FACTORS INFLUENCING THE PROTECTION, PROMOTION AND SUPPORT OF EXCLUSIVE BREASTFEEDING AMONG HEALTH WORKERS IN LAGOS STATE PRIMARY HEALTH CARE CENTRES

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KEYWORDS

Factors

Protection

Promotion

Support

Exclusive breastfeeding

Health workers

Primary Health Care Centres Lagos-State

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DEFINITION OF ABBREVIATIONS/ ACRONYMS

BFHI	Baby Friendly Hospital Initiative
CHEWS	Community Health Extension Workers
EBF	Exclusive breastfeeding
FMOH	Federal Ministry of Health
HIV	Human Immunodeficiency Virus
IBCLC	International Board-Certified Lactation Consultant
ILO	International Labour Organization
IYCF	Infant and Young Child Feeding
LCDA	Local Council Development Area
LGA	Local Government Area
NAFDAC	National Agency for Food and Drug Administration and Control
NGO	Non-Governmental Organization
OIC	Officer in Charge
PHC	Primary Health Care Centre
PMTCT	Preventive Mother to Child Transmission of HIV
UNICEF	United Nations International Children's Emergency Fund
WBTi	World Breastfeeding Trends initiative
WHA	World Health Assembly
WHO	World Health Organization

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INTERPRETATION OF KEY TERMS

Exclusive breastfeeding: This means feeding an infant with breast milk only for the first six months of life without mixing it with water, other liquids or solids but allowing the use of oral rehydration solution and drops or syrups of vitamins, minerals or medicines when necessary (WHO & UNICEF, 2003).

Health workers: This include individuals that have received in-depth training (usually varying in duration and skill sets) aimed at providing essential and appropriate health care services to people within their communities (e.g doctors, nurses/midwives, CHEWS).

Protection of breastfeeding: This involves creating an enabling environment for mothers to breastfeed their infants with confidence through the full implementation and enforcement of the International Code of Marketing of Breast-milk Substitutes and enactment of maternity protection legislation (CACH, 2017).

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Promotion of breastfeeding: It involves creating awareness about benefits of breastfeeding through education of stakeholders (e.g. mothers, health workers, community members), implementation of policies and information campaigns to improve attitudes, beliefs and social norms towards breastfeeding (CACH, 2017).

Support of breastfeeding: It involves providing mothers with support both to initiate and maintain breastfeeding. Adequately trained health workers found at health facilities or within the communities, family members as well as mother-to-mother support groups can provide this service (CACH, 2017).

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DECLARATION

I declare that the mini-thesis is my own original work and that it has never been submitted anywhere else for any purposes. All other peoples' ideas that have been cited have been acknowledged.

Full name: Adedolapo Opeyemi Gbabe **Date**: November, 2019

Signature

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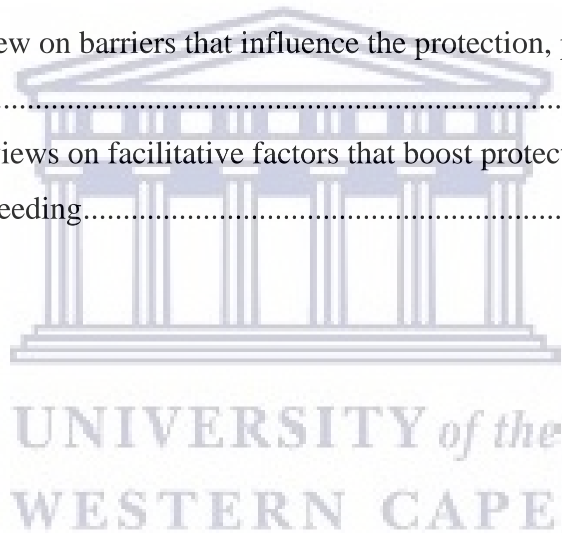
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ABSTRACT

Background: Globally, health workers play a critical role in the establishment and sustenance of breastfeeding due to their frequent contacts with mothers at the antenatal clinics, maternity/birthing units, Primary Health Care Centres (PHC) and postpartum clinics. Their knowledge and attitude regarding breastfeeding will affect the quality of information about infant and young child feeding practices passed along to mothers who visit their health facilities.

Aim: To determine the factors that influence the protection, promotion and support of exclusive breastfeeding by health workers working in Lagos State PHCs.

Methods: This is a descriptive cross-sectional study. The health workers' knowledge, attitudes, facilitative factors and barriers regarding protection, promotion and support of exclusive breastfeeding was determined by the researcher by administering a structured questionnaire comprising of some open- and close-ended questions as well as questions with response options in the form of a Likert scale to the participants. The open-ended questions were used to elicit qualitative responses. The participants comprised of a convenient sample of 5 health workers (i.e. 1 Doctor, 2 Nurses, 2 Community Health Extension Workers) per Flagship PHC chosen from 10 randomly selected Local Government Areas in Lagos State to give a total sample size of 50 health workers. The responses to the close-ended questions were analysed using STATA statistical software (version 15) while responses to the open-ended questions were analysed using thematic content analysis.

Results: This study found that the health workers had sub-optimal training on the intricacies of breastfeeding management/counselling. A significant deficit in knowledge regarding the latest recommendations on infant feeding in the context of HIV as well as policies and programmes related to breastfeeding were also identified. Half (50%) of the health workers reported that they had not attended any training on breastfeeding management. None of the health workers reported having breastfeeding support groups at their PHCs. Also identified was a high level of ignorance regarding their awareness /understanding of the Code and the national (Nigerian) legislation. All (100%) of the health workers had a good perception about exclusive breastfeeding.

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Conclusion: Health workers at the PHCs play an important role in the protection, promotion and support of EBF especially at the grassroot level since they are a mothers' first point of contact with the health system. Therefore, in order for them to play the role effectively, it is of utmost importance that they are upskilled through the acquisition of in-depth and up-to-date training on breastfeeding management/counselling as well as the Code and policies related to breastfeeding and appropriate IYCF practices. Furthermore, community sensitization through social mobilization, mass media campaigns coupled with inter-sectoral collaboration between health workers and other stakeholders have been identified as facilitative factors for the protection, promotion and support of exclusive breastfeeding.

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CHAPTER 1: Introduction

1.1 Introduction

The World Health Organization (WHO) /United Nations International Children's Emergency Fund (UNICEF) Innocenti declaration (1990) describes breastfeeding as a unique process carried out by mothers to provide adequate nourishment and promote healthy growth and development of infants. Furthermore, breastfeeding has been shown to provide various benefits for mothers and their infants, these include: Protection of infants against infectious diseases (e.g. diarrhoea, pneumonia), reduction in infant mortality rate, reduction in risk of overweight and obesity in childhood and adolescence, protection of mothers from developing certain forms of cancers (i.e. ovarian and breast cancers), a form of contraception and also enhances a woman's sense of satisfaction (WHO/UNICEF, 1990; WHO/UNICEF, 2003; Rollins et al., 2016; Victora et al., 2016). Other benefits of breastfeeding include: reduced health care costs, increased intelligence quotient (IQ) in children and it is also convenient for mothers (Cattaneo et al., 2004; Rollins et al., 2016; Victora et al., 2016; WHO & UNICEF, 2017).

Various research has shown that exclusive breastfeeding (EBF) which involves feeding an infant with only breast-milk without the addition of water or pre-lacteal feeds increases these benefits when practiced for the first six months of life (WHO/UNICEF, 2003; Dun-Dery & Laar, 2016; Rollins et al., 2016). Contrary to the evidence shown in various research about the benefits of EBF its global trends have been found to be sub-optimal. A study carried out by Cai, Wardlaw & Brown (2012: 12) further reported that: "…the practice of exclusive breastfeeding is not widespread in the developing world and increase on the global level is still very modest with much room for improvement". Another study by Victora et al. (2016) reported that just 37% of infants less than 6 months of age are breastfed exclusively in low-income and middle-income countries.

In Nigeria, most mothers breastfeed their infants however the prevalence of EBF for six months is not widespread (Adeyinka, Olatona & Oluwole, 2016; Ogbo et al., 2017). Health workers play an important role in ensuring that the WHO/UNICEF Innocenti declaration (WHO & UNICEF, 1990) and WHO/UNICEF Global Strategy for Infant and Young Child Feeding (WHO & UNICEF, 2003) which aims to protect, promote and support breastfeeding is being successfully implemented

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and sustained. It is therefore necessary to investigate factors influencing the protection, promotion and provision of support of EBF by health workers especially at the grassroots level in Lagos State PHCs.

1.2 Problem Statement

Health workers at the primary care level are usually the first point of contact of pregnant women and mothers with the health system in Lagos State. It is therefore necessary to investigate the factors that influence the protection, promotion and support of EBF by health workers especially at the primary-care level (i.e. Primary Health Care Centres), since these health workers may have an influence (either positive or negative) on the choice and support of mothers to practice exclusive breastfeeding.

1.3 Purpose of the study

The purpose of the study was to investigate factors that influence the protection, promotion and support of exclusive breastfeeding by health workers in Lagos State PHCs. In addition, it was anticipated that the findings from this research would contribute to a better understanding of how to improve the capacity of health workers in Nigeria (Lagos State, specifically) to provide nursing mothers with appropriate information and counselling on breastfeeding management and optimal Infant and Young Child Feeding practices. Lessons learnt from this research could potentially be applied to other areas in Nigeria or elsewhere.

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CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This section analyses the literature on the protection, promotion and support of EBF globally and nationally. The first section focuses on the protection of EBF. The next section describes the promotion of EBF. The third section outlines the support of EBF. The fourth section describes exclusive breastfeeding and appropriate infant feeding practices. The fifth section outlines the components of protecting, promoting and supporting EBF while the sixth section focuses on the knowledge and attitudes of health workers on EBF.

There are various settings involved in creating an enabling environment for the protection, promotion and support of breastfeeding (See Figure 1). This research has chosen to focus on the health facility as a setting where the protection, promotion and support of breastfeeding can be improved. An article by Rollins et al. (2016) describes a conceptual model which showcases all the components that contribute to an environment that can enable breastfeeding (See Figure 1).

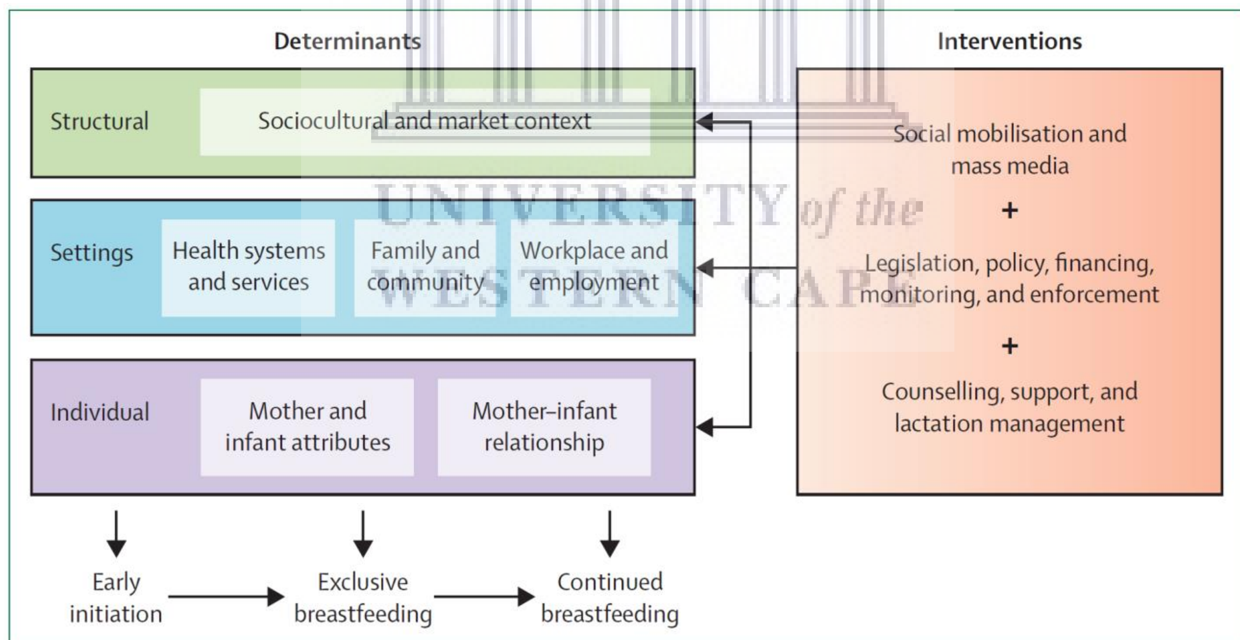

Figure 1: A conceptual model of the components for an enabling breastfeeding environment (Rollins, et al., 2016)

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2.2 The Protection of Exclusive breastfeeding

The WHO/UNICEF Global Breastfeeding Collective (WHO & UNICEF, 2017) states in their Call to Action that the following recommendations can help improve the protection of breastfeeding: (i) Fully implement the international Code of Marketing of Breastmilk Substitutes (hereafter referred to as 'The Code') and relevant World Health Assembly (WHA) resolutions through strong legal measures that are enforced and independently monitored by organizations free from conflicts of interest; (ii) Enact paid family leave and workplace breastfeeding policies, building on the International Labour Organization's maternity protection guidelines (ILO, 2014) as a minimum requirement, including provisions for the informal sector. Raising the awareness of health workers about 'The Code' and enforcing its implementation at various health facilities will help improve the protection of breastfeeding. Nigeria has national legislation on 'The Code', namely the Marketing of Infant and Young Children Food and Other Designated Products (Sales, Registration, etc.) Regulations (NGA, 2005). The national (Nigerian) legislation on the Code is applicable to infant formula and foods for children aged 0 to 3 years. The regulations also limit a variety of promotions, covering but not restricted to the donation of equipment, information education and communication (IEC) materials, advertising/ donation of breast milk substitutes (BMS) at reduced price to health workers/ health facilities as well as product labelling specifications (NGA, 2005).

However, a report done by the World Breastfeeding Trends initiative (WBTi) in collaboration with the Nigerian Federal Ministry of Health (FMOH, 2015) to assess the level of implementation of the Global Strategy for Infant and Young Child Feeding in Nigeria, identified several gaps regarding implementation and enforcement of the Code. These include:

"The training materials on the International Code of Marketing of Breastmilk Substitutes, although used for various trainings are still in draft since 2006;

The NAFDAC Act (as amended) "Marketing of Infant and Young Children Food and other designated product (registration, sales, etc.) Regulations 2005" has not included the relevant WHA Resolutions adopted after 2005;

The implementation and enforcement of the Code has suffered a lull overtime with low level of awareness of the national instrument for its implementation among stakeholders and the general public…." (FMOH, 2015).

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Similarly, a study done by Ogbo et al. (2017) reported that violations of 'The Code' still exist in Nigeria due 'to poor policy implementation and sub-optimal enforcement of 'The Code'. Another study done in Lagos, Nigeria by Access to Nutrition Foundation- ATNF (ATNF, 2018a) in collaboration with Westat (an employee-owned research corporation responsible for data collection related to compliance with the Code) and various international/local agencies (e.g. Bill and Melinda Gates Foundation, the Dutch Ministry of Foreign Affairs, FMOH, Lagos State Ministry of Health, NAFDAC, etc) reported that violation of the Code exists in Lagos in affirmation of findings from previous studies.

Globally, violation of the Code has also been reported in countries like Thailand, Vietnam, Indonesia, India, etc (ATNF, 2018a, ATNF, 2018b, Zehner, 2018). Furthermore, several factors have been reported to facilitate violation of the Code (in Nigeria and elsewhere) which include: inadequate training/low level of awareness of the Code among health workers; poor political will of the Government to enact and implement national legislation on the enforcement of the Code and other relevant WHA resolutions, weak/ non-functional monitoring mechanisms for code violators, corruption, etc (Ogbo et al. 2017; Flaherman et al. 2017; ATNF, 2018b, Brewer et al. 2018, Zehner, 2018). Inadequate training/low level of awareness of the Code among health workers can result in sub-optimal protection of breastfeeding coupled with a decreased duration of the practice of EBF by mothers. In addition, infants of such mothers are denied a healthy start in life as well as the benefits of EBF (e.g. prevention of diarrhea, pneumonia, malnutrition, childhood obesity etc).

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2.3 The Promotion of Exclusive breastfeeding

Health workers should be educated and well informed about the national and international policies, programmes and recommendations that promote breastfeeding through regular pre- and in-service training since they are responsible for providing information about infant and young child feeding practices to mothers that visit their health facilities and may therefore influence these mothers' infant feeding choice either positively or negatively. Examples of these policies are: The WHO/UNICEF Global Strategy on Infant and Young Child Feeding (WHO & UNICEF, 2003); the WHO Update Guidelines on HIV and Infant Feeding (WHO & UNICEF, 2016); the National Policy on Infant and Young Child Feeding in Nigeria (FMOH, 2010). In order to promote infant and young child feeding (IYCF) practices in Nigeria, the National Policy on Infant and Young

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Child Feeding in Nigeria was developed by the Federal Ministry of Health (2010) in addition to the establishment of a national legislative and health system framework (Ogbo et al., 2017). Furthermore, the National Policy on IYCF in Nigeria (2010) outlined as part of its policy statements that the Government have a responsibility to train health workers to protect, promote and support optimum IYCF practices (FMOH, 2010).

International agencies (e.g. UNICEF, WHO, Save the Children, Alive and Thrive, Save One Million Lives-SOML, 1000 DAYS etc) also promote breastfeeding in different states in Nigeria through various initiatives and programmes. For instance, Alive and Thrive, Save the Children, UNICEF and the Bill and Melinda Gates Foundation promote breastfeeding in Kaduna State by partnering with the State Government to raise awareness of all stakeholders about the importance of breastfeeding and also improve IYCF practices through the launch of a multimedia campaign titled 'Start Strong' (Dickson, 2018). Similarly, Wellbeing Foundation Africa (WBFA) an NGO in Nigeria, collaborates with Alive and Thrive to promote breastfeeding and appropriate IYCF practices as well as programmes aimed at improving maternal, newborn and child health in Lagos and Kaduna States (WBFA, 2018).

Furthermore, in the Gurum community located in Kano State in the northern part of Nigeria, UNICEF promotes breastfeeding through their support for the IYCF program. The program is aimed at training volunteer workers including men on the importance of EBF and good nutrition for their children (Akingbulu, 2019). These men go back to empower other men (i.e. fathers, grandfathers, expectant fathers) to motivate and encourage their wives and nursing mothers in their community to practice EBF (Akingbulu, 2019). In addition, 1000 DAYS an International agency in collaboration with Alive and Thrive, UNICEF, Nigerian Centre for Disease Control, Nigerian Ministry of Health and some local agencies organized a training workshop to deliberate on how social media campaigns can be used to promote breastfeeding in Nigeria (1000 DAYS, 2019).

In Nigeria, various programmes are also carried out at the health facilities and within the communities aimed at promoting breastfeeding which includes: Maternal Newborn and Child Health Week (MNCHW); World Breastfeeding Week (WBW); community sensitization campaigns on the benefits of breastfeeding; adverts on television stations and radio jingles to raise awareness of all stakeholders (i.e. health workers, policy-makers, mothers, fathers, family members and community members) about the importance of breastfeeding. For instance, the

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Federal Ministry of Health in partnership with Alive and Thrive, UNICEF, Civil Society Scaling-Up Nutrition (CS-SUNN), Action Against Hunger and Nutrition International collaborated during the celebration of World Breastfeeding Week (2019) to raise awareness of the general public in all the 36 States of Nigeria, on the importance and benefits of EBF (Nigeria Health Watch, 2019). Various sensitization campaigns were done on television, electronic media platforms, social media such as Facebook etc. Furthermore, public presentation of a breastfeeding video by CS-SUNN was also done to promote EBF practices. In addition, important personalities in Nigeria such as the first lady of Nigeria, wife of Kaduna State governor, Ministers and other stakeholders across the country were present at the WBW event to advocate for actions to promote breastfeeding (Nigeria Health Watch, 2019).

2.4 The Support of Exclusive breastfeeding

Recently, WHO/UNICEF inaugurated a Global Breastfeeding Collective whose main **v**ision is to create a world in which mothers are provided with support (i.e. technical, financial, emotional and public) to encourage early initiation of breastfeeding within one hour of child delivery, breastfeed exclusively for six months, introduce complementary feeds after six months and continue breastfeeding up to two years and beyond (WHO & UNICEF, 2017). In addition, it aims to advocate for more political support for breastfeeding and for all stakeholders (e.g. implementers, donors, governments, philanthropies, international organizations and civil society) to implement the recommendations outlined in the Call to Action in order to increase breastfeeding rates to the advantage of mothers, their children and the society (WHO & UNICEF, 2017). In Nigeria, Save the Children International, Alive and Thrive, UNICEF, 1000 Days and WHO are some of the Global Breastfeeding Collective partners who support breastfeeding in different states through various initiatives and their call to action that speaks to the Government, manufacturers of breastmilk substitute, employers, policy makers and other stakeholders to advocate for breastfeeding support for mothers. For instance, Alive and Thrive collaborates with Lagos State Government and other partners like UNICEF and Save the Children to educate mothers and community members in different LGAs about the importance of EBF, early initiation of breastfeeding within 1 hour of delivery and appropriate IYCF practices. This is done through various sensitization campaigns on television, radio, social media platforms (e.g. YouTube, Twitter etc). “Empower Parents, Enable Breastfeeding” was the theme for the 2019 World

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Breastfeeding Week which aimed at calling attention to giving support to parents so that they can achieve their breastfeeding goals.

Alive and Thrive in partnership with Save the Children and Civil Society Scaling-Up Nutrition (CS-SUNN) also supports breastfeeding by advocating for the adoption of a six months maternity leave policy for women in the employment of Kaduna State Government in Nigeria (Alive and Thrive, 2019). Similarly, Lagos State government supports breastfeeding as well through the implementation of the six months paid maternity leave policy for new mothers and ten days paternity leave for new fathers (i.e. for their first two deliveries) in Lagos State employment; this encourages the mothers to breastfeed their babies and also enables both parents to take active roles in caring for their newborn as well as achieve their breastfeeding goals (Lagos State Government (LASG) Public Service Rules, 2015; Personal Communication with the Nutrition Program Officer at the Lagos State PHCB, 8th August, 2019). Important personalities in the country such as the wife of the president of Nigeria in partnership with the FMOH also supports breastfeeding through media campaigns which calls on employers to create an enabling environment at the various workplaces to support nursing mothers (SUN Movement, 2015). In addition, 1000 DAYS an international agency, also support breastfeeding by advocating for policies and programs aimed at helping mothers achieve their breastfeeding goals through various initiatives and programmes such as training of health workers on IYCF practices and through breastfeeding campaigns on social media platforms such as WhatsApp, Instagram, Facebook (1000 DAYS, 2019).

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Scaling up the Baby Friendly Hospital Initiative (BFHI) by implementing the “Ten Steps to Successful Breastfeeding” has been reported to improve health workers’ support for breastfeeding (Shah et al., 2005; WHO & UNICEF, 2017). In addition, WHO & UNICEF have recently released updated guidance on the implementation of BFHI with a revised version of the “Ten Steps to Successful Breastfeeding” (WHO & UNICEF, 2018). Training of health workers by equipping them with the necessary skills to manage breastfeeding problems (e.g. mastitis, breast engorgement etc.), and also provide breastfeeding counselling to empower mothers and help build up their confidence and ability to breastfeed their infants have also been reported to improve support for breastfeeding (WHO & UNICEF, 2003; Cattaneo et al., 2004; WHO & UNICEF, 2017). Ogbo et al., (2017) reported that in Nigeria, BFHI was introduced in 1992 to promote breastfeeding and provide support for nursing mothers at health facilities but only a few Nigerian hospitals (about

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0.004%) are BFHI certified, hence the need for scaling up. In Lagos State, most of the PHCs that have maternity/ Birthing units also have nurses/ midwives that are trained to provide support for mothers to initiate breastfeeding immediately after delivery and to continue breastfeeding until they are discharged home. However, information regarding the current number of health facilities with official BFHI accreditation could not be ascertained during the period of conducting this research.

It has been reported that scaling up breastfeeding rates could help prevent the death of over 820,000 under-five children annually and it has also been estimated that 20,000 breast cancer related deaths of women will be prevented while millions of dollars will be saved in health care costs if breastfeeding rate is increased globally (Rollins et al., 2016; Victora et al., 2016). Organizing regular training for health workers on breastfeeding management/counselling courses as well as encouraging inter-sectoral collaboration and active participation between health workers, community members and support groups (e.g. NGOs) have also been shown to facilitate support for mothers to practice exclusive breastfeeding (Cattaneo et al., 2004; Oluwatosin, 2007; WBFA, 2018; Kaalu, 2019).

2.5 Exclusive breastfeeding and appropriate infant feeding practices

One of the global nutrition targets of the WHO is to increase the rate of exclusive breastfeeding in the first 6 months up to a minimum of 50% by 2025 (WHO, 2014). Worldwide, the overall rate of EBF for infants under six months as reported in the 2017 Global Breastfeeding Scorecard was 40%; but this has increased to 41% as reported in the 2019 Global breastfeeding scorecard however, only 23 countries were reported to have about 60% of their infants aged less than 6 months being exclusively breastfed (WHO & UNICEF, 2017; WHO & UNICEF, 2019). Furthermore, it was reported that the rate of early initiation of breastfeeding within the first hour of birth which was 44% globally as at 2017 has now reduced to 41% while the overall rate of continued breastfeeding at one year has also reduced from 74% to 70% (WHO & UNICEF, 2017; WHO & UNICEF, 2019).

Several reports have shown that the rate of EBF globally has continually reduced from the 1990s to date (Cai, Wardlow & Brown, 2012; Nehring-Gugulska, Nehring & Krolak-Olejnik, 2015;

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Artantas et al., 2016; Dun-Dery & Laar, 2016; Rollins et al., 2016; Ogbo et al., 2017; Jama et al., 2017; Flaherman et al., 2018; Senghore et al., 2018; Adeniyi et al., 2019).

Studies done in Nigeria have shown that breastfeeding is a common practice among nursing mothers however most mothers do not practice exclusive breastfeeding for 6 months as recommended by WHO/UNICEF (Okolo, Adewunmi & Okonji, 1999; Olaolorun & Lawoyin, 2006; Adeyinka, Olatona & Oluwole, 2016; Ogbo et al., 2017; Osibogun, Olufunlayo & Oyibo, 2018; Ibobo, Chime & Nwose, 2018; Ihudiebube-Splendor et al., 2019). The prevalence of EBF for 6 months among nursing mothers in Nigeria was initially reported to be as low as 17% (NPC & ICF International, 2014; Ogbo et al., 2017). On the contrary, the 2018 National Nutrition and Health Survey (NNHS) conducted by the National Bureau of Statistics (NBS) reported that the rate of EBF in Nigeria has increased from 17 to 28% (NBS, 2018). Nonetheless, there is still much room for improvement as the ultimate goal is to increase EBF rate in the first 6 months from 28% up to a minimum of 50% by the year 2025 in accordance with the WHO global nutrition targets.

Malnutrition accounts for more than half of the deaths recorded among under five children globally and is a major consequence of the following: not practicing EBF for 6 months; early introduction of infants to inadequate/ non-nutritious complementary feeds coupled with high rates of infections (FMOH, 2010). For instance, several studies done in Africa have reported that some HIV positive mothers choose not to practice EBF due to the fear of infecting their babies through breastmilk (Ijumba et al., 2012; Ngoma-Hazemba & Ncama, 2016; Adeniyi et al., 2019). Such mothers may have received sub-optimal counselling on breastfeeding management or in-correct infant feeding information from health workers who possess inadequate knowledge of the national and international Policies and recommendations regarding breastfeeding in the context of HIV (Ngoma-Hazemba & Ncama, 2016; Adeniyi et al., 2019). Examples of national and international Policies on infant feeding in the context of HIV include: National Policy on IYCF in Nigeria (FMOH, 2010); the WHO Guidelines on HIV and Infant Feeding (WHO & UNICEF, 2010) which has been updated to the WHO Guideline Updates on HIV and Infant Feeding, (WHO & UNICEF, 2016) etc. Consequently, infants of such mothers are deprived of the protective benefits of EBF and are at high risk for developing malnutrition and other infectious diseases (such as diarrhea, pneumonia). Furthermore, such infants are deprived of a healthy start in life and contribute to the

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statistics of high infant mortality rate reported in resource poor countries especially in Africa (WHO, 2000).

In Lagos State, the National Policy on IYCF in Nigeria (FMOH, 2010) which recommends that HIV positive mothers should practice EBF for 6 months with use of Antiretroviral Prophylaxis by mother, thereafter introduce complementary feeds after 6 months in addition to continued breastfeeding up to one year, has presently been implemented in health facilities (Personal communication with an official of the Lagos State Ministry of Health, 28th August, 2019).

2.6 Components of Protecting, Promoting and Supporting breastfeeding

The WHO/UNICEF Global Strategy on Infant and Young Child Feeding provides a framework for public health initiatives to protect, promote and support breastfeeding. The Global Strategy was adopted by all WHO member states at the 55th World Health Assembly (WHA) in May 2002 and it builds on the past and continuing achievements such as: The International Code of Marketing of Breast-milk Substitutes (1981); the Innocenti Declaration on Protection, Promotion and Support of Breastfeeding (1990); and the Baby Friendly Hospital Initiative (1991) which WHO/UNICEF recently updated in 2018 (WHO & UNICEF, 2003; Cattaneo et al., 2004; WHO & UNICEF, 2018). In addition, the Global Strategy makes provision for the special needs of children in difficult circumstances and highlights policies for the introduction of optimal complementary feeding at the appropriate time (Cattaneo et al., 2004).

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A recent study conducted by the Global Breastfeeding Collective reported that Nepal has been able to maintain high rates of EBF because the country has invested a lot in policies and programmes that protect, promote and support breastfeeding (WHO & UNICEF, 2017). Similar policies and programmes have also been recommended in the WHO/UNICEF Global Breast-feeding Collective Call to Action in order to increase breastfeeding rates to the advantage of mothers, their children and the society (WHO & UNICEF, 2017). These include: (i) Fully implement ‘The Code’ and relevant World Health Assembly resolutions through strong legal measures that are enforced and independently monitored by organizations free from conflicts of interest; (ii) Implement the “Ten Steps to Successful Breastfeeding” in maternity facilities, including providing breast-milk for sick and vulnerable newborns; (iii) Improve access to skilled breastfeeding counselling as part of comprehensive breastfeeding policies and programmes in health facilities; (iv) Strengthen links

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between health facilities and communities, and encourage community networks that protect, promote, and support breastfeeding. However, several studies done in Nigeria have reported that violation of the Code still exists in Nigeria due to poor policy implementation and inadequate mechanisms to ensure its enforcement; weak links between health facilities and communities; as well as inadequate well trained health workers to provide optimum breastfeeding counselling and the management of intricacies of breastfeeding (Olaolorun & Lawoyin, 2006; Utoo et al. 2012; FMOH, 2015; Ogbo et al. 2017; Zehner, 2018; Brewer et al. 2018; ATNF, 2018a). This research aims to identify the facilitative factors and barriers experienced by health workers in Lagos State PHCs with regard to implementing the above listed recommendations which have been shown to improve protection, promotion and support of breastfeeding.

Furthermore, this research sought to find out about the work experience of health workers at the PHCs in addition to training received by health workers regarding breastfeeding education/ counselling; management of problems related to breastfeeding; level of awareness of health workers about national and international policies and programmes related to breastfeeding and IYCF practices such as: The Code and national (Nigerian) Legislation on the Code as well as the mechanisms in place for enforcement at the PHCs; the National Policy on IYCF in Nigeria; the WHO Guidelines on HIV and Infant Feeding; "Ten Steps to successful breastfeeding" etc. It has been reported that upskilling health workers to implement and practice the "Ten Steps to Successful breastfeeding"; Scaling up Baby Friendly Hospital Initiative (BFHI) certified health facilities; raising awareness of health workers about 'The Code' and enforcing its implementation at the PHCs will help improve the protection, promotion and support for exclusive breastfeeding (FMOH, 2015; Ogbo et al., 2017; WHO & UNICEF, 2017).

2.7 Knowledge and Attitude of health workers on Exclusive breastfeeding

Knowledge and attitudes on EBF could be facilitators or barriers to health workers' protection, promotion and support of EBF. Globally, the knowledge and attitudes of health workers regarding breastfeeding have been indicated to be an important factor in determining the success rate of early initiation of breastfeeding within 1 hour of delivery, practice of EBF up to 6 months among nursing mothers, introduction of adequate and nutritious complementary feeds after 6 months in addition to continued breastfeeding up to 2 years and beyond (Adeniyi et al., 2019, WHO & UNICEF, 2019).

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Several studies done globally have reported that health workers' sub-optimal knowledge about breastfeeding management and counselling skills can impact negatively on their ability to protect, promote and provide support for nursing mothers to practice EBF (Shah, Rollins & Bland, 2005; Dykes, 2006; Silvestre et al., 2009; Leviniene et al., 2009; Radzyminski & Callister, 2015; Artantas et al., 2016; Chale, Fenton & Kayange, 2016; Gavine et al., 2017; Jama et al., 2017; Flaherman et al., 2018; Holtzman & Usherwood, 2018).

In Nigeria, several studies have reported that inadequate knowledge about breastfeeding among health workers can affect the quality of information about infant and young (IYCF) practices passed across to mothers that come in contact with these health workers (Okolo & Ogbonna, 2002; Olaolorun & Lawoyin, 2006; Utoo et al., 2012; Ogbo et al., 2017; Umeobieri et al., 2018).

Furthermore, some studies have also identified other challenges that inhibit health workers from protecting, promoting and supporting exclusive breastfeeding which includes: sub-optimal communication/counselling skills, inadequate time and skills needed to address breastfeeding problems, staff shortage, inadequate funding, insufficient BFHI certified facilities, inadequate knowledge about BFHI recommended practices among health workers, heavy workload, health workers lack of awareness and non-enforcement of 'The Code', poor implementation of the maternity protection law by some employers, sub-optimal pre-and in-service training of health workers on infant and young child feeding practices (Dykes, 2006; Jacobs & Jackson, 2008; Brow, Raynor & Lee, 2011; Utoo et al., 2012; Almeida, 2015; FMOH, 2015; Nehring-Gugulska, Nehring & Krolak-Olejnik, 2015; Rollins et al., 2016; Ogbo et al., 2017; Jama et al., 2017; Anstey et al., 2018; Senghore et al., 2018; Adeniyi et al., 2019).

In conclusion, organizing regular pre-and in-service training for health workers on breastfeeding management/counselling; raising their awareness about the Code and policies related to breastfeeding and optimal IYCF practices; strengthening mechanisms within the health facilities for monitoring and enforcement of the Code; organizing campaigns and sensitization programmes about the importance and benefits of EBF as well as paying advocacy visits to community leaders and policy makers is of utmost importance for the protection, promotion and support of EBF. In addition, encouraging inter-sectoral collaboration and active participation between health workers and other stakeholders (i.e. community members, support groups, NGOs, International agencies,

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Policy makers etc.) have been identified as facilitative factors for protection, promotion and support of EBF (Cattaneo et al., 2004; Oluwatosin, 2007; WHO & UNICEF, 2017; WHO & UNICEF, 2018; WHO & UNICEF, 2019; 1000 DAYS, 2019; Alive and Thrive, 2019).

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CHAPTER 3: METHODOLOGY

3.1 Introduction

This chapter presents the study aims and objectives. It also outlines the methodology used in the study including the study design, study settings, study population, study sample, sampling procedure, data collection, data analysis, reliability and validity, limitations and finally ethical consideration.

3.2 Study aim

The aim of the study was to determine the factors influencing the protection, promotion and support of exclusive breastfeeding among health workers working in Lagos State PHCs.

3.3 Specific objectives

1. To determine the experience and training with regards to the protection, promotion and support of breastfeeding among health workers (i.e. Doctors, Nurses and Community Health Extension Workers-CHEWS) in Lagos State.
2. To determine the knowledge and attitudes regarding exclusive breastfeeding among health workers in Lagos State PHCs.
3. To determine the facilitative factors and barriers regarding the protection, promotion and support of exclusive breastfeeding by health workers in Lagos State PHCs.

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3.4 Methodology

3.4.1 Study design

A cross-sectional descriptive study design was employed using a structured questionnaire comprising of some open-ended and close-ended questions. In addition, some questions with response options in the form of a Likert scale was also provided in the questionnaire. This study design was appropriate as it is relatively cost effective and was used within a short period of time (Mann, 2012) to assess the knowledge, attitude and factors influencing the protection, promotion and support of exclusive breastfeeding by health workers in Lagos State PHCs.

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3.4.2 Study setting

Lagos state is located in the South-Western part of Nigeria in West Africa (Chizoba, 2016). It is the smallest of the 36 states found in Nigeria occupying only 3,577 square kilometers, 22% of which consists of lagoons and creeks. Lagos is the most populous and richest state in Nigeria with over 20 million inhabitants from different ethnicities, cultures and religion. It is the commercial capital of Nigeria and is divided into two: the Island and the Mainland (Chizoba, 2016). Lagos is made up of 20 Local government areas (LGA) which are further subdivided into37 Local council development areas (LCDA) (See Appendix 1 & 2). A Flagship PHC headed by a Medical Officer of Health is situated in each of the 20 LGA. There are 2 major University teaching hospitals, several General hospitals and numerous private hospitals in Lagos state.

3.4.3 Study population

The study population consisted of all Doctors, Nurses and CHEWs employed in PHCs situated within the 20 LGA and the corresponding LCDA in Lagos State.

3.4.4 Study sample

A convenient sample of 5 health workers (i.e. 1 Doctor, 2 Nurses/Midwives and 2 CHEWS) per Flagship PHC situated within 10 randomly selected LGA and their corresponding LCDA were recruited in this study to give a total sample size of 50 health workers.

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3.4.5 Sampling procedure

A list of all 20 LGA and their corresponding LCDA was written out on 20 separate pieces of papers, which were wrapped properly and placed in a box. The researcher then randomly picked out 10 pieces of papers. The names of the 10 randomly selected LGAs and the corresponding Flagship PHCs included in the study are presented in table 1 below.

Table 1: Showing the 10 randomly selected LGAs and corresponding Flagship PHCs

Names of LGA	Names of corresponding Flagship PHCs
Mushin	Palm avenue PHC
Eti-Osa	Iru-Victoria Island PHC
Surulere	Coker Aguda PHC
Agege	Iga-Sango PHC

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Names of LGA	Names of corresponding Flagship PHCs
Lagos-Island	Iga-Idugaran PHC
Ikeja	Ojodu PHC
Shomolu	Oloja PHC
Oshodi-Isolo	Oshodi PHC
Ifako-Ijaye	Ifako PHC
Lagos Mainland	Simpson PHC

A convenient sample of 5 health workers per Flagship PHC situated within the 10 randomly selected LGAs were recruited to give a total sample size of 50 health workers. The convenient sample of 5 health workers per Flagship PHC were chosen by including: the first Medical doctor that consented to participate, the first 2 Nurses/Midwives that consented to participate as well as the first 2 CHEWS that consented to participate. The sample criteria for health workers included in the study were as follows: they should be willing to participate; should be selected from flagship PHCs within the 10 included LGAs that were randomly selected from the box; cadre of health workers selected must be a Doctor, Nurse/Midwife or CHEW.

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3.4.6 Data Collection

The researcher began data collection mid-January 2019 after receiving ethics approval from the Biomedical Ethics Research Committee of the University of the Western Cape and Lagos State Primary Health Care Board, Nigeria (See Appendix 7 & 8: Lagos State Primary Health Care Board approval letter to conduct research study). A day of the week was allocated to visit each of the 10 included PHCs for data collection mid-January 2019 over a period of 10 days. On arrival at each of the 10 included PHCs, the researcher presented the approval letters to conduct the research study and also explained the purpose of the study, the main objectives and an outline of the potential involvement of the participants (i.e.1 Doctor, 2 Nurses and 2 CHEWS per Flagship PHC) to the Medical Officer of Health in charge of the PHC or the Officer in Charge (OIC) which is usually a senior nursing officer where the former was not available at the time of visit. The convenient sample of 5 health workers per flagship PHC were chosen by the researcher as explained in the sampling procedure above. The researcher then proceeded to obtain a signed informed consent

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from the participants individually after explaining the purpose of the study as well as an outline of their potential involvement to them. The researcher also assured the participants of confidentiality of their responses and their right to voluntarily withdraw or stop participating in the study at any time without been penalized should they feel the need to do. All 50 included health workers agreed to participate in the study. Each interview lasted between 25 to 30 minutes and was done in a private location suitable for each participant within the 10 included PHCs during working hours.

Health workers' work experience and training on breastfeeding as well as knowledge, attitudes, facilitative factors and barriers regarding protection, promotion and support of EBF was determined by the researcher by administering a structured questionnaire that included both open- and close-ended questions to the participants. The open-ended questions were used to elicit qualitative responses. Paper based questionnaires were used for completion of the open-ended questions therefore no audio recording was done. The questionnaire was developed based on existing questionnaires that have been validated and used in previous studies done by: -Shah et al., (2005); Jacobs & Jackson, (2008); Macias & Glasauer, (2014) and Bermejo et al., (2016), and was adapted to meet the needs of this research. The developed questionnaire was piloted and modified by the researcher to suit the context of this study by administering it to 5 randomly selected health workers (i.e. 1 Doctor, 2 Nurses, 2 CHEWS) in Ipaja Flagship PHC situated in one of the excluded LGAs. The purpose of the pilot was to determine whether the questions were worded and placed in the best order to achieve the desired results; and also well understood by all classes of participants. No modifications were made to the questionnaires after piloting because the questions were well understood by all classes of participants and was able to achieve the desired results. After piloting was done and the necessary approval letters and signed informed consent were obtained, the researcher administered the questionnaires to the study sample as explained above. The participant information sheet, informed consent form and questionnaire are attached (Appendix 3, 4 & 5). English is the official language of communication in Nigeria and health workers (i.e Doctors, Nurses and CHEWs) employed in Lagos State PHCs are proficient in English therefore the questionnaire was not translated into a local language.

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3.4.7 Data Analysis

Data generated from this study was entered and analysed with the assistance of data-analysts. The responses to the close-ended questions were entered and analysed using STATA statistical software while responses to the open-ended questions were analysed using thematic content analysis. Through the thematic content analysis, major and minor themes were identified from responses provided by the respondents to the open-ended questions. The data collected from the pilot study was not included in the analysis of the result. Descriptive statistics such as: frequencies and percentages were used in analysing the study outcomes. Outcome variables included: (i) Percentage of health workers who had been trained in the protection, promotion and support of breastfeeding; (ii) Percentage of included PHCs whose health workers practiced protection, promotion and support of breastfeeding. While Independent variable included: (i) Knowledge of EBF among health workers, which was measured using open-ended and multiple response questions; (ii) Attitude of health workers to EBF, which was measured using open-ended and multiple response questions; (iii) Socio-demographic and economic characteristics like sex, profession, level of education or training obtained (in terms of breastfeeding management/counselling courses).

3.4.8 Reliability and Validity

Reliability was ensured by pilot testing the questionnaire with 5 health workers (1 Doctor, 2 Nurses and 2 CHEWs) in December, 2018 at Ipaja Flagship PHC situated in one of the excluded LGAs and also phrasing questions clearly in simple English language sentences that was well understood by all classes of participants. The researcher also cross-checked the completed questionnaires to ensure they were properly completed with no question left unanswered. Furthermore, the questionnaire was developed based on existing questionnaires that have been validated and used in previous studies done by: Shah et al., (2005); Jacobs & Jackson, (2008); Macias & Glasauer, (2014) and Bermejo et al., (2016) and has been adapted to meet the needs of this research.

3.4.9 Limitations

The limitations of the study included: Delay in receiving approval from the Lagos State Primary Health Care Board to conduct the research study at their PHCs, hence data collection had to be done within a short duration (10 days); Lack of representativeness of the study sample as a result

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of the convenience sampling method; Social desirability bias due to health workers who responded with what they thought the researcher wanted to hear; and Lack of external validity as it will be difficult to generalize the study results to all settings in Nigeria.

3.4.10 Ethical considerations

Permission to carry out the study and ethics approval was obtained from the Biomedical Research Ethics Committee of the University of the Western Cape (Ethics Approval no: BM18/7/25). Permission was also obtained from the Lagos State Primary Health Care Board and the Medical officers of health in charge of the PHCs that were used in the study (See Appendix 6: Application to the Lagos State Primary Health Care Board for approval to conduct research in Ministry of Health PHC facilities). The participants were duly informed about the purpose of the research, and what their involvement would entail (See Appendix 3: Participant information sheet). A signed consent form was obtained from the participants before commencing the research as evidence of their willingness to participate in the study (see Appendix 4: Informed consent form). In addition, confidentiality and anonymity of their responses was protected by making use of pseudonyms instead of their names and ensuring the questionnaires used during the study and all records of their participation were locked away safely in a filing cabinet. On completion of the research report, the questionnaires will be stored for at least 5 years before they are destroyed while password protected laptops accessible to the researcher and her supervisors were used for storing the electronic data generated from the study and this will be deleted after 5 years. The 4 ethical principles were adhered to. Respect for autonomy was ensured by assuring the participants of their right to participate, decline or indeed withdraw from the study at any time should they feel uncomfortable. Participants were informed of their right to withdraw "without any negative consequences". Beneficence, as the risk was minimal due to the nature of the study. Non-maleficence by protecting the confidentiality of the participants' responses to avoid any form of harm or repercussions and justice was ensured by treating all participants equally, fairly and impartially.

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CHAPTER 4: RESULTS

4.1 Introduction

In this chapter the results of the data analysis will be presented.

4.1.1 Demographic Characteristics, Work experience and Training of Health workers on Breastfeeding

Of the 50 respondents that participated in the study, 45 (90%) were females and 5 (10%) were males. Of the 5 male respondents, 4 were doctors and one was a CHEW. A total of 10 (20%) doctors, 20 (40%) nurses/midwives and 20 (40%) CHEWS participated in the study. At each PHC 40% of the included health workers (2 nurses/midwives each) worked at the Maternal and Child Health (MCH) unit while the remaining 60% (1Doctor, 2 CHEWS each) worked at the General Outpatient Department (GOPD). The majority of the health workers indicated they had 1-5 years of work experience at the included PHCs.

The demographics and work experience of the health workers in the included PHCs is presented in Table 2 below. The numbers are presented first and then the percentage in brackets.

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Table 2: Demographics and Work experience of the health workers in the 10 PHCs in Lagos

	Palm-avenue	Iru VI	Coker Aguda	Iga-Sango	Iga-Idugaran	Ojodu	Oloja	Oshodi	Ifako	Simpson	Total N (%)
Male	-	-	1 (20)	1 (20)	-	2 (40)	-	-	1 (20)	-	5 (10)
Female	5 (100)	5 (100)	4 (80)	4 (80)	5 (100)	3 (60)	5 (100)	5 (100)	4 (80)	5 (100)	45 (90)
Profession:											
Doctor	1 (20)	1 (20)	1 (20)	1 (20)	1 (20)	1 (20)	1 (20)	1 (20)	1 (20)	1 (20)	1 (20)
Nurse/Midwife	2 (40)	2 (40)	2 (40)	2 (40)	2 (40)	2 (40)	2 (40)	2 (40)	2 (40)	2 (40)	2 (40)
CHEW	2 (40)	2 (40)	2 (40)	2 (40)	2 (40)	2 (40)	2 (40)	2 (40)	2 (40)	2 (40)	2 (40)
Department:											
GOPD	3 (60)	3 (60)	3 (60)	3 (60)	3 (60)	3 (60)	3 (60)	3 (60)	3 (60)	3 (60)	3 (60)
MCH Unit	2 (40)	2 (40)	2 (40)	2 (40)	2 (40)	2 (40)	2 (40)	2 (40)	2 (40)	2 (40)	2 (40)
Years of work experience in the PHC:											
< 1 year	1 (20)	0	0	0	0	0	1 (20)	0	0	1 (20)	3 (60)
1-5 years	4 (80)	4 (80)	3 (60)	4 (80)	5 (100)	2 (40)	4 (80)	3 (60)	5 (100)	4(80)	38 (76)
6-15 years	0	1 (20)	2 (40)	1 (20)	0	2 (40)	0	2 (40)	0	0	8 (16)
> 15years	0	0	0	0	0	1 (20)	0	0	0	0	1 (20)

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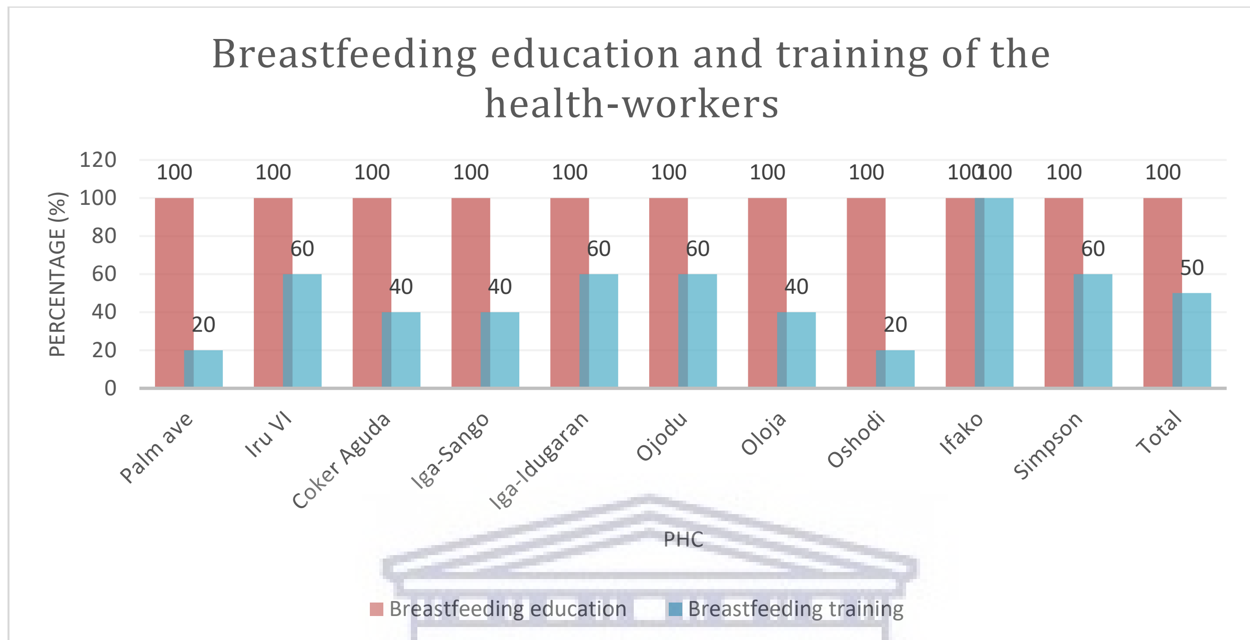

Figure 2: Breastfeeding education carried out and training received by health workers in the 10 PHCs

All respondents (100%) did breastfeeding education or counselling with mothers as part of their job. Only 25 (50%) of respondents had ever received training on breastfeeding management, of which 4 (16%) were doctors, 11 (44%) were nurses/midwives and 10 (40%) were CHEWs. Of the 10 PHCs included in the study, only Ifako PHC respondents all reported receiving training on breastfeeding management. Palm-Avenue and Oshodi PHCs each had just one (20%) respondent who had ever received training on breastfeeding management (Figure 2).

The majority of the respondents that had ever received training on breastfeeding management attended either a training that was organized by Nestle (an infant formula manufacturing company) or by the Ministry of Health in Lagos State with a wide variability in the duration of training ranging from 4hours to 2 weeks. None of the respondents reported attending an International Board-Certified Lactation Consultant (IBCLC) Certificate issued training on breastfeeding management. Furthermore, none of the respondents reported having a breastfeeding support group at their facilities.

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Only 11(22%) respondents were aware of the National (Nigerian) legislation on the Code. No respondents at the Iga-Sango and Oshodi PHCs reported awareness of the National (Nigerian) legislation on the Code. Four (8%) respondents have a mechanism in place at their PHC for enforcing the Code, and 23 (46%) of respondents did not know if their PHC had a mechanism in place for enforcing the Code.

Thematic content analysis was done by the researcher with the assistance of a data analyst to analyze the open-ended responses regarding the health workers' work experience and training on breastfeeding. A summary of the findings are presented below in Table 3.

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Table 3: Health workers' work experience and training on breastfeeding

Questions asked about work experience and training on breastfeeding	Major themes	Minor themes	Frequency of reported "Don't know" by the different professions (%)
Name Policies and programmes related to IYCF or breastfeeding	*Maternal and Child Health Week (MCHW)* **Nurses were more aware of the policies and programmes**	*National breastfeeding week; World breastfeeding day; Save the Children initiative; Alive and thrive; Nestle training on importance of breastfeeding; IYCF Policy; World Breastfeeding Trends initiative (WBTi); Ten Steps to successful breastfeeding; Baby Friendly Hospital Initiative; Food demonstration classes*	6 (12) Doctors 2 (04) Nurses 10 (20) CHEWS **Total 18 (36%)**
Does your facility have a breastfeeding support group? /If no, explain	*Don't know*	*Lack of capacity; Lack of space, lack of funds; Not enough health-workers, No provision for it; Nobody has ever thought about starting up one.*	6 (12) Doctors 19 (38) Nurses 13 (26) CHEWS **Total 38 (76%)**
Describe your understanding of the International Code of Marketing of Breast Milk Substitute	**Doctors were more aware of the Code, their responses included:** *"I am aware of the national policy which discourage promotion of breastmilk substitutes"* *"Breastmilk substitutes are not to replace exclusive breastfeeding in the first 6 months of life but only if there are indications where breastmilk is not achievable then can breastmilk substitute be given"* *"The International Code of Marketing of Breastmilk Substitute is a code that is made for companies that produce breastmilk substitutes"* *"Breastfeeding is natural, cheap, effective and favourable for the child thus it precedes other choice of infant feeding"* *'Exclusive breastfeeding except in cases where breast-feeding is contraindicated"*	**Nurses gave generalized responses of what it might be, their responses included**: *"Only healthcare providers are allowed to speak to mothers about breastmilk substitutes"* *"Not to be marketed by giving informed education on only breastmilk from about 30 mins to 1hr of birth to 6months, no water etc"* *"It is a code that regulates the activities of infant formula manufacturers"* *"Breastmilk is the best but for the mother that can't breastfeed their baby (e.g. sick mother), breastmilk substitute can be given"* *"If a mother is having any disease or if the mother dies, breastmilk substitute can be allowed so that the baby will be able to live a healthy life"* *"To promote safe and adequate nutrition for infants by the protection and promotion of breastfeeding and by ensuring the use of breastmilk substitutes when these are necessary"* **CHEWS had almost no awareness of the Code, the response given include:** *"It is to maintain the practice of breastfeeding, to improve the feeding of infants and nutrition"*	5 (10) Doctors 14 (28) Nurses 19 (38) CHEWS **Total 38 (76%)**

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Maternal and Child Health Week (MCHW) was the dominant answer provided by respondents to the question on policies and programmes related to IYCF. A total of 18 (36%) respondents comprising of 6 (12%) doctors, 2 (4%) nurses and 10 (20%) CHEWS did not know the answer. Most of the respondents indicated that they did not know why their facilities did not have breastfeeding support groups however a health worker mentioned that;

"The facility doesn't have the capacity to bring the breastfeeding mothers together after their discharge from the post-natal clinic, given the number of patients that need to be attended to…."

Other explanations provided by health workers included:

"There is not enough space within the PHC, it is meant to be initiated by Lagos State Government", "No provision for it", "Not enough fund, not enough health workers", "Many times it is individualized to every mother who comes to the facility", "Despite that, as a midwife it is my role to health educate mothers on the importance of exclusive breastfeeding", "Nobody has ever thought of starting up one", "Lack of information, lack of interest".

When asked about their understanding of the International Code of Marketing of Breast-milk Substitutes, 19 (38%) CHEWs, 14 (28%) nurses and 5 (10%) doctors were not able to provide any response (See Table 3).

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4.1.2 The Knowledge of health workers regarding breastfeeding

The knowledge of health workers regarding breastfeeding was assessed by asking 3 multiple choice questions and 13 open ended questions. The health workers' responses to the multiple-choice questions are presented in below in Table 4.

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Table 4: Knowledge of health workers regarding breastfeeding

	Knowledge of health workers regarding breastfeeding	Total N (%)
1	***Until what age is breastfeeding recommended:***	
	6 months or less	1 (2)
	6-11 months	4 (8)
	12-23 months	20 (40)
	24 months and beyond	25 (50)
	I don't know	0
2	***Possible HIV transmission routes:***	
	HIV can be transmitted from an infected woman to her baby in utero	4 (8)
	HIV can be transmitted from an infected woman to her baby at the time of delivery	40 (80)
	HIV can be transmitted from an infected woman to her baby through breastmilk	12 (24)
	I don't know	1 (2)
3	***Can MTCT occur when mother is on ARV:***	
	No	42 (84)
	Yes	6 (12)
	I don't know	2 (4)

Regarding knowledge of health workers elicited using multiple choice questions, half (50%) of the respondents indicated that the recommended age a mother should continue breastfeeding her baby in addition to giving complementary feeds is until 24 months and beyond, 40% answered 12-23 months, 8% answered 6-11 months while one (2%) of the respondent indicated 6 months or less (Table 4). The majority of respondents (80%) indicated that HIV can be transmitted from an infected woman to her baby at the time of delivery, 24% indicated that HIV can be transmitted from an infected woman to her baby through breastmilk while 8% answered that HIV can be transmitted in utero. The majority (84%) of the respondents indicated that HIV cannot be transmitted from an infected mother on Antiretroviral drugs (ARVs) to her baby if she decides to practice EBF for 6 months, 12% answered that an infected mother on ARVs can transmit HIV to her baby if she decides to practice EBF while 4% did not know the correct answer (Table 4).

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Thematic content analysis was done by the researcher to analyze the open-ended responses about the health workers' knowledge regarding breastfeeding. The findings are presented below in Table 5.

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Table 5: Health workers' knowledge regarding breastfeeding

Questions asked about knowledge of breastfeeding	Major responses/ themes	Minor responses/ themes	Frequency % (n) of correct responses by the different professions (%)
What is the first food a new born baby should eat?	*Colostrum/breastmilk*	*None*	10 (20) doctors 20 (40) nurses 20 (40) CHEWS **Total 50 (100%)**
How long should a baby receive nothing more than breastmilk?	*6 months*		9 (18) doctors 19 (38) nurses 20 (40) CHEWS **Total 48 (96%)**
How soon after delivery should a mother put her baby to breast?	*Immediately, within 30 minutes of delivery, within 1hour of delivery*		10 (20) doctors 19 (38) nurses 19 (38) CHEWS **Total 48 (96%)**
How often should a baby younger than six months be breastfed?	*On demand, 8-12 times in a day, every 2 hours*		9 (18) doctors 16 (32) nurses 12 (24) CHEWS **Total 37 (74%)**
What is the meaning of exclusive breastfeeding?	*Majority (98%) of respondents could define EBF except for one CHEW who gave an incomplete definition.*	***Only one CHEW gave an incomplete definition of EBF as:*** *"The food given to children from 0-6 months"*	10 (20) doctors 20 (40) nurses 19 (38) CHEWS **Total 49 (98%)**
Mention at least 4 benefits for a baby if he or she receives only breastmilk during the first six months of life	*"Mother-child bonding"* *"Protection against common childhood infections e.g. diarrhoea, pneumonia"* *"Promotes brain development"* *"Boosts immunity"* *"Increase Intelligence Quotient (I.Q)"*	*"Prevents oral thrush"* *"Easily digested"* *"Contains adequate nutrients"* *"Economical, cheap, affordable, safe and feasible"* *"Prevents Diabetes"*	10 (20) doctors 20 (40) nurses 19 (38) CHEWS **Total 49 (98%)**
Mention different ways a mother can keep up her breastmilk supply	*High intake of fluids (e.g. water, pap, tea), eating nutritious food and breastfeeding baby frequently*	*"Eat well and drink enough fluids, Be emotionally stable, Have a helping hand at home"* *"Adequate hydration, proper nutrition, sound mind"* *"Proper positioning and good attachment"*	10 (20) doctors 20 (40) nurses 20 (40) CHEWS **Total 50 (100%)**

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Questions asked about knowledge of breastfeeding	Major responses/ themes	Minor responses/ themes	Frequency % (n) of correct responses by the different professions (%)
		"Artificial pump, More sucking reflex enhances expression of breastmilk"	
Mention at least 5 physical or health benefits for a mother if she exclusively breastfeeds her baby	*Promotes mother-child bond* *Prevents breast and ovarian cancer* *Serves as a form of family planning contraceptive* *Aids uterine involution* *It is economical and readily available* *It helps lose weight gained during pregnancy*	**Minor responses provided by health workers included:** *"...prevents osteoporosis"* *"...she has a sense of satisfaction"* *"...reduced stress"* *"...Lactational Amenorrhoea"* **Some outlier responses provided by health workers included:** *"...It decreases the risk of cervical cancer later in life"* *"...Less incidence of uterine fibroid"* *"...she is less prone to uterine cancer"* *"... Prevents lactational mastitis"* *"... Prevents breast abscess"*	8 (16) doctors 18 (36) nurses 18 (36) CHEWS **Total 44 (88%)**
Many mothers need to work and are separated from their baby. In this situation, how could a mother continue feeding her baby exclusively with breastmilk?	*"Mother can express her breastmilk, keep in a clean covered container and baby can be fed with the expressed breastmilk on demand"* *"By expressing the breastmilk; Put the baby in a nearby crèche and go from time to time to breastfeed the baby; Mother can take the baby to work if its allowed"*		**Total 49 (98%)**
At what age should babies start drinking water and eating other foods apart from breastmilk?	*From 6 months*		**Total 50 (100%)**
Describe how you would manage a mother with breast engorgement	*"Apply warm compress; Give analgesics to relieve pain, Advice to wear well fitted bra"*	**Some responses provided by CHEWs include**: *"Refer to secondary facility (i.e. a General Hospital)"* *"Refer the mother to see the doctor then give her an analgesic to relieve pain"*	8 (16) doctors 19 (38) nurses 15 (30) CHEWS **Total 42 (84%)**

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Questions asked about knowledge of breastfeeding	Major responses/ themes	Minor responses/ themes	Frequency % (n) of correct responses by the different professions (%)
	"Educate the mother on the need to put her baby to breast regularly; Proper positioning and attachment"	*"By using cold compress and informing the mother to always empty each of the breast to satisfy the baby"* *"For a person with breast engorgement, the person will continue breastfeeding till the engorgement stops"* *"Assist her to express the milk out and use it to feed the baby; Encourage her to continue breastfeeding and not stop"* **Some responses provided by nurses include:** *"Encourage her to apply warm compress to soften the breast; she should breastfeed more often from the breast; I would give her pain killer (analgesics); I would advise her to apply cold compress after feeding the baby"* *"I will advise the mother to feed her baby frequently and make sure she feeds for about 20-30 mins on each breast; I will also give her paracetamol to relieve pain"* *"Tell her to gently massage and compress the breast when the baby pauses between sucks; Use cold compress for 10 minutes after feeding to reduce swelling"* *"She is asked to express the breastmilk to relief the pain; She can be given analgesics and antipyretic depending; She is encouraged to make sure to empty each breast on feeding"* *"Find out where she was managed ante-natally; Encourage her to put baby properly to the breast; Breastfeed exclusively on demand; Encourage to express to feel better; Wear firm brassiers as support"* **Some responses provided by doctors include:** *"I will encourage her to breastfeed often and she can express the breastmilk and store in a refrigerator for subsequent use"* *"Give analgesics; Encourage to wear firm bra; Examine the breast and nipple; Find out about proper positioning; Ice therapy"*	

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Questions asked about knowledge of breastfeeding	Major responses/ themes	Minor responses/ themes	Frequency % (n) of correct responses by the different professions (%)
		"*To express the engorged milk, use lukewarm compress for mild massage; Avoid tight fitting bras; Place on antibiotics*" *"Counsel on the right techniques of EBF; Encourage EBF"* *"Use of analgesics; Rest affected breast; Apply breastfeeding pump"*	
How will you manage a breastfeeding mother presenting at your PHC with breast infection (mastitis)?		**Some responses provided by doctors include:** *"I would advise her to breastfeed often, good hygiene (i.e. wash her bra and breast often); Apply Vaseline to the cracked nipples; Place mother on antibiotics and analgesics"* *"Analgesics, warm compress and antibiotics; Plus, continued breastfeeding; Education on proper attachment and positioning"* *"Teach and educate on the cause of her problem, about positioning and attachment etc; Give analgesics; Give antibiotics and explain to continue breastfeeding on the unaffected breast but not give the affected breast"* *"Give analgesics, antibiotics and do I&D (incision and drainage)"* *"Counsel on breastfeeding techniques; Advice on expressed breastfeeding; Give pain relief and antibiotics; Warm water compress and firm bra usage"* **Some responses provided by nurses include:** "*I would send her to the laboratory for breast swab m/c/s; I would advise her to feed her baby from the other breast*" *"Examine the breast; Educate on proper positioning and attachment; Place mother on antibiotics and pain reliever"* *"Stop her from breastfeeding from the infected breast; Treat with antibiotics"*	7 (14) doctors 12 (24) nurses 3 (6) CHEWs **TOTAL 22 (44%)**

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Questions asked about knowledge of breastfeeding	Major responses/ themes	Minor responses/ themes	Frequency % (n) of correct responses by the different professions (%)
		"Clean the breast; Encourage mother to always express milk for baby until infection subsides; Give antibiotics for treatment" "*Give analgesics and antipyretics; Encourage her to still breastfeed*" **Some responses provided by CHEWs include:** *"I will refer her to a doctor or manage her condition according to my standing order"* *"I will refer her to see the gynaecologist"* *"Treatment with antibiotics; Proper health education; Refer if no improvement"* *"Treat her for fever if she has it; Express the breast gently; Give some antibiotics; Reassure her; Encourage her to continue breastfeeding"* *"I would tell the mother to stop feeding her baby from the infected breast; I would prescribe antibiotics for her; I would use my standing order to treat her"*	
What is the latest recommendation regarding HIV and breastfeeding?	***All 10 (100%) doctors provided responses which included:*** *"That HIV infected mothers can still breastfeed exclusively without mixed feeding"* *"Commence ARVs in pregnancy as soon as possible and exclusively breastfeed till 6 months, wean child 10-12months"* *"Exclusive breastfeeding for the first 6 months for a woman who is on ARV drugs, Introduce complementary feeding after 6 months"* *"no mixed feeding"* *"Exclusive breastfeeding for the 1st 6 months and complementary feeding from*	**Only one respondent (a nurse) provided a detailed and accurate response** *"PMTCT Antenatally. Put on ART advised on EBF and Good Nutrition and Support, Can breastfeed for 2 years and beyond"* **12 (24%) nurses answered, "I don't know".** **Only 8 (16%) nurses provided responses which included:** *"Commence Proper compliance with drugs and exclusive breastfeeding"* *"A reactive mother can do exclusive, it depends on her decision making, as far as she can be adherent to her Antiretroviral drugs"* *"To give exclusive breastfeeding for 6 months without mixed feeding, To take her drugs and give the baby*	**Total 1 (2%)**

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Questions asked about knowledge of breastfeeding	Major responses/ themes	Minor responses/ themes	Frequency % (n) of correct responses by the different professions (%)
	6 months to 12 months, cessation of breastfeeding at 1 year" *"Early treatment of exposed new-born"* *"Practice exclusive breastfeeding for 6 months, then begin complementary feeding and stop breastfeeding totally at 1 year or once the child starts teething; Avoid mixed feeding in the first 6 months"* *"Exclusive breastfeeding for 6 months alone while on ARVs too"* *"To commence ARVs immediately the mother is caught with the virus"* *"Exclusive breastfeeding for HIV exposed infants but mothers should be on HAART; Baby is given Nevirapine from birth to 6 weeks"*	*Nevirapine at the appropriate time, To bring the child for check-up after 6 weeks"* "*Mother can breastfeed their babies exclusively for 6 months as long as they are on Anti-Retroviral drugs"* "*Mother can breastfeed exclusively for 6 months then commence complementary feeding after 6 months"* *"The HIV positive mother can breastfeed her baby till 1 year"* *"A mother that is HIV positive can breastfeed her baby. It depends on the mother's decision"* **12 (24%) CHEWS answered, "I don't know".** **Only 8 (16%) CHEWS provided responses which included:** "*Both mother and child should be on HIV drugs"* "*To do exclusive breastfeeding for 6 months and stop breastfeeding when the child is one year"* *"No breastfeeding"* *"Continue breastfeeding as long as the baby cannot bite. The mother should just continue taking her drugs"* "*HIV positive mother should not breastfeed the child more than 1 year"* *"The WHO is in support of recommending that HIV Positive mothers or their infants take Antiretroviral drugs throughout the period of breastfeeding and until the infant is 12 months old"* *"If the mother has been taking ARVs before she delivered the baby, she may continue breastfeeding"* *"Once the mother is on ARV she can breastfeed her baby exclusively without water and milk"*	

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All (100%; n=50) health workers indicated breastmilk/colostrum as the first food a newborn baby should eat and that complementary feeding should be commenced from 6months. The majority, (96%; n=48) indicated that a baby should receive nothing more than breastmilk for 6 months while another (96%; n=48) answered that a baby should be put to breast immediately or within 30 minutes to 1 hour of delivery. Regarding the frequency of breastfeeding a baby, (74%; n=37) indicated correctly that a baby should be fed on demand, 8-12 times in a day or every 2 hours. The majority, (98%; n=49) could define EBF correctly except for one CHEW who gave an incomplete definition (Table 5).

All the health workers provided varied responses regarding the benefits of EBF for a baby. The major themes identified included: (i) Promotes mother-child bonding; (ii) Protection against diarrhoea and pneumonia; (iii) Promotes brain development; (iv) Boosts immunity; (v) Increase intelligence quotient (I.Q). While regarding physical or health benefits of practicing EBF for a mother, the major themes identified included: (i) Promotes mother-child bond; (ii) Prevents breast and ovarian cancer; (iii) Serves as a form of family planning contraceptive; (iv) Aids uterine involution; (v) It is economical and readily available; (vi) It helps the mother to lose weight gained during pregnancy. However, some outlier responses regarding physical or health benefits of EBF for a mother were also identified which included: It decreases the risk of cervical cancer later in life; Less incidence of uterine fibroids; Less prone to uterine cancer; It prevents lactational mastitis (Table 5).

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All health workers included in the study were able to provide some advice regarding ways a mother can keep up her breastmilk supply. High intake of fluids (e.g. water, pap, tea); eating nutritious food and breastfeeding baby frequently was the major response provided by the health workers. One respondent mentioned that a mother needs to:

"Eat well and drink enough fluids, be emotionally stable, have a helping hand at home…"

When asked about the advice given to a breastfeeding working class mother who wanted to practice EBF, the majority (98%; n=49) of the respondents mentioned that they would advise the expression of breastmilk and preserving it for later use, while noting the importance of placing the child at a child care facility (crèche) close to the mother's workplace. This is to enable her to

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breastfeed her baby easily during her break time. Responses given by some of the health workers included:

"Mother can express her breastmilk, keep in a clean covered container and baby can be fed with the expressed breastmilk on demand"

"By expressing the breastmilk; Put the baby in a nearby crèche and go from time to time to breastfeed the baby; Mother can take the baby to work if its allowed"

Regarding advice given to nursing mothers with breastfeeding challenges such as breast engorgement, the major themes/responses identified were:

"Apply warm compress; Give analgesics to relieve pain, Advice to wear well fitted bra"

"Educate the mother on the need to put her baby to breast frequently; Proper positioning and attachment"

However, some of the CHEWS mentioned that they would give analgesics to relieve pain and then refer the mother to see the doctor. Regarding advice given to nursing mothers with mastitis, the major themes/responses identified were to:

"Place mother on antibiotics and analgesics; Educate on proper positioning and attachment; Continue breastfeeding from the unaffected breast"

Interestingly, some of the respondents mentioned that they would:

"refer the mother to see a gynaecologist"

"Stop her from breastfeeding from the infected breast; Treat with antibiotic".

These responses showed that the health workers had suboptimal knowledge about the management of mastitis which is a common problem associated with breastfeeding and this could impact negatively on the health workers' ability to support and encourage nursing mothers with this condition to practice EBF (Table 5).

Almost half (48%; n=24) of the health workers comprising (24% nurses/midwives; 24% CHEWS) answered that they did not know about the latest recommendation regarding HIV and

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breastfeeding. However, some doctors and nurses demonstrated partial knowledge regarding breastfeeding in the context of HIV (See Table 5). On the other hand, most of the CHEWS demonstrated a significant deficit in knowledge (See Table 5). Some interesting responses provided by some of the interviewed respondents were also identified which included:

"Continue breastfeeding as long as the baby cannot bite. The mother should just continue taking her drug"

"To commence ARVs immediately the mother is caught with the virus"

"No breastfeeding"

4.1.3 Attitude of health workers regarding exclusive breastfeeding

The attitude of health workers regarding breastfeeding was assessed with 5 questions. Four of these questions had multiple choice responses while four had open ended responses. The responses to the multiple-choice questions is presented below (See Table 6).

Table 6: Attitude of health workers regarding breastfeeding

	Attitudes of health workers regarding breastfeeding	Total N (%)
1	***Is it appropriate to exclusively breastfeed for 6 months:***	
	Yes	50 (100)
2	***Advertising of infant formula feeding appropriate:***	
	No	39 (78)
	Yes	8 (16)
	I don't know	3 (6)
3	***Confidence in breastfeeding counselling of HIV infected mothers:***	
	Not confident	3 (6)
	Confident	45 (90)
	Ok/so so	2 (4)
4	***Is it appropriate for health care workers to provide free infant formula:***	
	No, it is not appropriate	43 (86)
	Yes, it is appropriate	6 (12)
	I don't know	1 (2)

Analysis of the multiple-choice questions showed that all of the respondents (100%; n=50) indicated that it is appropriate to breastfeed a baby exclusively for 6 months. The majority (78%;

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n=39) answered that it is not appropriate to allow infant formula advertising at the PHC, (16%; n=8) indicated that they think it is appropriate to allow infant formula advertising at the PHC while (6%; n=3) did not know whether infant formula advertising is appropriate. Ninety percent (90%; n=45) of respondents indicated they felt confident about counselling an HIV positive mother on ARV prophylaxis to practice EBF for 6 months, (6%; n=3) indicated otherwise while (4%; n=2) were unsure, they just felt 'ok/so-so'). 86% (n=43) of respondents indicated that it is not appropriate for health workers to give free samples of infant formula to breastfeeding mothers, (12%; n=6) however indicated otherwise while only one (2%; n=1) did not know if it is appropriate or not (Table 6). Thematic content analysis was done by the researcher with the assistance of a data analyst to analyze the open-ended responses about the health workers' attitude regarding breastfeeding. The findings are presented below in Table 7.

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Table 7: Health workers' attitude regarding breastfeeding

Questions asked about attitude to breastfeeding	Major themes	Minor themes	Don't know frequency (%)
What is your perception of EBF?	*EBF is the best because of all its benefits for both mother and child*	*"It is good but stressful especially for working mothers"*	None
Can you explain why it's not appropriate to allow infant formula advertising (in form of calendars, stationery etc) at your PHC?	*It will discourage mothers from practising EBF and undermine health-workers' teaching on the importance of practising EBF*	*Infant formula is expensive and not natural*	4 (8%) doctors 5 (10%) nurses 2 (4%) CHEWS **Total: 11(22%)**
Can you explain the reasons why you do not feel confident in counselling an HIV positive mother on ARV to breastfeed her new born with breastmilk only for the first six months of life?	*Majority of the health-workers felt confident*	**Only 3 (6%) CHEWS answered that they did not feel confident. Their responses included:** *"I have not been trained on that"* *"Because the mother might default in one way or the other"* *"Fear of transmission of HIV from mother to child"*	None
Do you think it is appropriate for health workers to give free samples of infantrmula to breastfeeding mothers? If not appropriate can you explain the reasons why?	*It will discourage mothers from practising EBF and contradict health-workers' teaching on the importance of practising EBF*	*There will be temptation for mothers to purchase infant formula and disregard exclusive breastfeeding*	2 (4%) doctors 2 (4%) nurses 3 (6%) CHEWS **Total: 7 (14%)**

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Perceptions towards EBF were very similar among all cadres. They believe EBF is the best because of all its benefits for both mother and child, although some respondents mentioned the stress associated with breastfeeding especially for working class mothers (Table 7). Regarding attitudes towards giving free samples of infant formula to nursing mothers and formula advertising (in the form of calendars, stationery etc) at the PHCs, the major theme identified was that it will discourage mothers from practicing EBF and undermine/contradict health workers' teaching on the importance of practicing EBF. However, 7 (14) % of the health workers indicated that they did not know why it is not appropriate to give free samples of infant formula to nursing mothers while 11(22%) could not explain why it is not appropriate to allow infant formula advertising (in the form of calendars, stationery etc) at the PHCs (Table 7).

4.1.4 Barriers and facilitative factors to protection, promotion and support of exclusive breastfeeding by health workers

The barriers and facilitative factors to protection, promotion and support of EBF by the health workers were assessed in the form of a Likert scale and through open ended questions. Responses elicited from the Likert scale questions are presented in table 8 below.

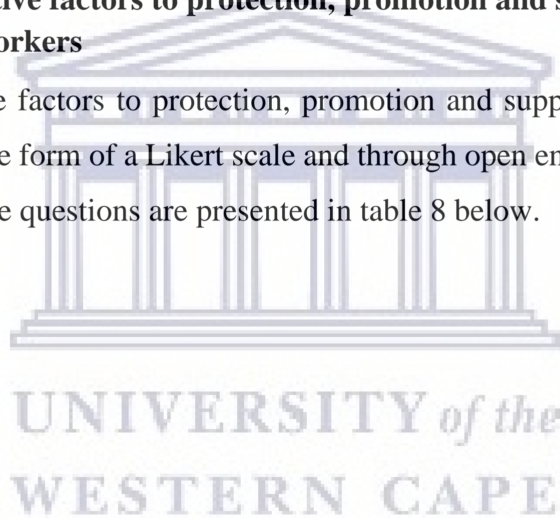
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Table 8: Barriers and facilitative factors to protection, promotion and support of exclusive breastfeeding

		Strongly disagree	Disagree	No opinion/un certain	Agree	Strongly agree
Barrier to protection, promotion & support of exclusive breastfeeding	Shortage of health workers at PHCs	1 (2)	3 (6)	1 (2)	15 (30)	30 (60)
	Lack of knowledge/training about breastfeeding management/poor counselling skills	0	1 (2)	0	28 (56)	21 (42)
	Lack of awareness about the International Code of Marketing of Breastmilk Substitutes (BMS)	1 (2)	1 (2)	7 (14)	29 (58)	12 (24)
	Poor enforcement of the Code of marketing of BMS	0	3 (6)	10 (20)	23 (46)	14 (28)
	Heavy workload at the PHCs	1 (2)	4 (8)	3 (6)	21 (42)	21 (42)
	Lack of breastfeeding support groups for mothers	0	1 (2)	4 (8)	24 (48)	21 (42)
	Insufficient BFHI certified facilities	0	5 (10)	7 (14)	27 (54)	11 (22)
	Inadequate knowledge about BFHI recommended practices among health workers	1 (2)	5 (10)	3 (6)	27 (54)	14 (28)
	Lack of funding for regular pre- and in-service training of health workers on breastfeeding management/ Counselling courses	0	3 (6)	3 (6)	14 (28)	30 (60)
Facilitative factors that boost health workers protection, promotion & support	Regular training of health workers on breastfeeding management & counselling skills	0	0	0	7 (14)	43 (86)
	More time available for health workers to counsel pregnant women & nursing mothers	0	0	1 (2)	14 (28)	35 (70)

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		Strongly disagree	Disagree	No opinion/un certain	Agree	Strongly agree
of exclusive breastfeeding	Additional staff available and well trained to assist in providing education and support of breastfeeding	0	0	1 (2)	9 (18)	40 (80)
	Improved understanding of infant feeding in the context of HIV and PMTCT	0	1 (2)	1 (2)	11 (22)	37 (74)
	Availability of information, education & communication (IEC) materials (e.g. pamphlets, posters etc.) on breastfeeding and its benefits at Health facilities	0	0	0	16 (32)	34 (68)
	Facilitating contact between mothers and peer support groups	0	0	0	21 (42)	29 (58)

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Over 70% of the health workers interviewed either agreed or strongly agreed that the following factors were barriers to protection, promotion and support of breastfeeding: Shortage of health workers at PHCs; Lack of knowledge/training about breastfeeding management/poor counselling skills; Lack of awareness about the International Code of marketing of BMS; Heavy workload at the PHCs; Lack of breastfeeding support groups for mothers; Insufficient BFHI certified facilities; Inadequate knowledge about BFHI recommended practices among health workers and Lack of funding for regular pre- and in-service training of health workers on breastfeeding management/ counselling courses (See Table 8).

All the health workers interviewed either agreed or strongly agreed that regular training of health workers on breastfeeding management and counselling skills; availability of IEC materials on breastfeeding and its benefits at the health facilities as well as facilitating contact between mothers and peer support groups are facilitative factors that boost health workers' protection, promotion and support of EBF. Furthermore, over 90% of respondents indicated that more time available for health workers to counsel pregnant women and nursing mothers; availability of additional well trained staff to assist in providing education and support of breastfeeding; as well as improved understanding of infant feeding in the context of HIV and PMTCT are facilitative factors that boost health workers' protection, promotion and support of EBF (See Table 8).

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Table 9: Health workers' view on barriers that influence the protection, promotion and support of exclusive breastfeeding

Questions asked about barriers to breastfeeding	Major responses/ themes	Minor responses/ themes
Barriers with regards to educating pregnant women about EBF include	**Beliefs that only breastmilk is not enough for the baby:** *"Some of the pregnant women believe that their breastmilk is not sufficient for their babies and they need to give infant formula…"* **Inadequate staff, *work-tools / PHC facility Infrastructure*** *"No teaching aids"* *"If there is no proper or conducive environment"* *"Most times the facilities are overcrowded with pregnant women"* *"…Inadequate manpower"* *"Time factor, short-staffed"* *"…Overworked health-workers"* **Negative influence from family members:** *"…Some husbands believe their wives' breasts will sag if they practice exclusive breastfeeding"* *"…discouragement from relatives (mothers-in-law in particular)"* *"Some mothers-in-law and grandmothers encourage their daughters-in-law / daughters to give water or formula to their babies"* **Negative perceptions of mothers regarding breastfeeding:** *"…Some women believe exclusive breastfeeding is time wasting"* *"When a mother's thinking is based on the breast looking flat as a result of breastfeeding"* **Work pressure on working-class mothers:** "*Working class mothers complain about not having enough time to breastfeed their babies"* *"Some mothers complain about their jobs preventing them from practising EBF (Work pressure; Lack of free time to nurse their babies while at work"* **Communication barriers:** *"Language barriers, lack of interest by some pregnant women in attending health education sessions at the PHC"* *"Some of the pregnant women are absent-minded, they don't pay attention during health talks"*	

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Questions asked about barriers to breastfeeding	Major responses/ themes	Minor responses/ themes
	"Mothers not regular for clinic visits and do not attend health talk; Lack of motivation" *"Some of the mothers especially the teenage mothers may not be interested; Most times antenatal clinics are overcrowded with pregnant women; It is difficult to communicate with them"*	
Challenges with helping/supporting mothers to initiate breastfeeding immediately after delivery at the maternity ward include	*"**Women with complications during delivery** (e.g. postpartum haemorrhage-PPH, Cervical tear, eclampsia, retained placenta)"* "***Women with inverted nipples***" "***Health status of the mother immediately after delivery** (i.e. some mothers complain of weakness, tiredness" mothers with Hepatitis B virus infection)* *"**Not enough adequately trained health-workers**"* *"**Negative cultural beliefs about breastfeeding and taboos about breastmilk** especially (Colostrum)* ***"Negative influence of mothers-in-law who discourage their daughter-in-laws / new mothers from delivering their babies at the health facilities but rather patronize TBAs***	***Some responses provided by nurses include:*** *"Women with inverted nipples; Sometimes mothers are too tired to initiate breastfeeding"* *"Some mothers are not able to lactate immediately; If the mother is weak; Cases of postpartum haemorrhage; Cases where mother has hepatitis B virus infection"* *"Breastmilk is not flowing, Tiredness or laziness"* *"In case of busy wards; If the patient is having postpartum bleeding; In case of eclampsia or complications of delivery"* *"Some mothers especially primips complain that breastfeeding is painful; Mothers with delivery complications (PPH)* ***Some responses provided by doctors include:*** *"Small labour room couch"* *"Cultural belief"* *"Lack of adequately trained health personnel, Attitude and behaviour of mothers and relatives, Application of wrong breastfeeding positioning and techniques"* *"Too many mothers and few health-workers; Mothers lack of cooperation"* *"Most complain of not expressing well; Inverted nipples"* *"Nurses wanting to clean and dress for baby and mother; People call the first breastmilk dirty and unhealthy"* ***Some responses provided by CHEWs include:***

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Questions asked about barriers to breastfeeding	Major responses/ themes	Minor responses/ themes
		"Some mothers are tired or feel too weak to initiate breastfeeding immediately after delivery" *"Some mothers may have some issues after delivery like bleeding, tear and other conditions which may delay early initiation"* *"Poor staffing, Family taboo by the patients saying until they do somethings at home before they can breastfeed their baby"* *"Some mothers visit Traditional Birth Attendants (TBAs) to deliver their babies, so it is difficult for health-workers to help them initiate breastfeeding; Influence of mother-in-laws who have faith in TBAs"* *"Some mothers complain that breastmilk is not flowing; Some mothers complain about nipple pain"*
Barriers with regards to providing follow up breastfeeding support to nursing mothers after discharge from the facility include	***"Lack of breastfeeding support groups"*** ***"Shortage of health-workers at the PHCs"*** ***"Poor adherence to postnatal clinic appointments by mothers"*** ***"Heavy workload"*** ***"Negative influence from relatives of nursing mothers*** *(e.g. grandmothers and mother-in-laws who believe breastmilk is not enough for the baby)"* ***"Working-Class nursing mothers having to resume back to work due to short maternity leave"*** ***"Communication barrier"*** ***"Cultural beliefs"*** ***"Inadequate funds"***	**Some responses provided by nurses include:** *"There are no welfare staff/social-workers to visit mothers at home to provide breastfeeding support"* *"Lack of breastfeeding support group; Shortage of staff (health-workers)"* *"Discouragement from mother-in-laws and neighbours"* *"Work (i.e. maternity leave is short), Pressure from grandmothers and mother-in-law"* *"Staff shortage and vehicle provision problem"* *"Distance of mothers from the PHC; No money for mothers to transport themselves to the PHC* **Some responses provided by doctors include:** *"No support group meetings; Poor adherence to postnatal clinic appointments"* *"Cultural beliefs, Inadequate personnel; Financial constraints"* *"Language barriers; Poor counselling skills; Heavy workload at the clinic"*

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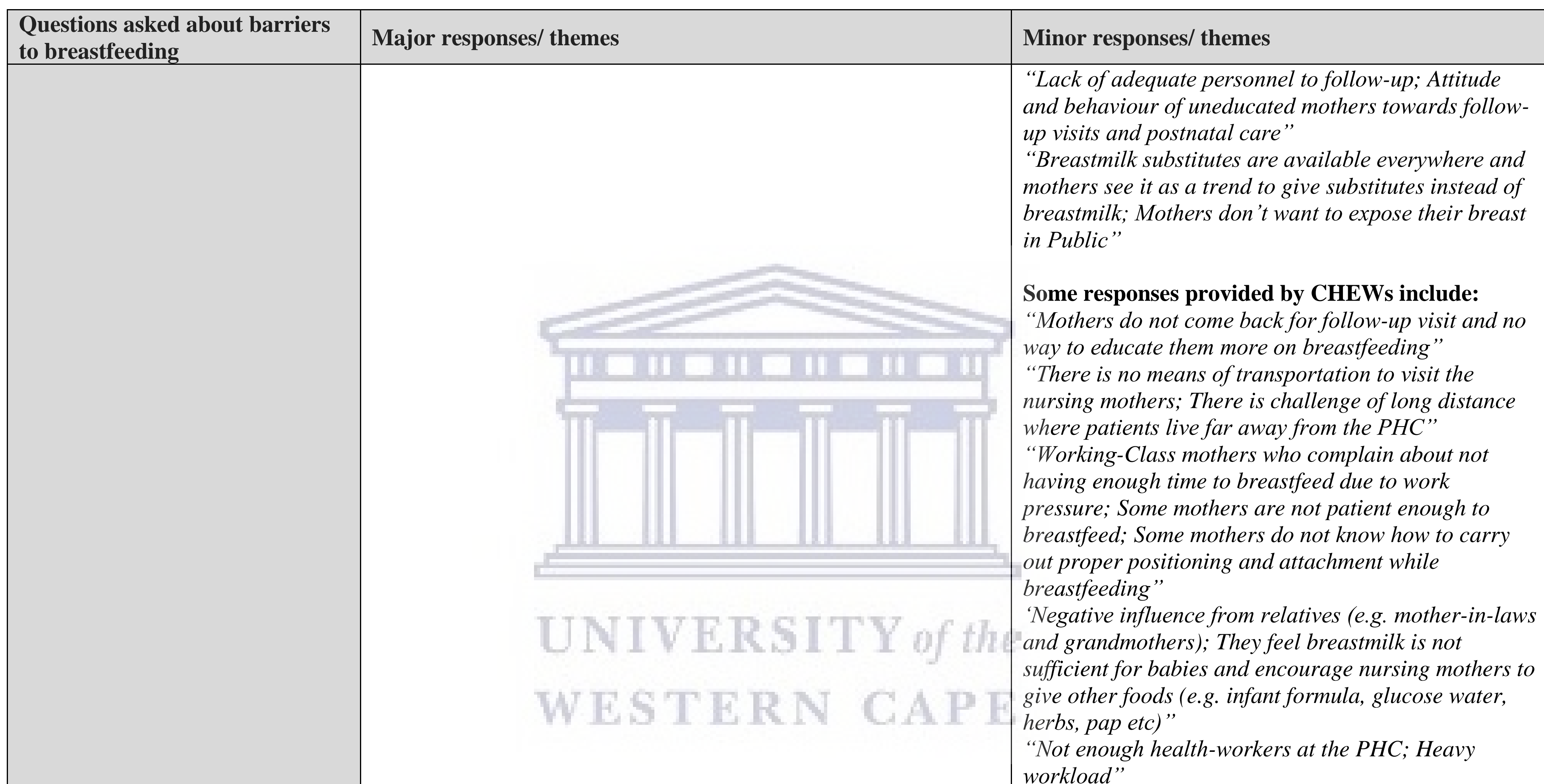
Questions asked about barriers to breastfeeding	Major responses/ themes	Minor responses/ themes
		"Lack of adequate personnel to follow-up; Attitude and behaviour of uneducated mothers towards follow-up visits and postnatal care" *"Breastmilk substitutes are available everywhere and mothers see it as a trend to give substitutes instead of breastmilk; Mothers don't want to expose their breast in Public"* **Some responses provided by CHEWs include:** *"Mothers do not come back for follow-up visit and no way to educate them more on breastfeeding"* *"There is no means of transportation to visit the nursing mothers; There is challenge of long distance where patients live far away from the PHC"* *"Working-Class mothers who complain about not having enough time to breastfeed due to work pressure; Some mothers are not patient enough to breastfeed; Some mothers do not know how to carry out proper positioning and attachment while breastfeeding"* *'Negative influence from relatives (e.g. mother-in-laws and grandmothers); They feel breastmilk is not sufficient for babies and encourage nursing mothers to give other foods (e.g. infant formula, glucose water, herbs, pap etc)"* *"Not enough health-workers at the PHC; Heavy workload"*



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Thematic content analysis was done to analyse health workers' views on barriers that influence the protection, promotion and support of EBF. None of the health workers gave an "I don't know" response (See Table 9).

The major themes/responses identified regarding barriers to educating pregnant women about EBF were: (i) Beliefs that only breastmilk is not enough; (ii) Inadequate staff, work tools and PHC facility infrastructure; (iii) Negative influence from family members; (iv) Work pressure on working-class mothers; (v) Communication barriers (See Table 9).

The major themes/responses identified regarding challenges with helping/supporting mothers to initiate breastfeeding immediately after delivery at the maternity ward include: (i) Women with complications during delivery; (ii) Women with inverted nipples (iii) Health status of the mother immediately after delivery; (iv) Not enough adequately trained health workers; (v) Negative cultural beliefs about breastfeeding and taboos about breastmilk especially (Colostrum); (vi) Negative influence of mothers-in-law who discourage their daughters-in-law/ new mothers from delivering their babies at the health facilities but rather patronize Traditional Birth Attendants-TBAs (See Table 9).

The major themes/responses identified regarding barriers to providing follow up breastfeeding support to nursing mothers after discharge from the facility included: (i) Lack of breastfeeding support groups; (ii) Shortage of health workers at the PHCs; (iii) Poor adherence to postnatal clinic appointments by mothers; (iv) Heavy workload; (v) Negative influence from relatives of nursing mothers (e.g. grandmothers and mothers-in-law who believe breastmilk is not enough for the baby); (vi) Working-Class nursing mothers having to resume back to work due to short maternity leave; (vii) Communication barrier; (viii) Cultural beliefs; (ix) Inadequate funds (Table 9).

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Table 10: Health workers' views on facilitative factors that boost protection, promotion and support of exclusive breastfeeding

Questions asked about facilitative factors to breastfeeding	Major responses/ themes	Minor responses/ themes	Frequency of reported "Don't know" by the different professions (%)
What factors have in the past boosted your efforts to provide breastfeeding support to pregnant women or nursing mothers?	*"Personal experience of breastfeeding my children"* *"A refresher training was done which boosted my efforts"* *"Previous training on breast-feeding management"* *"It's beneficial to the mother and baby"*	*"Mass media adverts"* *"Passion for the work (being a health worker, one must be passionate about encouraging nursing mothers and pregnant women to breastfeed their babies)* *"Because I was breastfed exclusively. Because the knowledge of it is good"* *"Positive effect of breastfeeding on babies that I have seen at the Child welfare clinic who were exclusively breastfed by their mothers. The babies looked healthy and chubby"*	**4 (8) Doctor** **8 (6) Nurses** **4 (8) CHEWS** **Total:16 (32%)**
Do you have any suggestions for improving the protection, promotion and support of EBF at your facility?	*Continuous education and training of health workers on breastfeeding management and effective counselling* *Establishment of breastfeeding support groups for mothers* *Organizing programmes to raise awareness of women, their family members and community members about the importance of breastfeeding* *"Employ more health-workers at the health facilities"*	*"Implementation of breastfeeding policies"* *"More training on support of EBF. Need experts in that field to visit pregnant mothers"* *"Health workers should be motivated"* *"More awareness about exclusive breastfeeding to caregivers e.g. grandmothers, mothers-in-law and family members"* *Provision of posters, pamphlet, flyers, jingles and videos on breastfeeding management at the PHCs for health-workers to educate pregnant women, nursing mothers and caregivers*	**Total:4 (8%)**
Do you have any additional comments or suggestions?	*More health-workers should be employed to the facilities to reduce workload and enhance health-workers' performance"* *Mothers-in-law and grandmothers should be educated about the importance of breastfeeding and allowing their daughters-in- law/ nursing mothers practice EBF* *"Breastfeeding counselling and education should be consistent"*		**Total 5 (10%)**

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Thematic content analysis was done to analyse health workers' views on factors that boost protection, promotion and support of breastfeeding.

The major responses identified regarding factors that boosted their effort to provide breastfeeding support to a pregnant woman or nursing mother were: (i) "Personal experience of breastfeeding my children" (ii) "A refresher training was done which boosted my effort" (iii) "Previous training on breastfeeding management" (iv) its beneficial to the mother and baby".

General findings from this study showed that it is of utmost importance that health workers acquire constant, in-depth and up-to-date training on the intricacies of breastfeeding management/ counselling as well as training on the International Code of Marketing of Breastmilk Substitutes and national legislation, policies and programmes related to optimum IYCF practices with special emphasis on infant feeding in the context of HIV.

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CHAPTER 5: DISCUSSION

5.1 Introduction

This chapter discusses the major findings of this study in relation to the study's aim and objectives, and presents comparisons with the results of similar studies done by other researchers.

5.2 Health workers' demographic characteristics, work experience and training regarding breastfeeding management

The cross-sectional descriptive study was carried out in 10 randomly selected LGAs in Lagos State including their corresponding flagship PHCs (See Table 1). Fifty health workers were interviewed in this study comprising of 45 females (i.e. 6 doctors, 20 nurses/midwives, 19 CHEWS) and 5 males (i.e. 4 doctors, 1 CHEW). The majority of the health workers indicated they had 1-5 years of work experience at the included PHCs (Table 2).

All the health workers did breastfeeding education or counselling with mothers as part of their job. On the contrary, only half (50%) of the health workers including: 4 (16%) doctors, 11 (44%) nurses/midwives and 10 (40%) CHEWs had ever received training on breastfeeding management which was organized either by the Lagos State Ministry of Health or Nestle (an infant formula manufacturing company) while none reported attending an IBCLC certificate issued training on breastfeeding management. Furthermore, there was significant variability noted in the duration of training attended by the health workers ranging from 4 hours to 2 weeks. Therefore, the quality of breastfeeding education or counselling provided for the nursing mothers who came in contact with the interviewed health workers cannot be ascertained to be optimal. These findings corroborate several studies done globally which reported that health workers had inadequate training on breastfeeding management/counselling (Shah, Rollins & Bland, 2005; Silvestre et al., 2009; Leviniene et al., 2009; Radzyminski & Callister, 2015; Artantas et al., 2016; Chale, Fenton & Kayange, 2016; Anstey et al., 2018; Esselmont et al., 2018; Flaherman et al., 2018). Likewise, a report done by World Breastfeeding Trends initiative (WBTi) (FMOH, 2015), identified that health workers in Nigeria had sub-optimal pre- and in-service training regarding IYCF practices. Other studies done in Nigeria have similarly reported inadequate training of health workers on breastfeeding management and appropriate IYCF practices (Olaolorun & Lawoyin, 2006; Utoo et al., 2012; Ogbo et al, 2017).

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Majority of the health workers interviewed had significant deficit in knowledge about the International Code of Marketing of Breastmilk Substitutes and national (Nigerian) legislation on the Code. More than half (76%) of the health workers comprising of 5 (10%) doctors, 14 (28%) nurses and 19 (38%) CHEWs could not explain their understanding of "the Code" (Table 3), while 46% did not know if their PHC had a mechanism in place for enforcing the "Code". None of the respondents reported having breastfeeding support groups for mothers at their PHCs. A total of 16% of respondents indicated that they think it is appropriate to allow infant formula advertising at the PHC while 6% did not know whether infant formula advertising is appropriate (Table 6). Several other studies done in Nigeria also corroborate these findings that significant gaps exist regarding health workers training/level of awareness of the Code coupled with violation/poor enforcement of the Code by the relevant stakeholders (i.e. Government, health workers, infant formula manufacturers, the general public etc) (FMOH, 2015; Ogbo et al., 2017; ATNF, 2018a; Zehner, 2018; Ogundipe & Obinna, 2018; Brewer et al., 2018).

Likewise, several studies done globally have also reported significant deficits in health workers' training and level of awareness of the Code in addition to poor implementation and enforcement by relevant stakeholders (Anstey et al., 2018; Flaherman et al., 2018; ATNF, 2018b, Zehner, 2018). These findings are quite disturbing as the ability of the health workers to protect, support and encourage mothers to practice EBF will be undermined. Similarly, their ability to ensure enforcement of the Code at the PHCs will also be impaired. Another consequence of this finding is that infants' morbidity and mortality rates could increase as a result of a decrease in the duration of the practice of EBF by mothers that receive breastfeeding education/counselling from health workers who think it is appropriate to advertise or give out free samples of infant formula. In addition, it has been reported that mothers who do not practice EBF are more likely to be at risk of developing diseases such as breast and ovarian cancers (Rollins et al. 2016; WHO & UNICEF, 2017).

This study found that18 (36%) respondents comprising of 6 (12%) doctors, 2 (4%) nurses and 10 (20%) CHEWS could not mention any policies or programmes related to IYCF. The variability in the duration of breastfeeding management training attended by the respondents coupled with gaps identified regarding their level of awareness about the Code are possible indications that the health workers did not receive adequate training to build up their capacity on breastfeeding management

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and optimal IYCF practices. Therefore, their ability to protect, promote and support EBF effectively will be impaired. These findings corroborate the report done by WBTi in collaboration with the Nigerian Federal Ministry of Health (FMOH, 2015) which showed that gaps existed regarding pre- and in-service training of health workers on optimal IYCF practices. Furthermore, several studies done globally also corroborate the findings that health workers lack adequate training on breastfeeding management (Shah, Rollins & Bland, 2005; Silvestre et al., 2009; Leviniene et al., 2009; Szucs, Miracle & Rosenman, 2009; Radzyminski & Callister, 2015; Artantas et al., 2016; Chale, Fenton & Kayange, 2016; Anstey et al., 2018; Flaherman et al., 2018).

A study done in Australia by Holtzman & Usherhood (2018) further supported the findings that health workers with sub-optimal training on breastfeeding management and counselling skills are likely to provide in- appropriate information to mothers who come in contact with them at the health facilities with breastfeeding difficulties (e.g. problems with latching, inadequate breastmilk supply etc.). A consequence of this is that the mothers' infant feeding choice will be affected negatively; also the health workers' ability to support EBF will be impaired. In Florida, Anstey et al. (2018) found from their study involving physicians and paediatricians that these health professionals were not adequately skilled in the management of breastfeeding intricacies like: proper latching; positioning; nipple pain and complaints about inadequate breastmilk flow. This was inspite of the fact that they possessed some knowledge about the advantages of breastfeeding and how to manage common medical problems associated with breastfeeding (e.g. mastitis, thrush etc.) (Anstey et al. 2018). Therefore, the need for in-depth pre- and in-service training regarding the management of the intricacies of breastfeeding as well as programmes related to IYCF for various cadres of health care professionals cannot be over-emphasized.

Constant training and re-training of health workers about the international Code of marketing of breastmilk substitutes should be done on a regular basis. Copies of updated training handbooks and protocols on the Code should also be made available at the health facilities for the perusal of health workers. In addition, a functional mechanism of enforcement should be put in place at the various health facilities as recommended in the National Policy on Infant and Young Child Feeding in Nigeria (FMOH, 2010).

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5.3 Knowledge of health workers regarding breastfeeding

Health workers need to have adequate, appropriate and up-to-date knowledge regarding breastfeeding management/counselling and optimal IYCF practices in order to protect, promote and support EBF effectively. Several studies done globally have reported that gaps exist regarding health workers' knowledge about the intricacies of breastfeeding (Szucs, Miracle & Rosenman, 2009; Anstey et al., 2018; Esselmont et al. 2018; Holtzman & Usherwood, 2018).

Correspondingly, responses from some health workers interviewed in this present study showed that they had sub-optimal knowledge about the management of mastitis which is a common problem associated with breastfeeding; this could impact negatively on their ability to support and encourage nursing mothers with this condition to practice EBF (Table 5). Likewise, several studies done in Nigeria have also identified similar gaps regarding health workers' knowledge of breastfeeding management and optimal IYCF practices (Olaolorun & Lawoyin, 2006; Utoo et al., 2012; FMOH, 2015; Ogbo et al. 2017).

This study also found that the respondents had inadequate knowledge about national and international policies on HIV and infant feeding recommendations such as: National Policy on IYCF in Nigeria (2010); the WHO Guidelines on HIV and Infant Feeding (WHO & UNICEF, 2010); the WHO Guidelines Update on HIV and Infant Feeding (WHO & UNICEF, 2016). Surprisingly, almost half (48%) of the health workers comprising (24% nurses/midwives; 24% CHEWS) answered that they did not know about the latest WHO recommendation regarding HIV and breastfeeding. Some of the doctors and nurses demonstrated some level of knowledge, though sub-optimal when asked questions related to infant feeding in the context of HIV (See Table 5). Responses from one of the interviewed doctors and nurses/midwives included respectively:

"Exclusive breastfeeding for the 1st 6 months and complementary feeding from 6 months to 12 months, cessation of breastfeeding at 1 year".

"*Mother can breastfeed their babies exclusively for 6 months as long as they are on Anti-Retroviral drugs" (Table 5).*

Their responses partly corroborated the recommendations in the Nigerian IYCF Policy (2010) which states that HIV positive mothers should breastfeed exclusively for 6 months with use of appropriate ARV prophylaxis, introduce complementary feeds after 6 months and continue

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breastfeeding up to 1 year. Conversely, some interesting responses provided by the other respondents were also identified which included:

"No breastfeeding"

"Continue breastfeeding as long as the baby cannot bite. The mother should just continue taking her drugs" (Table 5).

These responses show that there is need for constant update training courses for health workers on the current policies and trends in the management of HIV and breastfeeding. This training is crucial in order to prevent health workers from passing incorrect information about breastfeeding options (especially in the context of HIV and infant feeding) to mothers who come in contact with them at the health facilities for breastfeeding support and counselling. For instance, retroviral positive mothers who are advised by health workers not to breastfeed their babies or practice EBF because of the fear of infecting their baby with the virus (See Table 5). Such mothers will reduce their baby's chances of having a healthy start in life as the child will be prone to developing infectious diseases like diarrhoea, pneumonia, childhood obesity, low intelligence quotient (I.Q) etc, which EBF has been reported to prevent (WHO & UNICEF, 2017).

The National Policy on IYCF in Nigeria (FMOH, 2010) which recommends that HIV positive mothers should practice EBF for 6 months with use of ARV prophylaxis, introduce complementary feeds after 6months and continue breastfeeding up to 1 year is presently being practiced in health facilities in Lagos State. However, the duration of breastfeeding has been reviewed to 2 years for HIV positive mothers according to the WHO Guidelines Update on HIV and Infant Feeding (WHO & UNICEF, 2016). This policy is yet to be adopted in Nigeria, in addition the reason for the non-adoption of the latest 2016 WHO recommendations on HIV and Infant Feeding (WHO & UNICEF, 2016) could not be ascertained by the researcher at the time of conducting this study.

Findings from this study have shown that there is an urgent need to bridge the gap in knowledge exhibited by health workers regarding HIV and appropriate infant feeding practices. Therefore, the Ministry of Health in Lagos State have plans in place to organize capacity building programmes aimed at training health workers on "infant feeding in the context of HIV" (Personal communication with an official of the Lagos State Ministry of Health, 28th August 2019).

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5.4 Attitude of health workers regarding breastfeeding

Perceptions towards EBF and its benefits were similar among all cadres of health workers. All the respondents indicated that it is appropriate to practice EBF for 6 months. They believe EBF is the best because of all its benefits for both mother and child. Similar findings have also been reported in studies done in Nigeria (Olaolorun & Lawoyin, 2006; Utoo et al., 2012). However, some respondents interviewed in this study mentioned the stress associated with breastfeeding especially for working class mothers (See Table 7). Regarding attitudes towards giving free samples of infant formula to nursing mothers and formula advertising (in form of calendars, stationery etc) at the PHCs, the major theme identified was that it will discourage mothers from practicing EBF and undermine/contradict health workers' teaching on the importance of practicing EBF. Conversely, 7 (14) % of the health workers indicated that they did not know why it is not appropriate to give free samples of infant formula to nursing mothers while 8 (16%) indicated that they think it is appropriate to allow infant formula advertising at the PHC. A consequence of this finding is that the health workers' ability to protect, promote and support breastfeeding will be impaired because such health workers are likely to offer infant formula to nursing mothers who present at the PHCs with breastfeeding difficulties or for counselling regarding feeding options for their babies. Flaherman et al. (2018) also reported similar findings where health workers were found to encourage advertising and marketing of infant formula thereby contributing to the low rate of the practice of EBF by mothers.

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Analysis of the multiple-choice questions showed that the majority (90%; n=45) of respondents indicated that they felt confident about counselling an HIV positive mother on ARV prophylaxis to practice EBF for 6 months. Therefore, these health workers are likely to support, encourage and allay the fears of HIV positive mothers who desire to practice EBF. In addition, babies born to HIV positive mothers that practice EBF with good adherence to ARV prophylaxis are more likely to survive with reduced risk of developing malnutrition, diarrhea and pneumonia compared with those whose mothers practice mixed feeding (FMOH, 2010; WHO & UNICEF, 2010; WHO & UNICEF, 2016)

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5.5 Identified facilitative factors that boost protection, promotion and support of EBF by health workers

Regarding facilitative factors that boost protection, promotion and support of EBF the major open ended responses provided by health workers in this study included: “Personal experience of breastfeeding my children” (ii) “A refresher training was done which boosted my effort” (iii) “Previous training on breastfeeding management” (iv) its beneficial to the mother and baby” (See Table 10).

Similarly, Holmes et al., (2012) reported that Physicians included in their study who received breastfeeding education/training demonstrated improved knowledge regarding breastfeeding management. Therefore, their ability to support EBF was enhanced as evidenced by increase in duration of breastfeeding by their patients (Holmes et al., 2012).

This study found that in Lagos State, various programmes are carried out at the PHCs and within the communities aimed at promoting breastfeeding which includes: MNCH Week; Community sensitization campaigns to raise awareness of all stakeholders (i.e health workers, mothers, fathers, family members and the general public) about the importance of breastfeeding (Personal Communication with the Nutrition Program Officer at the Lagos State PHCB, 8th August, 2019). Furthermore, mothers are educated about the importance of good nutrition, benefits of breastfeeding, proper attachment and positioning of their babies whenever they attend ante-natal clinics, postpartum clinics or bring their babies for immunization as well as during community outreach programmes (Personal Communication with the Nutrition Program Officer at the Lagos State PHCB, 8thAugust 2019).

Similarly, it has been reported that protection, promotion and support of breastfeeding can be improved through mutual collaboration among all stakeholders coupled with the use of mass media such as television adverts, radio jingles and social media platforms (such as Facebook, YouTube, twitter etc) to promote campaigns that raise awareness of all stakeholders about the importance of breastfeeding and appropriate IYCF practices (Rollins et al., 2016; Nigeria Health Watch, 2019).

Findings from this study showed that all respondents either agreed or strongly agreed that regular training of health workers on breastfeeding management and counselling skills; availability of IEC materials on breastfeeding and its health benefits at the health facilities as well as facilitating

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contact between mothers and peer support groups are facilitative factors that boost health workers' protection, promotion and support of EBF. Furthermore, over 90% of respondents indicated that more time available for health workers to counsel pregnant women and nursing mothers; availability of additional well trained staff to assist in providing education and support of breastfeeding; as well as improved understanding of infant feeding in the context of HIV and PMTCT are facilitative factors that boost health workers' protection, promotion and support of EBF (See Table 8).

Correspondingly, up-skilling health workers to implement and practice the "Ten Steps to Successful Breastfeeding", scaling up Baby Friendly Hospital Initiative (BFHI) certified health facilities, and encouraging inter-sectoral collaboration and active participation between health workers, community members and support groups (e.g. NGOs, International agencies etc.) have been reported as facilitative factors for the protection, promotion and support of EBF (Cattaneo et al., 2004; Oluwatosin, 2007;WHO & UNICEF, 2017; WHO & UNICEF, 2018; WHO & UNICEF, 2019; 1000 DAYS, 2019; Alive and Thrive, 2019).

5.6 Identified barriers that inhibit protection, promotion and support of EBF by health workers

Over 70% of the health workers interviewed either agreed or strongly agreed that the following factors were barriers to the protection, promotion and support of breastfeeding: Shortage of health workers at PHCs; Lack of knowledge/training about breastfeeding management/poor counselling skills; Lack of awareness about the International Code of Marketing of BMS; Heavy workload at the PHCs; Lack of breastfeeding support groups for mothers; Insufficient BFHI certified facilities; Inadequate knowledge about BFHI recommended practices among health workers and Lack of funding for regular pre- and in-service training of health workers on breastfeeding management/counselling courses (See Table 8).

Furthermore, a summary of the major themes/responses generally identified through thematic content analysis included: (i) Negative influence from family members (e.g. grandmothers and mothers-in-law who believe that only breastmilk is not enough for the baby; husbands who believe breastfeeding will make their wives' breasts sag); (ii) Women with complications during delivery (e.g. post-partum haemorrhage etc.); (iii) Health status of the mother pre and post-delivery (e.g.

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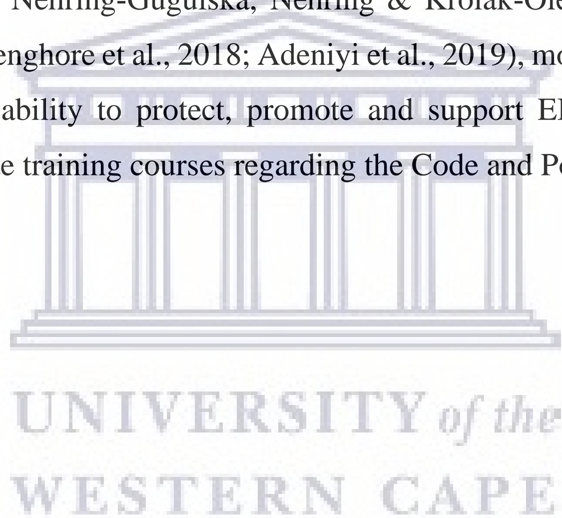
mothers with medical conditions like Hepatitis B, eclampsia, inverted nipples, weakness/tiredness post-delivery etc.); (iv) Lack of breastfeeding support groups; (v) Poor adherence to postnatal clinic appointments by mothers; (vi) Negative cultural beliefs about breastfeeding and taboos about breastmilk (especially colostrum); (vii) Shortage of adequately trained health workers at the PHCs; (viii) Poor adherence to postnatal clinic appointments by mothers; (ix) Heavy workload; (x) Communication/language barriers; (xi) Inadequate funds, work-tools and PHC infrastructure (See Table 9).

Although several studies on barriers to protection, promotion and support of EBF among health workers have been carried out both locally (Olaolorun & Laoyin, 2006; Utoo et al., 2012; FMOH, 2015; Ogbo et al., 2017) and globally (Dykes, 2006; Jacobs & Jackson, 2008; Brow, Raynor & Lee, 2011;Almeida, 2015; Nehring-Gugulska, Nehring & Krolak-Olejnik, 2015; Jama et al., 2017; Anstey et al., 2018; Senghore et al., 2018; Adeniyi et al., 2019), more research is still needed to address health workers ability to protect, promote and support EBF at the PHCs through improved awareness / update training courses regarding the Code and Policies related to IYCF.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CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

6.1 CONCLUSION

Health workers at the PHCs play an important role in the protection, promotion and support of EBF especially at the grassroot level since they are a mothers' first point of contact with the health system. Therefore, in order for them to fulfill their role effectively, it is of utmost importance that they are upskilled through the acquisition of in-depth and up-to-date training on breastfeeding management/counselling. Provision of funds should be made for the establishment of breastfeeding support groups in the PHCs as well as within the various communities in order to encourage the practice of EBF by mothers. More adequately skilled health workers should be employed at the PHCs to address the issue of staff shortage and work overload identified in this study. This intervention will help create more time for the health workers to provide optimum breastfeeding management/counselling services for mothers requiring such services.

In addition, health workers require regular training on the Code as well as policies and programmes related to appropriate IYCF practices (especially breastfeeding in the context of HIV) in order to prevent inaccurate dissemination of information to mothers. Policymakers and relevant stakeholders should also ensure that adequate mechanisms are put in place at the health facilities for implementation and enforcement of the Code in order to monitor the activities of infant formula manufacturers who have been reported as Code violators (ATNF, 2018a; Brewer et al., 2018). Furthermore, in order to implement the recommendations outlined in the call to action by the WHO/UNICEF Global Breastfeeding Collective to advocate for political support for breastfeeding, inter-sectoral collaboration between health workers and other stakeholders (i.e Government, health system, policy makers, mothers, their family members, community leaders, international agencies, NGOs and the general public) as well as adequate financing of policies and programmes that encourage breastfeeding and appropriate IYCF practices have been identified as facilitative factors for the protection, promotion and support of EBF (Rollins et al., 2016; WHO & UNICEF 2017;WHO & UNICEF, 2019).

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6.2 RECOMMENDATIONS

The following strategies are recommended to improve the protection, promotion and support of exclusive breastfeeding among health workers working in Lagos State PHCs based on the study findings and from the review of literature.

1. The Lagos State Ministry of Health (MOH) and the Primary Health Care Board (PHCB) should conduct regular pre- and in-service breastfeeding management/counselling training for the various cadres of health workers (Doctors, Nurses/Midwives, CHEWs) that will cover topics on in-depth management of intricacies of breastfeeding as well as appropriate IYCF practices in order to improve their capacity to protect, promote and support EBF effectively.
2. The Lagos State Ministry of Health and the PHCB should raise awareness and organize regular capacity building sessions for health workers about the 'Code' and other breastfeeding policies such as the Nigerian IYCF policy (FMOH, 2010), Ten Steps to Successful Breastfeeding, Guideline: Updates on HIV & Infant feeding (WHO & UNICEF, 2016) etc. In addition, these policies should be made easily accessible for use by all health workers, by printing and disseminating copies to the various health facilities. Furthermore, mechanisms should be put in place to curb violation of the 'Code' at the PHCs.
3. The Lagos State PHCB should establish breastfeeding support groups for nursing mothers at the various PHCs and within the communities for mothers who are not able to come to the PHCs.
4. The Lagos State Ministry of Health and the PHCB should integrate the services of IBCLC in breastfeeding management/counselling at the various health facilities in order to improve breastfeeding management/support for nursing mothers and also positively influence breastfeeding initiation, duration and exclusivity rates.
5. The Nigerian Ministry of Health needs to work towards scaling up the number of officially accredited BFHI certified Health facilities especially at the primary healthcare level since it is the first point of contact of mothers with the health system. This will help increase the coverage of skilled breastfeeding support provided for nursing mothers.

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6. Funding and adequate means of transportation should be provided for Community Health Workers to conduct home visits in order to provide breastfeeding support for mothers after they have been discharged from the health facilities.
7. Community leaders in partnership with NGOs, health workers and other nutrition stakeholders should organize awareness campaigns and sensitization programmes within the community especially aimed at building the capacity of female relatives of nursing mothers (especially the mothers-in-law and grandmothers) about the importance and benefits of allowing nursing mothers to practice exclusive breastfeeding. In addition, these female relatives and nursing mothers who have been found to practice EBF successfully for 6 months should be motivated with rewards (such as awards, important recognition within the community etc).
8. Government, philanthropies, companies from the private sector as well as influencers/ role-models within the society should collaborate and contribute funds to sustain and ensure scaling up /wide coverage of programmes /initiatives related to appropriate IYCF practices that have been initiated by international agencies such as UNICEF, WHO, Bill and Melinda Gates foundation, Alive and Thrive, Save the Children to mention a few.
9. More research is needed to evaluate the impact of improved awareness/ update training courses regarding the Code and Policies related to IYCF on the ability of health-workers to protect, promote and support EBF at the health-facilities.

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APPENDICES

APPENDIX 1: Diagram representing the hierarchy of Local Government Structure and health facilities in Lagos State

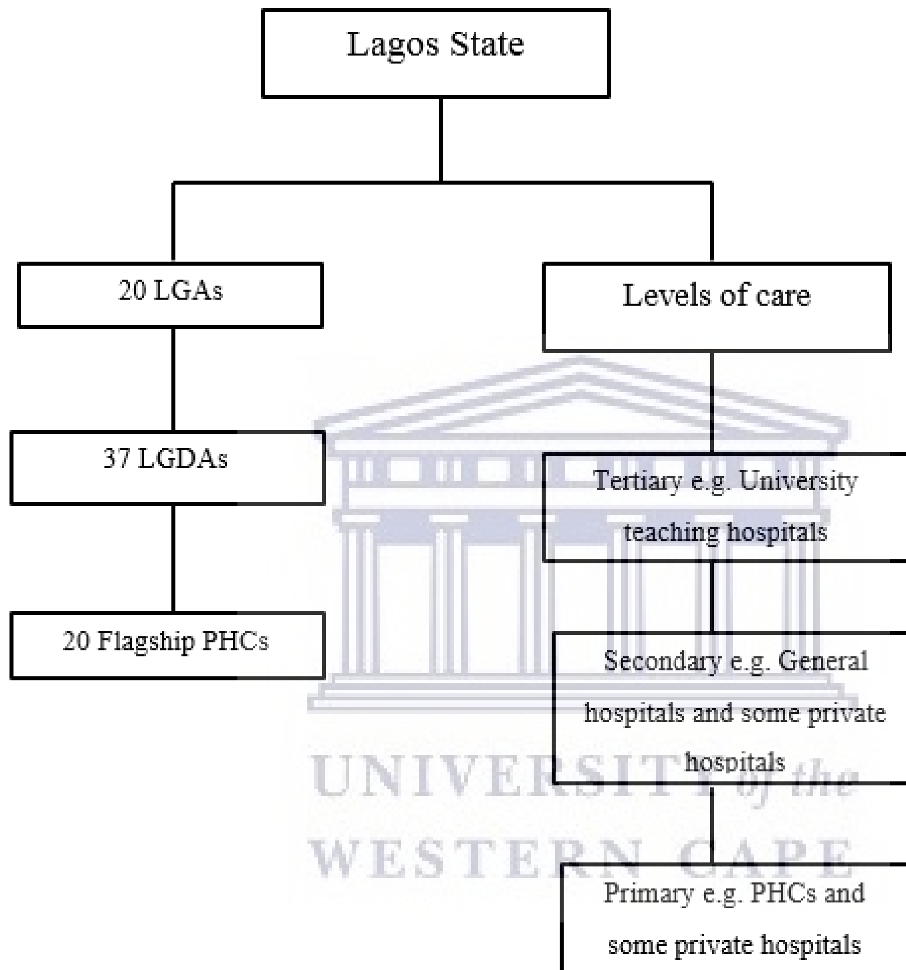

Figure 1: Hierarchy of Local Government Structure and health facilities in Lagos State

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APPENDIX 2: The LGAs and corresponding LCDAs in Lagos state

Table 1: showing the 20 LGA and 37 corresponding LCDA in Lagos state

Names of LGA	Names of corresponding LCDA
Agege	Orile- Agege
Ajeromi- Ifelodun	Ifelodun
Alimosho	Agbado-okeodo, Ayobo-Ipaja, Egbe-Idimu, Ejigbo, Igando-Ikotun, Mosan-Okunola
Amuwo- Odofin	Oriade
Apapa	Apapa- Iganmu
Badagry	Badagry West, Olorunda
Epe	Eredo, Ikosi-Ejirin
Eti- Osa	Eti-Osa East, Ikoyi-Obalende, Iru-Victoria Island
Ibeju- Lekki	Lekki
Ifako- Ijaiye	Ojokoro
Ikeja	Onigbongbo, Ojodu
Ikorodu	Igbogbo- Bayeku, Ijede, Ikorodu-North, Ikorodu-West, Imota
Kosofe	Agboyi- Ketu,Ikosi-Isheri
Lagos- Island	Lagos- Island East
Lagos- Mainland	Yaba
Mushin	Odi-Olowo/ Ojuwoye
Ojo	Iba,Oto-Awori
Oshodi- Isolo	Isolo
Shomolu	Bariga
Surulere	Coker-Aguda, Itire-Ikate

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APPENDIX 3: Participant Information Sheet

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21-959 2760, Fax: 27 21-959 3686

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

PARTICIPANT INFORMATION SHEET

Dear Participant

Thank you for your willingness to hear about this research. What follows is an explanation of the research project and an outline of your potential involvement. The research is being conducted for a mini-thesis. This is a requirement for the Masters in Public Health Nutrition programme which I am completing at the University of Western Cape. If there is anything you are unclear about or do not understand, please ask me. My contact details and those of my supervisor are stated at the end of this memo.

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Project title:

Factors that influence the protection, promotion and support of exclusive breastfeeding by health-workers in Lagos State Primary Health Care Centres.

What is this study about?

The purpose of the study is to investigate factors that influence the protection, promotion and support of exclusive breastfeeding by health-workers in Lagos State Primary Health Care Centres (PHCs). The main objectives of the study are to determine the experience and training with regard to the protection, promotion and support of breastfeeding among health-workers in Lagos State PHCs and their knowledge and attitudes regarding breastfeeding as well as to determine the factors that influence the protection, promotion and support of exclusive breastfeeding by health-workers in Lagos State PHCs.

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

If you agree to participate in the study you will be given this information sheet to keep. An informed consent will be obtained from you and then a questionnaire will be given to you to complete. This will take no longer than 30 minutes and will only focus on questions about the objectives mentioned above. The questionnaire will be administered by the researcher in free consulting rooms at your PHC or at any location which is most suitable for you within your PHC during working hours.

Would my participation in this study be kept confidential?

All records of your participation including your personal information and a signed consent form which I will need from you should you agree to participate in this research study will be kept confidential at all times. To help protect your confidentiality, the questionnaires used during this study will be locked away safely in a filing cabinet. Once the research report is completed the questionnaires will be stored for 5 years and then destroyed. There are no risks associated in participating in this research study.

What are the risks of this research?

The risk is very minimal due to the nature of the study, which involves answering questions. In addition steps will be taken to avoid any negative outcome.

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What are the benefits of this research?

There is no cost involved in participating except for the time you will be spending in completing the questionnaire. However, the findings from this research will contribute to a better understanding of the factors that influence the protection, promotion and support of exclusive breastfeeding by health-workers in Lagos State PHCs.

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

Your participation in this research is completely voluntary. You will be required to sign a consent form once you decide to participate. However, if you decide not to participate in this study, or if you stop participating at any point in time, you will not be penalized or lose any benefits to which you otherwise qualify. You have the right to withdraw from this study at any time without any negative consequences.

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

If you need any kind of assistance or health care, the researcher will make an appropriate referral to the Medical department at each PHC for professional medical/psychological management. However, the risk of any negative outcome is very minimal and steps will be taken to avoid any negative outcome.

What if I have any questions?

This research is being conducted by Adedolapo Gbabe, a part-time post-graduate student at the School of Public Health, University of the Western Cape. If you have any questions about the research study itself please contact:

Adedolapo Gbabe
Telephone number: +2348061284036
E-mail: dolapogbabe@gmail.com

I am accountable to Dr Ernesta Kunneke, contactable at:
Telephone number: 27 (0) 21 959 2760/2232
E-mail: ekunneke@uwc.ac.za

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This research has been approved by the University of the Western Cape's Senate Research Committee and Ethics Committee [BM18/7/25].

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APPENDIX 4: Informed Consent Form

UNIVERSITY OF THE WESTERN CAPE

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Tel: +27 21-959 2760, Fax: 27 21-959 3686

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

INFORMED CONSENT FORM

Title of Research Project: Factors that influence the protection, promotion and support of exclusive breastfeeding by health-workers in Lagos State Primary Health Care Centres.

The study has been described to me in a language that I understand and I freely and voluntarily agree to participate.

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My questions about the study have been answered. I understand that my identity will not be disclosed and that I may withdraw from the study without giving a reason at any time and this will not negatively affect me in any way.

Participant's name…………………………………………………...

Participant's signature…………………………………………………

Date……………………………………………………………………

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APPENDIX 5: Questionnaire

QUESTIONNAIRE

PART 1: Work experience and training on breastfeeding of the health-workers

1. Sex

(1) ☐ Male

(2) ☐ Female

2. Profession/cadre

(1) ☐ Doctor

(2) ☐ Nurse/Midwife

(3) ☐ CHEW

3. Name of PHC …………………………………………………………………………………

4. Department………………………………………………………………………………

5. Name of LGA/LCDA…………………………………………………………………………

6. How many years have you been working at your PHC…………………………………….

7. Please provide your general job description including the main responsibilities of your job

…………………………………………………………………………………………………

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…………………………………………………………………………………………………

8. Do you ever do breastfeeding education or counselling with mothers as part of your job?

…………………………………………………….

8i. If yes, please explain……………………………………………………………………….

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…………………………………………………………………………………………………...

8ii. If no, please explain why not……………………………………………………………

…………………………………………………………………………………………………

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9. Have you ever received training on breastfeeding management? ....

9i.If yes, please describe:

How long did the training last for? ………………………………

What was the name of the training? ………………………………………………………

……………………………………………………………………………………………..

10. Please name the policies and programmes related to Infant and Young Child Feeding or breastfeeding that you have heard of.

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11. Does your facility have a breastfeeding support group for mothers?

(1) ☐Yes (2) ☐ No

11i.If yes, do you refer mothers to this breastfeeding support group?

(1) ☐Yes (2) ☐ No

11ii.If no, please explain why your facility does not have a breastfeeding support group.

………………………………………………………………………………………….

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12. Please describe what your understanding of the International Code of Marketing of Breast-milk Substitutes is.

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12i. Are you aware of the national (Nigerian) legislation on the Code?

(1) ☐Yes (2) ☐No (3) ☐I don't know

12ii. Do you have a mechanism in place at your PHC for enforcing the Code?

(1) ☐Yes (2) ☐ No (3) ☐ I don't know

PART II: Knowledge of health-workers regarding breastfeeding

1.What is the first food a newborn baby should receive?

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2. How long should a baby receive nothing more than breastmilk?

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3. How soon after delivery should a mother put her baby to breast?

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4. How often should a baby younger than six months be breastfed or fed with breastmilk?

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5. What is the meaning of exclusive breastfeeding?

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6. Please mention at least 4 benefits for a baby if he or she receives only breastmilk during the first six months of life

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7. Many times, mothers complain about not having enough breastmilk to feed their babies. Please can you mention different ways a mother can keep up her breastmilk supply?

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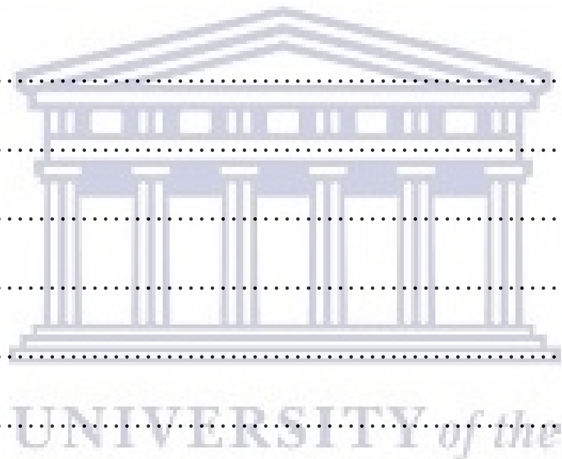
8. Please mention at least five physical or health benefits for a mother if she exclusively breastfeeds her baby.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9. Many mothers need to work and are separated from their baby. In this situation, how could a mother continue feeding her baby exclusively with breastmilk?

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10. At what age should babies start drinking water and eating other foods apart from breastmilk?

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11. Until what age is it recommended that a mother continues breastfeeding her baby (in addition to other foods and drinks)?

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(1) ☐ Six months or less

(2) ☐ 6-11 months

(3) ☐ 12-23 months

(4) ☐ 24 months and beyond

(5) ☐ I don't know

12. For a mother presenting at your PHC with breast engorgement, describe what you would do to manage her condition.

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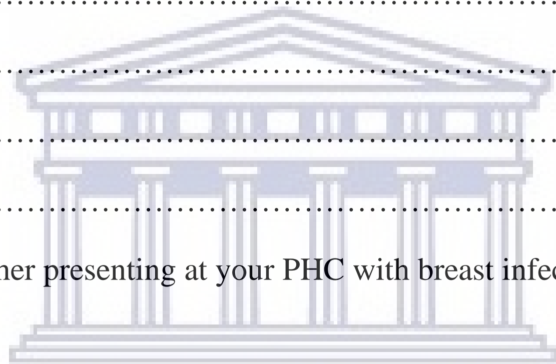

13. For a breastfeeding mother presenting at your PHC with breast infection (mastitis), how will you manage her condition?

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14. Transmission of HIV can occur through the following routes: Tick the correct options

(1) ☐HIV can be transmitted from an infected woman to her baby in utero

(2) ☐ HIV can be transmitted from an infected woman to her baby at the time of delivery

(3) ☐ HIV can be transmitted from an infected woman to her baby through breastmilk

(4) ☐ I don't know

15. Can HIV be transmitted from an infected mother on Antiretroviral drugs (ARVs) to her baby if she decides to practice exclusive breastfeeding for 6 months?

(1) ☐ Yes (2) ☐ No (3) ☐ I don't know

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16. What is the latest recommendation regarding HIV and breastfeeding?

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PART III: Attitudes of health workers regarding breastfeeding

1. What is your perception of exclusive breastfeeding?

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2. Do you think it is appropriate to breastfeed a baby exclusively for six months?

(1) ☐ Yes it is appropriate

(2) ☐ No it is not appropriate

(3) ☐ I don't know

2i. If not appropriate: Can you explain the reasons why it is not appropriate?

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3. Do you think it is appropriate to allow infant formula advertising (in form of calendars, stationery etc.) at your PHC?

(1) ☐ Yes it is appropriate

(2) ☐ No it is not appropriate

(3) ☐ I don't know

3i. If not appropriate: Can you explain the reasons why it is not appropriate?

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4. How confident do you feel in counselling an HIV positive mother on antiretroviral prophylaxis to breastfeed her newborn with breastmilk only for the first six months of life?

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(1) ☐ Not confident

(2) ☐ Ok/so-so

(3) ☐ Confident

4i. If not confident: Can you explain the reasons why you do not feel confident?

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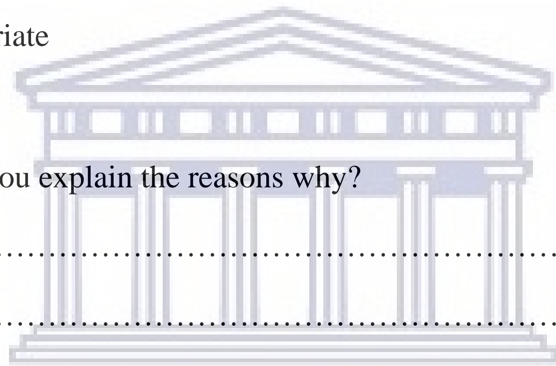
5. Do you think it is appropriate for health-workers to give free samples of infant formula to breastfeeding mothers?

(1) ☐ Yes it is appropriate

(2) ☐ No it is not appropriate

(3) ☐ I don't know

5i. If not appropriate: Can you explain the reasons why?



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PART IV: Factors that influence the protection, promotion and support of exclusive breastfeeding by health-workers

1. Can you mention some of the barriers/difficulties/challenges encountered by health-workers at your facility with regards to protecting, promoting and supporting exclusive breastfeeding at your facility?

i) Barriers with regards to educating pregnant women about exclusive breastfeeding include

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ii) Challenges with helping/supporting mothers to initiate breastfeeding immediately after delivery at the maternity ward include

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iii) Barriers with regards to providing follow up breastfeeding support to nursing mothers after discharge from the facility include

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How much do YOU agree with the following statements? (Please mark the statement that MOST CLOSELY corresponds with your own opinion). [Mark ONE answer per question only]

Table 1: Barrier to protection, promotion & support of exclusive breastfeeding

Barrier to protection, promotion & support of exclusive breastfeeding	Strongly Agree	Agree	No Opinion/ Uncertain	Disagree	Strongly Disagree
Lack of knowledge/ training about breastfeeding management/ poor counselling skills					
Lack of awareness about the International Code of Marketing of Breastmilk Substitutes (BMS)					
Poor enforcement of the Code of marketing of BMS					
Heavy workload at the PHCs					
Shortage of health-workers at PHCs					
Lack of breastfeeding support groups for mothers					
Insufficient BFHI certified facilities					
Inadequate knowledge about BFHI recommended practices among health workers					
Lack of funding for regular pre- and in-service training of health-workers on breastfeeding management/ Counselling courses					

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(1) What factors have (in the past) boosted your efforts to provide breastfeeding support to pregnant women or nursing mothers?

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(2) Do you have any suggestions for improving the protection, promotion and support of exclusive breastfeeding at your facility?

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How much do you agree with the following suggestions to improve breastfeeding protection, promotion and support by health professionals? (Please mark the statement that MOST CLOSELY corresponds with your own opinion). [Mark ONE answer per question only]

Table 2: Facilitative factors that boost health workers protection, promotion and support of breastfeeding

Facilitative factors that boost health workers protection, promotion & support of exclusive breastfeeding	Strongly Agree	Agree	No Opinion/ Uncertain	Disagree	Strongly Disagree
Regular training of health-workers on breastfeeding management & counselling skills					
More time available for health-workers to counsel pregnant women & nursing mothers					
Additional staff available and well trained to assist in providing education and support of breastfeeding					
Improved understanding of infant feeding in the context of HIV and PMTCT					
Availability of information, education & communication (IEC) materials (e.g. pamphlets, posters etc.) on breastfeeding and its benefits at Health facilities					
Facilitating contact between mothers and peer support groups					

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Do you have any additional comments or suggestions?

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Thank You.

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APPENDIX 6: Application to the Lagos State Primary Health Care Board

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21-959 2760, Fax: 27 21-959 3686

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

Application to the Lagos State Primary Health Care Board for approval to conduct research in Ministry of Health Primary Health Care facilities (to be sent once ethics approval has been obtained from the UWC BMREC).

Dr Gbabe Adedolapo Opeyemi
No 1 Supo Gbabe Street, Meiran
Lagos State.

18th Oct, 2018.

The Permanent Secretary
Lagos State Primary Health Care Board
5, Taylor Drive, Off Edmund Crescent, Yaba
Lagos State.

UNIVERSITY of the
WESTERN CAPE

Dear Sir/Madam,

Application for approval to conduct research on "Factors Influencing the Protection, Promotion and Support of Exclusive Breastfeeding among Health-workers in Lagos State Primary Health Care Centres (PHCs)"

I, Dr Gbabe Adedolapo Opeyemi humbly apply for approval to conduct research on "Factors influencing the protection, promotion and support of exclusive breastfeeding among health-workers" in 10 selected PHCs within 10 selected Local Government Areas (LGAs) in Lagos State.

These 10 LGAs/ PHC Facilities have been randomly selected:
1. Mushin LGA - Palm avenue PHC
2. Eti-osa LGA - Iru Victoria Island PHC
3. Surulere LGA -Coker Aguda PHC

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4. Agege LGA -Iga-Sango PHC
5. Lagos-Island LGA -Iga-Idugaran PHC
6. Ikeja LGA -Ojodu PHC
7. Shomolu LGA -Oloja PHC Bariga
8. Oshodi-Isolo LGA -Oshodi PHC
9. Ifako-Ijaye LGA -Ifako PHC
10. Lagos-Mainland LGA -Simpson PHC

This research study is to enable me complete the requirement for my Master's in Public Health Nutrition degree at the University of the Western Cape, Cape-Town, South Africa (distance learning programme). It is anticipated that the findings from this research will contribute to a better understanding of how to improve the capacity of health workers in Nigeria (Lagos State specifically) to provide nursing mothers with appropriate information and counselling on breastfeeding management and optimal Infant and Young Child Feeding practices. Furthermore, lessons from this research could potentially be applied to other areas in Nigeria or elsewhere.

Thank you in anticipation of your favourable response.

Yours Sincerely,

Dr Gbabe Adedolapo Opeyemi

Phone no: +2348061284036

Email: dolapogbabe@gmail.com

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APPENDIX 7: Ethics Clearance from University of the Western Cape

OFFICE OF THE DIRECTOR: RESEARCH
RESEARCH AND INNOVATION DIVISION

Private Bag X17, Bellville 7535
South Africa
T: +27 21 959 4111/2948
F: +27 21 959 3170
E: research-ethics@uwc.ac.za
www.uwc.ac.za

30 October 2018

Dr AO Gbabe
School of Public Health
Faculty of Community and Health Sciences

Ethics Reference Number: BM18/7/25

Project Title: Factors that influence the protection, promotion and support of exclusive breastfeeding by health-workers in Lagos State Primary Health Care Centres.

Approval Period: 24 October 2018 – 24 October 2019

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

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

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

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

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

PROVISIONAL REC NUMBER -130416-050

FROM HOPE TO ACTION THROUGH KNOWLEDGE.

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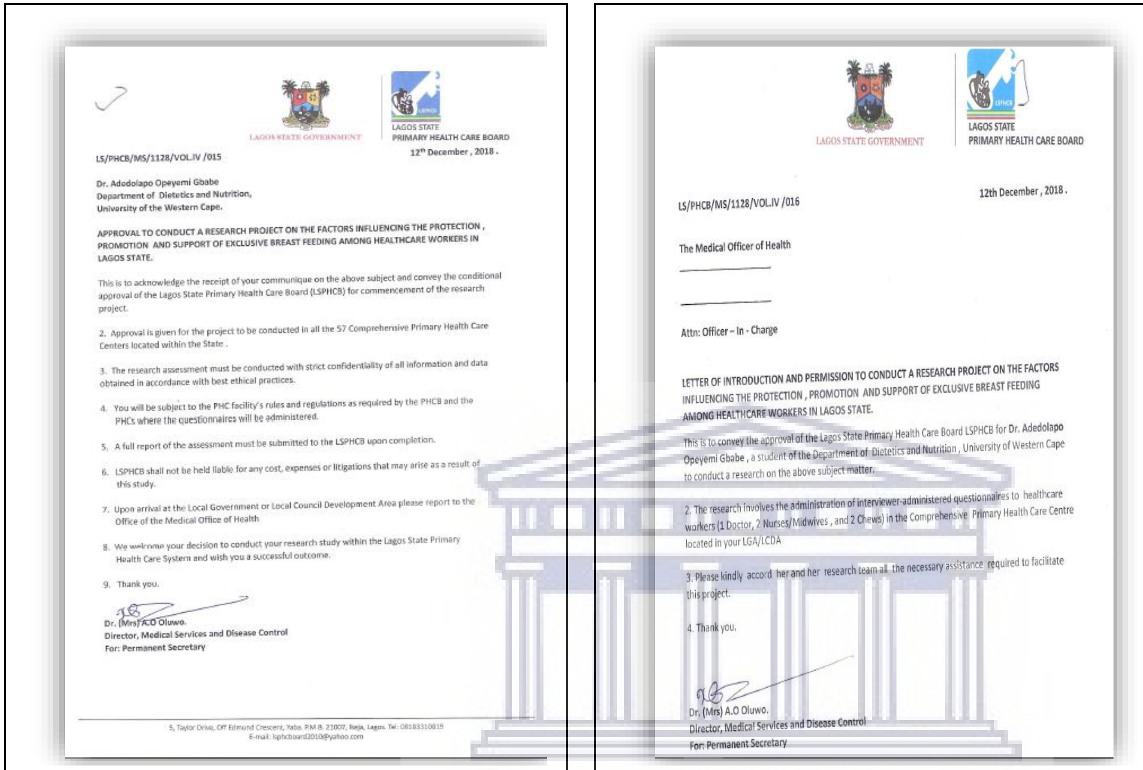
APPENDIX 8: Ethics Clearance from Lagos State Primary Health Care Board



LAGOS STATE GOVERNMENT

LAGOS STATE
PRIMARY HEALTH CARE BOARD

12th December , 2018 .

LS/PHCB/MS/1128/VOL.IV /015

Dr. Adedolapo Opeyemi Gbabe
Department of Dietetics and Nutrition,
University of the Western Cape.

APPROVAL TO CONDUCT A RESEARCH PROJECT ON THE FACTORS INFLUENCING THE PROTECTION , PROMOTION AND SUPPORT OF EXCLUSIVE BREAST FEEDING AMONG HEALTHCARE WORKERS IN LAGOS STATE.

This is to acknowledge the receipt of your communique on the above subject and convey the conditional approval of the Lagos State Primary Health Care Board (LSPHCB) for commencement of the research project.

2. Approval is given for the project to be conducted in all the 57 Comprehensive Primary Health Care Centers located within the State .

3. The research assessment must be conducted with strict confidentiality of all information and data obtained in accordance with best ethical practices.

4. You will be subject to the PHC facility's rules and regulations as required by the PHCB and the PHCs where the questionnaires will be administered.

5. A full report of the assessment must be submitted to the LSPHCB upon completion.

6. LSPHCB shall not be held liable for any cost, expenses or litigations that may arise as a result of this study.

7. Upon arrival at the Local Government or Local Council Development Area please report to the Office of the Medical Office of Health

8. We welcome your decision to conduct your research study within the Lagos State Primary Health Care System and wish you a successful outcome.

9. Thank you.

Dr. (Mrs) A.O Oluwo.
Director, Medical Services and Disease Control
For: Permanent Secretary

5, Taylor Drive, Off Edmund Crescent, Yaba. P.M.B. 21007, Ikeja, Lagos. Tel: 08183310819
E-mail: lsphcboard2010@yahoo.com

LAGOS STATE GOVERNMENT

LAGOS STATE
PRIMARY HEALTH CARE BOARD

12th December , 2018 .

LS/PHCB/MS/1128/VOL.IV /016

The Medical Officer of Health

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Attn: Officer – In - Charge

LETTER OF INTRODUCTION AND PERMISSION TO CONDUCT A RESEARCH PROJECT ON THE FACTORS INFLUENCING THE PROTECTION , PROMOTION AND SUPPORT OF EXCLUSIVE BREAST FEEDING AMONG HEALTHCARE WORKERS IN LAGOS STATE.

This is to convey the approval of the Lagos State Primary Health Care Board LSPHCB for **Dr. Adedolapo Opeyemi Gbabe** , a student of the Department of Dietetics and Nutrition , University of Western Cape to conduct a research on the above subject matter.

2. The research involves the administration of interviewer-administered questionnaires to healthcare workers (1 Doctor, 2 Nurses/Midwives , and 2 Chews) in the Comprehensive Primary Health Care Centre located in your LGA/LCDA

3. Please kindly accord her and her research team all the necessary assistance required to facilitate this project.

4. Thank you.

Dr. (Mrs) A.O Oluwo.
Director, Medical Services and Disease Control
For: Permanent Secretary

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WESTERN CAPE

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