggested that healthcare professionals should provide information that is always in line with national policies. In addition, infant formula company representatives should not engage with health professionals who will meet pregnant women, as this is also a violation of The Code of Marketing of Breast-milk Substitutes (Horwood *et al* 2022). Furthermore, many of these violations by healthcare professionals occur within the private healthcare sector, due to the financial resources provided to the private healthcare facilities by corporate companies (Vitalis *et al* 2022).

2.2.2 The workplace breastfeeding guide

The DOH has also provided a guide for a workplace breastfeeding policy (KZN DOH 2024). This guide, which is referred to as "Supporting breastfeeding in the workplace: A guide for employers and employees", was written to ensure that workplaces in SA support breastfeeding by providing practical information for employers (DOH SA 2019a).

The DOH has stipulated 10 steps to becoming a breastfeeding friendly workplace as follows (DOH SA 2019a):

1) "Appoint a working group to facilitate breastfeeding support in the workplace."

2) "Build awareness among staff and management about the breastfeeding policy and the breastfeeding needs of working mothers."
3) "Identify an influential breastfeeding advocate from amongst your staff to champion the breastfeeding cause."
4) "Identify a suitable and private space for moms to breastfeed or express their breast milk."
5) "Allow flexible scheduling of work duties to support breast milk expression during working hours."
6) "If possible, allocate a dedicated fridge for expressed breast milk, as well as a dedicated hand basin."
7) "It would be advisable to keep record/register of how many staff use the breastfeeding room."
8) "Report on and celebrate the establishment of your breastfeeding room."
9) "Evaluate the breastfeeding policy and amend when necessary."
10) "Photocopy the signs regarding being a breastfeeding friendly workplace and stick them up in a prominent pace at the workplace" (DOH SA 2019a).

Furthermore, the guide to supporting breastfeeding in the workplace further elaborates on the requirements for setting up a suitable breastfeeding room (DOH SA 2019a). These requirements are divided into three components in which the workplace can choose one component suitable to the workplace's resources and the employee's' needs. The guide contains steps on how women express breastmilk and how best to store expressed breastmilk at the workplace (DOH SA 2019a). Lastly, the guide elaborates on the South African laws protecting pregnant women and breastfeeding in the workplace (DOH SA 2019a).

2.2.3 The R991

The R991 is named the "Regulations Relating to Foodstuffs for Infants and Young Children" (South African Government Gazette 2012). This regulation prohibits the promotion of infant formula, follow-up formula and any other liquids and food intended for infants and the use of bottles, teats and feeding cups (South African Government Gazette 2012). There has been a suggestion to reduce the influence that breast milk substitute companies have towards education with stakeholders, healthcare professionals and universities regarding the importance of breastfeeding and the unethical recommendation of breast milk substitutes under the age of six

months (Jewett *et al* Ritcher 2022). One regulation within the R991 that targets infant formula companies is that they are not permitted to produce, distribute and present educational material relating to infant and young child nutrition (Ntsie 2020). Furthermore, the R991 regulations prohibit financial contributions or sponsorship to healthcare professionals working in infant and young child nutrition (Ntsie 2020).

In 2018 the infant formula industry was complying well with the R991 requirements and the advertisement of breast milk substitutes, but of late it was found that there were violations of the R991 including healthcare workers accepting free gifts from breast milk substitute companies and receiving educational material and equipment which were branded with the manufacturer's name, but not the name of a specific product (Vitalis *et al* 2021). According to the sub regulations within the R991, companies are prohibited to sponsor any sort of material and promotional products as an infant formula manufacturer (Ntsie 2020). Even though the items and materials may not have been branded, there is still a chance for the company to influence the health care professionals (Ntsie 2020). It has been recommended that those who are not aligned with the R991 should be penalised for their violations (Jewett, Pilime & Ritcher 2022).

2.3 Factors influencing breastfeeding rates

There are many factors that contribute to creating an encouraging environment for breastfeeding mothers and their infants (UNICEF 2018). At a national level, policies need to be in place to ensure maternity leave together with the right for women to practice lactating at the workplace (UNICEF 2018). Within the health facilities, women need to make informed choices based on factual and complete information together with supporting mothers with breastfeeding immediately after giving birth and further along their journey (UNICEF 2018). A crucial factor in the marketing of breast milk substitutes which needs to be restricted and monitored is for women not to get confused or have any misunderstanding that leads them to believe that infant formula is equivalent to breast milk (UNICEF 2018).

It has been reported that a woman's employment status is only one reason for breastfeeding preservation, with the focus being on the breastfeeding support granted at work for working mothers who want to maintain breastfeeding on their return to work (Tsai 2014). After birth, mothers prioritise the nutritional care and feeding of their children (Tsai 2014). Returning to work poses a challenge to women who may want to continue breastfeeding, and it has been

suggested that the workplace should encourage and support a mother's intention to continue breastfeeding after returning to work (Tsai 2014). The work environment is a definite factor that influences whether women continue or cease breastfeeding when they return to work (Quintero, Strassle, Tobón, Ponce, Alhomsi, Maldonado, Ko, Wilkerson & Nápoles 2023). Quintero *et al* (2023), who conducted a study in the United States of America (USA) that used data from pregnancy risk assessments done between 2016 and 2019, reported that one in five women stopped breastfeeding at less than 10 weeks or did not initiate breastfeeding because they were returning to work (Quintero *et al* 2023). A favourable work environment includes a workplace that has supportive supervisors and staff and most importantly, permits breastfeeding breaks to express breastmilk and a private space to do so (Daniels, Mbhenyane, Du Plessis 2024b).

Another factor influencing the decision to breastfeed is the knowledge that women have regarding the differences between breast milk and formula milk (Sowden *et al* 2009). In a study done in the Cape Metropole area, in the Western Province of SA, women who had chosen to formula feed their children believed that the composition of breast milk and formula was similar and therefore formula milk was as healthy as breast milk (Sowden *et al* 2009). In another study with 64 participating mothers in Johannesburg SA, the majority of mothers (97%) identified breastfeeding as superior to formula, but less than half (44%) of the mothers planned to exclusively breastfeed (Patel *et al* 2023). Furthermore, the participants lacked knowledge on the benefits of breastfeeding, which may be due to a lack of information given in prenatal and postnatal counselling on feeding options for expectant and new mothers (Patel *et al* 2023).

Patel *et al* (2023) reported that participants felt underequipped to make optimal feeding choices for their children. With most mothers planning to breastfeed exclusively, there was still a deficit in appropriate education on feeding practices and the best options for mothers (Patel *et al* 2023). Moreover, counselling rates on feeding practices were worse during postnatal care compared to antenatal counselling periods (Patel *et al* 2023). Some mothers in the USA chose not to breastfeed as they did not want to breastfeed, they did not like it and had to take care of other children (Quintero *et al* 2023).

2.3.1 Demographic characteristics of South African women who are likely to sustain breastfeeding

A study done in Cape Town, SA indicated that 88% of a total of 55 mothers in higher socio-

economic areas chose to formula feed their children from birth (Sowden *et al* 2009). The main factors influencing their decision to formula feed were the lack of breastfeeding knowledge or experience, the lack of public facilities to breastfeed, the lack of the father's involvement and lastly having to return to work (Sowden *et al* 2009) Another study done in Johannesburg, SA indicated that the majority of women attending public health facilities in SA are unemployed (Patel *et al* 2023). This study by Patel *et al* 2023, further indicated that these women valued breastfeeding as more superior to infant formula, but less than half were planning not to breastfeed their infants. Regarding women specifically in KZN attending public health care clinics, breastfeeding mothers mostly do not have a qualification above grade 12 and are mostly dependent on the child support grant due to unemployment (Horwood *et al* 2020). In this KZN study by Horwood *et al* 2020, close to half of the mothers from a total of 69 were breastfeeding at 14 weeks, whilst a third were not breastfeeding at all.

2.4 Breastfeeding among working women

Women of reproductive age have an increasing role in the labour market (Vilar-Compte, Hernández-Cordero, Ancira-Moreno, Burrola-Méndez, Ferre-Eguiluz, Omaña & Pérez Navarro 2021). This provides the opportunity for the workplace to be the most relevant space to promote, protect and support breastfeeding among working women (Vilar-Compte *et al* 2021). It represents an opportunity to foster gender equity, and the health and nutrition of mothers and infants (Vilar-Compte *et al* 2021). A woman's employment status is only one reason for breastfeeding preservation, with the focus being on the breastfeeding support granted at work for working mothers who want to maintain breastfeeding on their return to work (Sulaiman *et al* 2016). A study conducted in Malaysia reported that women who sincerely desired to maintain breastfeeding decided with their employers prior to returning to work, that they wished to take breastfeeding breaks when they returned to work (Sulaiman *et al* 2016).

A 2012 study conducted in Taiwan, indicated that about half of the study sample of 715 women, thought that taking breastfeeding breaks would negatively affect their performance evaluation at work, which may in turn negatively affect their desire to continue breastfeeding (Tsai 2014). Another study done in France including 2 480 women reported that returning to work had been the reason for the cessation of breastfeeding, while other women did not start breastfeeding at all in several cases (Castetbon *et al* 2020). Most women in France have at least five months maternity leave and flexibility in their working hours which is a determinant for breastfeeding

initiation together with any complications experienced while pregnant (Castetbon *et al* 2020).

Despite research being conducted across the world with regards to breastfeeding, there is a need for further studies regarding expressing breast milk at work and the support thereof, particularly in SA (Siziba *et al* 2015). Another study from an eight multi-country study including SA, specifically Johannesburg and Cape Town, aimed to explore women's perceptions and experiences when making decisions on their feeding choices (Horwood *et al* 2022). The study revealed that some working women ceased to breastfeed within weeks after giving birth or prior to returning to work because they were not supported in expressing and storing breast milk in the workplace (Horwood *et al* 2022). Frequent breast milk expression is associated with mothers being able to produce higher milk volumes, which would result in an ongoing milk supply (Parker *et al* 2021). Burns *et al* (2022) reported that 70% of women were expressing breast milk at work in order to maintain breast milk supply.

2.4.1 The rights of breastfeeding women following childbirth and returning to work

SA has adopted The Code of Good Practice on the Protection of Employees during pregnancy, which recommends that mothers returning to work can take two 30-minute breastfeeding breaks until their child is six months old (Department of Labour (DOL) SA 1998). The Code of Good Practice on the Protection of Employees was developed and adopted in terms of the South African Basic Conditions of Employment Act of section 87(1)(b) in order to protect breastfeeding (DOL SA 1998). To promote and protect breastfeeding at work, the South African national government legislated four months partly subsidised maternity leave (South African Government Gazette 2012).

The Labour Relations Act ensures job security during and after pregnancy by stipulating that dismissal related to pregnancy is unfair (Pereira-Kotze, Malherbe & Doherty 2022). Internationally, The Maternity Prevention Convention of the International Labour Organisation has recommended maternity leave of longer than 18 weeks, together with lactation breaks when women return to work (Pereira-Kotze *et al* 2022). Furthermore, it is compulsory in SA for mothers to have at least six weeks maternity leave after birth with a payment maternity benefit of not less than two-thirds of their salary (Pereira-Kotze *et al* 2022). Since their full salary is not guaranteed, some women return to work earlier than the recommended time due to insufficient financial support from staying at home longer (Pereira-Kotze *et al* 2022). On their return to work, it is recommended that mothers should be able to take one or more daily breaks or have a daily

reduction of working hours in order to breastfeed (Pereira-Kotze *et al* 2022). In SA, The Maternity Prevention Convention has not been entirely implemented as maternity leave is currently less than 18 weeks, with some work settings having no additional lactation breaks, and no private facilities for lactating mothers (Reimers 2017). Furthermore, globally, 53% of 185 countries have ensured 14 weeks maternity leave, with only 23% of these countries adhering to the recommended 18 weeks (Rollins, Bhandari, Hajeebhoy, Horton, Lutter, Martines, Piwoz, Richter & Victora 2016).

2.4.2 Workplace breastfeeding support for women

A 2019 study on Ghanaian working mothers also suggested that maternal employment outside the home had been identified as one of the societal level barriers to breastfeeding as women are also a notable segment of the labour force (Idrissu, Abdul-Lateef, Hushie & Bashiru 2019). Working mothers expressed the need for privately designed breastfeeding rooms, workplace crèches and an extension of the current maternity leave period from three to six months. Without these, it is difficult for working mothers to maintain exclusive breastfeeding (Idrissu *et al* 2019). Despite increases in female participation in the labour force, Ghanaian state support for breastfeeding workers remains limited (Idrissu *et al* 2019). The key enabling factors for breastfeeding were found to be existing peer support, breastfeeding breaks and a friendly attitude from superiors (Idrissu *et al* 2019). UNICEF has suggested that the private sector can show its support to working mothers by empowering mothers to initiate breastfeeding after birth and within the workplace (UNICEF 2018).

With mothers indicating that one of the factors affecting exclusive breastfeeding for six months is returning to work, it is recommended that the work environment make arrangements to support breastfeeding mothers in the workplace (Daniels, Mbhenyane & Du Plessis 2024a). In order for the work environments to be more accommodative to breastfeeding mothers, they could implement the workplace breastfeeding support practice model (Daniels *et al* 2024a). This model is greatly influenced by mothers believing that breastfeeding is beneficial for their infants and to possibly aim to exclusively breastfeed for six months and further breastfeed for as long as possible even once they have returned to work (Daniels *et al* 2024a). The workplace would, therefore, need to consult with mothers on their return from maternity leave regarding the support that they would receive at work after maternity leave, both from the employer and human resources (Daniels *et al* 2024a). The success of the model is dependant firstly on the employer's provision of support through leadership agreement and written policies to support

breastfeeding at work, provision of sufficient maternity leave, provision of a breastfeeding room or rooms and communication to all employees both male and female about the workplace agreement (Daniels *et al* 2024a). Furthermore, there should be engagement of these policies to women during pregnancy and after maternity leave (Daniels *et al* 2024a). According to the practice model, once these initiatives within the workplace are implemented, they would result in a supportive maternity and breastfeeding environment, increased knowledge and awareness about breastfeeding to all employees, and increased motivation for mothers to breastfeed for a longer period even after returning to work (Daniels *et al* 2024a). Moreover, breastfeeding support at work results in decreased absenteeism amongst employees who are breastfeeding and increased employee morale and self-efficiency and a healthy work environment (Daniels *et al* 2024a). When the leaders and supervisors are committed to support through education and implementation of policies, there will be more mothers continuing to breastfeed at work (Daniels *et al* 2024a). It is recommended that the workplace should have peer support or an advocate within the workplace in which breastfeeding mothers can find support from besides management (Daniels *et al* 2024a). Furthermore, when mothers are able to communicate their needs, there is a better chance for the implementation of breastfeeding policies at work (Daniels *et al* 2024a).

With the common occurrence of managers not initiating the prenatal and postnatal discussion with working mothers, one study at a South African school reported that principals did not have a problem with having to grant breastfeeding support to mothers who needed it but preferred that they communicated the specific support that they needed (Mabaso, Jaga & Doherty 2023). Mothers who felt that they were supported enough regarding matters that were associated with women only, were able to approach their managers about their pregnancies earlier (Reimers 2017). This would assist in ensuring they were not at any risk related to physical, chemical and biological environments at work since they would be pregnant and therefore, need to avoid certain areas at work (Reimers 2017). Another study, done in the Western Cape, South Africa with 14 managers, reported that even though most managers had knowledge of the Code of Good Practice on the Protection of Employees during pregnancy, they would have appreciated more information on how they could practically support breastfeeding women at work (Daniels, Du Plessis & Mbheyane 2020). It is therefore suggested that breastfeeding policies be communicated to all women prior to pregnancy for mothers to be educated and able to initiate and sustain breastfeeding during maternity leave (Reimers 2017). While transitioning from

maternity leave to being back at work, there would be a positive outcome to sustain breastfeeding especially when lactation breaks and facilities are communicated and provided (Reimers 2017).

In SA, some mothers have mentioned that breastfeeding at work is stressful and can lead to embarrassment (Maponya, Janse Van Rensburg & Du Plessis-Faurie 2021). Numerous mothers did not have any special treatment when they returned to work. It was also clear that the policies that support breastfeeding were not implemented when they returned to work and they hoped to continue breastfeeding exclusively (Maponya *et al* 2021). Barriers when returning to work included having to express breast milk during their lunch break as no additional breaks were given, inadequate space for storage of breast milk, and no support from the employer (Maponya *et al* 2021). Another study done in The Netherlands with participants who were university academics, reported that although they had lactation facilities available to them, they were not easily accessible and available (Hentges & Pilot 2021). Furthermore, they had two to three 30-minute breaks available, but they reported not being able to take them timeously as they were busy with work and taking breaks would be disruptive (Hentges & Pilot 2021).

Another problem in South Africa was that the workplaces seldom have written breastfeeding policies, and if they were present, they were available at mostly the public sector workplaces (Daniels *et al* 2020). After a survey was conducted on the availability of written policies, some organisations indicated that the workplace did not have suitable buildings and spaces that would be conducive for breastfeeding breaks (Daniels *et al* 2020).

2.4.3 Factors that affect the decision to sustain breastfeeding before returning to work

A study in the USA reporting on data between 2016 and 2019, indicated that the reason women ceased to breastfeed before 10 weeks port-partum included not producing enough milk, infants not latching well and breast milk not satisfying the infant (Quintero *et al* 2023). A study by Mabaso *et al* (2020) done in Cape Town, South Africa aimed to determine the breastfeeding practices of working mothers and their managers in the government sector. There is a need to determine all circumstances women face when trying to continue breastfeeding after returning to work and the support they receive (Mabaso *et al* 2020). Mothers have suggested that the only way for them to continue to breastfeed after returning to work would be to have support from management and supervisors at work (Mabaso *et al* 2020). Further research is required regarding the knowledge and support that the workplace gives to the working mother, and to further

establish practical support regarding maternity benefit and breastfeeding breaks, (Mabaso *et al* 2020). Moreover, after initiating breastfeeding, mothers experienced challenges and thereafter resorted to feeding infant formula as advice and support were not enough for them to continue breastfeeding (Horwood *et al* 2022).

In order to protect, promote and support breastfeeding in the workplace, SA has adopted The Basic Conditions of Employment Act No. 75 of 1997, which guarantees women four consecutive months maternity leave (South African Government Gazette 2020). In SA, women have unemployment insurance when they take maternity leave, which may be claimed if benefits were paid for prior to pregnancy (Pereira-Kotze *et al* 2022). The Unemployment Insurance Fund (UIF) allows women to claim for a maximum of 121 days of up to 60% of their salary when they are on maternity leave (Pereira-Kotze *et al* 2022). For women earning a higher salary, the amount to claim decreases, while those who received unpaid maternity leave can claim the benefit (Pereira-Kotze *et al* 2022).

If managers and pregnant women have a conversation prior to the women leaving for maternity leave regarding the entitled breastfeeding breaks at the workplace, women are more likely to perceive that returning to work would not be a reason for them to cease breastfeeding early (Mabaso *et al* 2020).If these conversations are suggested and led by the managers, it would shift the perspective that breastfeeding mothers are supported and that the workplace has concern for the mother's choices and well-being rather than it being a woman's private issue (Mabaso *et al* 2020). Furthermore, it was conveyed that breastfeeding needs to be viewed as important at the workplace, where initiatives and conversations should begin during pregnancy and continue after mothers return to work (Mabaso *et al* 2020). In addition, conversations between pregnant women and their supervisors about the support that they will receive when they return to work, would be beneficial in fostering breastfeeding friendly workplaces (Mabaso *et al* 2020).

A study conducted in Cape Town in 2020, reported that schools are family-orientated due to the support that teachers received to take care of family issues (Mabaso *et al* 2023). However, teachers indicated that lactation was seen as a specific and more private practice that should rather be attended to after work hours (Mabaso *et al* 2023). Moreover, one male principal affirmed the latter and reinforced that the workplace is a place where work demands should be met and breastfeeding breaks could hinder that (Mabaso *et al* 2023).

2.4.3.1 Social support and healthcare information

In SA, there are several policies and acts that support and protect breastfeeding (Horwood *et al* 2022). Horwood *et al* (2022), conducted their study in Johannesburg and Cape Town comprising of 69 participants. This study made use of focus group discussions with pregnant women and mothers who had already given birth and were still breastfeeding or formula feeding their infants (Horwood *et al* 2022). The study aimed to explore the influence of infant formula marketing on their feeding choices (Horwood *et al* 2022). Additionally, The Code prevents the marketing and advertisement of breast milk substitutes (Horwood *et al* 2022). This policy also ensures that healthcare professionals who interact with pregnant women and mothers do not influence their decision to formula feed. However, healthcare professionals encouraged breastfeeding initiation at birth, which mothers confirmed in both the private and public sectors during pregnancy (Horwood *et al* 2022). Furthermore, although mothers had a choice regarding how they would feed their infants, several women felt pressurised to breastfeed, and were made to feel bad if they chose formula feeding (Horwood *et al* 2022).

A study conducted in Durban, KZN, between 2015 and 2016, which interviewed 54 pregnant women, indicated that those women who experienced breastfeeding challenges at home consulted a healthcare worker (Ngcwalisa, Wilford, Masango, Haskins, Coutsoudis, Spies & Horwood 2017). However, when these consultations discouraged the mothers from continuing with breastfeeding due to the challenges, this advice was against the recommendations of promoting breastfeeding (Ngcwalisa *et al* 2017). An Eastern Cape study focused on first time mothers who needed the most assistance to initiate breastfeeding and maintain exclusive breastfeeding (Theodorah & Mc'Deline 2021). Participants indicated that practical support would be of greater benefit to them in addition to information received from family and friends as a form of encouragement (Theodorah & Mc'Deline 2021).

Another reason why healthcare professionals are influenced to support formula feeding is that they usually engage with representatives of companies that are marketing commercial infant formula (Horwood *et al* 2022). These practices are therefore contrary to the regulations in SA including the Tshwane Declaration of Support for Breastfeeding in SA regarding infant and young child feeding and a violation of The Code (Horwood *et al* 2022). Further training and support regarding breastfeeding policies and maintaining breastfeeding could encourage health professionals to align their practice and recommendations with national policies to provide ethical information and information that is within the guidelines to support breastfeeding

mothers and their challenges (Horwood *et al* 2022). On the other hand, pregnant women who had chosen to formula feed from birth were not encouraged to do so in both private and public healthcare centres, as there was always the strong message that "breast is best," which is the universal recommendation that benefits breastfeeding (Horwood *et al* 2022).

Another programme that is supportive towards mothers includes MomConnect which was established by the Department of Health to share messages and goals alongside the Side-by-Side campaign (DOH SA 2019b). This programme sends instant messages and Whatsapp messages to pregnant women, mothers and caregivers with children under the age of two years (DOH SA 2019b). This service is free to use and sends messages in line with the National Department of Health communications (DOH SA 2019b). A previous supportive initiative to improve breastfeeding was the Mother-Baby Friendly Initiative (MBFI) which was initiated in 1991 to improve breastfeeding initiation rates in healthcare facilities (Lubbe, Kubeka, Behr, Tshitaudzi, Dlamini-Nweketo & Botha 2024). In 2018 MBFI was phased out and the Ten Steps of Successful Breastfeeding was mandated as standard of care for healthcare facilities (Lubbe *et al* 2024). However, due to the declining exclusive breastfeeding rates, the National Department of Health, WHO and UNICEF hosted a workshop to revitalize the MBFI (Lubbe *et al* 2024). Findings from this workshop included continuous monitoring of the Ten Steps Implementation, tracking MBFI implementation, and optimal reporting and action plans (Lubbe *et al* 2024). Furthermore, it was recommended that healthcare workers from both public and private sectors should have sufficient training and knowledge in order to implement the policies in each facility (Lubbe *et al* 2024). Moreover, breastfeeding promotion in SA is a priority action that contributed to the 2030 National Development Plan goals (Lubbe *et al* 2024).

It is recommended that at a national level, breastfeeding can be improved and supported by adopting The Code of Good Practice on the Protection of Employees, improving maternity and paternity leave policies, upskilling lactation consultants and stipulating laws that protect mothers (Theurich *et al* 2019). Furthermore, since breastfeeding is significant to public health, the government needs to commit precisely on increasing breastfeeding initiation rates and impeding early cessation of breastfeeding (Theurich *et al* 2019). Social norms that encourage mothers to initiate breastfeeding and support them while breastfeeding includes public spaces to express, well trained healthcare professionals, and social support in which the support of a husband or partner is significantly important (UNICEF 2018).

2.4.3.2 Factors that affect the decision to sustain breastfeeding after returning to work

It is essential to better understand the workplace and how its influence mothers to breastfeed their children (Wallenborn, Perera, Wheeler, Lu & Masho 2018). Therefore, attention needs to be given to women and their perception regarding their workplace breastfeeding support (Wallenborn *et al* 2018). Furthermore, it has been reported that women who are supported when breastfeeding, show increased self-efficacy to attain their breastfeeding goals (Wallenborn *et al* 2018). In the USA, employed mothers indicated that besides the maternal and child health benefits of breastfeeding, employers may also benefit from supporting breastfeeding in the workplace (Dagher, McGovern Schold & Randall 2016). Employed mothers who breastfed incurred lower healthcare costs for themselves and their babies and had lower workplace absenteeism than non-breastfeeding mothers (Dagher *et al* 2016). Yet, mothers often found it difficult to continue breastfeeding after returning to work. Therefore, it is important to understand workplace-related barriers and facilitators to the initiation and continuation of breastfeeding (Dagher *et al* 2016). Thus, occupational health or human resource personnel who design worksite intervention programmes involving breastfeeding women upon return to work, should seek input from women across occupational categories to understand any potentially unique needs based on job class, schedules, and locations (Dagher *et al* 2016).

A study conducted in Cape Town in 2018 on eight mothers and four managers aimed to investigate the breastfeeding experiences of both working mothers and senior managers in a provincial government setting (Mabaso *et al* 2020). This study had a small sample size as it was an exploratory qualitative design study (Mabaso *et al* 2020). Prior to this study, participants only knew about their right to maternity leave and time off when attending prenatal visits, but nothing about their right to breastfeed at work and being supported to do so (Mabaso *et al* 2020). Most mothers ceased breastfeeding before returning to work as they were not going to express breast milk at work and they also did not want the discomfort of full and uncomfortable breasts (Mabaso *et al* 2020). Consequently, mothers decided to wean their children off the breast before returning to work, and some had the ability to freeze expressed breast milk prior to returning to work (Mabaso *et al* 2020).

This study recommended that the workplace should discuss and provide breastfeeding support during pregnancy (Mabaso *et al* 2020). This discussion should inform the managers of the mother's desire to continue breastfeeding when they return to work, resulting in support already

being in place when they returned to work (Mabaso *et al* 2020). Several managers, which included male managers expressed their willingness to support breastfeeding mothers. However, they did not know how to and were not aware of the need from the mothers and therefore wanted training on such matters (Mabaso *et al* 2020). On the other hand, a few mothers reported knowledge of the option to apply for extended maternity leave, but some mothers chose not to apply for the extension as it was unpaid leave (Mabaso *et al* 2020). This study confirmed that mothers lacked the confidence to request support from their managers or supervisors to support their decision to continue breastfeeding (Mabaso *et al* 2020).

A study done in the Western Cape, SA, indicated that employed mothers who were able to breastfeed at work, had communicated the provision and promotion of breastfeeding time and space in consultation with their managers after maternity leave (Daniels *et al* 2024a). Part of the workplace breastfeeding support practice model that was featured in the study was the need to educate employees about the benefits of breastfeeding which would be beneficial when done by the workplace. (Daniels *et al* 2024a). Furthermore, educational material on breastfeeding and supportive activities at the workplace would indicate the support that breastfeeding mothers have at the workplace from their leaders or supervisors (Daniels *et al* 2024a). It has been reported that having written policies does not guarantee that support is provided to breastfeeding women, therefore focus should be on the education of these policies so that the workplace can be held accountable (Daniels *et al* 2020).

With regards to their decision to breastfeed, mothers interviewed in a study in SA in the neonatal department of Chris Hani Baragwanath Academic Hospital in 2017, reported that 28 of 64 of them had planned to exclusively breastfeed prior to giving birth (Patel *et al* 2023). In cases where mothers could not breastfeed, some mothers (43 of 64) did not have any knowledge of human milk banks, leaving them with no other alternative other than to formula feed (Patel *et al* 2023). However, the study also reported that after the conversation on human milk banks, more than half of the mothers were comfortable with utilising human milk for their children if the need arose (Patel *et al* 2023). Furthermore, a study done in KZN, reported that there was a lack of awareness concerning human milk banks amongst mothers (Hadebe, Naidoo, Khan & Masekela 2024).Lactation support interventions have been shown to be effective, but this still needs to be defined together with the outcomes (D'Hollander, McCredie, Uleryk, Keown-Stoneman, Birken, O'Connor & Maguire 2013). This study suggested that for mothers not to stop breastfeeding before six months, lactation consultation needs to be effective, and this should

also be of importance for policy makers in order to improve breastfeeding rates (D'Hollander *et al* 2013). Furthermore, mothers had stopped breastfeeding prior to returning to work because they had the opinion that work and breastfeeding would be impossible to merge (Mabaso *et al* 2023).

Some studies from the Lancet series suggested that to improve breastfeeding outcomes there needs to be a focus on structural and societal barriers such as maternity and workplace policies, the regulation of the marketing of breast milk substitutes and an improvement in health insurance and lactation support (Rollins *et al* 2016). In SA, few recommendations have been researched as a way for workplaces to promote and support breastfeeding mothers. These include: making all employees aware about the rights and support for lactating mothers at work, demarcating a private space to express and store breast milk, and ensuring that mothers have additional 30-minute breaks to lactate (Maponya *et al* 2021). Other recommendations besides the promotion of breastfeeding breaks and flexible working hours, is to educate all employees both male and female about breastfeeding and also provide time for pregnant women to attend antenatal clinic visits (Daniels *et al* 2024a). Furthermore, peer support groups could be promoted to mothers breastfeeding at work (Daniels *et al* 2024a).

2.5 Conclusion

A review of literature indicates a lack of information surrounding the breastfeeding practices of working women and the support that they receive in the South African workplace. It would be beneficial to determine whether mothers receive physical and practical support from the workplace to continue breastfeeding through expressing breast milk at work. Furthermore, more information is required regarding the knowledge and implementation of the Tshwane Declaration of Support for Breastfeeding in SA by the work environment in order for mothers to be supported at work with regards to breastfeeding. Further, the awareness of the Tshwane Declaration of Support for Breastfeeding in SA among working women has not been investigated. This study aimed to determine the breastfeeding practices of working mothers and the lactation support that they receive at the workplace, as well as their awareness of the Tshwane Declaration of Support for Breastfeeding in SA.

The next chapter will present the methodology used in the study.

CHAPTER 3: METHODOLOGY

This chapter presents the methodology of the study, specifically, the study design, study population and sample selection, study site selection, the development of the interviewer-assisted self-administered questionnaire, pilot study, data collection, reduction of bias, validity, data quality control, statistical analysis and ethical considerations.

3.1 Study design

This study used a descriptive cross-sectional design to determine the breastfeeding practices of working mothers and the lactation support that they receive at the workplace, as well as their awareness of the Tshwane Declaration of Support for Breastfeeding in SA. A cross-sectional study design is used to collect data or information from a population at a specific point in time (Wang & Cheng 2020). Furthermore, a cross-sectional study is suitable to generate hypotheses and to provide data on the prevalence of outcomes (Wang & Cheng 2020).

Cross-sectional studies have a disadvantage of sampling bias and unresponsive bias because the sample is selected from a large and heterogenous population (Wang & Cheng 2020). The disadvantage is possible because of the low response rate which may lead to a low sample size (Wang & Cheng 2020). Cross-sectional studies have advantages of being inexpensive and easy to conduct as they most often use interviews and questionnaires (Wang & Cheng 2020). Another advantage is that multiple outcomes and exposures can be studied, and they are easy for generating hypotheses (Wang & Cheng 2020).

3.2 Study population and sample selection

The study population comprised mothers attending private baby clinics in the eThekwini Metropolitan, which consists of eThekwini (Durban) together with the smaller surrounding towns. The study population consisted of breastfeeding mothers of all race and age groups in eThekwini (Durban). These women were selected while visiting the private baby clinics and hospitals. The participants of the study were chosen from an available population based on the study inclusion criteria (Wang & Cheng 2020). Potential participants were approached and invited to participate in the study. Those who agreed to participate signed the informed consent form (Appendix A) before they could participate in the study. Convenience sampling was performed to select the study participants, which included women who were breastfeeding at

the time of data collection as well as those who initiated breastfeeding at birth but had stopped due to returning to work or for other reasons (Etikan, Musa & Alkassim 2016). Convenience sampling is a non-random sampling method which selects eligible participants from the study population according to accessibility and availability at a given time, and their willingness to participate (Etikan *et al* 2016). Therefore, the sample can only be generalised to a specific population where the sample is drawn and cannot be generalised to populations of different characteristics (Andrade 2021). On arrival at the clinics all eligible participants were approached because if they were randomly selected, the correct population would not have been achieved and the sample size would not be reached. Furthermore, participants had to be employed or planning to return to work after maternity leave, as the study was based on the support received at the workplace. Participants who did not meet the inclusion criteria were not invited to participate in the study. Participants who did not give consent to participate were also excluded from the study.

After the researcher visited one of the private baby clinics in eThekwini Metropolitan, it was found that an estimated 22 breastfeeding mothers were seen per week, and an estimated 80 breastfeeding mothers were seen per month. The statistician determined the required sample size based on the number of clinics that agreed to participate, and the estimated number of breastfeeding mothers seen daily at these clinics. From a population of 560, assuming a margin of error of 0.05 and a significance level of 0.05, the required sample size was calculated at 228 (N1=384/(1+384/560) = 228 (Bartlett, Kotrlik & Higgins 2001).

3.3 Study site selection

The study selection site was in eThekwini (Durban) which is the third largest city in South Africa, and the largest city in KZN. It had a population of 4.2 million people in 2022, with 72.2% of its population of working age (DOS SA 2023). Furthermore, eThekwini Metropolitan has the highest number of private hospitals and clinics in KZN (National Hospital Network 2022). Upon discharge after delivery, every mother is given a Road-to-Health Booklet that has information on their infant's health and wellness and the immunisation schedule which is encouraged to be followed timeously until the age of 12 years (DOH SA 2018). Mothers are encouraged to start their child's second immunisation at six weeks, followed by 10 weeks, 14 weeks, six months, nine months and 18 months. With the mothers having to visit the clinic or hospital for these immunisations with their infants, it becomes the ideal place to collect data regarding their current breastfeeding practices and the support given at work. Research had

indicated that patients attending primary health care were those that were economically active but of low-income standard, and additionally with no health insurance (Govender, Girdwood, Letswalo, Long, Meyer-Rath & Miot 2021). Those who attend private health care facilities prefer it because they could afford it, it was convenient and they perceived that the care that they would receive would be of good quality (Govender *et al* 2021). Another SA study indicated that one of the factors that contribute the profile of patients attending private health care is their income, especially recurring income (Mhlanga & Hassan 2022). Individuals that lack salaries and wages or have low levels of income and are dependent on grants, have reduced probability to attend private health care facilities (Mhlanga & Hassan 2022). Therefore, data were collected at private clinics and hospitals only, as it was assumed that the women who attend these clinics and hospitals would be employed and would meet the study inclusion criteria. With maternity leave duration in South Africa varying from two to four months, it was anticipated that the mothers visiting the clinics at 14 weeks and six months, respectively, (South African Government Gazette 2012) may have been back at work and possibly facing challenges expressing breast milk while at work.

3.4 Study methods and materials

3.4.1 Interviewer-assisted self-administered questionnaire

A questionnaire is the most common tool used to collect data or information from participants to secure answers to a set of questions (Taherdoost 2021). Questions can be close-ended in which participants choose answers from options given, or open-ended to provide elaborated answers (Taherdoost 2021). Questionnaires are advantageous because they assist in collecting data from a large sample size, they can save time and are more cost effective (Taherdoost 2021). Structured interviews are interviews in which the researcher asks the participants the same questions in the same order (Ricci, Lanfranchi, Lemetayer, Rotonda, Guillemin, Coste & Spitz 2019). The interviewer-assisted self-administered question type has an advantage of allowing the participants to answer with more insight as the researcher asks the question. Therefore, there is more detail to the answer than if they had answered by themselves without elaborating. The questionnaire was written in English only, as the study was assumed to be for a population that would be able to understand English.

An interviewer-assisted self-administered questionnaire (Appendix B) was developed by the researcher to collect data to meet the study objectives. The questionnaire was based on a validated and previously used self-administered questionnaire survey (Appendix C) regarding

the same topic (Nakao, Moji, Honda & Oishi 2008). Permission to use the questionnaire was obtained from Dr Yuku Nakao (PhD) (Nakao *et al* 2008). The questionnaire developed for the current study was modified from Dr Nakao's questionnaire and it was thereafter validated by a statistician and an expert in breastfeeding. The statistician and the breastfeeding expert validated the questionnaire to ensure that it addressed the study objectives. The questionnaire comprised close-ended questions and multiple-choice questions and consisted of three sections. Section A of the questionnaire collected information regarding the demographic characteristics of breastfeeding mothers and their breastfeeding practices. Section B obtained information on the breastfeeding practices of working mothers while at their workplace and the support (physical and technical) that breastfeeding mothers received from their employers at work. Lastly, section C determined if working women who were breastfeeding were aware of the Tshwane Declaration of Support for Breastfeeding in SA with regards to continuing breastfeeding when they returned to work.

3.5 Pilot study

Pilot studies assess the feasibility of the study design and give the researcher an opportunity to refine the study design and methodology (Cramer 2021). One of the main reasons for conducting a pilot study is to test the reliability of the questionnaire, especially for new research studies (Bujang, Omar, Foo & Hon 2024). Pilot studies assist in ensuring that the theory takes into consideration the practical aspects of the study (Cramer 2021). Furthermore, it has been suggested that a sample size of less than 30 participants is sufficient to conduct a pilot study (Bujang *et al* 2024).

A pilot study was conducted on 3 and 10 July 2023, respectively. It was conducted at one purposively selected private clinic in the city of Pietermaritzburg. Pietermaritzburg was used for the pilot study because it was not included in the main study. Mothers at this facility were informed of the purpose of the study and were thereafter invited to participate in the study. A total of 10 women participated in the pilot study. Each participant signed an informed consent form (Appendix A) before participating. The pilot study aimed to determine if the questions were appropriate and well understood and the time taken to complete each questionnaire.

After completing the pilot study, nine questions were amended to improve understanding and clarity, and make the questionnaire shorter. Each questionnaire took about eight minutes to complete. The researcher also realised that most participants came to the clinic alone with their

infants and were unable to complete the questionnaire themselves and needed assistance to do so. Therefore, the initial self-administered questionnaire was changed to an interviewer-assisted self-administered questionnaire. Due to the booking system in place at these private clinics, the participants came in one by one and there was time for the researcher to assist each participant to complete the questionnaire.

Table 3.1 shows which questions were amended in the original questionnaire and how they were amended after the pilot study.

Table 3.1: Amendments made to the original questionnaire and the reasons for amendments

Old question and number	Amendments	Reason for amendments
7. What is your current occupation? What do you do?	Removed the words 'what do you do'	The question 'what is one's occupation' is adequate. There was no need to elaborate further.
12. Table indicated options from '1' to more than '6' times.	Added the option '0 times'	If the participant had not breastfed that day, they were then given an option to answer '0 times', instead of assuming all mothers were expressing.
15. Question had a table of options for the possible answer.	Removed multiple choice options regarding breastfeeding support.	To give the participant the option to share from whom they received support.
16.1. Question had a table of options for the possible answer.	Removed multiple choice options regarding where they received support.	To give the participant an opportunity to elaborate with an open-ended question.
16.2. Was a follow-up question from 16.1 with a table of options.	Combined with question 16.1.	To make the question shorter.
17. Table with options of possible answers.	Removed multiple choice regarding breastfeeding problems.	To give the participant an opportunity to elaborate with an open-ended question.
26. Table with options of possible answers.	Removed multiple choice regarding breastfeeding problems.	To give the participant an opportunity to elaborate with and open-ended question.
27.1 If yes to the previous question, need to elaborate answer.	Combined as one question with question 27.	To create one question that would also be shorter.
32.1 If yes to the previous question, need to elaborate answer.	Combined as one question with question 32.	To create one question that would also be shorter.

3.6 Data collection

All twelve private clinics were approached to participate in the study. These clinics included all baby clinics or stork's nests based in hospitals and those outside of the private hospitals and also considered private facilities. The clinics that were approached were all within eThekwini metropolitan namely: Hillcrest, Pinetown, Westville, Amanzimtoti, Durban, Umhlanga and Ballito. Only seven clinics signed the gatekeeper's permission letter to participate in the study (Appendix D). Upon arrival at the facility, the researcher informed the nursing sister in charge about the aim of the study and the selection criteria. The researcher also highlighted that participation in the study would not interfere with the patients' consultation. Participants who met the inclusion criteria were approached to participate in the study. The researcher gave each

participant a consent form to read and sign (Appendix A). After the participant signed the consent form, the interviewer-assisted self-administered questionnaire was completed. The researcher assisted all the participants to complete the questionnaire (Appendix B).

The researcher was present at each facility for data collection from 08h30 until 12h30 each day as that was the time allocated for the clinic appointments. The clinics were often open at 8h30 until 13h00. Mothers arrived one by one to their clinic appointment, and those eligible for the study were invited to participate. All participants who agreed to participate were assisted by the researcher to complete the questionnaire. Each participant took between six to eight minutes to complete the questionnaire.

3.6.1 Initial data collection

Data collection was initiated on 4 September 2023. Data collection continued until 7 December 2023. However, by that date, only 64 participants had participated in the study, which was less than the desired sample size. Therefore, a decision was taken to extend the data collection period.

3.6.2 Extended data collection

Data collection recommenced on 24 January 2024 and all the participating clinics were visited to reach the desired sample size. Data collection ended on 27 May 2024. Data collection was very slow because many participants attending the clinics did not meet the inclusion criteria and could not participate. Ultimately data collection was stopped due to time constraints set by the UKZN Human and Social Sciences Ethics Committee. The original sample size of 228 was based on an estimated 22 breastfeeding mothers seen per week, which was based on all mothers attending the clinic and not just those who were working and breastfeeding, as this data were not available. On some data collection days, the clinic was not as busy with only three participants meeting the inclusion criteria instead at least six participants.

3.7 Reduction of bias

Bias occurs when there is a systemic error in the study results that affects the outcome of interest (Wang & Cheng 2020). Bias can be categorised as selection bias and information bias (Wang & Cheng 2020). Bias was reduced by conveniently selecting participants who met the inclusion criteria at the selected healthcare facility. The selection of the days of the study were according to the timeline of the study and availability of the researcher and not according to appointments

made by the participants. Participants were selected on the day of data collection according to the inclusion criteria. The researcher ensured that the participants could not discuss their answers to the questionnaire with each other during data collection by seeing them individually. The questionnaire was read out to each participant and the researcher recorded the responses as reported by each participant. The researcher asked the questions in the same manner for each participant. The participant was given the opportunity to read the question being read out by the researcher and the response was recorded in the questionnaire by the researcher.

3.8 Validity and reliability

Validity is the measure of appropriateness of the instrument used to measure the desired outcome (Allen, Robson & Iliescu 2023). Furthermore, it is the extent to which the results relate to the real world (Kesmodel 2018). To ensure content validity, the questionnaire used in the current study was based on a validated and previously used questionnaire regarding the same topic (Nakao *et al* 2008) (Appendix C). Face validity implies that the instrument used to measure the outcome should also appear valid (Allen *et al* 2023). Dr Nakao had used a self-administered questionnaire to gather data from breastfeeding participants, however, the current study ultimately changed to an interviewer-assisted self-administered questionnaire after the pilot study findings. To ensure face validity the questionnaire used in the current study was validated by a statistician and an expert in breastfeeding. The breastfeeding expert suggested that the manner in which the questions were asked had to be changed to improve understanding. The statistician suggested that the questions needed to be more simple, short and clear in order for the answers to meet the research objectives.

Reliability refers to how the measuring instrument can be consistent and be used consistently over time (Sürücü & Maslakçi 2020). Reliability can be improved by recording interviews, formatting the collection of data or formatting the method of data collection (Quintão, Andrade & Almeida 2020). Reliability was ensured by only including the participants that met the study inclusion criteria. Furthermore, face validity was confirmed by means of a validated questionnaire that was understandable. Face validity was achieved after the pilot study, when changes were made according to recommendations made (Yusoff 2019).

3.9 Data quality control

To ensure quality control, the researcher entered the data from all questionnaires onto a Microsoft Excel spreadsheet twice to ensure the data was correctly captured. Thereafter, a research assistant checked the data for any errors. Errors were corrected before the data were analysed.

3.10 Data analysis

Data were analysed using the International Business Machines Statistical Product and Service Solutions (IBM SPSS) version 25 (IBM Corp, Armonk, NY, USA). The statistical tests used to analyse the data were as follows: descriptive statistics including means and standard deviations, chi-square goodness of fit test and binomial test. A p-value of <0.05 was considered statistically significant. During data collection, open-ended questions were transcribed verbatim by the researcher. Statistical analysis of open-ended questions was done after grouping similar answers together and thereafter reported on all the answers. Table 3.2 presents the objectives of the study and how they were analysed.

Table 3.2: The objectives of the study and statistical tests used to address each objective

Objectives of the study	**Variables**	**Statistical tests that were applied**
To determine the demographic characteristics of breastfeeding mothers working in the private and public sectors in the eThekwini Metropolitan, KZN, SA.	• Age • Education • Marital status • Number of children • Occupation • Type of employment • Work Sector • Delivery method • Maternity leave duration	• Descriptive statistics • Chi-square goodness of fit test • Binomial test
To determine the breastfeeding practices of working mothers while at the workplace and if they lactate during the workday.	• Feeding method • Frequency of breastfeeding • Frequency of expressing breast milk • Intended duration of breastfeeding • Breastfeeding education • Cessation of breastfeeding • Breastfeeding support at home • Breastfeeding problems	• Descriptive statistics • Chi-square goodness of fit test • Binomial test
To determine the support (physical and technical) that breastfeeding mothers receive from their employers to enable them to express breast milk or lactate at work.	• Education and support at work • Ability to continue breastfeeding at work • Breastfeeding breaks at work • Awareness of rights • Workplace policies on breastfeeding	• Descriptive statistics • Binomial test • Chi-square goodness of fit test
To determine if working women who are breastfeeding are aware of the Tshwane Declaration of Support for Breastfeeding in SA with regards to continuing breastfeeding when they return to work.	• Awareness of the Tshwane Declaration of Support of South Africa • Infant formula information and sources • Human milk banks information and sources	• Descriptive statistics • Binomial test

3.11 Ethical considerations

Ethics approval was obtained from the UKZN Humanities and Social Sciences Research Ethics Committee (HSSREC) (Reference number: HSSREC/00005261/2023) (Appendix E). The HSSREC safeguards the dignity, rights, safety and wellbeing of all human participants involved in non-biomedical research. Prior to data collection, an application was submitted to the ethics committee for approval to obtain data from the participants at the selected clinics. Participating clinics and hospitals completed the gatekeeper's permission letter after being informed of the study objectives (Appendix D). Further, each participant was given a consent form to complete and sign before they could participate in the study (Appendix A). The consent form was written in English only. To maintain the principle of justice, all clinics within the area had a choice to participate or decline participation. It was indicated on the gatekeeper's permission letter that if they chose not to participate it would not affect them negatively in anyway. The participants also had the right to participate or decline participation and further keep their information and details private. To maintain confidentiality and anonymity, participants' names and surnames were not recorded on the questionnaire, however, each questionnaire was identified with a code. The researcher was present at each clinic for data collection and the completed consent forms and questionnaires were retained by the researcher.

The consent form included the information of the researcher, the aims of the study, and the procedure for completing the questionnaire. If the participants or the clinics wished to withdraw from the study at any point, they were allowed to do so without any consequences. The participants were not given any incentive for participating in the study. Beneficence was achieved by limiting any inconveniences possible for both the clinics and the participants. In order to not cause any inconvenience, on each day of data collection the responsible sister was asked if it was a convenient day for the researcher to collect data. During data collection, in order not to disturb the participants and the sister during their consultation, the participants were approached before or after their appointment with the sister. There was also consideration for the participants' infants or children, so if they had to attend to them, they were given the time to do so without pressure to complete the questionnaire. The hard copy questionnaires and consent forms of each participant were collected and stored in a secure place by the researcher. The electronic information was kept on a secure device. The data sent to the statistician did not contain names of clinics or participants.

The next chapter presents the study results.

CHAPTER 4: RESULTS

This chapter presents and describes the results of the study, in line with the study objectives. The first section presents the socio-demographic characteristics of the participants, the second section presents their breastfeeding practices, the third section presents the support that they received from the employers to enable them to express breast milk or lactate at work and the fourth section presents the participants' awareness of the Tshwane Declaration of Support for Breastfeeding in SA.

4.1 Socio-demographic characteristics of study participants

The first objective was to determine the demographic characteristics of breastfeeding mothers working in the private and public sectors in the eThekwini Metropolitan, KZN, SA. A total of 134 mothers participated in this study. Table 4.1 presents the socio-demographic characteristics of the participants.

Table 4.1: Socio-demographic characteristics of the participants (n=134)

Characteristics	**n (%)**
Age (years)	
18-22	2 (1.5)
23-30	43 (32.1)
31-40	87 (64.9)
41-50	2 (1.5)
Education	
Some schooling	2 (1.5)
Matric	13 (9.7)
Higher education certificate	8 (6.0)
Diploma	31 (23.1)
Undergraduate degree	49 (36.6)
Postgraduate degree	31 (23.1)
Marital status	
Single	24 (17.9)
Married	89 (66.4)
Divorced	4 (3.0)
Widowed	1 (0.7)
Living together	16 (11.9)
Number of children	
1	65 (48.5)
2	45 (33.6)
3	15 (11.2)
4	8 (6.0)
5	1 (0.7)

About 65% (n=87) of the participants were aged between 31 to 40 years old and 66.4% (n=89) were married. Forty-nine participants (36.6%) had an undergraduate degree and 48.5% (n=65) had only one child, which was the one they brought with them to the clinic (Table 4.1). The mean age of the infants that came to the clinic with the participants was 5.9 months (SD=4.6432).

Table 4.2 shows the occupation of the participants and their type and sector of employment.

Table 4.2: Occupation, type and sector of employment of participants (n=134)

Occupation	**n (%)**
Administration/clerk/receptionist	16 (11.9)
Banker	4 (3.0)
Biologist	1 (0.7)
Dietitian	2 (1.5)
Engineer	8 (6.0)
Entrepreneur	8 (6.0)
Finance/accounting	9 (6.7)
Hair and beauty	5 (3.7)
Health worker (excluding nurses and dietitians)	16 (11.9)
Human resources	7 (5.2)
Lawyer	5 (3.7)
Manager/director	13 (9.7)
Marketing	6 (4.5)
Nurse	8 (6.0)
Sales representative/manager	9 (6.7)
Teacher/lecturer	17 (12.7)
Type of employment	
Full-time	122 (91.0)
Part-time	12 (9.0)
Sector of employment	
Private sector	84 (62.7)
Public sector	38 (28.4)
Self-employed	12 (9.0)

Table 4.2 shows that the most predominant occupation was teacher/lecturer (n=17; 12.7%), followed by administrators/clerk/receptionist (n=16; 11.9%) and health workers (excluding nurses and dietitians) (n=16; 11.9%). The majority of participants were employed full-time (n=122; 91.0%) and 62.7% (n=84) worked in the private sector (Table 4.2).

Figure 4.1 shows whether participants gave birth to the infants they brought to the clinic through natural birth or through Caesarean section. Figure 4.1 also indicates how many participants were able to initiate breastfeeding within an hour after giving birth.

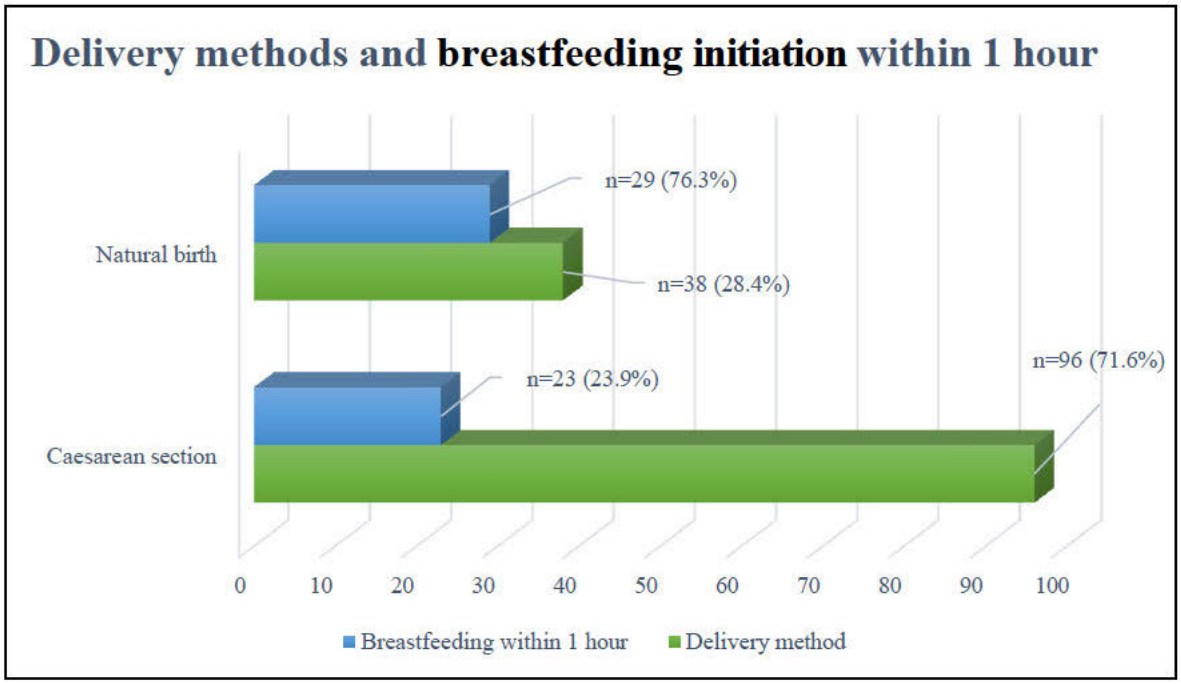

Figure 4.1: Delivery method of infants and breastfeeding initiation within an hour after delivery

More mothers delivered through Caesarean section (71.6%; n=96) compared to a natural birth (28.4%; n=38). About 76% (n=29) of mothers who had a natural birth were able to initiate breastfeeding within an hour of birth, compared to 23.9% (n=23) who gave birth through Caesarean section (Figure 4.1).

Table 4.3 indicates whether the participants had taken maternity leave and if they were planning to return to work after leave.

Table 4.3: Maternity leave and returning to work after leave (n=134)

Maternity leave taken	**n (%)**	**p-value***
Yes	119 (88.8)	**0.000***
No	12 (9.0)	
Not applicable	3 (2.2)	
Returning to work (for those still on leave)		
Yes	63 (47.0)	**0.000***
No	7 (5.2)	
Not applicable[#]	64 (47.8)	
Maternity leave duration granted		**n (%)**
None		12 (9.0)
3 weeks		1 (0.7)
1 month		2 (1.5)
6 weeks		2 (1.5)
2 months		9 (6.7)
11 weeks		1 (0.7)
3 months		24 (17.9)
4 months		70 (52.2)
5 months		7 (5.2)
6 months		5 (3.7)
7 months		1 (0.7)

*Binomial test; p values in bold are statistically significant
[#] If the participants were self-employed, they answered not applicable since they could not take maternity leave Those who had already returned to work also answered not applicable

If the participants were self-employed, they answered "Not applicable" since they could not take maternity leave. Those who had already returned to work (n=64; 47.8%), answered "Not applicable". Most participants received maternity leave from their employer (n=119; 88.8%), while 9% (n=12) did not get maternity leave after giving birth. Only 2.2% (n=3) of participants were self-employed and therefore did not have maternity leave. A binomial test showed that a statistically significant number of participants were going to return to work after maternity leave (n=63; 47.0%) (p=0.000). About 52% (n=70) of the participants received maternity leave for four months, while 17.9% (n=24) received maternity leave for three months (Table 4.3).

4.2 Breastfeeding practices

The second objective of this study was to determine the breastfeeding practices of working mothers while at the workplace and if they lactate during the workday. Table 4.4 indicates the participants' feeding methods at the time of data collection, with the first section giving a summary of participants back at work and those on leave. Furthermore, Table 4.4 indicates how the different age groups of infants were fed on the days of data collection.

Table 4.4: Feeding methods used by participants

Feeding method (n=134)	**n (%)**	**p-value***
Exclusive breastfeeding	49 (36.6)	
Exclusive formula feeding	15 (11.2)	**0.000**
Mixed feeding	70 (52.2)	**0.000**
Feeding method as per age: 0-4 months (n=69)	**n (%)**	
Exclusive breastfeeding	36 (52.2)	
Exclusive formula feeding	3 (4.3)	
Mixed feeding	30 (43.5)	
Feeding method as per age: 4-6 months (n=24)		
Exclusive breastfeeding	5 (20.8)	
Exclusive formula feeding	2 (8.3)	
Mixed feeding	17 (70.8)	
Feeding method as per age: 6-12 months (n=27)		
Exclusive breastfeeding	8 (29.6)	
Exclusive formula feeding	5 (18.5)	
Mixed feeding	14 (51.9)	
Feeding method as per age: 12-24 months (n=14)		
Exclusive breastfeeding	0	
Exclusive formula feeding	5 (35.7)	
Mixed feeding	9 (64.3)	

*Chi-square goodness of fit test; p values in bold are statistically significant

A chi-square goodness of fit test showed that overall, 52.2% (n=70) of infants and young children were being mixed fed, while 11.2% (n=15) were being exclusively formula fed at the time of data collection (p=0.000). About 52% (n=36) of infants 0-4 months old were being exclusively breastfed, while 70.8% (n=17) of infants 4-6 months old were being mixed fed. Interestingly, 35.7% (n=5) of participants 12-24 months old were being exclusively formula fed (Table 4.4).

Table 4.5 indicates the working status of the participants at the time of collection, the ages of their infants and their feeding methods.

Table 4.5: Working status of participants and feeding methods used (n=134)

Working status of participants		
Age of infants	**Currently on maternity leave n (%)**	**Returned to work n (%)**
Participants with infants younger than 4 months (n=69)	61 (88.4)	8 (11.6)
Participants with infants older than 4 months (n=65)	2 (3.1)	63 (96.9)
Working status of participants and feeding method		
On maternity leave (n=63)		
Exclusive breastfeeding n (%)	**Exclusive formula feeding n (%)**	**Mixed feeding n (%)**
40 (63.5)	3 (4.8)	20 (31.7)
Returned to work (n=71)		
Exclusive breastfeeding n (%)	**Exclusive formula feeding n (%)**	**Mixed feeding n (%)**
9 (12.7)	12 (16.9)	50 (70.4)

Table 4.5 indicates that 88.4% (n=61) of participants with infants less than four months old, were still on maternity leave. About 64% (n=40) of the participants who were still on maternity leave, were still exclusively breastfeeding and 31.7% (n=20) were mixed feeding. About 70% (n=50) of those who had returned to work were mixed feeding their infants (Table 4.5).

Table 4.6 indicates the breastfeeding practices of the participants, namely the frequency of breastfeeding within a 24-hour window period, how often participants expressed breast milk within the same period, and how long the participants wished to breastfeed for. In addition, Table 4.6 shows how long it took the participants to initiate breastfeeding after the birth of their infants, whether the participants received education or demonstration in order to initiate and continue breastfeeding successfully, and the number of participants who had already ceased breastfeeding at the time of data collection.

Table 4.6: Information regarding breastfeeding practices

Frequency of breastfeeding in previous 24 hours (n=116)[#]	**n (%)**	**p-value***
0 times	11 (9.5)	**0.037***
1-2 times	30 (25.9)	
3-4 times	25 (21.6)	
5-6 times	21 (18.1)	
>6 times	29 (25.0)	
Frequency of expressing breast milk (n=118)[#]		
1-2 times	39 (33.1)	**0.000***
3-4 times	8 (6.8)	
5-6 times	2 (1.7)	
>6 times	1 (0.8)	
Not expressing	68 (57.6)	
Intended duration of breastfeeding (n=119)		
<4 months	7 (5.9)	**0.000****
4-6 months	22 (18.5)	
7-12 months	34 (28.6)	
13-18 months	27 (22.7)	
19-24 months	16 (13.4)	
>24 months	13 (10.9)	
Breastfeeding initiation after birth (n=134)		
<1 hour	52 (38.8)	**0.000***
1-3 hours	61 (45.5)	
3-4 hours	12 (9.0)	
>4 hours	9 (6.7)	
Education and demonstration received (n=134)		
Yes	110 (82.1)	**0.000****
No	24 (17.9)	**0.000****
Breastfeeding ceased before the time of data collection (n=57)		
Yes	13 (22.8)	**0.000****
No	44 (77.2)	**0.000****

*Chi-square goodness of fit test; p values in bold are statistically significant
**Binomial test; p values in bold are statistically significant
[#]Some participants did not answer

Table 4.6 indicates that a significant number of participants who were breastfeeding were not expressing breast milk at all (n=68; 57.6%) (p=0.000), while 33.1% (n=39) were expressing breast milk one to two times in a 24-hour period (n=39; 33.0%) (p=0.000). Only 9.5% (n=11) of participants did not breastfeed at all in the previous 24-hours. Moreover, a chi-square goodness of fit test indicated that a significant 69.7% (n=83) of participants were planning to breastfeed for between four to 18 months (p=0.000). The results of the chi-square goodness of fit test showed that a significant number of participants had initiated breastfeeding between one to three hours after giving birth (n=61; 45.5%) (p=0.000). About 82% (n=110) of participants received education and demonstration from healthcare professionals regarding initiating and

maintaining breastfeeding after giving birth (p=0.000). A binomial test found that 77.2% (n=44) of mothers did not stop breastfeeding because of the problems indicated, while 22.8% (n=13) did (p<0.001) (Table 4.6).

Table 4.7 compares the frequency of breastfeeding within a 24-hour window period for those who were still breastfeeding (n=116), between those who were still on maternity leave (n=63) and those who had returned to work (n=53). Table 4.7 excludes those who had stopped breastfeeding completely.

Table 4.7: Frequency of breastfeeding related to maternity leave and work status

Frequency of breastfeeding in 24 hours	**Currently on leave (n=63)**	**Returned to work (n=53)**
0 times	3 (4.8)	8 (15.1)
1-2 times	7 (11.1)	23 (43.4)
3-4 times	12 (19.0)	13 (24.5)
5-6 times	17 (27.0)	4 (7.5)
>6 times	26 (41.3)	3 (5.7)

Table 4.7 indicates that 41.3% (n=26) of participants who were still on maternity leave were breastfeeding more than six times per day. Among the participants who had returned to work, 43.4% (n=23) were breastfeeding one to two times per day (Table 4.7).

Table 4.8 indicates from where participants received support to maintain breastfeeding, together with where they received breastfeeding education and demonstration from. Furthermore, it shows breastfeeding problems experienced by participants. The participants could select more than one option when answering all questions in Table 4.8.

Table 4.8: Breastfeeding support, source of education and breastfeeding problems experienced

Sources of breastfeeding support (n=134)[Ψ]	**n (%)***
"Clinic nurse"	7 (5.2)
"Family"	24 (17.9)
"Internet"	1 (0.7)
"Lactation consultant"	11 (8.2)
"Mother"	16 (11.9)
"Myself"	10 (7.5)
"Nanny/helper"	4 (3.0)
"No-one"	4 (3.0)
"Spouse/partner"	57 (42.5)
Sources of breastfeeding education and demonstration (n=110)[Ψ]	
"Antenatal class"	18 (16.4)
"Family"	1 (0.9)
"Lactation consultant"	9 (8.2)
"Nurses in hospital"	76 (69.1)
"Paediatrician"	3 (2.7)
"University studies"	1 (0.9)
"YouTube videos"	2 (1.8)
Breastfeeding problems (n=57)[Ψ]	
"Abscess on the breast"	2 (3.5)
"Blisters on the breast"	1 (1.8)
"Clogged ducts"	2 (3.5)
"Cracked nipples"	12 (21.1)
"Dried milk ducts"	1 (1.8)
"Engorged breasts"	9 (15.8)
"Jaundice"	1 (1.8)
"Low milk supply"	17 (29.8)
"Mastitis"	3 (5.3)
"Poor latching"	3 (5.3)
"Sore nipples"	6 (10.5)

[Ψ] Participants could select more than one option

Table 4.8 indicates that participants predominantly received support from their "spouse/partner" (n=57; 42.5%). Furthermore, of the 110 participants who received education and demonstration on how to breastfeed after birth, 69.1% (n=76) of the participants received it from "nurses in hospital". A total of 43% (n=57) of participants experienced breastfeeding problems. Participants most often experienced "low milk supply" (n=17; 29.8%) followed by "cracked nipples" (n=12; 21.1%) and "engorged breasts" (n=9; 15.8%) (Table 4.8).

4.3 The support that participants received from their employers

The third objective of this study was to determine the support (physical and technical) that breastfeeding mothers receive from their employers to enable them to express breast milk or lactate at work.

Table 4.9 indicates if the participants received education or support regarding breastfeeding from an occupational health worker or their manager at the workplace during pregnancy. Furthermore, Table 4.9 indicates if participants would continue breastfeeding after returning to work, and awareness of mothers regarding their breastfeeding breaks. Since this is related to the workplace in which participants had an employer and/or human resources department, the 12 participants who were either self-employed or owned their own businesses were excluded from Table 4.9, resulting in a total of 122.

Table 4.9: Education or support at work and participants' awareness of breastfeeding breaks (n=122)

During pregnancy		
Education or support received at work (all inclusive)	**n (%)**	**p-value***
Yes	12 (9.8)	
No	110 (90.2)	**0.000**
During maternity leave		
Plan to continue breastfeeding at work (those on maternity leave)	**n (%)**	
Yes	63 (51.6)	**0.000**
No	6 (4.9)	
Not applicable[#]	53 (43.4)	
Awareness of breastfeeding breaks (all inclusive)		
Yes	37 (30.3)	
No	85 (69.7)	**0.000**

*Binomial test and Chi-square goodness of fit test; p values in bold are statistically significant
[#]Participants were already back at work and therefore answered not applicable

Participants were all asked if they had received any education while they were pregnant before leaving work for maternity leave. A binomial test showed that a significant 90.2% (n=110) of participants did not receive any education or support from their workplace regarding breastfeeding support for breastfeeding mothers while they were pregnant (p=0.000). About 52% (n=63) of the participants reported that they would continue to breastfeed after returning

to work (p=0.000). Moreover, a chi-square goodness of fit test indicated that a significant 69.7% (n=85) of participants were not aware of their breastfeeding rights as breastfeeding mothers (p=0.000) (Table 4.9).

Table 4.10 reports whether the participants who had returned to work received support or breastfeeding breaks and if their workplace had written policies regarding breastfeeding.

Table 4.10: Breastfeeding breaks, and support from work and written policies for those participants who had returned to work (n=64)

Participants that had returned to work		
Breastfeeding breaks given at work	**n (%)**	**p-value***
Yes	19 (29.7)	
No	34 (53.1)	**0.000**
Support from work to breastfeed		
Yes	20 (31.3)	**0.000**
No	44 (68.8)	
Written policies at work		
Yes	7 (10.9)	
No	34 (53.1)	**0.000**
Don't know	23 (35.9)	**0.000**

*Binomial test and Chi-square goodness of fit test; p values in bold are statistically significant
#Participants were already back at work and therefore answered not applicable

A chi-square goodness of fit test indicated that of the participants who had returned to work, a significant number of participants (n=34; 53.1%) did not receive breastfeeding breaks at their workplace (p=0.001). About 69% (n=44) of participants reported not being supported at the workplace to continue breastfeeding. Furthermore, 53.1% (n=34) reported that there were no written policies at the workplace regarding breastfeeding (p=0.000) (Table 4.10).

Table 4.11 indicates the different reasons why participants stopped breastfeeding. A total of 18 participants gave reasons why they had stopped breastfeeding.

Table 4.11: Reasons for stopping breastfeeding (n=18)

Reasons	**n (%)**
"Breast abscess"	1 (5.6)
"Breastfeeding is difficult"	1 (5.6)
"Breast issues"	1 (5.6)
"Cannot express at work"	1 (5.6)
"It will affect my work"	1 (5.6)
"Low breast milk production/supply and flow"	4 (22.2)
"Mastitis resulted in hospitalization"	1 (5.6)
"No reason given"	2 (11.1)
"Not enough milk to pump for the baby"	2 (11.1)
"No time and opportunity to express breast milk"	3 (16.7)
"No time and low milk supply"	1 (5.6)

Participants were asked an open-ended question to describe the reasons why they had to stop breastfeeding before their infants were six months old. Participants reported that they stopped breastfeeding prior to returning to work because they had "low breast milk production/supply and flow" (n=4; 22.2%), followed by "no time and opportunity to express breast milk" at work (n=3; 16.7%) (Table 4.11).

Table 4.12 indicates whether participants were provided with breaks to express breast milk at work. Furthermore, it shows whether participants had knowledge or awareness of their rights as breastfeeding mothers.

Table 4.12: Support given at work and awareness of rights

Type of support given at work (n=122)	**n (%)**
"Breastfeeding breaks to express/pump breast milk"	19 (15.6)
"Breastfeeding breaks with a private room"	15 (12.3)
"Breastfeeding breaks with a private room and fridge"	5 (4.1)
"Breastfeeding breaks with no private room"	6 (4.9)
"Breastfeeding breaks and educational material and manager support"	2 (1.6)
"Can go home to breastfeed"	2 (1.6)
"Expressing breaks whilst on remote work"	3 (2.5)
"Flexible hours"	6 (4.9)
"No support"	60 (49.2)
"They do not promote it"	1 (0.8)
"30-minute breastfeeding breaks twice per day"	3 (2.5)
Rights that participants were aware of (n=134)	
"Allowed to express breast milk and breastfeed for 6 months"	1 (0.7)
"Baby friendly initiative"	1 (0.7)
"Breastfeeding breaks to express breast milk"	5 (3.7)
"Breastfeeding is best"	1 (0.7)
"In South Africa breastfeeding is promoted for the survival and health of infants and children especially regarding HIV/AIDS. And continue breastfeeding for 6 months and beyond and create awareness"	1 (0.7)
"Maternity leave and breastfeeding breaks"	1 (0.7)
"No knowledge"	105 (78.4)
"Not sure"	3 (2.2)
"Right to breastfeeding breaks and support"	6 (4.5)
"Right to continue breastfeeding even after returning to work"	1 (0.7)
"Right to feed your child as you wish"	7 (5.2)
"Yes, but I do not know anything specific"	2 (1.5)

Participants were given an open-ended question to elaborate on the type of support they received at work. The 12 participants who were self-employed did not answer this section. Regarding their rights, participants could elaborate on what the rights meant to them. Less than half of the participants did not receive support (n=60; 49.2%), while 15.6% (n=19) of participants who had already returned to work reported having "breastfeeding breaks to express/pump breast milk." Only 12.3% (n=15) had "breastfeeding breaks with a private room." Table 4.12 further indicates that 78.4% (n=105) of participants had no knowledge of their rights regarding breastfeeding, while the other 21.6% (n=29), which was a combination of the reasons under all of the "Rights that participants were aware of", had some knowledge and indicated which rights they knew of regarding breastfeeding support (Table 4.12).

4.4 Tshwane Declaration of Support for Breastfeeding in South Africa

The fourth objective was to determine if working women who were breastfeeding were aware of the Tshwane Declaration of Support for Breastfeeding in SA with regards to continuing breastfeeding when they returned to work. Table 4.13 shows if mothers were aware of the Tshwane Declaration of Support for Breastfeeding in SA and the extent of their understanding. They were given an open-ended question in which they could elaborate on their understanding.

Table 4.13: Awareness and understanding of the Tshwane Declaration of Support for Breastfeeding in South Africa and where this knowledge was obtained from

Tshwane Declaration awareness (n=134)	**n (%)**	**p-value***
Yes	6 (4.5)	**0.000**
No	128 (95.5)	**0.000**
Tshwane Declaration understanding (n=134)		
Yes, completely	2 (1.5)	**0.000**
Yes, partly	4 (3.0)	**0.000**
No	128 (95.5)	**0.000**
Where Tshwane Declaration knowledge was obtained from (n=6)		
"Continuing professional development meeting for dietitians"	1 (16.7)	**0.000**
"University (Dietetics)"	2 (33.3)	**0.000**
"Newspaper"	2 (33.3)	**0.000**
"Internet"	1 (16.7)	**0.000**
Understanding of the Tshwane Declaration (n=6)	**n (%)**	
"Hospitals promote breastfeeding and the environment must be supportive of breastfeeding"	1 (16.7)	
"It helps me know my rights which are supported by the government to help me to continue breastfeeding beyond my maternity leave even as government prioritises breastfeeding my baby."	1 (16.7)	
"Not sure."	1 (16.7)	
"One can breastfeed after returning to work without implicating work, no marketing of infant formula therefore no confusion of breast milk substitutes."	1 (16.7)	
"Support for breastfeeding mothers."	1 (16.7)	
"The rights of breastfeeding mothers to be supported by healthcare and social environment."	1 (16.7)	

*Binomial test; p=values in bold are statistically significant

A significant number of participants (n=128; 95.5%) did not know about the Tshwane Declaration of Support for Breastfeeding in SA ($p<0.001$). Some of the 4.5% (n=6) of participants who were aware of the Tshwane Declaration were dietitians who had learnt about it while completing their university degrees and had acquired further information at the

workplace. The other participants received knowledge through the newspaper (n=2; 33.3%) and 16.7% (n=1) read about it on the internet. Furthermore, 95.5% (n=128) of participants did not understand the Tshwane Declaration and how it impacted them as mothers since they did not know about it. Some mothers (n=4; 3.0%) partly understood the Tshwane Declaration, which was based on the answers they gave compared to the Tshwane Declaration's objectives. Furthermore, participants were given an open-ended question to elaborate on their understanding regarding the Tshwane Declaration of Support for Breastfeeding in SA (Table 4.13).

Table 4.14 reports on information on infant formula and human milk banks received by mothers.

Table 4.14: Information received regarding infant formula and human milk banks (n=134)

Infant formula information (n=134)	**n (%)**	**p-value***
Yes	18 (13.4)	**0.000**
No	63 (47.0)	**0.000**
Don't know	53 (39.6)	**0.000**
Human milk bank information (n=134)		
Yes	31 (23.1)	**0.000**
No	103 (76.9)	**0.000**
Where they received information on infant formula from (n=18)		**n (%)**
"Antenatal clinic class"		9 (50.0)
"Advised for a colic infant"		1 (5.6)
"In hospital"		2 (11.1)
"Nurses and Paediatrician"		4 (22.2)
"Options given when wanted to wean off the breast"		1 (5.6)
"Top up infant formula after birth"		1 (5.6)
Where they received information on human milk banks from (n=30)		
"Clinic/health education"		1 (3.3)
"General knowledge"		6 (20)
"Internet/social media"		4 (13.3)
"Informed at the hospital after birth, and given the option"		7 (23.3)
"Orphanage"		1 (3.3)
"Working within the health sector"		11 (36.7)

Most participants did not receive any information about infant formula (n=63; 47.0%), while those who did receive information mostly received it from "antenatal clinic class" (n=9; 50.0%). About 77% (n=103) of participants did not receive information about human milk banks (p=0.000). Of the participants who received information about human milk banks, 36.7% (n=11) obtained the information from "working within the health sector." Only seven participants (23.3%) were informed at the hospital after giving birth that human milk banks were an available option for them if they had no breast milk supply and did not wish to give infant formula (Table 4.14).

4.5 Summary of results

To summarise the results, the first objective was to determine the demographic characteristics of breastfeeding mothers working in the private and public sectors in the eThekwini Metropolitan, KZN, SA. The study participants consisted of 134 who were between 31 to 40 years old, working full-time and in the private sector. Most participants worked as teachers or lecturers, followed by those working as administrators, clerks and receptionists.

The second objective of the study was to determine the breastfeeding practices of working mothers at the workplace and if they lactate during the workday. A significant number of participants were mixed feeding their children. More than half of the participants were not expressing breast milk at all, while those who did express breast milk did so mostly one to two times a day. Participants received education and demonstration regarding initiating and maintaining breastfeeding after giving birth from healthcare professionals. At least half of the participants received maternity leave for four months.

The third objective of the study was to determine the support (physical and technical) that breastfeeding mothers receive from their employers to enable them to express breast milk or lactate at work. A significant number of participants did not receive any education or support while pregnant. However, a significant number of participants reported that they were eager to continue breastfeeding after returning to work. Furthermore, most participants who had returned to work did not receive breastfeeding breaks at their workplace and were not aware of their rights to two 30-minute breastfeeding breaks at the workplace. Moreover, when the participants returned to work, they did not get support at the workplace to continue breastfeeding. More than half of the participants were not aware of any policies that the workplace had regarding breastfeeding support.

The fourth objective was to determine if working women who are breastfeeding are aware of the Tshwane Declaration of Support for Breastfeeding in SA. A statistically significant proportion of the participants did not know about the Tshwane Declaration of Support for breastfeeding in SA and the few who were aware of it were dietitians by profession and had been exposed to it at university. Most participants received information on infant formula from healthcare workers and a statistically significant proportion of participants did not receive information about human milk banks. The next chapter discusses the results of the study.

CHAPTER 5: DISCUSSION

The following chapter will present the study's discussion. This study aimed to determine the breastfeeding practices of working mothers and the lactation support that they receive at the workplace, as well as their awareness of the Tshwane Declaration of Support for Breastfeeding in SA. This chapter discusses the results that were presented in Chapter Four, in line with what studies have found. The hypotheses presented in Chapter One are revisited and either accepted or rejected.

5.1 Socio-demographic characteristics of the study participants

The first objective was to determine the demographic characteristics of breastfeeding mothers working in the private and public sectors in the eThekwini Metropolitan, KZN, SA. One hundred and thirty-four mothers participated in the current study. Although the study aimed to interview 228 mothers, many mothers did not meet the inclusion criteria on the days of data collection. This was because they were either not working or had not initiated breastfeeding. A 2018 KZN breastfeeding study, with more than 4000 participants, reported that more than half of their participants were aged between 20 and 29 years old, which is a younger age group than that of the current study (Horwood *et al* 2018). Compared to Horwood *et al* (2018), the current study had very different socio-demographic characteristics. Half of the participants in the 2018 study only had some high schooling without matric and were single (Horwood *et al* 2018). Horwood *et al* (2018) also conducted their study in primary healthcare clinics, whereas the current study was only conducted in private clinics. Therefore, it was expected that more participants in the current study would be married and have at least an undergraduate degree.

The majority of the participants in the current study worked full-time, while some were returning to full-time employment from maternity leave, which is similar to most studies. There is also a lower chance of getting maternity leave if one had to work part-time or on a contract basis. An Australian study conducted on 3368 participants regarding breastfeeding after returning to work, found that more than half of the participants had a university diploma and were mostly employed part-time (Burns *et al* 2022).

In the current study, the majority of the participants gave birth through a Caesarean section. A Caesarean section is a surgical procedure that is usually done in emergencies to save the lives of both mother and child (Solanki *et al* 2020). It is an invasive birth procedure that involves making incisions in the abdomen and uterus to deliver a baby (Ulfa *et al* 2023). Having a Caesarean section delivery may be a barrier to being able to initiate breastfeeding within an hour after birth because of the discomfort that mothers experience (Ulfa *et al* 2023). Therefore, having a Caesarean section may impact exclusive breastfeeding if the initiation of breastfeeding is not successful, which would furthermore result in less participants being able to breastfeed and further breastfeed at work. In SA, many women elect to have a Caesarean section instead of a natural birth (Solanki *et al* 2020). However, the rate of Caesarean section births was 27.4% in the public sector because the procedure is not elective in the public sector and women do not have a choice of birthing method (Solanki *et al* 2020). On the other hand, Caesarean sections (either elected or non-elected) was reported to be 73% in the private sector in SA, which was three times higher than the global trend (Solanki *et al* 2020). Women of higher socio-economic levels are more likely to request Caesarean section deliveries in the private hospitals as they have a medical aid which may subsidise the procedure partially or completely (Solanki *et al* 2020).

The WHO together with UNICEF recommends that breastfeeding should be initiated within an hour after birth (UNICEF 2018). A 2016 South African review reported that 67.3% of infants born naturally and through Caesarean section, were initiated on breast milk within an hour after birth (Vitalis *et al* 2021). The results of the current study showed that less than half of the infants were initiated on breast milk within one hour after giving birth, which is lower than expected. Irrespective of the type of birthing method, mothers were able to initiate breastfeeding well, even after more than one hour and thereafter maintain breastfeeding.

In order to protect, promote and support breastfeeding in the workplace, SA currently uses the Basic Conditions of Employment Act No. 75 of 1997, which guarantees women four months of unpaid maternity leave (South African Government Gazette 2020). After maternity leave mothers are able to go back to their remunerated employment work (Pereira-Kotze *et al* 2022). Most participants in the current study received maternity leave which varied from six weeks to seven months, however, some participants indicated during data collection that they combined some of their annual leave with their maternity leave to have a longer period of leave. More

than half of the participants had already returned to work as their maternity leave was over or they did not have maternity leave. This is most likely why the majority of infants were already mixed feeding at the time of data collection. A peer review done in SA reported that South African workplaces still give less than 18 weeks of maternity leave, which will impact their decision to maintain exclusive breastfeeding (Reimers 2017). Since the law does not state that maternity leave must be paid, mothers would return to work as soon as paid maternity leave is over, due to them not being able to afford to stay at home without their salaries. Therefore, it would be beneficial for the private sector to be more supportive, since they do not guarantee paid maternity leave for four months unlike the public sector. The workplace would further show its support by ensuring that they renumerate mothers for the full maternity leave and to also renumerate close to 100% of their salary to ensure continuous breastfeeding for a longer period.

5.2 Breastfeeding practices of the study participants

The second objective of this study was to determine the breastfeeding practices of working mothers while at the workplace and if they lactate during the workday. Between 2015 and 2021, 48% of women globally exclusively breastfed their infants under six months old (UNICEF 2022). In the current study, more than half of the participants were mixed feeding at the time of data collection. Of those still on maternity leave, 63.5% were exclusively breastfeeding, while 12.7% of those who had returned to work were able to exclusively breastfeed. About 70% of mothers who had returned to work were mixed feeding their infants. This was expected as returning to work would pose a barrier to exclusively breastfeed if one is not supported at work. The mean age of the infants in the study was 5.9 months which impacts the number of infants who would have been exclusively breastfeeding at the time of data collection. They may have been initiated on breast milk at birth but weaned off breast milk after their mothers returned to work, as retuning to work is one of the reasons for initiating infant formula.

In the current study, more than half of the participants had returned to work at the time of data collection. These participants mostly had infants above four months old, who were mostly being mixed fed (feeding breast milk and infant formula). This would be expected as returning to work may have posed as one of the barriers to continue exclusive breastfeeding especially if they were not supported to express breast milk at work. A Scottish study did a survey on the reasons for mixed feeding infants and some of the reasons included low milk supply, which happened within two

weeks after birth (Michalopoulou, Garcia, Wolfson & Wright 2023). The participants of the study had access to lactation specialists which decreased the risk of unplanned mixed feeding of their infants (Michalopoulou *et al* 2023). On the other hand, mothers were also motivated to maintain breastfeeding because of their belief that it's the best nutrition for their infants and also the fact that breastfeeding is free and therefore, there is no need to purchase infant formula (Daniels *et al* 2024b). Other problems that result in mixed feeding were reported to be anxiety, stress and not enough time to breastfeed and express breastmilk at home (Daniels *et al* 2024b). Furthermore, mothers mentioned that the influence of family resulted in early initiation of infant formula as they were pressured to ensure that infants were full and not fed too frequently (Horwood *et al* 2022). In the current study, 16.9% of mothers who had returned to work were exclusively formula feeding as they had already weaned their infants off breastmilk. Therefore, in the current study the hypothesis that working women cease to breastfeed their children (both exclusively and mixed feeding) upon returning to work, is rejected.

A study in the North West Province of SA, including 159 mothers, reported that 38.5% of infants who were 10-14 weeks old were being exclusively breastfed. However, the duration of exclusive breastfeeding decreased as the infants grew older (Semenekane, Witten, Swanepoel & Kruger 2022). With the benefit of mothers having maternity leave and therefore being able to exclusively breastfeed their infants, a higher rate of exclusive breastfeeding was expected in the current study among the participants who were still on maternity leave. When maternity leave is about to end, mothers would likely start to supplement breastfeeding with infant formula as they would be preparing to return to work, which may be the reason why a quarter of infants were already being mixed fed by mothers still on maternity leave in the current study. However, if there was communication of breastfeeding support such as the two 30-minute breaks per day to sustain breastfeeding, mothers would more likely sustain breastfeeding for a longer period.

The current study investigated the difference between those who were on maternity leave and those who had returned to work in terms of feeding practices and ceasing breastfeeding. Less than half of the participants who were still on maternity leave were able to breastfeed six and more times in a 24-hour period, with only a very small percentage not breastfeeding at all. Of the participants who had returned to work, less than half breastfed their infants one to two times in a 24- hour period, while only a small proportion were breastfeeding more than six times a day. This indicates that returning to work impacts on the frequency with which mothers are able to breastfeed. An Ethiopian study reported that among 861 lactating participants, 77% were

breastfeeding their infants under the age of six months old on average nine times per day in a 24-hour period (Dadi *et al* 2021). This study had a 63.3% exclusive breastfeeding rate and a high rate of breastfeeding frequency (77%), which was likely due to the majority of the participants being housewives (71.3%) (Dadi *et al* 2021).

Another cohort study reported that participants breastfed infants younger than one month on average seven times per day, while those with infants under four months (16%), breastfed on average four times per day (Castetbon *et al* 2020). Castetbon *et al* (2020) further reported that women with infants less than four months old continued to breastfeed even though they would have returned to work, however, this was dependant on their workload and job title. Those with flexible work were more likely to breastfeed for longer (Castetbon *et al* 2020). It was expected that most participants in the current study would breastfeed more often, as the mean age of the infants was less than six months, which is within the recommended age of exclusive breastfeeding. Since more than half of the participants had returned to work, the feeding practices would have been affected as they would not have been able to exclusively breastfeed for a long as possible if the workplace did not offer any breastfeeding support.

Just over half of the participants in the current study were not expressing breast milk at all within a 24-hour window period. Of those who were expressing breast milk, about 33% were expressing breast milk one to two times per day. Research has indicated that frequent breast milk expression is associated with mothers being able to produce higher milk volumes, which will result in ongoing milk supply (Parker *et al* 2021). Therefore, mothers would be able to breastfeed for a longer period if they had a sustained milk supply. For mothers who had returned to work, expressing breast milk at work would be necessary to sustain their milk supply as they would be breastfeeding their infants at home. However, mothers would require physical and technical support at work in order to express breast milk at work. This would include the suggested two 30-minute breastfeeding breaks, a supportive work environment, a private breastfeeding room and storage place for expressed breast milk (Mabaso *et al* 2020).

The work environment is a definite factor that influences whether women continue or cease breastfeeding when they return to work (Quintero *et al* 2023). Quintero *et al* (2023), who conducted a study in the USA using data from pregnancy risk assessments done between 2016 and 2019, reported that one in five women stopped breastfeeding at less than 10 weeks or did not initiate breastfeeding because they were returning to work (Quintero *et al* 2023). In the

current study, the majority of participants had received education and demonstration about breastfeeding. The participants mostly received education and demonstration from hospital nurses and from nurses at antenatal classes. Moreover, some participants also indicated that because they were eager to breastfeed successfully, they had requested for a lactation specialist to assist with breastfeeding after birth, which enabled them to successfully initiate and maintain breastfeeding. A South African study conducted in urban cities reported that breastfeeding is also affected by the support from healthcare professionals during pregnancy and after birth and this can positively impact mothers to maintain breastfeeding for a prolonged period of time (Horwood *et al* 2022). Another study conducted in Durban, KZN, indicated that women who experienced breastfeeding challenges at home consulted a healthcare worker (Ngcwalisa *et al* 2017). Breastfeeding rates are likely to be positively impacted when women receive correct and supportive advice from healthcare professionals (Ngcwalisa *et al* 2017).

Theodorah & Mc'Deline (2021) conducted a study in Buffalo City Metropolitan, Eastern Cape, SA which was inclusive of first time mothers. The research reported on the support needed by mothers to maintain exclusive breastfeeding, and results indicated that first-time mothers received most of their support at the antenatal clinic and from nurses after giving birth (Theodorah & Mc'Deline 2021). After giving birth and initiating breastfeeding, mothers predominately received assistance to maintain breastfeeding at home from their partners and spouses in order to be able to breastfeed successfully at home (Theodorah & Mc'Deline 2021). Participants indicated that practical support would be of greater benefit to them. Even after education and information given regarding breastfeeding, women need continued support from those close to them to maintain breastfeeding for as long as possible (Theodorah & Mc'Deline 2021).

Most participants in the current study indicated that they had hoped to breastfeed for at least four to 18 months, which is more than the recommended period. Another study in SA done with 580 women, indicated that about 40% of mothers completely ceased to breastfeed their infants within one month of their birth because they had to return to work (Siziba *et al* 2015). Moreover, mothers reported that it is important to wean children off breastmilk prior to returning to work as this would assist mothers to notice any issues infants may face with infant formula whilst they were still on maternity leave (Horwood *et al* 2022). The willingness to breastfeed for longer indicates that mothers valued breastfeeding. However, since the participants of the current study were working mothers, their work would have affected their decision and ability to breastfeed

for a prolonged period. This is the reason a very small number of infants were being exclusively formula fed as they had been weaned off breastfeeding completely. This could have been higher if there was no support at the workplace. A French study that included 2480 women, reported that returning to work had been the reason for the cessation of breastfeeding, while other women did not start breastfeeding at all in several cases (Castetbon *et al* 2020). Besides the working environment, breastfeeding can be affected by current and past experiences of breastfeeding (WHO 2009).

The participants of this study were given an opportunity to describe the problems they had experienced while breastfeeding. The most common problem reported by participants was low milk supply which was an important issue as providing enough good nutrition is the primary reason for a mother's choice of feeding. Furthermore, breastfeeding challenges were the main reason for starting infant formula and therefore mixed feeding (Horwood *et al* 2022). Furthermore, another study done in rural and urban KZN, reported that one of the main reasons why mothers introduced infant formula to supplement breast milk was because of the perception that their breast milk was inadequate (Ngcwalisa *et al* 2017). Another barrier mentioned was the problem of infants not latching onto the breast (Ngcwalisa *et al* 2017). However, this was not mentioned as a barrier to breastfeeding in the current study.

5.3 The support that participants received from their employers

The third objective of this study was to determine the support (physical and technical) that breastfeeding mothers receive from their employers to enable them to express breast milk or lactate at work. In order for mothers to continue breastfeeding even after returning to work, they need support and information about how they will be supported when they return to work (Vilar-Compte *et al* 2021). A significant number of participants in this study indicated that the workplace did not provide them with education or support while they were pregnant and prior to going on maternity leave. In the current study, a small number of participants were planning to wean their children off the breast when they returned to work because they were not aware of any breastfeeding support they would receive at work. Therefore, if there was communication of existing support for breastfeeding mothers, participants may have continued breastfeeding knowing that the workplace would support them.

In SA, the government has legislated four months of partly subsidised maternity leave in order to promote and protect breastfeeding at work. Working mothers who are breastfeeding are also

entitled to two 30-minute breaks per day to ensure that they can sustain breastfeeding for the first six months of their child's life (South African Government Gazette 2012). Half of the participants in the current study who were on maternity leave reported that they would continue to breastfeed after returning to work. In the current study, a significant number of participants reported that they did not receive breastfeeding breaks after returning to work, therefore they had either introduced infant formula whilst continuing breastfeeding or they stopped breastfeeding completely. The South African workplaces that do not support breastfeeding mothers with breastfeeding breaks are in contravention of the legislation. If the workplace is not aware of the rights of breastfeeding mothers, they will not be able to initiate and support them, and furthermore, employees would not be able to hold their workplaces accountable for their rights at work.

An Australian study done on 2457 participants, reported that about 70% of women were expressing breast milk at work in order to maintain a breast milk supply (Burns *et al* 2022). However, some participants reported that at times, they were unable to take their scheduled lactation breaks due to their workloads (Burns *et al* 2022). This suggests that as much as some workplaces may provide these breaks, some women may not be able to take breaks to express breast milk due to their heavy workloads. Another study done in The Netherlands with academics as participants, reported that although they had lactation facilities available to them, they were unable to utilise them due to a lack of time from heavy workloads (Hentges & Pilot 2021). Furthermore, although the participants had two to three 30-minute breaks available, they reported not being able to take them timeously (Hentges & Pilot 2021). Hentges & Pilot (2021) found that employees were not aware of their rights and therefore did not receive guidance on what was available to them (Hentges & Pilot 2021). Therefore, having facilities in place and opportunities to take breaks, does not necessarily mean that the breastfeeding mother can stop her work to do so. In the current study, the majority of the participants were not aware of any rights they had as employed breastfeeding mothers, and specifically the right to express breast milk twice a day for 30 minutes each.

Although mothers may have a lack of awareness of their maternity and breastfeeding rights, mothers still need to be protected by having their rights communicated to them and implemented at the workplace. These rights, which are some of the objectives of the Tshwane Declaration of Support for Breastfeeding in SA, include: maternity leave, support to exclusively breastfeed for six months, two 30-miunte breaks per day and the promotion of human milk

banks. The hypothesis that women who are working in the private and public sectors do not receive support in line with the Tshwane Declaration of Support for Breastfeeding in SA to support breastfeeding upon returning to work, is accepted.

If mothers had some knowledge or awareness about their breastfeeding rights, they would have been able to continue breastfeeding their infants (Mabaso *et al* 2020). This would mean that it would not be necessary for mothers to prematurely stop breastfeeding before returning to work. Prior to this study, participants only knew about their right to maternity leave and time off when attending prenatal visits, but nothing about their right to breastfeed at work and be supported to do so (Mabaso *et al* 2020). A few participants knew that they had a right to breastfeeding breaks and support, while others were not specific on how often and for how long (Mabaso *et al* 2020).

A study in Cape Town, which explored work experiences amongst eight women and four managers reported that most mothers and managers were not aware of the rights that breastfeeding mothers had and therefore would not be able to discuss these before maternity leave (Mabaso *et al* 2020). Although mothers were not aware of their rights, they were still adamant to breastfeed for a prolonged period of time. This study suggested that a conversation between pregnant women and managers is necessary to assist with breastfeeding awareness and thereafter breastfeeding practices (Mabaso *et al* 2020).

In the current study, the participants who had returned to work reported on the breastfeeding support at their workplaces for breastfeeding mothers. More than half of these participants indicated that they had no breastfeeding support at their workplace. Of those who were aware of the support at work, only about a quarter knew something about breastfeeding breaks. The other participants were aware of these rights because they had support that included breastfeeding breaks in a private area at the workplace. It is therefore suggested that breastfeeding policies be communicated to all women prior to pregnancy or maternity leave for mothers to be educated and therefore, be able to initiate and sustain breastfeeding during maternity leave (Reimers 2017). Maponya *et al* (2021) suggested that the promotion and support for breastfeeding mothers in the workplace must include: making all employees aware of the rights and support that lactating mothers will receive at work and demarcating a private space to express and store breast milk (Maponya *et al* 2021). Furthermore, the workplace should allow the use of expressing and feeding devices to lactate and ensure that mothers have additional 30-minute breaks to lactate, hereby granting mothers technical and practical

breastfeeding support (Maponya *et al* 2021). However, having policies written in the workplace does not guarantee that they would be implemented and that support will be provided (Daniels *et al* 2020). The workplaces need knowledge on how support can be implemented in order to support breastfeeding mothers efficiently (Daniels *et al* 2020). Moreover, to increase advocacy among other employees, the employer needs to be educated on their roles and responsibilities regarding breastfeeding support at work (Daniels *et al* 2020).

In the current study, about half of the participants indicated that there were no written policies that supported breastfeeding in the workplace, whilst only about 10% of participants had written policies at their workplace. This suggests that the majority of workplaces may not be obliged to support breastfeeding mothers since they do not have written policies that would hold them accountable. Furthermore, since the workplace may have policies in place, management would also need training on how to implement these policies for breastfeeding mothers to be supported adequately. To those workplaces that do not have the policies in place, they would need education and training on the policies that they should have in place for women in the workplace. Because participants were not aware of this declaration, they would therefore lack understanding and would not be able to fight for rights that they were not aware of. Therefore, the hypothesis that breastfeeding women are not aware of workplace policies and procedures put in place to support them upon their return to work, is accepted.

5.4 Awareness of the Tshwane Declaration of Support for Breastfeeding in South Africa

The fourth objective was to determine if working women who are breastfeeding are aware of the Tshwane Declaration of Support for Breastfeeding in SA with regards to continuing breastfeeding when they return to work.

The Tshwane Declaration of Support for Breastfeeding in SA and the Regulations Relating to Foodstuffs for Infants and Young Children (R991) are consistently being violated by the strategic marketing of infant formula and the influence that healthcare professionals have on mothers to consider feeding infant formula (Horwood *et al* 2022). In the current study, the majority of participants were not aware of the Tshwane Declaration of Support for Breastfeeding in SA and therefore had no understanding of it. The three participants who were aware of it had studied it at university, while the other three participants were aware through the newspaper and internet. This was expected because the Tshwane Declaration of Support for Breastfeeding

in SA is not widely publicised and therefore, it would be beneficial for it to be researched at the workplace with the human resource departments. The South African government had created the Tshwane Declaration of Support for Breastfeeding in SA to support breastfeeding through regulating the Code of Marketing of Breast-milk Substitutes, committing resources to protect and support breastfeeding, legislating maternity leave and promoting baby friendly hospitals amongst other methods (DOH SA 2011). It was previously reported that the Tshwane Declaration of Support for Breastfeeding in SA needs to build more commitment and capacity from the national to the local levels in order for implementation to be monitored (Du Plessis & Pereira 2013). Additional research is needed regarding the Tshwane Declaration of Support for Breastfeeding in SA as there have been no studies comparing awareness and implementation of it. The hypothesis that breastfeeding women are not aware of the Tshwane Declaration of Support for Breastfeeding in SA with regards to continuing breastfeeding when they return to work, is accepted.

A study conducted in Durban, KZN, in 2015 and 2016 which interviewed 54 pregnant women, indicated that those women who experienced breastfeeding challenges at home consulted a healthcare worker (Ngcwalisa *et al* 2017). However, when these consultations discouraged the mothers to continue breastfeeding due to the challenges, this advice was against the recommendations of promoting breastfeeding (Ngcwalisa *et al* 2017). In the current study, about 13% of the participants received information about infant formula and most came from healthcare workers, particularly nurses and paediatricians. The information was given because the participants had breastfeeding issues, while some needed information on options to supplement breastfeeding or if the infants did not tolerate other infant formulas. In SA, there are several policies and acts that support and protect breastfeeding (Horwood *et al* 2022). Additionally, the Code of Marketing of Breast-milk Substitutes prevents the marketing and advertisement of breast milk substitutes (Horwood *et al* 2022). This policy also ensures that healthcare professionals who interact with pregnant women and mothers, do not influence their decision to formula feed (Horwood *et al* 2022).

Hadebe *et al* (2024) reported that there was a lack of awareness concerning human milk banks in KZN. While there are a number of human milk banks available in both the public and private sectors, pregnant women and mothers were not aware that they could use this service if they were unable to breastfeed their infants. In the current study, only about a quarter of the participants were aware of human milk banks. Those who were aware of them were participants who worked

in both the private and public health sectors. Another study in SA reported that in cases where mothers could not breastfeed, 67% participants did not have any knowledge of human milk banks in order to choose it as an option (Patel *et al* 2023). It is recommended that at a national level, breastfeeding should be improved and supported by adopting the Code of Marketing of Breast-milk Substitutes, improving maternity and paternity leave policies, upskilling lactation consultants and stipulating laws that protect mothers (Theurich *et al* 2019).

CHAPTER 6: CONCLUSION, STUDY LIMITATIONS AND RECOMMENDATIONS

The aim of the study was to determine the breastfeeding practices of working mothers and the lactation support that they receive at the workplace, as well as their awareness of the Tshwane Declaration of Support for Breastfeeding in SA. The study objectives were as follows: i) To determine the demographic characteristics of breastfeeding mothers working in the private and public sectors in the eThekwini Metropolitan, KZN, SA; ii) To determine the breastfeeding practices of working mothers while at the workplace and if they lactate during the workday; iii) To determine the support (physical and technical) that breastfeeding mothers receive from their employers to enable them to express breast milk or lactate at work; iv) To determine if working women who are breastfeeding are aware of the Tshwane Declaration of Support for Breastfeeding in SA with regards to continuing breastfeeding when they return to work. This chapter presents the study conclusions, limitations and recommendations.

6.1 Conclusions

In conclusion, breastfeeding mothers who were working in the private and public sectors in the eThekwini Metropolitan and participated in this study were between 31-40 years old, married and had one or two children. Most mothers had a degree, worked full-time and were employed in the private sector. Although mothers initiated exclusive breastfeeding at birth, the rate of exclusive breastfeeding reduced with time. Returning to work led to most mothers mixed feeding their infants (giving both breast milk and infant formula) as they were not able to sustain exclusive breastfeeding after returning to work. Therefore, the hypothesis that they would cease to breastfeed their children upon returning to work was rejected. Returning to work was also associated with a lower frequency of breastfeeding during the day. There was a lack of education or support on breastfeeding for the participants from the workplace while they were pregnant. In addition, there was a lack of written policies regarding breastfeeding at the workplace and poor support for breastfeeding mothers. It was assumed that participants were not aware of their rights regarding breastfeeding and after confirmation from the results of the study, the hypothesis was accepted. The breastfeeding mothers who participated in the study lacked knowledge of their rights regarding breastfeeding at the workplace. There was also poor awareness of the Tshwane Declaration of Support for Breastfeeding in SA among the mothers who participated in the study, which was confirmed by almost all of the participants stating that they were not aware of the Tshwane Declaration and therefore, the hypothesis was accepted

Moreover, over two thirds of participants did not receive support at work and therefore, the hypothesis that the women who are working in the private and public sectors do not receive support regarding breastfeeding upon returning to work, was accepted. The study has shown that the formal private sectors and the formal public sector do not support breastfeeding mothers well enough and therefore, need to have written policies according to national policies and have them implemented for the benefit of workers. The study also revealed that the recommended breastfeeding period is affected by returning to work amongst other issues, therefore, the workplace would be an ideal place to support breastfeeding mothers as they spend most of their time at work during the day. Furthermore, the government could use these findings to put in place laws and regulations and thereafter monitor its implementation.

6.2 Study limitations

The limitations of the study are described as follows:

6.2.1 The final sample size in this study was smaller than planned. Although additional time was allocated for data collection, the researcher was unable to achieve the original sample size target. Furthermore, the original sample was calculated without considering the full inclusion and exclusion criteria. Therefore, findings cannot be generalised for the entire eThekwini Metropolitan.

6.2.2 Although 12 private clinics were originally approached to participate in the study, only seven clinics gave permission to be included in this study. Therefore, findings cannot be generalised for the entire eThekwini Metropolitan.

6.2.3 Due to the inclusion criteria being intended for working women, specifically in the formal workplace, the study could not be generalised to the workplace at large. Therefore, these conclusions pertain to the public and private sector formal working mothers only.

6.2.4 The missing data of three participants in two questions resulted from the data not being correctly recorded during data collection and capturing. This resulted in the data being excluded from the total number of participants for those two questions.

6.2.5 Regarding the participants' maternity leave, there could have been a question to determine if they had paid or unpaid maternity leave and also if their maternity leave was fully renumerated.

6.3 Recommendations based on the results of the study

From the results of this study, the following recommendations can be made:

6.3.1 Considering the number of clinics that did not consent to participate, future study sites should be larger to allow more clinics to be approached. Furthermore, private paediatricians and private corporate clinics who offer infant immunisations should also be approached to participate to increase participation rates.

6.3.2 The formal workplace needs to be trained regarding legislated laws and compulsory laws regarding breastfeeding, in order to be able to adopt and practice these laws at the workplace and further be able to communicate policies to employees.

6.3.3 Education and training at antenatal classes should include awareness of women's breastfeeding rights during pregnancy, so that mothers can make informed decisions about breastfeeding, and to be able to hold workplaces accountable for these rights.

6.3.4 The government should consider changing recommendations into laws in order for workplaces to strictly have written policies and implement accordingly to support pregnant women and breastfeeding mothers. Furthermore, mothers should be educated regarding the policies and laws in order to be able to hold the workplaces accountable.

6.4 Recommendations for further research

The recommendations that are suggested for further research are as follows:

6.4.1 Research at workplaces should investigate their written policies on breastfeeding and expressing breast milk at work for all women returning from maternity leave.

6.4.2 Future studies should investigate if mothers employed in small business are aware of their rights regarding maternity leave and breastfeeding at work.

6.4.3 Similar studies should be conducted in other regions of South Africa and on a larger scale, in order to achieve a larger sample size, and ample time should be given for data collection.

6.4.4 Future studies should investigate the public and private sectors separately, in order to establish support in the different sectors. This may give insight on how different human resource departments give support to breastfeeding mothers and if they communicate the support prior to them going on maternity leave.

6.4.5 Research should be done on public servants regarding the breastfeeding support that they receive at work. This should further determine if the Tshwane Declaration of Support for Breastfeeding in SA, is being implemented by the government to support,

protect and promote breastfeeding.

6.4.6 Research should also be conducted at the workplace in order to compare the awareness of breastfeeding rights of both mothers and human resource departments or managers in order to determine if the breastfeeding rights and policies are truly written, communicated and in place at the workplace.

6.4.7 Future studies should investigate the awareness of the DOH workplace booklet amongst mothers and workers and implementation of this booklet at workplaces.

6.4.8 More research is needed regarding the awareness of the rights of working women and the Tshwane Declaration of Support for Breastfeeding in SA within the workplaces. Furthermore, research would be needed on the education and training that the workplace employers and employees receive regarding breastfeeding rights for women.

6.4.9 Research should look at the training, knowledge and understanding of the Tshwane Declaration of Support for Breastfeeding in SA, specifically with DOH stakeholders and the workplace management and human resource departments. Since the Tshwane Declaration is not vastly communicated to the public, it would not benefit them if the workplace and DOH stakeholders are not aware of it and therefore, unable to implement it.

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APPENDIX A: Informed consent form for participants

Informed Consent Form for participants

Good day,

My name is Nolwazi Mncwabe and I am currently a student in the Discipline of Dietetics and Human Nutrition at the University of KwaZulu-Natal.

If you are currently breastfeeding your child, you are invited to consider participating in my MSc Dietetics study which will determine if the workplace supports breastfeeding mothers when they return to work and wish to continue feeding their children breast milk.

The aims of the study are:

- To establish the demographic characteristics of breastfeeding mothers who are working in the private and public sectors in the central Durban area, South Africa.
- To determine the breastfeeding practices of working mothers while at the workplace and if they lactate during the workday.
- To determine the support that breastfeeding mothers receive from their employers to enable them to express breast milk or lactate at work.
- To determine if working women who are breastfeeding are informed and aware of the Tshwane Declaration of Support for Breastfeeding in South Africa with regards to continuing breastfeeding when they return to work.

The study is expected to enroll working mothers who are breastfeeding their children in the Durban area.

The procedure of the study is as follows:

1) If you give consent to participate, a questionnaire will be given to you to complete. The questionnaire consists of 33 questions related to your demographic characteristics and thereafter breastfeeding practices. Please answer these questions as accurately and truthfully as possible. There are no right or wrong answers.

Please note that this study will not provide any direct benefit or harm to you as a study participant.

The study will be anonymous and voluntary. You will be allocated a code, and your name and surname will not be required on the questionnaire. You may withdraw from the study at any point, should you wish to do so, with no penalties incurred.

In the event of any problems or concerns/questions you may contact the researchers and supervisors at:

Researcher: Nolwazi Mncwabe
Email: [redacted]
number: [redacted]

Supervisor: Dr Nicola Wiles
Email: wilesn@ukzn.ac.za Phone

Co-Supervisor: Prof Kirthee Pillay
Email: pillayk@ukzn.ac.za

UKZN Humanities and Social Sciences Research Ethics Committee Research office,
Westville Campus
Govan Mbeki Building Private Bag X 54001 Durban
4000
KwaZulu-Natal, South Africa
Tel: 27 312604557 Fax 27 3126044609
Email: HSSREC@ukzn.ac.za

CONSENT

I (Name and surname) _____ have been informed about the study entitled: "To determine the factors influencing a working mothers decision to continue or cease breastfeeding when retuning to the workplace" by Nolwazi Mncwabe, agree to participate.

I understand the purpose and procedures of the study.

I declare that my participation in this study is entirely voluntary and that I may withdraw at any time.

If I have any further questions/concerns or queries related to the study I understand that I may contact the researcher on email at [redacted] or telephonically at [redacted].

If I have any questions or concerns about my rights as a study participant, or if I am concerned about an aspect of the study or the researchers then I may contact:

UKZN Humanities and Social Sciences Research Ethics Committee Research Office,
Westville Campus
Govan Mbeki Building Private Bag X 54001 Durban
4000
KwaZulu-Natal, South Africa
Tel: 27 312604557 Fax 27 3126044609
Email: HSSREC@ukzn.ac.za

APPENDIX B: Interviewer-assisted self-administered questionnaire

Definitions
Lactation: the practice of both expressing breast milk and breastfeeding

A. Demographic characteristics

1. How old are you?

18 – 22 years	23 – 30 years	31 – 40 years	41 – 50 years

2. What is your highest level of education?

Some schooling	Matric	Certificate	Diploma	Undergraduate degree	Postgraduate degree

3. What is your marital status?

Single	Married	Divorced	Widowed	Living Together

4. How many children do you have (including the baby brought to the clinic/hospital)?

_____

5. What is the age of the baby that you have brought with you to the clinic/hospital today (in months and weeks e.g. 2 months and 1 week)?

_____months _____weeks

6. How was your baby delivered?

Natural birth	Caesarean section

7. What is your current occupation?

_____

8. Are you a full time or part-time worker?

Part-time worker	Full-time worker

9. Where are you employed?

Private sector	Public sector	Other

10. How are you currently feeding your baby?

Exclusive breastfeeding	Exclusive formula feeding	Mixed feeding (breastfeeding & formula feeding)

11. For how many months are you planning to breastfeed?

< 4 months	4 - 6	7 – 12	13 – 18	19 – 24	> 24

12. If you are currently breastfeeding:

how many times have you breastfed in the past 24 hours?

0 times	1 – 2 times	3 – 4 times	5 – 6 times	More than 6 times

13. If you are currently breastfeeding:

how many times have you expressed breast milk in the past 24 hours?

1 – 2 times	3 – 4 times	5 – 6 times	More than 6 times	Not Expressing

14. How long after birth did you initiate breastfeeding?

< 1 hour	1 - <3 hours	3 – 4 hours	> 4 hours

15. Who do you get support from in order to breastfeed successfully?

---

16. Did you receive any education or demonstration on how to breastfeed and express breast milk?

Yes	No

16.1 If your answer to the previous question was yes, where did you receive education or demonstration from, and from whom did you get it i.e. healthcare professional type?

---

17. When breastfeeding what, if any, problems did you experience?

---

18. Did the above problems result in you ceasing breastfeeding?

Yes	No

B. Breastfeeding support at work

19. Did your workplace give you maternity leave days after the birth of your baby?

Yes	No	Not applicable

20. How long was the maternity leave given at work (indicate weeks or months)?

21. Did you receive any education or support information whilst pregnant from an Occupational Health Nurse regarding breastfeeding when you return to work?

Yes	No

22. If you are currently still on maternity leave, are you planning on returning to work?

Yes	No	Not applicable

23. When you return to work, will you continue breastfeeding?

Yes	No	Not applicable

If no, why not?

_____

_____

24. Does your workplace provide breastfeeding breaks or time to express breast milk for lactating women?

Yes	No	I don't know

25. Are you aware that you are entitled to two 30-minute breaks to express breast milk during working hours at work?

Yes	No

26. What kind of support does your workplace give to breastfeeding women?

_____

_____

_____

C. Tshwane Declaration

27. Are you aware of the rights that mothers and children have regarding breastfeeding, and if so what are they?

_____

_____

28. Are you aware of The Tshwane Declaration of Support for Breastfeeding in South Africa?

Yes	No

If you answered YES to q28:

28.1 Where did you hear about the Tshwane Declaration?

_____

29. Do you understand the Tshwane Declaration and how it applies to you as a breastfeeding mother?

Yes, completely	Yes, partly	No

29.1 If yes (completely or partly) to the above question, how does it benefit you as a breastfeeding mother?

_____

_____

30. Does your workplace support the practice of supporting breastfeeding women to continue breastfeeding?

Yes	No	I do not know

31. Does your workplace have written policies and procedures that support the practice of breastfeeding and lactating at the workplace?

Yes	No	I do not know

32. Have you received information regarding infant formula either before or after birth. Where did you get this information? Can you also elaborate on what kind of information it was.

_____

_____

33. Were you informed of human milk banks and their availability if you needed them?

Yes	No

33.1 If yes to the above, from where did you get information on human milk banks?

_____

Thank you for your participation

APPENDIX C: Self-administered questionnaire survey (Nakao *et al* 2008)

Question 1) These questions are about your first physical contact with your child.

① When did you first touch your child?

(1) Within 30 minutes of birth, (2) Within 1 hour, (3) Within 2 hours, (4) Within
1 day, (5) Sometime thereafter

② Where on their body did you first touch your child?

(1) Hand, (2) Foot, (3) The entire body over their clothes, (4) The entire body with direct skin contact,

(5) I breastfed them, (6) Other ( )

③ When did you first directly breastfeed (allow your child to nurse directly from the breast) after the birth?

(1) Within 30 minutes of birth, (2) Within 1 hour, (3) Within 2 hours, (4) Within 1 day, (5) Sometime thereafter

④ How long did your child feed for? About _____minutes

⑤ Which breast did your child nurse from? (1) Right breast, (2) Left breast, (3) Both breasts, (4) I don't recall

⑥ How strongly did your child suckle? (1) Only to the point of licking, (2) Felt as though the child was suckling,

(3) Strongly

⑦ What did you think of the timing of your first breastfeeding session?

(1) Too early, (2) A little too early, (3) Just right, (4) A little too late, (5) Too late

⑧ Why did you think this? (Multiple answers are permitted)

(1) I felt poorly, (2) My child felt poorly, (3) My breast was too firm during nursing, (4) I wanted to breastfeed sooner, (5) Other reason (

)

⑨ How satisfied are your with your first session of breastfeeding?

(1) Satisfied, (2) Somewhat satisfied, (3) Somewhat dissatisfied, (4) Dissatisfied

Question 2) These questions are about your time <u>in hospital</u>.

⑩ What was the first fluid that your child ingested?
(1) Breast milk, (2) Sugar water, (3) Milk, (4) I don't know, (5) Other (

) What was your child fed during your time in hospital?
(1) Sugar water and breast milk, (2) Milk, (3) Sugar water and milk, (4) Sugar water, breast milk, and milk, (5) Breast milk, (6) Breast milk and milk, (7) Other ( )

⑫ How did your child breastfeed during your time in hospital?
(1) They fed frequently, (2) They fed at set times, (3) Other ( )

⑬ What did you think of your child's breastfeeding during your time in hospital?
(1) I was satisfied, (2) I was somewhat satisfied, (3) I was somewhat dissatisfied, (4) I was not satisfied

Why did you think this way?

Question 3) These questions are about your situation from discharge to the present time.

⑭ What are all the fluids your child has ingested in their first month since birth? (Multiple answers are permitted)
(1) Milk, (2) Breast milk, (3) Warm water, (4) Green tea, (5) Sugar water, (6) Other ( )

⑮ What is your child's current feeding status? (what fluids do you feed them) (Multiple answers are permitted)
(1) Milk, (2) Breast milk, (3) Warm water, (4) Coarse tea, (5) Soup, (6) Fruit juice,
(7) Sugar water, (8) Pocari Sweat,
(9) Other ( )

⑯ Have you needed to visit a hospital or other facility (maternity center) for your health since the birth?
(1) Yes, (2) No
If you have, please give the reason.
E.g.: (a) On the second day after discharge, I visited the obstetrician due to heavy bleeding from the uterus; I was given oral medication after treatment,
(b) In the second month after delivery, I developed mastitis due to clogged milk ducts; I was given a breast massage by the midwife and antibiotics

by the Department of Obstetrics and Gynecology

Question 4) These questions are about you and your child.

1. What is the sex of your child? (1) Boy, (2) Girl
2. How many siblings does your child have? (1) None, (2) One, (3) Two, (4) Three, (5) Four
3. What were your child's height and weight at birth? (1) Height ( ) cm, (2) Weight ( ) g
4. After how many weeks of gestation was your child born? ( ) weeks, ( ) days *This information should be written on **page 8 Childbirth** of your Maternal and Child Health Handbook
5. How old are you? ( ) years
6. How was your child delivered? (1) Cesarean section, (2) Vaginal delivery, (3) Vacuum delivery, (4) Other ( )
7. How much bleeding did you experience during delivery? (1) A little, (2) Moderate, (3) A large amount (mL) *This information should be provided on **page 8 Childbirth** of your Maternal and Child Health Handbook
8. How long did the delivery last? ( ) hours. *This information should be provided on **page 8 Childbirth** of your Maternal and Child Health Handbook

Thank you for completing this questionnaire.

*If you would like to provide any feedback to the health center or university about maternal and child health matters, please write these on the back of the form. Thank you.

APPENDIX D: Gatekeeper's permission letter

UKZN HUMANITIES AND SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE (HSSREC)

APPLICATION FOR ETHICS APPROVAL

For research with human participants

"The breastfeeding practices of working mothers and the lactation support that they receive at the workplace."

Information Sheet and Consent to Participate in Research Date: 31 October 2022

Dear Nursing Manager/Practice Manager

My name is Nolwazi Mncwabe and I am currently registered for my Master of Science in Dietetics at the University of Kwa-Zulu Natal.

You are being invited to consider participating in a study titled "The breastfeeding practices of working mothers and the lactation support that they receive at the workplace."

The aim and purpose of this study is to obtain information from breastfeeding mothers regarding the support that they receive from their employers and the understanding that they have regarding their rights to lactate at work. The study will involve administering a questionnaire to breastfeeding mothers who are attending your facility on the day of data collection. The questionnaire will only be given to those mothers who consent to participate in the study.

If you choose to enroll your facility in the study, participation is expected to take approximately three days.

It is anticipated that the results of the study will provide insight into the current situation in Durban with regards to breastfeeding practices and the support that breastfeeding mothers receive in their workplace. This will allow recommendations to be made regarding how policies and practices in the workplace can accommodate breastfeeding mothers. It is also anticipated

that awareness may be created regarding the barriers that result in the cessation of breastfeeding early, due to the work environment.

In the event of any problems or concerns/questions you may contact the researcher at [redacted] and [redacted] or the UKZN Humanities & Social Sciences Research Ethics Committee, contact details as follows:

Research Office, Westville Campus Govan Mbeki Building
Private Bag X 54001 Durban
4000

KwaZulu-Natal, SOUTH AFRICA

Tel: 27 31 2604557- Fax: 27 31 2604609

Email: HSSREC@ukzn.ac.za

Participation in this research study is voluntary for both the institution and the participants, and they may therefore withdraw their participation at any point. In the event of withdrawal or refusal to participate, the participants will not incur a penalty or loss of treatment or other benefit to which they are normally entitled.

There will be no costs that may be incurred by participants as a result of participation in the study. Furthermore, there are no reimbursements and prizes for participation.

In order to protect the confidentiality of personal/clinical information, all participants will have a code indicated on their questionnaire and no participant names will be obtained. No personal information or contact details of the participants are required for the study. Data will be analyzed according to the demographic questions answered, which are without personal information and details. Furthermore, there will be no pictures/photos taken at the study site.

I _____have been informed about the study entitled "The breastfeeding practices of working mothers and the lactation support that they receive at the workplace" by Nolwazi Mncwabe a Master of Science (Dietetics) student.

I understand that the purpose and procedures of the study include the participants completing a questionnaire.

I have been given an opportunity to answer questions about the study and am satisfied with the answers that I obtained.

I declare that the participation of my clinic in this study is entirely voluntary and that I may withdraw at any time.

If I have any further questions/concerns or queries related to the study I understand that I may contact the researcher at [redacted] / [redacted]).

If I have any questions or concerns about my rights as a study participant, or if I am concerned about an aspect of the study or the researchers then I may contact:

Researcher: Nolwazi Mncwabe

Email: [redacted]

Phone number: [redacted]

Supervisor: Dr Nicola Wiles

Email: wilesn@ukzn.ac.za

Co-Supervisor: Prof Kirthee Pillay

Email: pillayk@ukzn.ac.za

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

Research Office, Westville Campus Govan Mbeki Building
Private Bag X 54001 Durban
4000

KwaZulu-Natal, SOUTH AFRICA

Tel: 27 31 2604557 - Fax: 27 31 2604609

Email: HSSREC@ukzn.ac.za

_____ _____

Signature of Participant **Date**

_____ _____

Signature of Witness **Date (Where applicable)**

_____ _____

Signature of Translator **Date (Where applicable)**

APPENDIX E: Ethics approval from the Humanities and Social Sciences Ethics Committee

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

22 June 2023

Nolwazi Fundisiwe Enathi Mncwabe (219097536)
School Of Agri Earth & Env Sc
Pietermaritzburg Campus

Dear NFE Mncwabe,

Protocol reference number: HSSREC/00005261/2023
Project title: To determine the breastfeeding practices of working mothers and the lactation support that they receive at the workplace.
Degree: Masters

Approval Notification – Expedited Application

This letter serves to notify you that your application received on 06 February 2023 in connection with the above, was reviewed by the Humanities and Social Sciences Research Ethics Committee (HSSREC) and the protocol has been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

This approval is valid until 22 June 2024.
To ensure uninterrupted approval of this study beyond the approval expiry date, a progress report must be submitted to the Research Office on the appropriate form 2 - 3 months before the expiry date. A close-out report to be submitted when study is finished.

HSSREC is registered with the South African National Health Research Ethics Council (REC-040414-040).

Yours sincerely,

[redacted]

Professor Dipane Hlalele (Chair)

/dd

Humanities and Social Sciences Research Ethics Committee
Postal Address: Private Bag X54001, Durban, 4000, South Africa
Telephone: +27 (0)31 260 8350/4557/3587 **Email:** hssrec@ukzn.ac.za **Website:** http://research.ukzn.ac.za/Research-Ethics
Founding Campuses: Edgewood Howard College Medical School Pietermaritzburg Westville