ASSESSMENT OF KNOWLEDGE, ATTITUDE AND PRACTICES ON KENYA'S BREAST MILK SUBSTITUTES ACT (2012) AMONG NURSES IN MBAGATHI AND PUMWANI HOSPITALS, KENYA

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DECLARATION

This thesis is my original work and has not been presented for degree in any other University. I therefore declare that all the material cited in this write up which are not mine have all been dully acknowledged.

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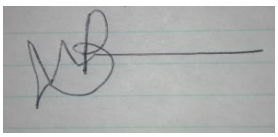
Declaration by the Supervisors

We confirm that that the work reported in this thesis was carried out by the candidate under our supervision.

Signature  **Date**: 28/09/2021

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DEDICATION

I dedicate this Thesis to my family and friends for the moral support they have offered so far. May God bless them.

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ABSTRACT

International Code on marketing BMS was developed by the World Health Organization, to protect lactating mothers and healthcare personnel from commercial pressure by BMS manufacturers. Nursing officers are obligated to promote, encourage, protect and acquaint themselves with their obligations in accordance with this Code. The research problem in this study was based on the scarce empirical evidence about the information and knowledge of the recommendations of the International Code on BMS by health workers in Kenya responsible for counseling mothers of new-born babies on breastfeeding. The main objective of this study was to determine the knowledge, attitude and practices of BMS Act among nurses at selected hospitals. The specific objectives were; establish demographic characteristics of nurses in Mbagathi and Pumwani Hospitals, Nairobi County, to assess the knowledge level of Nurses on the Kenya's Breast Milk Substitute Act; determine the attitude towards Kenya's Breast Milk Substitute Act and to examine the practices of the Kenya's Breast Milk Substitute Act among nurses in Mbagathi and Pumwani Hospitals, Nairobi County. This study adopted a cross-sectional descriptive research/study design. Simple random sampling was used to include nurses in the study. Yamane formula was used for the simple random sampling technique method to come out with a sample size of 200 Nurses for study. The study used questionnaire as the primary data collection tool. Descriptive statistics and chi-square tests were used to analyses data with the help of SPSS. The study found that majority (83.9%) of the respondents was Female. Majority (85%) were young being aged under 40 years. Slightly above half (49.7%) were married. All the respondents were trained with majority (65.6%) having acquired a college certificate. Over half (56.5%) of the respondents had more than 6 years of working experience. Majority [168, 90.3%] had a high knowledge on Kenya's BMS Act. The vast majority [185, 99.5%] of the respondents had a positive attitude towards BMS. Majority [153, 82.3%] of the respondents had good practices in regards to BMS practices. The level of education and nurses' knowledge were significant (p=0.000) in the study. The study therefore concluded that nurses had high knowledge, positive attitude and good practices regarding their role in EBF promotion and discouraging use of breast milk substitutes in line with the BMS act. The study recommended that; the government and other private organizations should carry out mass education to create awareness on BMS, in order to adopt the recommended infant and young children nutrition practices as postulated by the World Health Organization (2017). Policies and programs should be implemented to support breastfeeding initiatives for the purpose of upscaling exclusive breastfeeding in Kenya.

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ABBREVIATIONS AND ACRONYMS

BFHI	The Baby-Friendly Hospital Initiative
BMS	Breast Milk Substitute
EBF	Exclusive Breastfeeding
HIV	Human Immunodeficiency Virus
HCWs	Health Care Workers
HICs	High Income Countries
IC BMS	International Code of Breast Milk Substitutes
ICN	International Council of Nurses
IYCF	Infant and Young Children Feeding
KNH	Kenyatta National Hospital
LMICs	Low Middle Income Countries
MDG	Millennium Development Goals
MF	Milk Formula
RNs	Registered Nurses
SPSS	Statistical Software for Social Sciences
UNAIDS	The Joint United Nations Programme on HIV/AIDS
UNICEF	The United Nations Children's Fund
USA	United States of America
WHA	World Health Assembly
WHO	The World Health Organization

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Among the available intervention in mother and child heath, breastfeeding and exclusive breastfeeding in particular has been found to be positively impactful in reducing infant mortality, enhancing overall health and spurring mental growth and development (Quinn & Tanis, 2020). Breastfeeding a child according to World Health Organization (WHO, 2017) guidelines is known as optimal breast-feeding (EBF). It includes breast-feeding initiation within the first hour of birth which should be followed by breastfeeding on demand exclusively for at least 6 months. Exclusive breastfeeding has been defined as the giving just breast milk and nothing fir the first 6 months of its life apart from oral rehydration (Wanjohi et al., 2016).

Besides meeting an infant's nutritional needs, Mosquera et al. (2019) indicates that breastfeeding lessens mortality, dreariness and hospitalization from gastrointestinal and respiratory irresistible sicknesses. It is likewise contrarily connected with overweight and heftiness, high systolic circulatory strain, and type I and type II diabetes, while it is decidedly connected with further developed execution in knowledge tests in youth and puberty. EBF likewise helps the soundness of the mother with longer times of amenorrhea, lower paces of breast and ovarian malignancy and type II diabetes. Likewise, Wanjohi et al. (2016) states that, breastfeeding has been related with expanded

knowledge, training achievement at adulthood, usefulness, acquiring capacity and social turn of events.

Despite many benefits conferred by breastfeeding to both the mother and the baby, uptake of breastfeeding and more so exclusive breastfeeding is low. All around the world, less than forty percent of babies under a half year old enough are breastfed exclusively. Maonga et al. (2016) states that pervasiveness of EBF is low around the world (35 %), and in sub–Saharan Africa it ranges somewhere in the range of 22 and 33 %. In Kenya, four out of ten babies are as yet not breastfed exclusively and about 15% are begun on different food varieties sooner than a half year according to the 2014 Kenya Demographic Health Survey (Kenya National Bureau of Standards [KNBS], 2015). According to Mensah et al. (2017), most breastfeeding mothers use infant formula as a supplement or substitute for breast milk because they believe that despite the high cost of formula, breast milk is not enough to feed their babies.

One of the reasons for poor breastfeeding practices contrary to WHO recommendations is the availability of breast milk substitutes. Breastmilk substitute (BMS) refers to any replacement of breastmilk that is claimed to be equally nutritious and safe for the baby (Forsyth, 2013). Examples of BMS include cow milk and infant formula milk. According to Ching et al. (2021), inappropriate BMS marketing Bottles and pacifiers threaten the breastfeeding environment and exacerbate infant mortality, morbidity and malnutrition. This is on the grounds that substitutes are viewed as second rate compared to breastmilk; they do not have an equilibrium of supplements, they might be messy or wrongly ready and they don't secure against disease, and whenever sullied may convey

contamination, prompting higher death rates. To protect breast milk, form the threat posed by breast milk substitutes, several laws have been created. The most popular of these laws is WHO's International Code of Marketing of Breast-milk Substitutes also known as the code.

The International Code of Marketing of Breast-milk Substitutes was approved in order to protect and promote breastfeeding through the World Health Assembly by ensuring the reduced marketing and distribution of breast milk replacements (WHO, 2013). The Code was intended to assist reduce the negative impact on breastfeeding rates and duration of aggressive marketing and advertising, free samples and other promotional methods of infant food producers. The Code aims to safeguard BMS's most vulnerable, prohibiting publicity and other types of marketing. The Kenyan Parliament enacted the Breast Milk Substitutes (Regulation and Control) Act in 2012 to give effect to the Code by providing for marketing and distribution of substitutes for breast milk; safe, adequate nourishment for newborns by encouraging breastfeeding and appropriate use of substitutes for breast milk (Ministry of Health [MOH], 2021).

The code recognizes the significant role health workers have in its implementation. According to WHO (2021), health care workers such as doctors and nurses play an indispensable part to play in instructing mothers and different care givers about infant and young child feeding practices. It is additionally their moral, legitimate, and proficient obligation to ensure, advance, and backing ideal taking care of infants. HCWs specifically assume a fundamental part in getting ready, instructing, empowering, and supporting mothers to breastfeed and are instrumental in working with commencement

and continuation of breastfeeding. They are answerable for giving data about advantages of breastfeeding to assist the new mother with settling on a completely educated choice with regards to baby nourishment (Kyenkya & Marinelli, 2020). Nurses are therefore important stakeholder in implementation of the code. Nurses therefore require knowledge of the International Code, to safe guide and protect, encourage and promote, and also support and help breastfeeding mothers both at the hospital settings and community level, where they live and thereby, contribute to the global efforts in improving the nutritional star growth and development of infants and young children (Ching et al., 2021). The aim of this study was to determine nurses' knowledge level attitude and the practice on the recommendations of the BMS Act among nurses in Selected Hospitals In Kenya.

1.2 Statement of the Problem

Exclusive breastfeeding, one of the best natural resources, needs protection and promotion (Lutter, 2013). However, only a third of infants are exclusively breastfed for the initial a half year of life, and information from 37 nations show that the pace of elite breastfeeding for the initial a half year of life expanded from 34% to 41% and this is still worrisome as WHO recommends EBF for the first six months for all neonates (WHO, 2017). This low EBF rates may be attributed to information of BMS among BMS manufacturers. In Kenya, according to the United Nations Children's Fund (UNICEF ,2013), only a third (32%) of children are exclusively breastfed for the first six months and majority of the infants are passing up indispensable supplements they need in the primary long periods of life from the breastmilk.

The competitive advertising of BMS brings about expanded infant morbidity and mortality, particularly in developing countries. The WHO Code was intended to forbid such publicizing, yet this practice continues undeterred. All HCWs are required to advance and back breastfeeding, know and comprehend the Code, and report infringement and along these lines improve infants' well-being all through the world (WHO, 2013). All health workers therefore need to recognize inappropriate advertising of formula, to report violations of the Code and to support efforts to promote breastfeeding. In the prenatal phase, nurses who work with pregnant women play an important role in laying the groundwork for the effectiveness of breastfeeding (Haroon et al., 2013). Nurses play crucial in teaching mothers and other parents about feeding babies and small children. Nursing officers are obligated to promote, encourage, protect and acquaint themselves with their obligations in accordance with this Code (Witherspoon, 2013). Knowledge of recommendations of the International Code for IYC counseling is a professional obligation for all HCWs to guide the feeding-decision of others and to follow to the recommendations of the International Code, thereby, contribute to improving infant nutrition outcomes (Barennes et al., 2016).

The research problem in this study was based on the scarce empirical evidence about the information and knowledge of the recommendations of the International Code on BMS by health workers in Kenya responsible for counseling mothers of new-born babies on breastfeeding. Furthermore, no research has been done in Kenya to assess the awareness, attitudes and the practice among the HCWs on the BMS Act of Kenya as stipulated by the WHO and this study addressed this gap despite of the Act being in place.

1.3 Objectives of the Study

1.3.1 Main Objective

To determine knowledge, attitude and practices on Kenya's breast milk substitutes act among nurses in Mbagathi and Pumwani Hospital, Kenya.

1.3.2 Specific Objectives

(i) To establish demographic characteristics of nurses in Mbagathi and Pumwani Hospitals, Nairobi County.

(ii) To assess the knowledge level on the Kenya's BMS Act among nurses in Mbagathi and Pumwani Hospitals, Nairobi County.

(iii) To examine the nurses' attitude towards Kenya's BMS Act among nurses in Mbagathi and Pumwani Hospitals, Nairobi County.

(iv) To determine the practice on Kenya's BMS Act among nurses in Mbagathi and Pumwani Hospitals, Nairobi County.

1.4 Research Questions

(i) What are the demographic characteristics of nurses in Mbagathi and Pumwani Hospitals, Nairobi County?

(ii) What is the knowledge level of Kenya's BMS Act among nurses in Mbagathi and Pumwani Hospitals, Nairobi County?

(iii) What are the nurses' attitude towards Kenya's BMS Act among nurses in Mbagathi and Pumwani Hospitals, Nairobi County?

(iv) What are the practices level of the Kenya's BMS Act among nurses in Mbagathi and Pumwani Hospitals, Nairobi County?

1.5 Justification of the Study

Member states of the WHO, International organizations and Civil Society have presented strong statements and arguments, expressing concern over reported companies code violation and distributers with regard to contacting health workers and mothers during the WHA (WHO, 2017). The WHA and its member states have implicated healthcare workers in the inappropriate marketing, advertising and promoting of breast milk substitutes in health setting facilities. In the final resolution of WHA 2012, the Assembly called for an end to inappropriate marketing of foods for IYC, and has called upon companies and distributors to fully comply with the responsibilities as set out in the IC. Stipulated in the articles of the International Code are the responsibilities for member states/governments, manufacturers, communities and health care professionals to promote, protect and support appropriate nutrition for IYC. Nurses therefor have a responsibility to know their obligation under the Code.

For the purpose of restricting inappropriate promotion of formula that can interfere with breastfeeding, the International Code was adopted. Nurses can contribute to local and global efforts to fight malnutrition and improve child survival. Inappropriate marketing of infant formula in the hospital setting undermines the breastfeeding decision of the mother (Sharlin & Edelstein, 2010). This includes the provision of discharge packages containing formula, bottles and teats, a task often undertaken by nurses in maternity care settings. According to McLaughlin et al. (2011), such nursing activity is a method of direct and

inappropriate advertisement of artificial feeding to mothers, sending a message that hospitals and nurses endorse infant formula and particular brands. The nursing profession has an ethical obligation to ensure the protection of mothers of new-born babies from undue influence from inappropriate marketing in hospital settings and therefore need to equip them with the knowledge of the International Code in order to implement the recommendations and to not inadvertently become Code violators in hospitals (Colaceci et al., 2017).

1.6 Assumptions of the Study

In conducting this study, the researcher assumed that nursing practice was informed by, among other sources, knowledge of global health policies recommended by (WHO). Knowledge of the International Code and IYC nutrition as recommended by the WHO is relevant to child health and should influence nursing practice. It was assumed that knowledge of global health recommendations may occur at any category of the nursing, from a student nurse to a nursing manager or supervisor. The educational background, number of years in nursing practice and training within the hospital was assumed to influence the acquisition of knowledge, which impacts on practice. Nurses were assumed uniquely placed in hospitals to convey knowledge of health information, empower and encourage mothers of infants and child to follow recommendations of International Code among other appropriate global health recommendations. It was assumed that mothers will typically choose the best nutrition option for their infants and young children based on the support received from nurses who they trust.

1.7 Limitations of the Study

According to Polit and Beck (2009), limitations are problems or constraints encountered by a researcher in a study. A sample size of 200 was used in the study due to limitations of time and finance.

1.8 Definition of Terms

Complementary food Is any food, which can be manufactured or prepared locally and it can be used to complement an infant or used as breast milk substitute, when breast milk is insufficient to satisfy requirements of the infant nutritionally.

Exclusive breastfeeding Providing a newborn baby with nothing but breastmilk from birth as long as a half year old enough, without giving different fluids or solids, not water, except for oral rehydration arrangement, or drops/syrups of nutrients, minerals or medications.

Infant feeding practices It includes how the infants were fed in from birth to the first year of life of a child. At times, a child is used instead of infant.

Infant feeding formula Involves formulated industrially commercial formula with applicable standards accordingly,

which is meant for satisfaction of nutritional requirements of an infant in the first months of his or her life till complementary foods is introduced.

Infant Formula

Milk which is produced industrially and is meant for consumption of infant. Is always made of soya or cow milk. It duplicates the nutrient of natural human breast milk content. Because the chemical content properties of breast milk are still unknown exactly, 'formula' is used as an imperfect approximation necessary.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter reviews the literature about the study field. The researcher reviewed a variety of sources for studies, research publications, articles from journals related to the International Code and its implementation in WHO member states, with a focus on nurses and other health workers in the hospital. According to Polit and Beck (2009), literature review provides useful background for understanding the current knowledge on a topic. The researcher included historical literature to give context to the topic, refined the research problem and methodology and also identified concepts related to the topic.

2.2 Overview of Breastfeeding

Breastfeeding is the practice of feeding an infant milk through the mother's breast (Noel-Weiss et al., 2012). WHO (2013) and UNICEF recommend that newborns ought to be started breastfeeding inside the main hour of birth and be solely breastfed for the initial a half year of life – which means no different food sources or fluids are given, including water. Babies ought to be breastfed on request – that is as frequently as the infant needs, day and night. Explorations surveys from all over the world show that, breastfeeding is essential to an infant’s deep rooted wellbeing, and decreases costs for wellbeing offices, families, and governments. Breastfeeding inside the main hour of birth shields infants from contaminations and saves lives. Newborn children are at more serious danger of

death because of loose bowels and different contaminations when they are just to some extent breastfed or not breastfed by any means (Adugna et al., 2012).

As indicated by Venneman et al. (2009), breastfeeding diminishes the danger of abrupt baby death condition by up to half at all ages through early stages, while a 15-year-old accomplice study theorized, breastfeeding was related with assurance against maternally executed infant abuse, especially baby disregard (Strathearn et al., 2009). Relationship among breastfeeding and various persistent or non-transmittable infections including hypersensitivities, weight, diabetes, hypertension, malignant growth, and Crohn's illness have been seen by different examinations (Leon-Cava et al., 2002). Discoveries of precise surveys and meta-examinations recommend there is a defensive impact against overweight and weight from breastfeeding; this impact is more significant against heftiness than against overweight (Horta et al., 2013). During the 2009 World Breastfeeding Week, breastfeeding was endorsed as a lifeline and a shield that protects infants in emergencies (Kornides & Kitsantas, 2013).

In the underlying a half year of life, breast milk alone is the ideal food, giving the total of the enhancements, including supplements and minerals, an infant youngster needs, suggesting that no other liquid or food is required (Rollins et al., 2017). What's more, breast milk conveys antibodies from the mother that help battle ailment, shielding children from the runs and intense respiratory diseases. Breastfeeding likewise invigorates a newborn child's resistant framework and reaction to inoculation and, as indicated by certain examinations, gives intellectual advantages also (Shloim et al., 2015) Kept breastfeeding past a half year, joined by adequate amounts of healthfully sufficient,

sheltered and suitable strong, semi-strong and delicate nourishments, likewise guarantees great wholesome status and ensures against sicknesses. It has been assessed that ideal breastfeeding of infants under two years old can possibly forestall 1.4 million deaths in children under five in the every year.

Documentation of the evidence of the impact of breastfeeding on prosperity results is particularly huge at this moment, when stresses over transmission of HIV through breast milk are sabotaging programs supporting continued breastfeeding (Johnson et al., 2012). In the especially problematic conditions looked by HIV-positive women, the benefits of breastfeeding should be weighed against the peril of mother-to-kid transmission of HIV. Current approaches proceed with help breastfeeding, particularly selective breastfeeding, while at the same time guaranteeing educated decision on baby taking care of choices (Shloim et al., 2015). All HIV-tainted moms ought to get advising that incorporates general data about the dangers and advantages of the different newborn child taking care of alternatives and explicit direction in choosing the choice destined to suit their conditions; they ought to likewise approach follow-up care and backing, including family arranging and wholesome help (Binns et al., 2016).

Just around 33% (36%) of babies are only breastfed for the initial a half year of life (WHO, 2013). Current breastfeeding designs are still a long way from the suggested level and extensive variety exists across areas. In view of information from 37 nations with pattern information accessible (covering 60% of the building up total populace), the pace of selective breastfeeding for the initial a half year of life expanded from 34% to 41% over the creating scene somewhere in the range of 2000 and 2004. Basic updates were

made in sub-Saharan Africa, where rates drastically expanded from 15% to 32% during this identical time interval. Select breastfeeding rates in South Asia and the Middle-East/North Africa similarly extended from 43% to 47% and from 30% to 38% some place in the scope of 2000 and 2004, exclusively. Western and Central Africa, explicitly, experienced imperative redesigns with rates expanding from 4% to 22%, and Eastern and Southern Africa also showed upgrades with tip top breastfeeding rates extending from 34% to 48% (WHO, 2017). Rates remained generally consistent in East Asia and the Pacific during this time. The north-eastern some portion of Kenya sees the biggest level of selective breastfeeding through a half year. The beachfront piece of Kenya logs the littlest level of exclusive breastfeeding

Sadly, early suspension of breastfeeding for business breast milk substitutes, presentation of fluids, for example, water and squeezes, unnecessary supplementation and inadequately coordinated presentation of strong, semi-strong and delicate nourishments, frequently of low quality, is very normal (Brady, 2012). Despite the fact that progress has been made since the 2000s, earlier audits of worldwide patterns feature unassuming upgrades in the commonness of selective breastfeeding among infants matured under a half year. It is significant that consistently under food is trapped in about 40% of the 11 million passing of children under five in agricultural countries, and nonattendance of brief and selective breastfeeding in soonest organizes causes an extra 1.5 million of these passing (Piwoz & Huffman, 2015)

2.3 Overview of BMS and BMS Marketing

Infant formula is an optional feeding method to breast milk for mothers who choose not to breast feed. Article 2 of the Code (1981) defines characterizes baby formula as: "Breast milk substitute formulated industrially as per pertinent Codex Alimentarius guidelines, to fulfill the ordinary dietary prerequisites of babies up to somewhere in the range of four-and-a-half-year-old enough, and adjusted to their physiological attributes. Wolf (2003) traces the use of breast milk substitutes to the early bottle-fed their infants had three main options: canned Cow's Milk, proprietary infant food to be mixed with cow's milk or water and fresh cow's milk.

Cow milk was available in raw, certified, pasteurized, sterilized or modified form. Infants were also fed with other breast milk substitutes such as pap and panada, a mélange of meat and rice broth, cow milk, sugar and water in nursing bottles or sucking rags. Canned condensed and canned evaporated milk have also been offered to infants as breast milk substitutes. Pharmacies sold commercially manufactured powders to be mixed with water or cow's milk or both (Wolf, 2003). Beginning in the industrial revolution, safer water supply and sewerage systems, pasteurization of milk, availability of refrigeration and separation of mothers from the baby after birth contributed to the declining of breastfeeding, according to Piwoz and Huffman (2015). By the 1900's, besides commercial breast milk substitutes, many recipes of homemade substitutes were based on condensed milk. Evaporated milk had become the most common form of infant nutrition. Anderson et al. (2008) stated that 50% of toddlers received rice porridge before 6 months as well as diluted sweetened condensed milk.

SMA was introduced in 1919, Lactogen in 1920, Similac in 1924 and Enfamil in 1959. These became known as commercial formulas. Infant formula is superior to other BMS such as canned Milk cow, fresh cow's milk and proprietary infant foods, however it is inferior to breast milk (Fomon, 2001) and all healthcare workers should have proper knowledge on the same in order not to promote them. The recommendations of the Code state that BM can be replaced by infant formula during the first 4 to six months, and describes formula as a bona fide substitute (WHO, 1981). The marketing of Infant formula as suitable for partly or fully replacement of BM by companies and distributors is prohibited by the International Code and stipulated under the Scope in Article two (WHO, 1981).

Cow milk and other foods such as fruit juices and cereals are not considered bona fide substitutes. According to Barennes et al. (2008), products such as Bear Brand coffee creamer used in Laos are not considered a bona fide breast milk substitute. The WHO states that cow milk, vegetables, fluids, fruit juices, semi solids and solids given after six months are not considered breast milk substitutes but rather complementary foods (1981). These foods cannot be marketed for use by infants below 6 months and should not be marketed to undermine EBF and continued breastfeeding.

With the exception of the ready-to-feed type, infant formula requires dilution with clean water and a mother or caregiver who is able to follow the instructions provided. Over-dilution leads to inadequate intake of nutrients and calories, whereas dilution with little water leads to dehydration, diarrhea and intake of excess calories. Professional nursing

counseling is necessary in educating mothers who decide to formula-feed to promote food safety and to prevent morbidities and mortality associated with infant feeding.

It is noted that infants with medical conditions such as maple syrup, urine disease, galactosemia and phenylketonuria should not be given BM but rather specialized formula for infant (WHO, 2009). Infant formula is a bona fide BMS, according to the International Code and is source of nutrition which is important for infants who are not breastfed. Lawson (2007) stated that infant formula is a safe alternative to breast milk for mothers who are unable or do not wish to breastfeed, provided it is safely prepared and handled. In Switzerland, 100% of the population has access to improved drinking water. Tap water quality is as pure as bottled mineral water (Sterken et al., 2014). Improved water and good sanitation reduce potential risk factors for formula contamination.

The offer of BMS in LMICs is broad and expanding. Milk equation (MF)— the business term which incorporates IF, FF and TM—was the quickest developing sound and utilitarian food/savor class 2013, with monetary execution a long ways in front of caffeinated drinks and pre-and probiotic yogurts, the following best entertainers. All around the world, MF deals developed from US$2 billion out of 1987 to about US$40 billion out of 2013 and represented 66% of all child food deals universally. Of all the MF sold, about 39% are IF and 25% each are FF and TM. The excess 11% of items sold are uncommon milks, for example, for low-birth-weight babies. Different examinations revealed that MF deals were developing at 10% each year in 48 of 55 business sectors estimated.

According to the committee (Koletzko et al., 2005), the contents of newborn child formula should meet specific necessities, and advance typical development and improvement of the babies for whom they are proposed. The board of trustees presumed that newborn child formula should just contain segments in such sums that fill a dietary need or give additional benefits. The committee further recommended that infant formula should contain between 60 and 70 kcal of energy per 100ml, as well as macronutrients that are within the levels. Protein source for milk-based formulas is obtained from skim milk and includes major proteins of casein and whey. The fat of infant formula may stem from a number of oil sources. Vegetable oils such as coconut oil, safflower oil, and soybean oil, when combined in specific proportions, can be used as a suitable source of fat in infant formulas (Maduko et. al., 2005; Packard et. al., 2002). Coconut oil is a relatively saturated fat that is rich in medium- and long-chain saturated fatty acids, while safflower and soybean oils are good sources of polyunsaturated fatty acids.

According to Sterken et al. (2014), the WHO responded to the global decline in breastfeeding initiation and duration by producing several policies and global health recommendations (Sterken et al., 2014). The International Code is one of the policy recommendations aimed at addressing the influence of the marketing methods used by formula companies and distributers on breastfeeding. Nurses as HCWs play a critical role in breastfeeding advocacy and are mandated by the International Code Support, promote and protect breasting (WHO, 1981).

Recent studies about the International Code in member states available in English were explored. The International Code is a recommendation to all member states, aiming on

the inappropriate marketing of formula infant in a way that interferes with BF. The preamble of the IC refers to the Risk of infants in the first few months and as such usual marketing practices are rather unsuitable for infant formula as a commercial product. According to the WHO (2001), advertising to mothers of children less than six months is inappropriate for the following reasons: 'Advertising of infant formula as breast milk substitute for breast milk contends unjustifiably with typical normal and healthy breastfeeding, which isn't liable to publicizing, yet which is the most secure and least cost strategy for feeding a newborn child, and promoting baby formula as a substitute for breast milk favors clueless dynamic, bypassing the vital counsel and management of the mother's doctor or HCW.

Appropriate marketing infant food is the central theme of the International Code. The promotion of infant formula in hospitals has been documented in many studies emanating from member states. Bartick et al. (2017) stated that inappropriate promotion of formula is common in US hospitals, despite evidence that inappropriate marketing is a threat to breastfeeding. The International Code is very clear about how marketing of BMS inappropriately violates the Code. When formula for infant is promoted as suitable for total replacement or partial for BM, it amounts to a violation (WHO 1981). Nurses' knowledge of the International Code is therefore a professional responsibility to assist mothers with informed decision-making.

Breast milk substitute makers and at times likewise merchants, wholesalers, and retailers elevate their items straightforwardly to and through wellbeing frameworks and suppliers by offering allowances to go to supported gatherings, unconditional presents (with

organization logos), and giving free equation in maternity release packs (Nelson et al., 2015). Organization delegates have additionally, before and as of late, offered monetary motivating forces to wellbeing laborers for advancing their items in nations as assorted as Ukraine, India, China, Indonesia, the Philippines, Togo and Burkina Faso, and different pieces of Central and West Africa (Merewood et al., 2010). In certain examples, wellbeing laborers have furnished organizations with contact data on new births with the end goal of item advancement, infringing upon protection arrangements, as announced as of late in China. The effect of these motivations on breastfeeding practices has not been deliberately evaluated due to their "in the background" nature. More noticeable instances of BMS advancement inside wellbeing frameworks, for example, instructive pamphlets and banners with organization brands showed in wellbeing offices, are additionally ordinary and might be deciphered as unsaid supports for organizations and items (Tarrant et al., 2015).

Early utilization of IF meddles with nursing initiated breastmilk creation, conceivably transforming this insight into a reality (Sadacharan et al., 2014). Among mothers with the expectation to breastfeed, utilization of IF during maternity stays is prescient of abbreviated term of selective breastfeeding and any breastfeeding in a scope of studies. Arrangement of free IF in medical clinic release packs containing special materials and child items is perhaps the most widely recognized BMS advertising rehearses in the United States. Its predominance somewhere else is obscure (Nelson et al., 2015). A public report tracked down that 81% of US moms revealed getting IF containing release packs in the clinic, and a review of more than 3200 maternity medical clinics announced that 91% conveyed if in organization supported release packs. A 2000 Cochrane survey

of 9 randomized examinations on the effect of IF-containing release packs announced an adverse consequence on elite breastfeeding. Interestingly, moms not getting release packs with recipe or coupons were 58% bound to breastfeed solely for a half year contrasted with the individuals who got release sacks containing equation or coupons for it. Showcasing of BMS Directly to Consumers Data because of direct to purchaser promoting on breastfeeding rehearses are restricted to a modest bunch of studies that connection review of BMS commercials to commonness of explicit taking care of choices (Tarrant et al., 2015).

An examination in the Philippines tracked down that 59% of moms of small infants reviewed an IF commercial, principally through TV, and that equation use was twice as regular among the individuals who reviewed the promotions contrasted with the individuals who didn't see them (Sobel et al., 2012). Utilization of IF was additionally connected with a 6-overlay higher probability of breastfeeding discontinuance before a year old enough, however different components including reverse causality might be mindful to some extent for this distinction. In Vietnam, scientists tracked down that 80% of moms announced seeing ads for IF on TV in the previous 30 days, while just 39% referenced seeing any breastfeeding data, yet taking care of practices by TV viewership was not detailed (Nguyen et al., 2013). Scientists in Laos PDR report that Thai TV commercials are affecting moms' perspectives toward recipe taking care of, and this impact is related with a 75% decrease in selective breastfeeding (Kittisakmontri et al., 2019).

Breast milk substitutes are likewise elevated to new moms by means of different methods, like home visits or through the mail (Inoue et al., 2013). In an examination in China, 40% of moms detailed accepting free BMS tests after conveyance, with the greater part (61%) coming from BMS organization agents. A US study tracked down that 55% of moms got free recipe via the post office from makers, a training not denied in the United States (Appleton et al., 2018). Organizations are progressively utilizing the Internet and web-based media, including Facebook pages, Twitter, You-Tube recordings, and portable applications to advance and sell their items, including web based requesting and coupons for nothing or scaled down cost BMS.68 The impact of these outlets on breastfeeding conduct and BMS use has not been estimated however is probably going to increment as Internet access, web based business, and mining of online purchaser information develops, and in light of the fact that it is to a great extent unregulated (Abekah-Nkrumah et al., 2020)

According to Stang et al. (2010), pregnant women and mothers are primary targets of formula marketing which often contain health statements or claims such as improvement in brain development, which may influence the mothers' feeding decision of the infant. The reviewed results on randomized controlled trials on infant formula complemented with DHA, a fatty acid, and concluded that the more of DHA haven't significant effect on the development of infant. Five hundred violations of the Code by companies and health workers have been reported globally in 46 countries (Brady, 2012). In developed countries such as Switzerland, many infant formula companies have been reported to provide meals free, grants research and financial support to nurses in order to attend conferences. Koletzko (2011) reported on a company accused of distributing free

packages containing feeding bottle and teat to mothers of four- to six-week-old infants. The implementation of the Code is not only the responsibility governments or member states and the infant formula companies, but also the responsibility of health care systems and nurses such as nurses. Chung et al. (2008) in South Korea, recommended the education and advocacy of the benefits of breastfeeding to health workers who are in maternity units. For this study, infant morbidity and mortality are outcome measures of inappropriate infant feeding practices. Parry et al. (2013) stated that BM is the advisable and the best means of infants nutrition for up to six months old. It contains substances which help infants to resist infections and other diseases. Breastfeeding lowers infant mortality by reducing the taking in of infectious bacteria.

The urgency for member states, civil society and the WHO to develop an IC originated in early 1970's. At 27th WHA, a global decreases in breastfeeding rates with raising morbidity and mortality was noted by many member states, and among factors cited as contributing to this decline was the inappropriate promotion of manufactured breast milk substitutes (WHO, 1981). Brady (2012) stated that the International Code stemmed from the association of the rise in infant morbidity and mortality with the competitive marketing of formula by companies in the well-developed world, where they sought new markets. Acute poverty, lack of education and poor hygienic conditions contributed to poor formula preparation and use, which resulted in mortality in children and infants from diarrhea pneumonia and malnutrition.

The Baby Killer, a famous report on infant malnutrition and deaths as a consequence of inappropriate use of infant formula, highlighted health consequences associated with

formula feeding in developing countries where mothers without the knowledge, resources or the facilities (clean water supply, proper hygiene, fuel, clean utensils, and storage facilities) prepare formula for their infants and young (Basch et al., 2013). The report raised concern globally about morbidity and mortality as a cause of unsuitable use of formula infant in developing countries. Many infant formula companies were sued for label. The regulation of practicing of marketing of the infant food industry was consequently advocated for by civil society organizations and member states. The WHO and UNICEF in 1979, held a global meeting on IYC Nutrition and it was concurred that there ought to be an International Code of Marketing of baby formula and other breast milk substitutes. After counsel by the Director General of WHO with part states and every single concerned gathering in 1979, the International Code was embraced (WHO, 1981). Part states are thusly expected to advance, secure and support breastfeeding by embracing and actualizing the proposals of the Code as per their individual administrative structure to guarantee that breast milk substitutes are not marketed irresponsibly in countries and that accurate information is given to mothers on appropriate infant nutrition (Berry et al., 2012)

Infants in the developed world have a right to the best nutrition outcomes as those in developing countries and should enjoy equal rights to protection from inappropriate marketing practices that has been shown to impact on mothers' feeding decisions. Infants who are not breastfed are placed at vulnerable for increased morbidity (Stang et al., 2010). The impact of marketing of formula through the media and how it affects mothers' infant feeding decisions has been studied. Formula is advertised as the elite choice of infant feeding, often associated with modernity. Advertising and health workers attitude

have been shown to influence mothers' infant feeding decision. Mothers' exposure to commercial advertisement of infant formula increases the risk of breast-feeding stoppage in the first two weeks (Kaplan & Graff, 2008).

The opportunity to distribute free infant formula packages to mothers of new born at hospitals prior to discharge is a marketing strategy. Rosenberg et al. (2008) stated in their study that mothers of newborn who have initiated breastfeeding while at the hospital have been provided with formula packages before discharge. This marketing strategy discourages mothers from exclusive breastfeeding. Chen et al. (2015) noted that 91% US hospitals distribute infant formula samples in violation of the International Code. Partnerships with hospitals and their staff create brand loyalty; some of the marketing efforts include providing free formula for hospital use, gifts to staff in the form of fellowships and conferences as well as funds to support supplies.

2.4 International Code of Marketing of Breastmilk Substitutes

The International Code calls on member states to implement the recommendations according to their own legislative frameworks (WHO, 2012). Kenya adopted the International Code in 2007 on a voluntary basis in a form of a Code of Conduct, to rule the promoting of breast milk substitutes, dealing with labeling, contact with mothers, physicians and health workers (Mohamed et al., 2020). The key aspects of the International Code's recommendations are as follows: no advertisement of formula and other products under the Code to Public (Article 5), no Free samples of formula/products to breastfeeding mothers (Article 5), no promotional activities in relation to marketing of formula in health facilities Article 6). It is recommended that health Facilities should not

be used to promote products (Article 6), no personnel from manufacturers or distributers are permitted to counsel mothers (Article 5), no pictures of infants idealizing formula are permitted on labels of products (Article 4). Information given to health workers concerning formula must be have facts and scientific (Article 7), no material or financial inducement to encourage products should be given by manufacturers or distributers to health workers (Article 7), message on artificial feeding must include importance of breastfeeding and dangers and the cost of formula feeding on the labels (Article 4). It is recommended that health personnel (workers) should promote and protect breastfeeding familiarize themselves with their mandate under the Code (Article 7). Manufacturers should disclose to institutions which health workers they have sponsored to attend conferences, given research grants, etc. (Article 7) (WHO, 2017).

According to the World Health Organization (2013), each member state should act on the IC through legislations, regulations, measures such as national policies or codes. Member states are to ensure that processes for implementation, monitoring and reporting of violations are in place. Published information on the state of the implementation of the IC in countries permitted the researcher to appreciate the length to which countries have followed in accordance with the Code. For over 30 years since the IC was implemented at the WHA, it has not been enacted into national laws or provisions by all member states. The Code is enforced by some member states, despite the fact that infant poor nutrition and infant deaths remain a priority in public health and a major component of the Millennium Development Goals. Of the 194 member states, 37 countries have enacted legislation on the Code. 47 nations have adopted laws on many of the provisions of the IC on BMS; the majority of these are developing countries. 19 countries have enacted

legislations on a few of the provisions. Switzerland and 7 other member nations have taken up some of the provisions through non-binding measures. 14 member states have adopted all the provisions however they remain non-binding. The remaining 46 countries have not yet enacted the Code. For instance, in Iran, Zarshenas et al. (2020) stated that the WHO Code is highly favored by the Iranian Government. Iran has adopted many of the provisions including no presents/gifts of formula samples to health workers, no advertising of formula to the public, and no direct or indirect samples which are free or gifts to mothers or relatives. The study showed a downward trend with exclusive breastfeeding at four and six months, from far meeting the recommendations of WHO.

2.5 EBF Promotion

Breastfeeding promotion can greatly affect the decision of a mother to breastfeed in the prenatal setting. Prenatal counseling boosts breastfeeding rates and helps detect possible trouble areas. In the prenatal phase, nurses who work with pregnant women play an important role in laying the groundwork for the effectiveness of breastfeeding (Haroon et al., 2013). As a deterrent to breastfeeding, women cite a shortage of help from health providers. Breastfeeding education, meanwhile, is not deemed to be necessary for basic nursing education, and students are not sufficiently trained to help women who are breastfeeding (Folker-Maglaya et al., 2018).

Moudi et al. (2016) study was conducted to compare the effect of breastfeeding promotion interventions on exclusive BMF among primiparous women. Education and peer encouragement in this sample raised the number of women who fed breast milk solely, maintained exclusive breastfeeding and increased the length of breast milk.

Family assistance is more important than schooling and support from peers. Such results found that in exclusive BMF length, peer help and health care provider education were comparable. However, in raising the exclusive BMF limit, peer support was more successful than education from health care providers. Compared to standard treatment, both peer support groups and the curriculum of health care providers had an effect on extending the rate of exclusive breastfeeding.

Graca et al. (2011) study aimed to analyze the contributions of the Primary Healthcare nursing interventions, with primiparae in the promotion of breastfeeding. The strategies and intervention started in preparatory phase extended into postpartum period, by use of multiple methods (consultation individual, parenting/childbirth courses training and home visits) and the context of intervention (health care and home) had a substantial influence on the length of breastfeeding that was not confirmed in the prevalence.

Moimaz et al. (2017) sought to find out the community health workers Knowledge on practices and promotion of breastfeeding. The findings of the present study pointed to a weakness in the execution of courses on this subject to qualify them. 45.95 percent approximately of community health workers indicated they may feel unable to provide mothers realistic advice on breastfeeding, confirming the lack of scientific awareness regarding this activity. The data obtained from the study shows that community health workers have limited knowledge of breastfeeding practice and promotion, but they also lacked certification courses to permit them to guide up on according to nursing mothers also there was bulk of the post-natal home visits and lateness.

Raha et al. (2010) compared the difference between mother's and staff nurse's perception towards the roles of nurses in promoting exclusive breastfeeding in Bangladesh. The findings of the current study found that staff nurses registered a higher score than mothers for overall understanding and for all sub-scales of nursing positions in supporting exclusive breastfeeding. The mothers indicated a modest degree of the nurse's role in encouraging exclusive breastfeeding when the views of the staff nurse were at a high level. In this study, the perception of staff nurses regarding the role of nurses in fostering breastfeeding was high, whereas the perception of mothers was moderate. The views of the staff nurse varied considerably from the expectations of the mother.

Chanapai et al. (2014) investigated the predictive power of age, knowledge, attitude, self-efficacy, spousal or relative support, and nurse support on 6-weeks exclusive breastfeeding in prim parous postpartum mothers. The results found that 26.7 percent of the difference in 6-week exclusive breastfeeding could be explained by age, experience, temperament, self-efficacy, spousal and nurse help. Only spousal help and self-efficacy, however, were key predictors. The findings showed that nurses could improve the self-efficacy of mothers by offering breastfeeding awareness and experience.

2.6 Nurses Knowledge on Breast Milk Substitutes Guidelines

Knowledge of the International Code, for this study purpose, was the acquiring of facts and information about the International Code obtained either through formal nursing education or professional experience for use in infant nutrition counseling. Beake et al. (2017) stated that the focus of teaching is on outcomes that demonstrate how much nurses

have gained to date skills and knowledge with competent and confident through rendering of services in a variety of settings.

Cattaneo et al. (2010) in their assessment of the ongoing of the promotion of breastfeeding protecting it and breastfeeding support in Europe noted little improvement International Code in implementation. . The rates of breast feeding in Europe are falling short of global recommendations. Nurses are stakeholders in the implementation of Code (WHO, 2013). Their knowledge of the recommendations of the Code has a direct impact on both local efforts at country level and global efforts in improving the life of IYC. Information underpins nursing practice defines the profession. Article seven of the International Code is about health workers encouraging and protecting breastfeeding. Cattaneo et al. (2010) stated that public health care policies and the health care systems are determinants of breastfeeding. Health care systems provide access to ANC, quality assistance during giving birth and in the first few days afterwards and professional support for counseling and lactation support.

Findings of McLaughlin et al. (2011) indicate that pediatric nurses recognize that both mother and infant are best at breastfeeding, but they can be confused about the physiology of lactation and attachment. They may be unsure about how to help a sick, injured infant's breastfeeding mother. Information deficiencies have been established in key areas relating to common issues with breastfeeding, attachment, management of milk supply, terms, the effect of nutrients (fluid or formula), preventive benefits, and recommendations and methods to help them. These may make the difference between sustained breastfeeding, hospitalization of babies and teenagers, the rehabilitation of

children who are sick and wounded, and could have a detrimental effect on the sufficient care given to breastfeeding mothers. Local, national and foreign laws, guidelines and recommendations were accessible to relatively few participants. Support is given to the need to implement successful policies to disseminate policy improvements, guidelines and guidance and to develop education and reference resources primarily directed at strengthening nursing awareness and expertise to support breastfeeding mothers of sick, hospitalized babies.

The International Council of Nurses based in Geneva (ICN), in its position statement on the Code in 2004, strongly supports the International Code and states that breast-fed infants have a high survival rates and low morbidity incidences. Nurses, according to ICN, are mandated professionally to actively advance the provisions of IC (Kahlert et al., 2018). Horta et al. (2013) stated that the determinants of the mothers' feeding decision on infant are based on information and support received during the periods of pregnancy, child birth and postpartum. The International Code forbids company employees from advising mothers about infant feeding as it undermines exclusive breastfeeding (WHO, 2013). A health care worker who distributes promotion materials, such as discharge packages, is "coincidentally reinforcing the formula advancement message, conceivably to the detriment of a mother's plan to breast feed (Muchacha & Mtetwa, 2015).

Several studies have shown that nurses' knowledge of the Code in member states is inadequate to protect breastfeeding. Bonner and Lloyd (2011) stated that one-third of health facilities in Glasgow surveyed displayed non-compliant materials from manufacturers. Likewise, Battersby in her assessment of maternity specialists'

information on formula taking care of likewise noticed that numerous birthing assistants came up short on the information on formula milks and that there is constrained help accessible for moms who choose to formula-feed (Folker-Maglaya et al., 2018). Similarly, Laksman et al. (2009) in their continuous assessment of studies focusing on mothers' experiences of bottle feed in the United Kingdom, stated that while milk breast is the gold recommended for infant feeding and always should be encouraged, for mothers who decide to feed by bottle, there is inadequate provision of information and support, which may expose infants at danger. Horta et al. (2013) noted that for a large number of women, access to health professionals for support and information about formula feeding is restricted, which contributes to poor infant feeding decisions.

Goga et al. (2012) noted that although mothers' decision regarding infant feeding might be impacted by medicinal services experts, information on breast feeding among them is frequently deficient. In Australia, McGuire et al. (2018) stated that the many mothers did not follow put down guidelines exclusive breastfeeding nor appropriate timing of introducing complementary foods. Formula feeding was the reason cited for the discontinuation of breastfeeding, and infant cues and behavior were the reasons for early introduction of solid foods. Tsutaya et al. (2019) in Japan stated that health care providers have low level of knowledge of the Code and low level of support for breastfeeding, based on responses to a questionnaire developed by the International Board of Certified Lactation Consultants on the Code and compliance in hospitals. Only 18% of obstetricians had ever heard about the Code. The study recommended a need for health care providers to increase their knowledge of the International Code in order to promote breastfeeding.

Similarly in Pakistan, Piwoz and Huffman (2015) stated that 79.8% of the health care personnel did not have knowledge of the International Code and 70.5% were not knowledgeable of the national breastfeeding law. What the researchers found interesting was that the minority who knew of the national law was more likely to report receiving promotional gifts from distributers. In South Africa, Nieuwoudt et al. (2019) in infant feeding policies assessment of programs in four of the African countries noted that health workes were receiving free formula samples and this regards to violation to the International Code. Recently this year, the Department of Health of South Africa released draft regulations on foods for infant and young children (No R184) for public comments. The purpose of the draft regulations is to promote safe foods by setting standards and by restricting the use of inappropriate marketing practices. According to the Department of Health, the regulations was fit to the public by reducing conflict of interest by nurses and ensuring that parents receive objective information to help them to decide on informed decisions about nutrition of the infant.

Aguayo et al. (2013) in West Africa noted that companies were violating the Code by giving free samples and donations to mothers. Eighty five percent of the health workers in Togo didn’t know about the presence of the International Code. In 2018, they returned to West and Central Africa to monitor progress and noted that 50% of the 24 countries have laws, decrees or regulations that implemented most of the provisions of the Code. Nurses' knowledge of the International Code is therefore a professional responsibility to protect mothers from misinformation about appropriate infant feeding to enable informed decision-making.

2.7 Nurses' Attitude towards Breast Milk Substitutes Guidelines

Available studies suggest that nurses' attitudes affect their breastfeeding promotion role and their compliance to the code. According to majority of studies, most nurses do not see it as their role while others do not think it is important. Daniels and Jackson (2011) showed adequate knowledge and interpretation of the prescribed concepts of the BFHI. Rooming-in could be defined by a total of 56.6 percent of the workers, 47.2 percent could identify the BFHI elements, and 52.8 percent could name three baby-friendly care activities and routines. Eighty-nine percent of the nursing staff were able to display the baby's proper location for breastfeeding, and 91.1 percent were able to explain the baby's correct attachment to the breast. The right-hand milk-expressing strategy was properly displayed by just 8.9 percent of the breastfeeding workers, 35.6 percent knew about the correct handling of sore nipples, and 22.2 percent knew how to treat engorgement.

Weshahy et al. (2019) assessed knowledge, attitude and practice (KAP) among medical staff on regarding breast feeding management and and also to come ou with to needs for improving their practice in management of lactation . Attitude percent score of physicians in university hospitals (63.83 ± 12.68) was not significantly lower than them in MOH regarding breastfeeding (70.92 ± 17.37). Attitude percent score of nurses in university hospitals (60.75 ± 4.92) was significantly lower than them in MOH (65.67 ± 2.74) regarding breastfeeding.

In Quinn and Tanis (2020) study, statistically important variations in mean scores were identified when the physician scores were divided by specialization. Pediatricians had poorer ratings on breastfeeding behavior. Mean scores for breastfeeding attitudes and

awareness, on the other hand, were favorable for doctors and nurses irrespective of the field of specialty, with no statistically relevant discrepancies identified. As per the authors, while the practices, assumptions, and familiarity with breastfeeding of pediatricians ought not be viewed as the essential driver of the low paces of supported elite breastfeeding in the post pregnancy period by the association, this examination offered a chance for investigation that we didn't quickly consider when we took apart our prosperity measurements pertinent to select breastfeeding.

Ikobah et al. (2020) study aimed at assessing health workers' attitude towards infant feeding. This study found unsatisfactory level of attitude of health workers towards appropriate infant feeding practices. There was a positive outlook towards mothers breastfeeding in fewer than 50 percent of the diverse occupations represented in this report. This creates an obstacle for mothers to achieve optimal breastfeeding and supportive feeding activities, as most of them turn to health professionals for meaningful assistance. Health workers' outlook towards baby formula feeding babies who are more likely to be overfed than breastfed babies was suboptimal, with about 38% of health workers not committing to this. Therefore, this suggests that most health workers in this sample will not be able to advise and direct mothers on the best feeding choice that would most likely facilitate optimal weight gain for exclusive breastfeeding in children.

Spear (2014) results found that participants were largely educated about and respectful of teenage mothers' breastfeeding. Some nurses, however, did not realize that there are dietary discrepancies between breast milk and baby formula, maintained the tradition of setting time limitations for breast-feeding, and suggested that because of immaturity and

lack of dedication, they were dubious about the capacity of young mothers for breastfeeding success. In median attitude and experience scores dependent on the specialization of the individual, statistically important variations were noted; knowledge and attitude were positively associated with the level of education of the nurse.

2.8 Nurses' Professional Practice on Breast Milk Substitutes Guidelines

Protecting, encouraging and endorsing optimal feeding is nurse's spiritual, legal and ethical obligation. Nurses and health care services around the country, however, are used by corporations to sell breast milk supplements, such as baby formula, follow-up formula, or growing-up milk. Kenon (2013) found that there is no specific law in the United States that mandates conformity with the code, and breaches of the code that hinder the initiation, duration, and exclusivity of breastfeeding occur every day. Courageously, inside their facility, the staff and healthcare professionals at the Rosebud PHS Indian Hospital (Rosebud) have taken a unique stance against unethical marketing tactics and faced numerous challenges to the enforcement of the code.

A similar study by Aguayo et al. (2013) monitored compliance with the International Code of Marketing of Breastmilk Substitutes in health systems, sales outlets, distribution points, and the news media in Togo and Burkina Faso, west Africa. The study found that breast milk replacement producers in Togo and Burkina Faso use national healthcare programs to market their products and distribute free samples to mothers. Health programs were often used for the delivery of free samples to health care professionals for reasons other than professional testing or appraisal and for the distribution of substance induction within the framework of the code to advertise goods. The appearance in the

working setting of such commercial presents, observed in audits approved by breast milk producers themselves, conveys a sense of support by health care providers of breast milk replacements.

Champeny et al. (2019) assessed determinants of BMS feeding among newborns in delivery facilities in Phnom Penh, Cambodia, and Kathmandu Valley, Nepal. Health professional advice and help had a strong effect on BMS feeding prior to discharge from Kathmandu Valley and Phnom Penh distribution facilities. This was an opportunity to educate health providers to properly recognize and assist moms with breastfeeding problems and reduce the need for more BMS feeds to be added.

Liu et al. (2014) study aimed to monitor the implementation of the Code in China. The percentage who reported solely breastfeeding their child was 30.9 percent of the entire study of 291 mothers; 69.1 percent of mothers reported feeding their infant with commercially available formula. 40.2 percent of the mothers reported receiving free formula samples with respect to infringement of the Code. Of these, in or close hospitals, 76.1 per cent obtained free samples. Of the shops surveyed, 45.7% were found to promote items in a manner that breaches the Code. In comparison, the rules set out in the Code did not agree with 69.0% of the marking on the formula goods.

Pries et al. (2016) assessed mothers' exposure to commercial promotions for breastmilk substitutes and use of these products through a cross-sectional survey among 294 mothers of children less than 24 months of age. Eighty-six percent of mothers reported witnessing promotional advertisements for breastmilk replacements, 19.0 percent reported observing food brands/logos on health facility equipment for babies and young children, and 18.4

percent reported receiving a suggestion from a health provider to use a breastmilk replacement. Breastmilk replacement use was high, occurring in 43.1 percent of children aged 0-5 months and 29.3 percent of children aged 6-23 months. Findings have also shown that breastfeeding activities among Phnom Penh mothers need to be changed. Just 36.1 percent of babies aged 0-5 months were breastfed exclusively, and 12.5 percent of children aged 20-23 months were also breastfed.

2.9 Theoretical Framework

2.9.1 Interactive Theory of Breastfeeding

In a systemic, dynamic and procedures aspect, Interactive Theory of Breastfeeding conceptualizes breastfeeding. The other notions mentioned are multidimensional and interact, thereby affecting the dynamic breastfeeding concept (Primo & Brandão, 2017). The writing survey and observational information on breastfeeding recommend that "mothers and infant's organic conditions", "mothers' and baby's insight," and "mothers' dynamic" are fundamental for breastfeeding to happen and they have an immediate and important impact. Organic conditions incorporate the breasts' life structures, creation of milk, and infants' stomatognathic framework life systems and physiology. A mothers' impression of breastfeeding changes, since it relies upon information, social and financial conditions, abilities, feelings, needs, convictions, culture, and the targets of every mother. A infant's discernment alludes to detects (taste, sight, contact, smell, and hearing) saw during breastfeeding that are improvements identified with the cycle (Lööf-Johanson et al., 2013).

A mothers' dynamic is more extensive, in light of the fact that it is a dynamic and deliberate interaction through which they decide to breastfeed among different alternatives (Primo et al., 2020). At each taking care of involvement, mothers settle on more explicit choices that describe the demonstration of breastfeeding. It is expected that mothers' choice to keep communicating with the infant, bringing about breastfeeding, is remade after each experience. These three ideas include the powerful course of breastfeeding in a more proximal manner. The Interactive Theory of Breastfeeding hypothesizes that a few ideas impact breastfeeding, balancing it in a more distal way, and they are: mothers' self-perception; space for breastfeeding; mother's job; hierarchical frameworks for the security, advancement, and backing of breastfeeding; and family and social position (Souza et al., 2018).

With respect to the level of the cooperation cycle itself, the presence of two significant ideas was thought of: season of breastfeeding and stress (Primo et al., 2017). Time is straightforwardly affected and regulated by the mother baby dynamic connection during breastfeeding. This association influences the term of each taking care of and the progression or end of selective breastfeeding after the 6th month, which is influenced by the presentation of new food when the baby is a half year old or less. Stress is a unique express that is expanded or diminished by the activity of distressing variables coming about because of the connections between the mother, the infant, and the climate. Stress influences mother and infant cooperation, on the grounds that relying upon the degree of stress of every person, correspondence and association between them may not happen as expected and may hinder the exchange accomplishment (Aizer et al., 2016).

Given the strength of relational and social angles, the Interactive Theory of Breastfeeding is a hypothetical system that is concordant with the models of social determinants of wellbeing (Primo et al., 2020). Affected by close to home, relational, or social elements, mothers report that during breastfeeding they feel joy and joy, however they are additionally worried about their milk supply, with listing breasts, and humiliated by breastfeeding out in the open. The mothers' impression of breastfeeding depends on their feelings, their experiences, individual, family, and social encounters with breastfeeding, just as on abilities, information, convictions, and buzzwords learned for the duration of their lives, along these lines shifting between mothers. To a significant number of them, breastfeeding is a demonstration of affection, of heavenly gift, however it additionally requires a feeling of obligation and commitment. Thusly, a few mothers dread being considered as "terrible" or "imprudent" moms; they breastfeed so as not to feel remorseful and rather not uncover their sentiments. Mothers who assume their part as moms and attempt, regardless of everything, to save their independence, regardless of whether it is restricted, can choose when to start breastfeeding and if to keep up with it (Primo et al., 2017).

To know about the most compelling people in the nursing mother's interpersonal organization and to comprehend the collaboration between these individuals and the mother during breastfeeding is fundamental, since this training is dependent upon numerous impacts, positive or contrary, from family members, companions, neighbors, and wellbeing experts (Primo et al., 2020). Grandparents and female figures who have as of now experienced parenthood and breastfeeding, just as accomplices, are the most persuasive people. Backing from companions, individuals from the congregation, and

wellbeing experts is additionally significant, on the grounds that it adds to work on moms' fearlessness and confirmation to start and to continue to breastfeed.

Mothers' choice to start breastfeeding and its congruity after each taking care of is an intricate interaction that is influenced by various variables, among which are: familiarity with the advantages of breastfeeding; getting family, social, and expert help; having a positive individual encounter and family custom; and the craving and individual decision to breastfeed (Tsutaya et al., 2019). Nonetheless, when mothers get negative impacts that are against breastfeeding, they can pick alternate approaches to take care of their infants, either by not starting to breastfeed or by suspending it rashly.

Medical attendants can distinguish the variables that meddle in breastfeeding finish in order to act in a more intuitive and foundational way by utilizing the hypothesis ideas (Lööf-Johanson et al., 2013). There is a specific commitment to the ID of nursing analyze that are more explicit to the breastfeeding system. For example, mothers' dynamic, when it is independent, permits the expert to analyze the "sufficient dynamic cycle for breastfeeding." On the other hand, when independence is limited, dynamic probably won't be finished, which can bring about the demonstrative speculation of "hazard to a deficient dynamic interaction for breastfeeding."

2.9.2 Social Marketing Theory

Social Marketing theory (SMT) is a combination of theoretical perspectives and established marketing techniques. Characterized by Kotler et al. (2012) as "the plan, execution, and control of projects looking to build the worthiness of a social thought or practice in an objective gathering," SMT utilizes ideas of market division, customer

research, thought design, correspondence, assistance, motivations, and trade hypothesis to expand target bunch reaction (Kotler et al., 2012). In friendly showcasing, the intercession is created from a strong base of correspondence and social-mental speculations, and promoting procedures are utilized to enhance message improvement and program execution (Wallack, 1990). Social showcasing hypothesis depends on the "promoting reasoning" that individuals will take on new practices or thoughts on the off chance that they feel that something of significant worth is traded between him/her and the "social advertiser" (Solomon, 1989). Subsequently, one of the objectives of a social advertiser is to address buyer issues and needs. The "something" can be a substantial item (i.e., re-usable staple packs) or a thought (i.e., the idea of reusing and maintainable living) or both. SMT likewise expects that viable methodologies from the business area can effectively and productively be applied to propel social causes (Manikam & Russell-Bennett, 2016).

These methodologies incorporate the five "P's"- item, value, spot, advancement and situating (Blair-Stevens & McVey, 2010). Momentarily, the item alludes to the conduct (i.e., rehearsing elite breastfeeding) or thought (i.e., supporting moms who breastfeed) that the crowd needs to acknowledge. A product offering alludes to the assortment where the item can be advanced (for example breastfeed as opposed to utilizing recipe milk) to accomplish the objective of reception of the item. The cost of the item alludes to the financial just as the non-money related expense of an item. These non-financial expenses incorporate mental, social, or accommodation costs (Luca & Suggs, 2013). On account of WABA, breastfeeding isn't just for all intents and purposes free yet in addition guarantees mother and youngster's physical, mental, and generally prosperity. Lessening these

expenses incredibly increment the possibilities that a groundbreaking thought/item will be taken on. The spot alludes to the dissemination destinations of the item (for the WBW lobby, anyplace WABA agents live). The more noteworthy the quantity of conveyance destinations and the more helpful and proper where the item can be tracked down the better possibility that mindfulness and utilization of the item is worked with.

Advancement of an item alludes to the manners by which the crowd is made mindful of the item, like utilization of notices, direct promoting and different roads. In the advancement of an item, social promoting efforts depend on the communication between broad communications and relational channels for expanding mindfulness and working with change. Situating alludes to the mental "picture" of the item. The advancement of breastfeeding, for instance, can be "situated" to moms from various perspectives, for example, a simple method to lose pregnancy weight, an approach to bond with infants, or an approach to diminish the odds of getting wellbeing infection or specific kinds of malignant growth. One more review by Stead et al. (2007) thinks about the adequacy of social showcasing as a mediation model on the lines of business advertising procedures to determine social and medical conditions. In the article, social promoting adequacy is examined in impacting wellbeing conduct

A mother's dynamic is more complete, on the grounds that it is a dynamic and methodical cycle through which they decide to breastfeed among different choices (Rollins et al., 2017). At each taking care of involvement, mothers settle on more explicit choices that portray the demonstration of breastfeeding. It is accepted that mothers' choice to keep interfacing with the youngster, bringing about breastfeeding, is revamped after each

experience. These three ideas include the powerful course of breastfeeding in a more proximal manner (Adugna et al., 2012). The Interactive Theory of Breastfeeding hypothesizes that a few ideas impact breastfeeding, adjusting it in a more distal way, and they are: mother's self-perception; space for breastfeeding; mother's job; hierarchical frameworks for the assurance, advancement, and backing of breastfeeding; and family and social power.

With respect to the level of the cooperation interaction itself, the presence of two applicable ideas was thought of: season of breastfeeding and stress (Donovan & Henley, 2010). Time is straightforwardly affected and tweaked by the mother kid dynamic communication during breastfeeding. This cooperation influences the length of each taking care of and the coherence or stopping of selective breastfeeding after the 6th month, which is influenced by the presentation of new food when the kid is a half year old or less (Adugna et al., 2012). Stress is a powerful express that is expanded or diminished by the activity of unpleasant components coming about because of the collaborations between the mother, the kid, and the climate. Stress influences mother and baby association, in light of the fact that relying upon the degree of stress of every person, correspondence and connection between them may not happen as expected and may disable the exchange accomplishment (Kornides & Kitsantas, 2013).

Given the strength of relational and social perspectives, the Interactive Theory of Breastfeeding is a hypothetical structure that is concordant with the models of social determinants of wellbeing. Impacted by close to home, relational, or social variables, mothers report that during breastfeeding they feel joy and bliss, yet they are additionally

worried about their milk supply, with hanging breasts, and humiliated by breastfeeding openly (Manikam & Russell-Bennett, 2016). The mother's view of breastfeeding depends on their feelings, their experiences, individual, family, and social encounters with breastfeeding, just as on abilities, information, convictions, and prosaisms learned for the duration of their lives, consequently differing between mothers. To a considerable lot of them, breastfeeding is a demonstration of affection, of heavenly gift, however it additionally requires a feeling of obligation and commitment. Consequently, a few mothers dread being considered as "terrible" or "imprudent" moms; they breastfeed so as not to feel remorseful and rather not uncover their sentiments. Mothers who assume their part as moms and attempt, regardless of everything, to safeguard their independence, regardless of whether it is restricted, can choose when to start breastfeeding and if to keep up with it.

To know about the most compelling people in the nursing mother's informal community and to comprehend the association between these individuals and the mother during breastfeeding is fundamental, since this training is dependent upon different impacts, positive or antagonistic, from family members, companions, neighbors, and wellbeing experts (Kornides & Kitsantas, 2013). Grandparents and female figures who have as of now experienced parenthood and breastfeeding, just as accomplices, are the most compelling people. Backing from companions, individuals from the congregation, and wellbeing experts is likewise significant, on the grounds that it adds to work on moms' fearlessness and confirmation to start and to continue to breastfeed. Mothers' choice to start breastfeeding and its coherence after each taking care of is an intricate cycle that is influenced by various components, among which are: familiarity with the advantages of

breastfeeding; getting family, social, and expert help; having a positive individual encounter and family custom; and the longing and individual decision to breastfeed. In any case, when mothers get negative impacts that are against breastfeeding, they can pick alternate approaches to take care of their children, either by not starting to breastfeed or by stopping it rashly (Adugna et al., 2012).

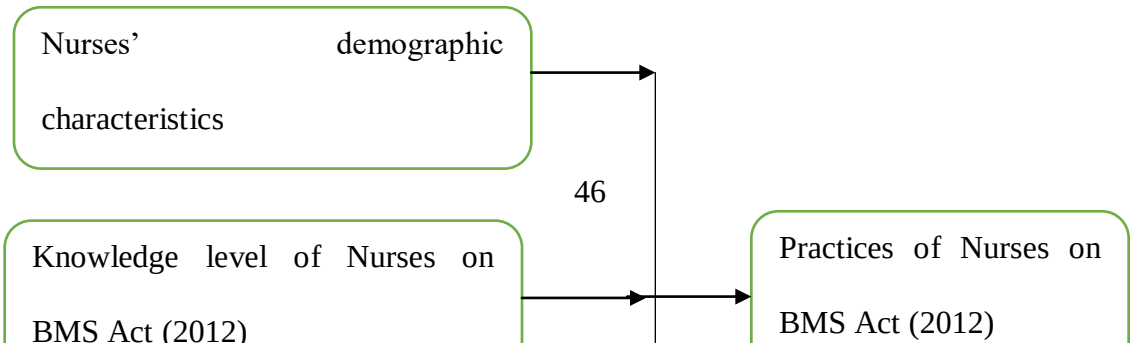
Medical attendants can recognize the elements that meddle in breastfeeding fulfillment in order to act in a more intuitive and fundamental manner by utilizing the hypothesis ideas (Folker-Maglaya et al., 2018). There is a specific commitment to the distinguishing proof of nursing analyze that are more explicit to the breastfeeding system. For example, mother's dynamic, when it is independent, permits the expert to analyze the "sufficient dynamic cycle for breastfeeding." On the other hand, when independence is confined, dynamic probably won't be finished, which can bring about the indicative theory of "hazard to a lacking dynamic interaction for breastfeeding (Beake et al., 2017)

2.10 Conceptual Framework

Figure 2.1 shows the variables in the study.

Figure 2.1

Conceptual Framework



Nurses' knowledge of the International Code is paramount to educate mothers on the recommended neonate EBF and subsequent IYCF and further infant nutrition counseling and this can lead to adherence of BMS code in Kenya. Further. Adhering to the stipulation of the International code on BMS, nurses and other healthcare workers can not inform lactating others on the breastmilk substitutes as they may introduce them early before the recommended EBF period.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter is about the design and methodologies that was used while carrying out the study. It shows how this study was conducted, noting the research approach, sample, sampling and data collection method. The chapter addresses ethical principles associated with the collection of data.

3.2 Research Design

The study used cross-sectional descriptive study which is the study of a phenomenon as it occurs naturally in its real-life situations. The purpose of a cross sectional descriptive research design is to describe and document aspects of a situation (Polit & Beck, 2009). The researcher describes the characteristics of the phenomenon in terms of context, frequency and distribution of the situation, with a focus on measuring the awareness and nurses' level of knowledge of the Code. A feature of descriptive study is that there is no manipulation of variables. A cross-sectional descriptive research design was applied to this study because the researcher answers the research question by collecting information on the attributes, characteristics and experiences of nurses working in nursing-practice environments for mothers.

3.3 Study Area

This study was conducted in Mbagathi and Pumwani Hospitals. These two facilities were selected because they are the public hospitals in Nairobi City County that record a very high number of births, antenatal care and post-natal care attendance apart from Kenyatta National Hospital which is a referral hospital. The nurses working in these two facilities therefore have a role to promote breast-feeding and adhere to the code. Mbagathi County Hospital is a public health facility under the County Government of Nairobi's Department of Health Services. This hospital has a total of 320 beds. There are approximately 53 healthcare professionals who deal with maternity and child concerns. Pumwani Maternity Hospital is a Nairobi-based obstetric and referral hospital that provides care to pregnant mothers in Nairobi and the surrounding regions. There are 354 obstetric beds, 144 baby cribs, and two operating rooms. The average number of deliveries per day is 50–100, and Caesarean Sections are 10–15.

3.4 Study Population

The study population is a sub-set of population which is targeted to be studied and it forms the basis from where the sample for the study is taken (Gerrish & Lacey, 2010). The target population was all nurses because of their responsibility for counseling mothers on infant nutrition. According to the hospital records, they are estimated to be 400 nurses in Mbagathi and Pumwani Hospitals, Nairobi County.

3.4.1 Inclusion and Exclusion Criteria

All registered nurses working Mbagathi and Pumwani Hospitals who were willing to take part in the study were included in the study. Trainee nurses and nurses who were not willing to take part in the study were excluded from the study.

3.5 Sampling

3.5.1 Sample Size Determination

Polit and Beck (2009) define a sample as, a subset of the elements represented in the study. In this study, Yamane formula was used for the simple random sampling technique method

n= N / (1 + Ne^2)
Where
n = sample size
N = Population Size
e = level of precision
At 95% level of confidence and p=5

n= 400 / (1 + 400*0.0025)
n= 200

3.5.2 Sampling Procedure

Simple random sampling was used to include nurses in the study. Specifically, lottery method using Microsoft excel was employed. In this technique, a list of all the nurses in the two facilities was made in Microsoft excel. Then using the random function, a

random sample of 200 nurses were generated. This ensured that the sample was random and nurses from both facilities were included.

3.6 Instrumentation

A structured questionnaire was used to collect data from the respondents. The questionnaire contained several sections such as demographic characteristics of respondents, nurses' knowledge, attitude and practice regarding BMS. The questionnaire was preffered as the instrument for data collection because it uses a short time to collect data from a large number of respondents .

3.6.1 Validation and Reliability of the Instruments

Validity is the accuracy in measurement, for example in this study, making sure that questionnaires and interview guides actually measure what it needed to measure. It also means the degree which conclusions drawn from data or inferences are justified and reasonable. Reliability is the measurement of consistency, e.g, making sure that certain data collection instrument, a questionnaire in this case and informant key guide produces the equal or similar answer if put under conditions which is similar. (Mugenda & Mugenda, 2009). This was done through pretesting to determine the questionnaire clarity of items, and items that were inadequately found, were modified for the improvement of the quality of the research instruments.

Pretesting of the questionnaires was conducted before commencing on the study. This was important in assessing the research instruments its accuracy, clarity and suitability and also to check their validity and reliability. A pretest was conducted in Pumwani

Hospital and it was done to 10% of the sample size whereby 20 respondents were involved. Pretesting aimed to look the time taken to complete the questionnaire and response to answers. The comments and suggestions made during pretesting assist in improving the quality of the questionnaire. It reveals deficiencies in the questionnaire (Mugenda & Mungenda, 2009). This enhanced validity. To ensure reliability, data collected was analyzed using Cronbach's alpha. Items which scored less than 0.7 were removed or rephrased.

3.7 Methods of Data Collection

Quantitative data methods collection was used to collect data, through a questionnaire as the method of data collection. Before analyzing the data, the data was validated, data editing done and then data was coded. In the process of data validation, checking of questionnaires was done to check for accuracy in terms of proportions of the issued questionnaires.

3.8 Methods of Data Analysis

Completeness for the questionnaires was checked. Scrutinizing for questionnaires was done for error checking during editing. Descriptive statistics and chi-square tests were used to analyses data. SPSS (V. 25.0) was used to analyze quantitative data. Descriptive statistics were important for univariate analysis of variables in the study. Descriptive analysis therefore enabled the study establish demographic characteristics of respondents, nurses' knowledge, attitude and practice regarding BMS. To establish relationship between variables, chi-square analysis was conducted. This enabled the study establish

the relationship between demographic characteristics of respondents and knowledge, attitude and practice regarding BMS as well as the relationship between knowledge and attitude with practice. Analysis was conducted at 95% confidence interval whereby p values of less than 0.05 were taken as significant.

3.9 Ethical Considerations

The study was supervised and approved by the department of public health and human dietetics of Kenya Methodist University. Ethical review of the study was obtained from the Kenya Methodist University Ethics and Research review body Committee. A research permit was obtained from National Commission for Science, Technology and Innovation (NACOSTI). Permission was obtained from the county government of Nairobi and from the management of the two facilities. Participants were provided with information about the study to enable them to make their mind on whether they will participate or not. They were assured of their right and freedom to withdraw from participation at any time. Maternity ward nurses in Mbagathi and Pumwani Hospitals, Nairobi County were approached to participate in the study on a voluntary basis. The researcher respected the wishes of the participants.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

Through the questionnaire, the chapter, analyses the results of the data obtained, discusses results and then interpret them. The results were presented using descriptive statistics by use of tables.

4.2 Response Rate

A total of 200 respondents/nurses were targeted by the study in data collection regarding to Breast milk Substitute and the International Marketing Code of Infant Formula, in Mbagathi Hospital and Pumwani Maternity Hospital

Table 4.1

Response Rate

Category	n	[%]
No response	14	[7.0
Actual Response	186	[93.0]
Total	200	[100]

As shown in Table 4.1 186 responded out of the 200. The respondents samples filled-in the form and the questionnaires were returned with a response rate of 93.0% and if the response rate is more than 60% of the sample size, the data could be further analyzed. This good response rate was made possible after the researcher made more visits

physically in order to remind the respondents to complete filling in the questionnaires and return them.

4.3 Demographic Characteristics of the Respondents

Demographic characteristics of respondent at the two hospitals were assessed. This included data on respondents' age, gender, level of education, working institution and their current institution.

Table 4.2

Demographic Characteristics of the Respondents

Demographic Characteristics Categories		n[186]	%
Institution	Mbagathi	85	45.7
	Pumwani	101	54.3
Gender	Male	30	16.1
	Female	156	83.9
Age (in years)	Between 20-30 years	58	31.2
	Between 31-40 years	100	53.8
	Between 41-50 years	24	12.9
	More than 50 years	4	2.2
Marital status	Married	111	59.7
	Single	75	40.3
Level of education	Nursing bachelor's degree	53	28.5
	Nurse with a postgraduate degree	11	5.9
	College [Certificate]	122	65.6
Current Occupation	Nursing Ward Manager	7	3.8
	Nurse	179	96.2
Number of years	less than 5 years	92	49.5
	Between 6-10 years	85	45.7
	More than 10 years	9	4.8
Current duty place	ANC	35	18.8
	Delivery Suite	23	12.4
	PNC	69	37.1
	Pediatric Ward	59	31.7
Number of years at work	Less than one year	44	23.7
	Between 1-5 years	37	19.9

	Between 6-10 years s	58	31.2
	More than 10 years	47	25.3
Women/mothers counseled weekly	None	4	2.2
	1-5 mother	42	22.6
	6-10 mother	80	43.0
	11-15 mother	59	31.7
	More than 15 women	1	.5

It was determined that majority of the respondents were females who were 83.9% and on the age bracket, most or majority 100(53.8%) were between 31-40 years, followed by 58[31.2%] who were between 20-30 years. It was noted that most were married [111,59.7%] and the rest cited they were in not in any form of union. It was established majority (122,65.6%) had nursing diploma/certificate, followed by those with nursing bachelor's degree [53,28.5%] .

Almost all were nurses [179,96.2%] and on the experience at the post, 49.5% cited they have work experience of less than five years while 85[45.7%] had work experience between 6-10 years] and their current duty was in the PNC [69,37.1%], those at ANC were 35,18.8%] while 59[31.7%] worked at the paediatric ward.

On the numbers of work of the respondents had worked, a third indicated between 6-10 years (58,31.2%) while a quarter cited, they have been working for more than ten years [47,25.3%]. It was noted that 43% they counselled between 6-10 women weekly on infant nutrition compared to 59[31.7%] who counselled between 11-15 women on weekly basis. Chi-square tests were conducted between demographic characteristics of respondents and nurses' practices. Results are presented in Table 4.3.

Table 4.3

Effect of Demographic Characteristics on BMS Practices

Demographic characteristic	P-value
Institution	0.544
Gender	0.287
Age	0.337
Level of education	0.014***
Marital status	0.517
Working experience	0.21

*** Significant at 95% CI

The level of education was significant (p=0.014) as shown in Table 4.3. Cross tabulation showed that nurses with higher education (bachelor's degree and above) had a better EBF promotion practice. This is in line with the findings of Lechthaler et al. (2020), who found that the higher the proportion of Registered Nurses (RNs) with a doctorate degree, the better the patient outcomes. Hospitals with a larger percentage of RNs with bachelor or higher degrees had better breastfeeding promotion, according to Blegen et al. (2013). Rahman et al. (2015), on the other hand, discovered that nursing educational degree was unrelated to treatment outcomes in Malaysian private hospitals.

4.4 Nurses Knowledge on BMS

The second objective of the study sought to assess the knowledge level on the Kenya's BMS Act among nurses in in Mbagathi and Pumwani Hospitals, Nairobi County. Respondents in the study were therefore asked questions related to aspects of BMS code. The results are presented in Table 4.4.

Table 4.4

Nurses Knowledge on BMS

Knowledge on.	Category	n[186]	%
Aware of IC on BMS	Yes	168	90.3
	No	18	9.7
Training on BMS	At nursing school	15	8.1
	At your place of work	83	44.6
	Through continuing education programs while employed at my expense	76	40.9
	Nursing journals	12	6.5
Marketing of Breast-milk substitutes	Lack of advertisements at hospitals	112	60.2
	Lack of total advertisement of infant formulas	74	39.8
Availability of information on BMS	Yes	171	91.9
	No	15	8.1
All staff comply with code	Yes	135	72.6
	Not sure	51	27.4
Patient education is a core nursing function in your ward	Yes	176	94.6
	No	10	5.4
Stakeholders should be targeted with the information contained in the code	Mothers	2	1.1
	Nurses	15	8.1
	Clinicians	7	3.8
	Doctors	41	22.0
	All above	121	65.1
Knowledge of the IC essential and useful when counseling mothers	Yes	159	85.5
	No	27	14.5
Relevance of nurses' knowledge	Counseling mothers on appropriate infant feeding choice	141	75.8
	marketing of formula, feeding bottles, teats and bottles by manufacturers	40	21.5
	Nutrition and content of the formula	5	2.7

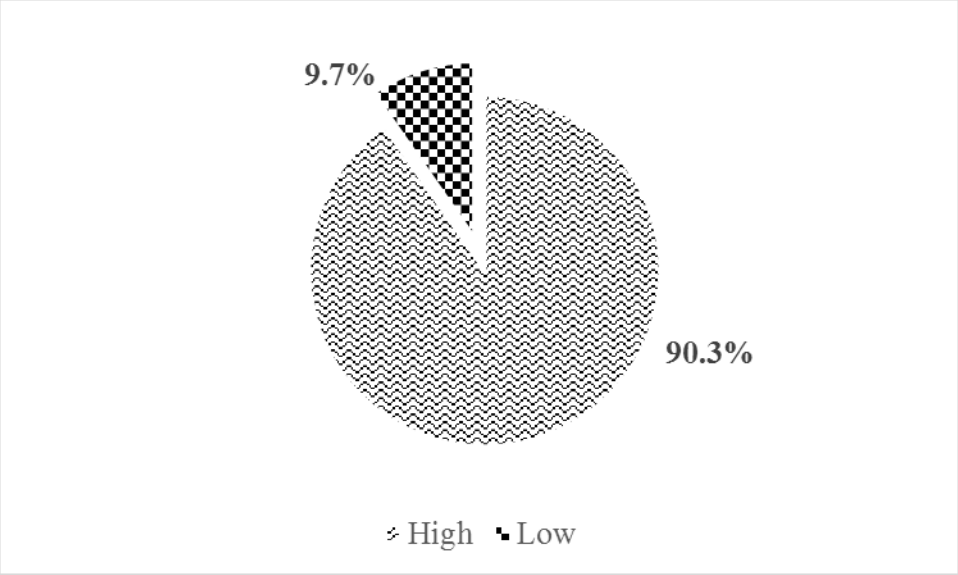
It was established that majority [168,90.3%] were aware of IC of advertising and marketing of BMS and 44.6% indicated they learnt on BMS at their place of work while 76[40.9%] indicated through continuing education programs while employed at my expense. Probing on the BMS Act contents on International Code Marketing Breast-milk

substitutes, 112[60.2%] cited Lack of advertisements at hospitals compared to 74[39.8%] argued lack of total advertisement of infant formulas and this indicated they knew the BMS Act contents. It was established that there was information available on the International Code for infant/young child nutrition counseling at the study sites [171,91.9%] and majority [135,72.6%] of the nurses at the wards followed a guideline or protocol for infant and young child nutrition counseling. The study further established that Patient education was a core nursing function on the ward as indicated by 176[94.6%] of the respondents and the key stakeholders should be targeted with the information contained in the code the study established all those worked in the hospital sectors [121, 65.1%]. Majority [159,85.5%] of the nurses asserted that the knowledge of the IC essential and useful when counseling mothers on the superiority of breast-feeding and their opinion of the code indicated that Counseling mothers on appropriate infant feeding choice [141,75.8%] and 21.5% cited marketing of formula, feeding bottles, teats and bottles by manufacturers.

Responses in Table 4.4 were evaluated to find out the overall knowledge of nurses on BMS. Respondents who correctly answered 5 questions and above were classified as having high knowledge while those who answered 4 or less were classified as having low knowledge. The results are presented in Figure 4.1

Figure 4.1

Respondents Level of Knowledge



Findings in Figure 4.1 show that majority [168, 90.3%] had a high knowledge on Kenya's BMS Act. This is similar to findings of McLaughlin et al. (2011) who found that nurses recognize that both mother and infant are best at breastfeeding, but they can be confused about the physiology of lactation and attachment. However, this finding differs with Tsutaya et al. (2019) in Japan who stated that health care providers have low level of knowledge of the Code and low level of support for breastfeeding, based on responses to a questionnaire developed by the International Board of Certified Lactation Consultants on the Code and compliance in hospitals. Similarly, the finding differs with Piwoz and Huffman (2015) who stated that 79.8% of the health care personnel did not have knowledge of the International Code and 70.5% were not knowledgeable of the national breastfeeding law.

Chi-square tests were conducted between nurses' knowledge with nurses' practices in regards to BMS. Results are presented in Table 4.5.

Table 4.5

Effect of Knowledge on Practices

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	164.454[a]	2	.000
Likelihood Ratio	140.870	2	.000
Linear-by-Linear Association	97.389	1	.000
N of Valid Cases	185		

Results in Table 4.5 show that nurses' knowledge was significant (p=0.000). This means that there is a relationship between nurses' knowledge and nurses' practices in regards to BMS. Cross tabulation showed that nurses with high knowledge were more likely to have good practices. This is consistent with the findings of Owoaje et al. (2002), who found that nurses who attended the BFHI training workshop were significantly more knowledgeable about some aspects of exclusive breastfeeding, had more positive attitudes, and were more likely to use appropriate practices to promote exclusive breastfeeding. However, Yang et al. (2018) showed that nurses' understanding of breastfeeding was insufficient in some contexts, particularly in respect to breastfeeding assessment and management, and that this knowledge did not necessarily improve after completion of a standard curriculum.

4.5 Nurses Attitude towards BMS

The third objective of the study examined the nurses' attitudes towards Kenya's BMS Act among nurses in Mbagathi and Pumwani Hospitals, Nairobi County. Respondents in the study were therefore asked questions related to aspects of BMS code. The results are presented in Table 4.6.

Table 4.6

Attitude towards BMS

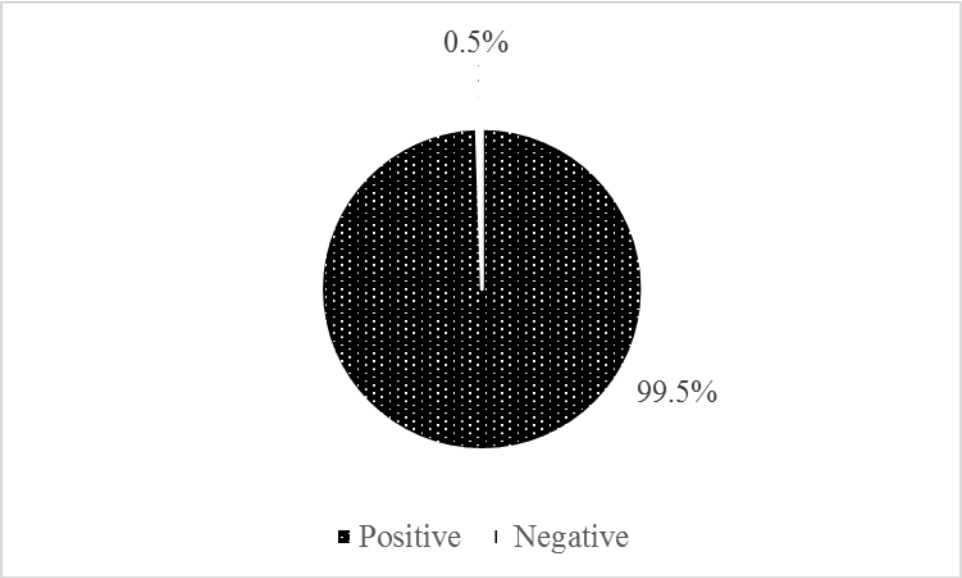
Attitude	Categories	n[186]	%
Role of a nurse in infant/young child nutrition counseling is to support the feeding decision of the mother/caregiver	Agree	185	99.5
	Disagree	1	.5
BMS Displays present in ward about infant and young child nutrition	Educational infant nutrition related materials	125	67.2
	Posters of infant nutrition including formula and /or teats/bottles	43	23.1
	Promotional advertisements from distributors/manufacturers of infant and young child foods	18	9.7
Ever been approached by BMS salesmen.	Yes	6	3.2
	No	102	54.8
	Not sure	78	41.9
Item(s) received from BMS manufacturers	Free samples of infant formulas	7	3.8
	Free samples of teats, feeding bottles, toys	3	1.6
	Educational materials on infant formula	9	4.8
	None	167	89.8

The Table 4.6 presents the respondents attitudes towards BMS Act [International Code] in the two research sites. It was established that majority agreed [185,99.5%] that role of

a nurse in infant/young child nutrition counseling is to support the feeding decision of the mother/caregiver and on the types of displays are present on their ward about infant and young child nutrition, Educational infant nutrition related materials ranked first [125,67.2%], followed by 23.1% who cited on posters of infant nutrition including formula and /or teats/bottles. This agreed with Abekah-Nkrumah et al. (2020). Majority [54.8%] respondents were not been approached by infant formula manufacturers/staff/ distributors at the hospital compared to 3.2% who have been approached. Majority [167,89.8%] indicated that they had not received any merchandize from manufacturers and/or distributors of infant food compared to 4.8% who were given educational materials on infant formula and 3.8% given samples of infant formulas contrary to the recommendations of the international code. Responses in Table 4.5 were evaluated to find out the overall attitudes of nurses on BMS. The results are presented in Figure 4.2.

Figure 4.2

Attitudes towards BMS



Results in Figure 4.2 show that the vast majority [185, 99.5%] of the respondents had a positive attitude towards BMS. This is consistent with findings of Weshahy et al. (2019) showed positive attitudes among medical staff regarding BF management. Quinn and Tanis (2020) also showed positive attitude among professional caregivers in a suburban community hospital who typically provide, or influence, the care of parturient women. However, Ikobah et al. (2020) found unsatisfactory level of attitude of health workers towards appropriate infant feeding practices. A chi-square test was conducted between nurses' knowledge and nurses' attitudes. Results are presented in Table 4.7.

Table 4.7

Effect of Knowledge on Attitude

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.207[a]	3	.157
Likelihood Ratio	4.355	3	.226
Linear-by-Linear Association	1.915	1	.166
N of Valid Cases	184		

The results show that there was no significant association (p=0.157) between nurses knowledge and attitudes. This is similar to the findings of Quinn et al. (2020). In contrast, regardless of specialization, mean scores for attitudes and knowledge of breastfeeding were good for physicians and nurses, with no statistically significant differences detected. A chi-square test comparing the attitudes of infants and nurses was also performed. Results are presented in Table 4.8.

Table 4.8

Effect of Attitude on Practices

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.810[a]	3	.008
Likelihood Ratio	13.851	3	.003
Linear-by-Linear Association	6.476	1	.011
N of Valid Cases	184		

Results in Table 4.8 show that there is a significant association (p=0.008) between nurses' attitude and nurses practices. This finding is similar to findings of Daniels and Jackson (2011), Spear (2014) and Weshahy et al. (2019) who in similar studies found no relationship between attitudes and practices related to EBF and BMS.

4.6 Nurses BMS Practice

The fourth objective of the study sought determine the practices level of the Kenya's BMS Act among nurses in in Mbagathi and Pumwani Hospitals, Nairobi County. Results are presented in Table 4.9.

Table 4.9

Nurses BMS practice

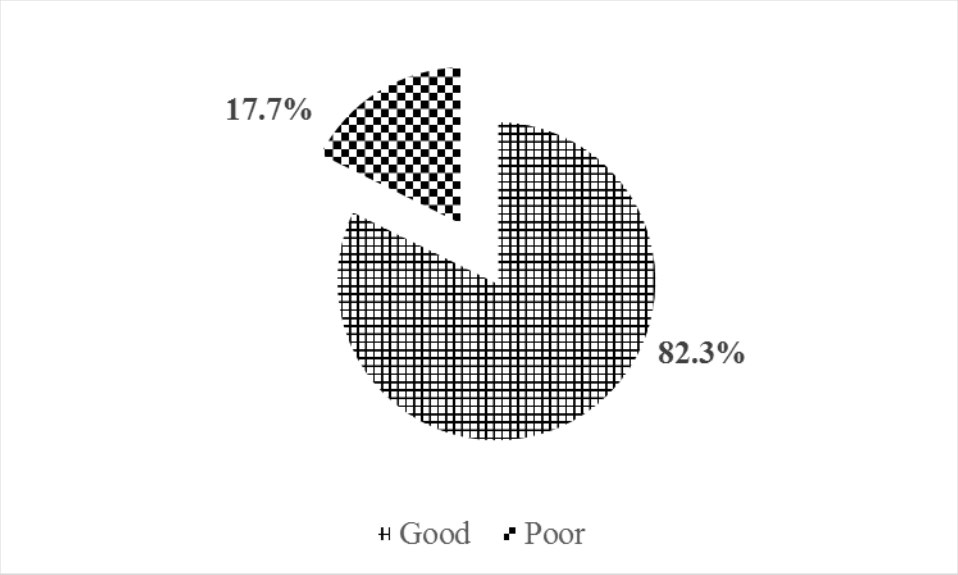
Practice	Response	n[186]	%
Hospital based protocols followed on the usage of code in this facility	Yes	153	82.3
	No	33	17.7
Hospital accepts donations of parenting and/or nutrition education materials produced/sponsored by infant formula manufacturers/distributers	Yes	4	2.2
	No	182	97.8
Advise a mother of a newborn baby to EBF for the 1st six months	Yes	163	87.6
	No	23	12.4
Would you be interested in learning more to improve your knowledge of the International Code	Yes	185	100

The Table 4.9 presents the responses on the BMS practices by the nurses in the two hospitals and the study established that. Most [82.3%] agreed that hospital based protocols to be followed on the usage of code in facility and it was noted that hospital did not accepts donations of parenting and/or nutrition education materials

produced/sponsored by infant formula manufacturers/distributers [182, 97.8%] Majority [163,87.6%] advised mothers of a newborn baby to EBF for the 1st six months s and all of the respondents were interested in learning more to improve their knowledge of the International Code. Responses in Table 4.9 were assessed to find out the overall practice. Results are presented in Figure 4.3.

Figure 4.3

Nurses BMS Practices



Majority [153, 82.3%] of the respondents had good practices in regards to BMS practices. This finding is however in contrast to Brady (2012) who found that nurses are used by corporations to sell breast milk supplements, such as baby formula, follow-up formula, or growing-up milk. Aguayo et al. (2013) study also found that breast milk replacement producers in Togo and Burkina Faso use national healthcare programs to market their products and distribute free samples to mothers.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

Chapter five, presents the summary of findings, discussion and the conclusion that is drawn from the findings and recommendations of the study. Conclusions and recommendations focuses on purpose of the study

5.2 Summary

The study established demographic characteristics of nurses in Mbagathi and Pumwani Hospitals, Nairobi County. The study found that majority (83.9%) of the respondents were Female. Majority (85%) were young being aged under 40 years. Slightly above half (49.7%) were married. All the respondents were trained with majority (65.6%) having acquired a college certificate. Over half (56.5%) of the respondents had more than 6 years of working experience. The level of education (p=0.014) was significant whereby nurses with higher education (bachelor's degree and above) had a better practice.

The second objective of the study sought to assess the knowledge level of the Kenya's BMS Act among nurses in in Mbagathi and Pumwani Hospitals, Nairobi County. Majority (90.3%) of the nurses had a high knowledge on Kenya's BMS Act. There was a significant association (p=0.000) between nurses' knowledge and nurses' practices. Cross tabulation showed that nurses with high knowledge were more likely to have good practices.

The third objective of the study examined the nurses' attitudes towards Kenya's BMS Act among nurses in Mbagathi and Pumwani Hospitals, Nairobi County. The vast majority (99.5%) of the respondents had a positive attitude towards BMS. There was no significant association (p=0.157) between nurses' knowledge and attitudes. There was a significant association (p=0.008) between nurses' attitudes and nurses' practices.

The fourth objective of the study sought determine the practices level of the Kenya's BMS Act among nurses in in Mbagathi and Pumwani Hospitals, Nairobi County. Majority of the respondents had good practices in regards to BMS practices. The practices were mainly influenced by knowledge.

5.3 Conclusion

The level of education was the only demographic characteristic that had an association with nurses' practice regarding Kenya's BMS Act. Specifically, highly educated nurses with bachelor's degree and postgraduate degrees were more likely to have better practices. This shows the importance of education and training in enhancing compliance to Kenya's BMS Act.

Nurses have a high level of knowledge on Kenya's BMS Act in Mbagathi and Pumwani Hospitals, Nairobi County. Majority [168,90.3%] of nurses were aware of Kenya's BMS Act. The vast majority [83,44.6%] of nurses had also been trained on the act. More importantly, majority [112,60.2%] of nurses knew that there should be no BMS advertisements at hospitals.

Nurses' attitudes had positive towards Kenya's BMS Act among nurses in Mbagathi and Pumwani Hospitals, Nairobi County. Specifically, nurses perceived exclusive breastfeeding to be more important than breast milk substitutes. In addition, majority [185,99.5%] of nurses positively perceived their role in EBF promotion and discouraging use of breast milk substitutes.

Lastly, nurses had good practices regarding Kenya's BMS Act. Majority [153,82.3%] of nurses followed the code in the facility. They did not accept donations of parenting and/or nutrition education materials produced/sponsored by infant formula manufacturers/distributers. In addition, they advised a mother of a newborn baby to EBF for the 1st six months. Nurses with good practices were more likely to have higher knowledge.

5.4 Recommendation

The study recommended that;

The ministry of health should enhance education and career development of health workers especially nurses. The government should sponsor more nurses to gain higher education through funding and sponsorships. This is because the level of education was found to strongly influence nurses' practice leading to BMS act.

Educational institutions which offer nursing such as KMTC and universities should include the code and Kenya's BMS act in their curriculum to enhance nurses' knowledge and awareness of the need to adhere to the act's recommendation.

The government and other private organizations should carry out mass education to create awareness on BMS, in order to adopt the recommended infant and young child nutrition practices as postulated by the WHO (2017).

Policies and programs should be implemented to support breastfeeding initiatives for the purpose of upscaling exclusive breastfeeding in Kenya.

There should be also close supervision to ensure that nurses and other HCWs in Kenya are complying with the code and Kenya's BMS act.

Legal action should be taken to those found violating the Breast Milk Substitute Regulation and Control act of (2012) in Kenya.

5.5 Suggestions for Further Study

Only nurses were involved in the current study. Future studies should therefore include breast-feeding mothers as respondents so as to get their perspective on breast-feeding promotion.

In addition, other health workers such as clinical officers and medical officers as well as community health volunteers should be included in future studies.

A similar study should be conducted in public hospitals in other counties on the same especially the health facility in Rural settings of Kenya to find whether they are aware of the International Code of BMS, and Kenya BMS Act (2012) and compare with this study which was undertaken in Health Facility In Urban settings in Nairobi County.

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APPENDICES

Appendix I: Consent form

Kenya Methodist University

Department of Human Nutrition and Dietetics

Dear Respondent

My names are Clement, a master's student at *Kenya Methodist University*. Am undertaking a study on the determine the knowledge, attitudes and practices of BMS Act among nurses at Selected hospitals. This research proposal is critical to strengthening service provision among infants and children as it will generate new knowledge in this area that will inform decision makers to make decisions that are research based.

Procedure to be followed

Participation in this study will require that I ask you some questions. I will record the information from you in a questionnaire check list. You have the right to refuse participation in this study. You will not be penalized nor victimized for not joining the study and your decision will not be used against you nor affect you at your place of employment.

Please remember that participation in the study is voluntary. You may ask questions related to the study at any time. You may refuse to respond to any questions and you may stop an interview at any time. You may also stop being in the study at any time without any consequences to the services you are rendering.

Discomforts and risks.

Some of the questions you will be asked are on intimate subject and may be embarrassing or make you uncomfortable. If this happens; you may refuse to answer if you choose.

You may also stop the interview at any time. The interview may take about 20 minutes to complete.

Benefits

If you participate in this study, you will help us to strengthen service provision on the infant nutrition in Kenya and other Low-in- come countries in Africa. This research is critical to strengthening service delivery as it will generate new knowledge in this area of burden of service and quality of care that will inform decision makers to make decisions that are research based.

Rewards

There is no reward for anyone who chooses to participate in the study.

Confidentiality

Your name will not be recorded on the questionnaire and the questionnaires will be kept in a safe place at the University.

Participant's Statement

The above statement regarding my participation in the study is clear to me. I have been given a chance to ask questions and my questions have been answered to my satisfaction. My participation in this study is entirely voluntary. I understand that my records will be kept private and that I can leave the study at any time. I understand that I will not be victimized at my place of work whether I decide to leave the study or not and my decision will not affect the way I am treated at my work place.

Name of Participant: …… **Date**……..

Signature……

Investigator's Statement

I, the undersigned, have explained to the volunteer in a language s/he understands the procedures to be followed in the study and the risks and the benefits involved.

Name of Interviewer

Date……. **Interviewer Signature**……

Appendix II: Questionnaire

PLEASE PROVIDE YOUR HONEST RESPONSE TO THE FOLLOWING QUESTIONS AND STATEMENTS:

SECTION 1 : SOCIO DEMOGRAPHIC CHARACTERISTICS

1. Gender **M** **( )**

F **( )**

2. Age

A. Between 20-30 years
B. Between 31-40 years
C. Between 41-50 years
D. More than 50 years

3. Educational Qualification

A. Nursing bachelor's degree

B. Nurse with a postgraduate degree

C. Certificate

4. Current Occupation: (Circle as appropriate)

A. Nursing ward manager

B. Nurse

5. Number of years (or months) of experience in present position

years or months

6. Current Duty place

A. Antenatal Care

B. Delivery suite

C. Post-natal care

D. Pediatric ward

E. Other

7. Number of years (or months) in the section (s) selected from number 5.

years or months

8. How many women/mothers do you counsel about infant or young child nutrition each week?

A. None

B. 1-5

C. 6-10

D. 11-15

E. Above 15

SECTION II: KNOWLEDGE ON BMS

9. Are you aware of International Code of Marketing Breast-milk substitutes?

Yes

No

10. Where did you learn about the recommendations of the

International Code of Marketing Breast-milk substitutes?

A. At nursing school

B. At your place of work

C. Through continuing education programs while employed at my expense

D. Nursing journals

E. Pediatric journals

F. Other

G. Never heard about these recommendations

11. What does the International Code say about Marketing Breast-milk substitutes?

12. At your place work, is there information available on the International Code for infant/young child nutrition counseling?

A. Yes ❑

B. No ❑

C. Not sure ❑

13. On your ward, all staff follow a guideline or protocol for infant and young child nutrition counseling.

A. Yes ❑

B. No❑

C. Not sure❑

14. Patient education is a core nursing function on your ward

A. Yes❑

B. No

Not sure ❑

15. Suggest information you think should be added to the code?

16. Who should be targeted with the information contained in the code?

Mothers
Nurses
Clinicians
Doctors

17. In your opinion, is the knowledge of the International Code essential and useful when counseling mothers on the superiority of breast-feeding?

A. Yes ❑

B. Non❑

C. Not sure ❑

18. If you are familiar with the content of the Code, in your opinion, is a nurse's knowledge of the Code relevant in:

Counseling mothers on appropriate infant feeding choices?

Does marketing of formula, feeding bottles, teats and bottles by manufacturers and distributors on your ward or hospital?

Nutrition and content of the formula

The appropriate preparation and use of formula

iv.) Facilitating breast feeding

SECTION III: ATTITUDE ON BMS

SECTION 2

19. The role of a nurse in infant/young child nutrition counseling is to support the feeding decision of the mother/caregiver.

A. Agree ❑

B. Disagree ❑

C. Not sure ❑

20. 15. What types of displays are present on your ward about infant and young child nutrition?

A. Educational infant nutrition related materials ❑

B. Posters of infant nutrition including formula and /or teats/bottles ❑

C. Promotional advertisements from distributors/manufacturers of infant and young child foods ❑

D. Other

E. None ❑

21. Have you ever been approached by infant formula manufacturers/staff/ distributors at the hospital?

A. Yes ❑

B. No **o**

C. Not sure ❑

22. If yes, please explain briefly the reason for the meeting

23. Please select as appropriate, item(s) you have received from manufacturers and/or distributors of infant food

A. Gifts (USB keys, pens, pencils, notepads, calendars, clocks, etc) ❑

B. Free samples of infant formulas ❑

C. Free samples of teats, feeding bottles, toys ❑

D. Sponsorship of training, meetings or conferences ❑

F. Cash grants, holiday packages ❑

H. Educational materials on infant formula ❑

J. None ❑

SECTION IV: PRACTICES OF BMS

Section 3

24. Are there any hospital-based protocols to be followed on the usage of code in this facility?

A. Yes ❑

B. No ❑

C. Don't know ❑

25. The hospital accepts donations of parenting and/or nutrition education materials produced/sponsored by infant

formula manufacturers/distributers?

A. Yes ❑

B. No ❑

C. Don't know ❑

26. Would you advise a mother of a newborn baby to exclusively breast- feed for the first 6 months?

A. Yes ❑

B. No ❑

C. Don't know ❑

27. What would you advise a mother who wishes to feed her child with formula?

28. If you are not sure, would you be interested in learning more to improve your knowledge of the International Code ?

i. Yes ❑

ii No ❑

Appendix III: Research Permit

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013

The Grant of Research Licenses is guided by the Science, Technology and Innovation (Research Licensing) Regulations, 2014.

CONDITIONS

1. **The License is valid for the proposed research, location and specified period.**
2. **The License and any rights thereunder are non-transferable.**
3. **The Licensee shall inform the County Governor before commencement of the research.**
4. **Excavation, filming and collection of specimens are subject to further necessary clearance from relevant Government Agencies.**
5. **The License does not give authority to transfer research materials.**
6. **NACOSTI may monitor and evaluate the licensed research project.**
7. **The Licensee shall submit one hard copy and upload a soft copy of their final report within one year of completion of the research.**
8. **NACOSTI reserves the right to modify the conditions of the License including cancellation without prior notice.**

National Commission for Science, Technology and innovation
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Website: www.nacosti.go.ke

REPUBLIC OF KENYA

National Commission for Science, Technology and Innovation

RESEARCH LICENSE

Serial No.A 26216

CONDITIONS: see back page

THIS IS TO CERTIFY THAT:
MS. CLEMENT NYABOKE
of KENYA METHODIST UNIVERSITY, 30083-100 NAIROBI,has been permitted to conduct research in *Nairobi County*

on the topic: *ASSESSMENT OF THE IMPACTS OF IMPLEMENTATION OF KENYANS BREAST MILK SUBSTITUTE ACT 2012 AMONG NURSES IN SELECTED HOSPITALS NAIROBI KENYA*

for the period ending:
26th July,2020

Permit No : NACOSTI/P/19/42578/31993
Date Of Issue : 29th July,2019
Fee Recieved :Ksh 1000

.....
Applicant's Signature

.....
Director General
National Commission for Science, Technology & Innovation

Appendix IV: Ethical Clearance Letter

KENYA METHODIST UNIVERSITY
P. O. BOX 267 MERU - 60200, KENYA
TEL: 254-064-30301/31229/30367/31171
FAX: 254-64-30162
EMAIL: INFO@KEMU.AC.KE

3RD JUNE, 2019

KeMU/SERC/HND/43/2019

Clement Nyaboke
HND-3-3314-3/2015

Kenya Methodist University

Dear Clement,

SUBJECT: ETHICAL CLEARANCE OF A MASTERS' DEGREE RESEARCH THESIS

Your request for ethical clearance for your **Masters' Degree Research Thesis** titled **"Assessment of the Impacts of Implementation of Kenya's Breast Milk Substitute Act (2012) Among Nurses in Selected Hospitals, Nairobi, Kenya."** has been provisionally granted to you in accordance with the content of your research thesis subject to tabling it in the full Board of Scientific and Ethics Review Committee (SERC) for ratification.

As Principal Investigator, you are responsible for fulfilling the following requirements of approval:

1. All co-investigators must be kept informed of the status of the thesis.
2. Changes, amendments, and addenda to the protocol or the consent form must be submitted to the SERC for re-review and approval prior to the activation of the changes. The Thesis number assigned to the thesis should be cited in any correspondence.
3. Adverse events should be reported to the SERC. New information that becomes available which could change the risk: benefit ratio must be submitted promptly for SERC review. The SERC and outside agencies must review the information to determine if the protocol should be modified, discontinued, or continued as originally approved.

4. Only approved consent forms are to be used in the enrollment of participants. All consent forms signed by subjects and/or witnesses should be retained on file. The SERC may conduct audits of all study records, and consent documentation may be part of such audits.
5. SERC regulations require review of an approved study not less than once per 12-month period. **Therefore, a continuing review application must be submitted to the SERC in order to continue the study beyond the approved period.** Failure to submit a continuing review application in a timely fashion will result in termination of the study, at which point new participants may not be enrolled and currently enrolled participants must be taken off the study.

Please note that any substantial changes on the scope of your research will require an approval.

Thank You.

Dr. A.N. Matoshi
Chair, SERC

C.C. Dean, RD&PGS

Republic of Kenya

MINISTRY OF EDUCATION

STATE DEPARTMENT OF EARLY LEARNING AND BASIC EDUCATION

Telegrams: "SCHOOLING", Nairobi
Telephone; Nairobi 020 2453699
Email: rcenairobi@gmail.com
cdenairobi@gmail.com

REGIONAL COORDINATOR OF EDUCATION
NAIROBI REGION
NYAYO HOUSE
P.O. Box 74629 – 00200
NAIROBI

When replying please quote

Ref: RCE/NRB/RESEARCH/1/64 vol.1 **DATE:4th December, 2019**

Clement Nyaboke
Kenya Methodist University
P. O. Box 267-60200
MERU

RE: RESEARCH AUTHORIZATION

We are in receipt of a letter from the National Commission for Science, Technology and Innovation regarding research authorization in Nairobi County on *"Assessment of the Impacts of Implementation of Kenyans Breast Milk Substitute Act 2012 among nurses in selected Hospitals Nairobi Kenya."*

This office has no objection and authority is hereby granted for a period **26th July, 2020** as indicated in the request letter.

Kindly inform the Sub County Director of Education of the Sub County you intend to visit.

REGIONAL DIRECTOR OF EDUCATION
04 DEC 2019
MINISTRY OF EDUCATION
P. O. Box 74629, NAIROBI

KINOTI KIOGORA
FOR: REGIONAL DIRECTOR OF EDUCATION
NAIROBI.