

**ASSESSING FACTORS AFFECTING THE FEEDING PRACTICES OF MOTHERS OF
INFANTS 0-6 MONTHS IN KIBERA ESTATE ATTENDING LANG'ATA HEALTH
CENTRE**

**AN UNDERGRADUATE RESEARCH PAPER PRESENTED TO THE SCHOOL OF
NURSING SCIENCES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE AWARD OF A DEGREE IN NURSING SCIENCES**

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CYNTHIA MUKOLWE

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Declaration

I, Cynthia Mukolwe, declare that this dissertation is my original work and has not been submitted for the award of a degree/diploma in any university/college/institution.

Signed:.....

Date:.....

Cynthia Mukolwe

Approval

This dissertation entitled ‘Assessing factors affecting the feeding practices of mothers with children 0-6 months in Kibera Estate attending Lang'ata Health Centre’ has been done under my supervision and has been submitted to the IHSU SON for examination with my approval as the candidate’s supervisor.

Signed:.....

Date:.....

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TABLE OF CONTENTS

DECLARATION.....	II
APPROVAL.....	III
ACKNOWLEDGEMENT.....	IV
LIST OF TABLES.....	VII
LIST OF FIGURES.....	VIII
LIST OF ACRONYMS.....	IX
OPERATIONAL DEFINITIONS.....	X
CHAPTER 1.....	1
INTRODUCTION.....	1
1.1 BACKGROUND.....	1
1.2 PROBLEM STATEMENT.....	3
1.3. GENERAL OBJECTIVES.....	4
1.4. SPECIFIC OBJECTIVES.....	4
1.5 RESEARCH QUESTIONS.....	4
1.6 SIGNIFICANCE OF THE STUDY.....	5
1.7 JUSTIFICATION OF THE STUDY	5
CHAPTER TWO.....	7
LITERATURE REVIEW.....	7
2.0 INTRODUCTION.....	7
2.1 INFANT FEEDING PRACTICES	7
2.2 HIV AND INFANT FEEDING.....	10
2.3 FEEDING PRACTICES IN RELATION TO SOCIAL-DEMOGRAPHIC FACTORS.....	12
2.4 FEEDING PRACTICES IN RELATION TO CULTURAL FACTORS	16
2.5 FEEDING PRACTICES IN RELATION TO INFANT FACTORS.....	19
CHAPTER THREE.....	26
METHODOLOGY.....	26
3.0 INTRODUCTION	26
3.1 STUDY DESIGN	26
3.2 STUDY AREA.....	26
3.3 STUDY POPULATION.....	27
3.4 SAMPLE SIZE CALCULATION.....	27
3.5 STUDY VARIABLES.....	28
3.6 DATA COLLECTION TECHNIQUES.....	29
3.7 DATA MANAGEMENT.....	29
3.8 QUALITY CONTROL.....	30
3.9 ETHICAL ISSUES.....	30

4.0 LIMITATIONS.....	31
CHAPTER FOUR.....	32
DATA PRESENTATION.....	32
4.0 INTRODUCTION.....	32
Table 1: Distribution of respondents by their Social-demographic characteristics.....	32
4.1 SOCIAL DEMOGRAPHIC CHARACTERISTICS.....	33
4.2 INFANT FACTORS AFFECTING INFANT FEEDING PRACTICES.....	33
Table 2: Infant factors affecting infant feeding practices	35
4.3 SOCIAL-DEMOGRAPHIC FACTORS.....	36
TABLE 3: SOCIAL-DEMOGRAPHIC FACTORS AFFECTING INFANT FEEDING PRACTICES	36
4.4 CULTURE.....	37
TABLE 4: CULTURAL FACTORS AFFECTING INFANT FEEDING PRACTICES.....	37
TABLE 5: OTHER FACTORS AFFECTING INFANT FEEDING PRACTICES	38
CHAPTER FIVE.....	39
DISCUSSION.....	39
5.1 DISCUSSION OF FINDINGS.....	39
5.1.1 Demographic characteristics.....	39
5.1.2 Feeding practices.....	39
5.1.3 Social-demographic characteristics affecting infant feeding practices.....	41
5.1.4 Cultural characteristics affecting infant feeding practices	43
5.1.5 Other factors affecting infant feeding practices.....	43
CHAPTER SIX.....	45
CONCLUSION AND RECOMMENDATIONS.....	45
6.1 CONCLUSION.....	45
6.2 RECOMMENDATIONS.....	45
REFERENCES:.....	47
APPENDIX A.....	52
INFORMED CONSENT FORM FOR MOTHERS PARTICIPATING IN THE STUDY.....	52
QUESTIONNAIRE.....	53
APPENDIX B	57

List of Tables

Table 1: Distribution of respondents by their social-demographic characteristics.....	32
Table 2: Infant factors affecting infant feeding practices.....	35
Table 3: Social-demographic factors affecting infant feeding practices.....	36
Table 4: Cultural factors affecting infant feeding practices.....	37
Table 5: Other factors affecting infant feeding practices.....	38

List of Figures

Figure 1: Conceptual framework.....	6
Figure 2: Pie Chart showing infant feeding practices.....	33
Figure 3: Bar graph showing other feeding practices.....	34

List of Acronyms

EBF: Exclusive Breast feeding

WHO: World Health Organization

MoH: Ministry of Health

HSPs: Health Service Providers

PedNSS: Pediatric Nutrition Surveillance System

CDC: Center for Disease Control and Prevention

ASA: American Pediatric Association

GHAI: Greater Horn of Africa Initiative

KDHS: Kenya Demographic and Health Survey

USAID: United States Agency for International Development

ILCA: International Lactation Consultant Association.

ICDDR,B: International Centre for Diarrhoeal Disease Research Bangladesh

Operational definitions

Colostrum feeding- Feeding an infant on the first fluid secreted by the breast for the first three or four days after delivery until lactation begins.

Exclusive breastfeeding- Feeding an infant on breast milk only continuously for six months without giving any other fluids even water with the exception of vitamins, minerals and medicines.

Predominant feeding- Feeding an infant on breast milk and other liquids such as water, water based drinks, fruit, juices, oral rehydration solution.

Mixed feeding- Breastfeeding a child while giving non-human milk or food-based fluids and solid foods.

Complementary feeding- Introducing semi-solid and soft solid foods for infants after 6 months in addition to breast milk.

Infant feeding- Exclusively breastfed, predominantly breastfed, mixed fed or not breastfed.

ABSTRACT

The study was carried out in Kibera Estate, Nairobi Kenya with an objective to assess the factors affecting the feeding practices of mothers of infants zero to six (0-6) months.

Methods: A descriptive cross-sectional study design was used to collect data through a quantitative approach. A total of 300 mothers of infants six months old and below were interviewed.

Results: The study revealed that 89.3% of the sample lived in the urban informal settlements and average household size was 5 members per household, 78.3% were unemployed, 54.6% had little or no education, 40.3% were 25 years and above while 24.7% were 18 years or less. 37.7% were married. About 49.3% of infants were fed on breast milk while 50.7% received cow's or formula milk. Mixed feeding was widely practiced with largely formula milk, porridge or gruel and herbal drinks. Discarding colostrums, giving pre-lacteal feeds, introduction of other foods too early were some of the common practices noted among the mothers.

Conclusions: The study concluded that not all infants aged zero to six months are exclusively breastfed, social-demographic factors have a significant effect on infant feeding practices and culture is significantly related to infant feeding practices.

CHAPTER 1

INTRODUCTION

1.1 Background

Breastfeeding of human infants has been a common feature of all cultures and all times because our very survival depends on it. In contrast, other modes of infant feeding: what is fed, when, how and by who have differed according to both time and place (WHO, 1990).

The world health organisation recommends exclusive breastfeeding of infants for the first six months using on demand feeding and with initiation within the first hour of birth. Nutritionally adequate, safe and appropriate complementary foods should be introduced after six months. Breastfeeding should be encouraged for up to two years (Ulak et al., 2012). Exclusive breastfeeding for six months of age is recommended for HIV positive mothers with abrupt cessation of breastfeeding and introduction of safe and appropriate weaning and other foods. When implemented in both developed and resource poor developing countries, these recommendations have been shown to reduce both morbidity and mortality and also provide more pronounced benefits to the mother (Kruger and Gericke, 2001; Ulak et al, 2012).

Breastfeeding is accepted as the natural and optimal means of nourishing an infant and of preventing morbidity and mortality. The superiority of breast milk has been confirmed: it is the best (Kruger and Gericke, 2001). Colostrum, the yellowish, sticky breast milk produced at the end of pregnancy, is recommended by WHO as the perfect food for the newborn, and feeding should be initiated within the first hour after birth (WHO, 2012).

Globally, an average of about 35% of infants between ages 0-6 months are breastfed exclusively.

The nutritional, immunologic, and economic advantages of breastfeeding are well recognized. In

the 2009 Paediatric Nutrition Surveillance System (PedNSS), 61.7% of infants were ever breastfed, 27.0% were breastfed for at least 6 months, and 18.5% were breastfed for at least 12 months (CDC, 2011). Poor breastfeeding and complementary feeding practices have been widely documented in developing countries with only about 39% of infants exclusively breastfed for the first six months.

In the USA breastfeeding report card 2010, exclusive breastfeeding rates were 33% at 3 months and 13.3% at 6 months. A similar report in 2011 indicated exclusive breastfeeding rates at 35% at 3 months and 14.8% at 6 months.

In India, according to 2005-2006 report, 58% of infants under four months were exclusively breastfed while 46% of those under 6 months were breastfed exclusively (WHO, 2012).

In Ghana, only 8% of children under four months of age are breastfed and 45% are given some form of supplementary feeding by age three months (Awumbila, 2003).

In Kenya, according to Kenya Demographic and Health Survey (KDHS) 2008-2009, 32% of children under the age of six months are exclusively breastfed an improvement from 13% in 2003 (Kimani-Murage et al, 2011).

Urban poor settlements or slums provide distinct challenges with regards to child health and survival. Slums in sub-Saharan Africa expand at a fast rate with majority of urban dwellers living in slum settlements. They are characterized by poor environmental sanitation and livelihood conditions and as such urban slum dwellers tend to have very poor health indicators contrary to the long-held belief that urban residents are advantaged with regards to health outcomes (Kimani-Murage et al, 2011). In Kenya, slum children are reported to be sicker and to have higher mortality rates than any other sub-group in Kenya including the rural areas. Therefore,

infants born to mothers that reside in the urban slums may be exposed to sub-optimal breastfeeding and complementary feeding practices.

Despite efforts by Health Service Providers (HSPs) to increase the percentage of breastfed babies, not much success has been achieved because feeding practices are directly related to varied economic, socio-cultural and religious factors in the community and to various dynamics prevailing at the household level (Awumbila, 2003). Sub-optimal breastfeeding and complementary feeding practices are associated with various factors including maternal age, marital status, education level and occupation; antenatal and maternity health care; health education and media exposure; culture, socio-economic status and area of residence; and the infant's birth weight, birth order and use of pacifiers (Kimani-Murage et al, 2011).

1.2 Problem statement

Optimal infant feeding means that mothers are empowered to initiate breastfeeding within one hour of birth, breastfeed exclusively for the first six months and continue to breastfeed for two years or more, together with nutritionally adequate, safe and age-appropriate feeding of solid, semi-solid and soft foods starting in the sixth month.

In Kenya, studies indicate that an estimated 8400 infant deaths per year are due to sub-optimal breastfeeding practices (GHAI, 2001). Data from KDHS 2008-09 indicate that only 32% of infants below six months are exclusively breastfed. Most Kenyan mothers prefer mixed feeding rather than exclusive breastfeeding. Studies reveal that Kenya loses 76 billion every year treating three major but preventable diseases caused by improper breastfeeding. These are Otitis media, lower respiratory tract infections and gastrointestinal illnesses (Kibet, 2012). These illnesses impact directly on the infant's nutrition, health and growth.

In view of this incompatibility, there is a need to determine the suitable health education techniques that can prompt mothers to practice the ideal feeding methods for their infants in order to reduce morbidity, mortality and improve infant health respectively. If this is not addressed, there may be a hindrance or prolonged delay in the achievement of Millennium Development Goal 4 which is to reduce under five mortality rates by two thirds between 1990 and 2015. This can be best achieved through exclusive breastfeeding for six months.

1.3. General Objectives

To assess the factors affecting the feeding practices of mothers of infants 0-6 months in Kibera attending Lang'ata Health Centre.

1.4. Specific Objectives

1. To determine the feeding practices of mothers of infants zero to six months in Kibera attending Lang'ata health center.
2. To establish the relationship between social-demographic factors and feeding practices of mothers of infants zero to six months in Kibera attending Lang'ata health center.
3. To establish the effect of culture on feeding practices of mothers of infants zero to six months in Kibera attending Lang'ata health center.
4. To establish the infant factors affecting feeding practices of mothers of infants zero to six months in Kibera attending Lang'ata health center.

1.5 Research questions

1. What are the feeding practices of mothers of infants zero to six months in Kibera attending Lang'ata health center?

2. How do social-demographic factors affect feeding practices of mothers of infants zero to six months in Kibera attending Lang'ata health center?
3. How does culture affect feeding practices of mothers of infants zero to six months in Kibera attending Lang'ata health center?
4. How do infant factors affect feeding practices of mothers of infants zero to six months in Kibera attending Lang'ata health center?

1.6 Significance of the study

Infant feeding practices are important determinants of nutrition and health status of children. Poor breastfeeding practices, especially the lack of exclusive breastfeeding during the first 6 months of life and inadequate complementation are important risk factors for infant and childhood morbidity and mortality.

The study aimed to assess the knowledge, attitude and practices of mothers related to infant feeding practices, its benefits and introduction of supplements. As a result it will create awareness among mothers and improve standards of nutrition in infants and young children.

1.7 Justification of the study

The study sought to investigate the factors affecting the feeding practices of infants. It was hoped that it would add more knowledge to what was being practiced. The results of the study were expected to provide mothers with a better understanding of the correct feeding methods for their infants. The research would also identify problems with infant feeding and suggest significant policy statements through its recommendations on age appropriate infant feeding practices. As such, it could enable policy formulation in the country that will sustain the recommended standards of infant feeding.

1.8 Conceptual Framework

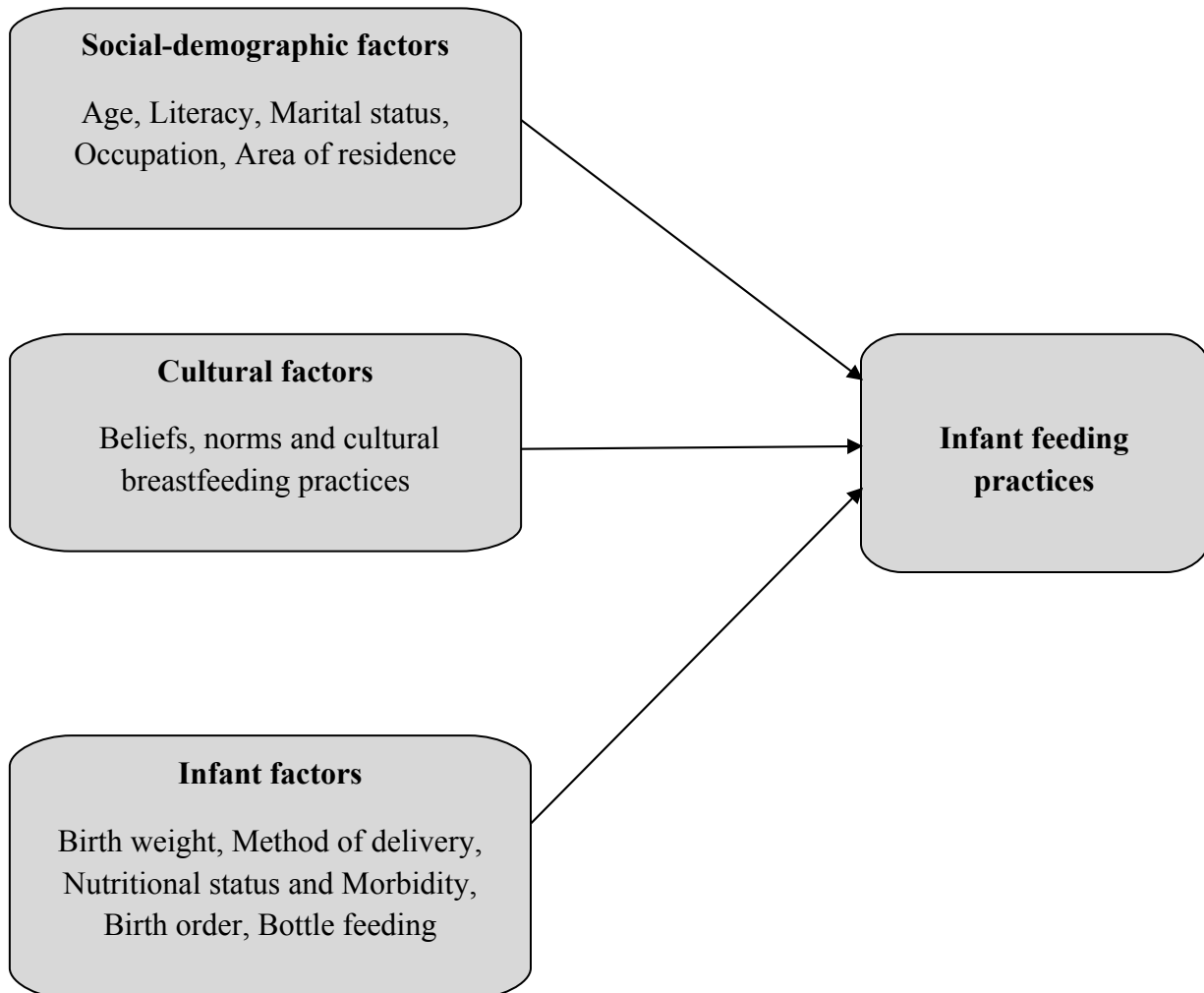


Figure 1: Conceptual framework

The conceptual framework above shows the independent variables, social-demographic, cultural and infant factors respectively that affect the dependent variable, infant feeding practices.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The chapter summarises literature related to factors affecting the feeding practices of infants zero to six months of age and is summarised in the following sections: Feeding practices in infants, feeding practices in relation to social-demographic factors, feeding practices in relation to cultural factors and feeding practices in relation to infant factors.

2.1 Infant feeding practices

Infant feeding practices generally refer to the various feeding methods employed by the mother or caregiver to provide the necessary nourishment to their infants. These range from either exclusively breastfed, predominantly breastfed, mixed fed or not breastfed at all.

2.1.1 Breastfeeding

Breastfeeding is an integral part of infant feeding and is the natural form of supplying nourishment to an infant. In a study, "Preliminary Data from Demographic and Health Surveys on Infant Feeding in 20 Developing Countries authors Marriott, Campbell, Hirsh and Wilson determined that of the 20 countries studied, 99.6% of 0-6 and 87.9% of 6-12 month old infants were breastfed. Breast milk provides total food security for the baby as it is a hygienic source of food with the right amount of energy, protein, fat, vitamins, and nutrients for infants in the first six months. It is the only safe and reliable source of food for infants in an emergency (Alive&Thrive).

2.1.2 Exclusive Breastfeeding

Exclusive breastfeeding necessitates feeding an infant on breast milk only continuously for six months without giving any other fluids even water with the exception of vitamins, minerals and medicines(WHO,2012). UNICEF (2012) indicates that it is the perfect way to provide the best food for a baby's first six months of life. Breastfeeding is so much more than food alone since breastfed infants are less likely to die from diarrhoea, acute respiratory infections and other diseases.

Benefits of exclusive breastfeeding

The United States Agency for International Development (USAID) recognizes exclusive breastfeeding for the first six months of life as the best feeding practice for enhancing child survival, growth and development. It also protects against diarrhoea by eliminating the infant's exposure to water-borne pathogens (USAID, 2009).

Breast milk provides protective antibodies from the mother to help protect infants against acute respiratory infections, bacterial meningitis, atopic disease, childhood asthma and childhood leukaemia. Breast milk prevents long term complications such as diabetes mellitus, obesity, Crohn's disease and lymphoma (Burby, 2005).

Breastfeeding stimulates an infant's immune system and response to vaccination as well as boosting cognitive development (Child info, 2012).

Breastfeeding saves money by reducing costs that would otherwise be used to treat illness or buy breast milk substitutes, feeding equipment or fuel for preparation. It is environmental friendly

since it is a natural, renewable, sustainable resource that requires no fuel for preparation, packaging, shipping, or disposal (Alive & Thrive).

Breastfeeding can reduce stress level and risk of postpartum haemorrhage as well as reducing the risk of ovarian and breast cancers (Baby Center, 2012). It promotes mother to child bond and meets the baby's emotional needs (USAID, 2009). Breastfeeding contributes to optimal child spacing (Burby, 2005).

2.1.3 Predominant Breastfeeding

Predominant breastfeeding means that the infant's predominant source of nourishment has been breast milk including that expressed from a wet nurse as the predominant source of nourishment. However, the infant may have also received other liquids such as water, water based drinks, ritual foods, fruits, juices, drops or syrups and oral rehydration solution (WHO, 2012).

Monterrosa et al, in their study in 2008 indicated that a lower incidence of gastrointestinal infections was associated with predominant breastfeeding from zero to six months compared to non predominant breastfeeding. Shiva, Ghotbi & Padyab (2007) agree that partially breastfed infants are likely to be hospitalised more frequently than predominantly breastfed babies. In their study, there was no significant difference in the risk of hospitalisation associated with being predominantly or exclusively breastfed.

2.1.4 Mixed feeding

Mixed feeding entails breastfeeding a child while giving non-human milk or food-based fluids and solid foods. The introduction of foods other than breast milk before six months of life is not

only undesirable, but could also be harmful since they displace the nutritious mother's milk and serve as a precursor for infectious pathogens leading to severe illness (Ulak et al., 2012).

Kerr, Berti and Chirwa (2007) in a breastfeeding and mixed feeding practices study in Malawi to find out the timing, reasons, decision makers, and child health consequences determined that 65% of children were given food in their first month, only 4% were exclusively breastfed for 6 months. The common early foods were *mzuwala* and *dawale* (herbal infusions), water and porridge. *Mzuwala* was introduced by grandmothers to protect children from illness while other foods were introduced by mothers or grandmothers in response to perceived hunger. The early introduction of porridge and *dawale* was associated with worse anthropometric status compared to *Mzuwala*, which is not associated with poor growth and is usually made with boiled water and given in small amounts. On the other hand, porridge which is associated with poor child growth, is potentially contaminated and served in larger amounts, which would displace breast milk.

Similarly, Kapil U., et al (1993) in a study to assess breastfeeding practices in a sample of 818 children established that 100% were ever breastfed. However, only 15% were exclusively breastfed for the first four months of life, 85% received water thus increasing risk of gastrointestinal infections. Water is believed to improve hydration and tea, which is advised by parents and even medical personnel, believed to relieve pain and quench thirst.

2.2 HIV and Infant feeding

Infant feeding in the context of HIV poses significant challenges due to risk of transmission of the virus via breastfeeding and the complexity of the major influence that feeding practices exert on child survival. The dilemma is to balance the risk of infants acquiring HIV through breast

milk with the higher risk of death from other causes in particular malnutrition and diarrhoea (UNICEF, 2012; WHO, 2009).

HIV transmission may occur for as long as a child is breastfed but the risk is nearly twice as much among women recently infected than for those infected before or during pregnancy due to the high viral load shortly after initial infection (WHO, 2003). The method of infant feeding is clearly associated with the risk of transmission through breastmilk. Compared to mixed feeding, the risk of HIV transmission is 3-4 fold lower with exclusive breastfeeding for the first six months. In a study by the WHO 2007 only 4% of exclusively breastfed infants became infected with HIV between 6 weeks and 6 months even in the absence of ARVs (UNICEF, 2012).

UNICEF indicates that HIV transmission through breastfeeding can be reduced if HIV positive women breastfeed exclusively for six months rather than practising mixed feeding. It is assumed that HIV transmission is higher in HIV infected women who take ARVs and mix feed compared to those who breastfeed exclusively, are infected and on ARVs. Thus mixed feeding should be discouraged in the first six months (2012).

The 2010 recommendations are that national authorities should decide which infant feeding practice and interventions are appropriate for the country. These include either breastfeeding with an ARV intervention or avoidance of breastfeeding altogether. If a country selects breastfeeding with an ARV intervention, mothers infected with HIV are recommended to breastfeed their infants until 12 months of age with exclusive breastfeeding for the first six months. ARVs should be provided to the mother or infant depending on the country's PMTCT protocol until one week after all breastfeeding has ceased. If replacement feeding is chosen, it

should not be used unless it is acceptable, feasible, affordable, sustainable and safe (AFASS) (UNICEF, 2012; Atashili et al., 2008).

2.3 Feeding practices in relation to social-demographic factors

2.3.1 Age

Maternal age has been shown to have an influence on breastfeeding. Park, Meier & Song (2003) studied characteristics of teenage mothers and predictors of breastfeeding initiation. The breastfeeding initiation rate of United States mothers younger than 20 years old was 36% in 1995 compared to that of 63% among mothers older than 25. CDC researchers reported that several factors can contribute to lower breastfeeding rates including the mother being young (Woznicki, 2010). Similarly, Tucker, Wilson and Samandari (2011) agree that adolescent mothers in the U.S. are less likely to initiate breastfeeding and those who do breastfeed for shorter durations.

In 2004, the Department of Health, Social Services and Public Safety (DHSSPS) reviewed literature that showed many young mothers lack access to key sources of information and advice on breastfeeding such as antenatal services, peer support programmes, friends, family and other social support networks. Young first time mothers may further lack assertiveness and are therefore reluctant to ask for information or advice on issues such as breastfeeding.

In Uganda, although universally practiced (99%), breastfeeding is less likely to be undertaken by adolescent mothers who often leave their babies in the hands of grandmothers due to social-economic reasons. Furthermore, poor weaning practices result to malnutrition in babies born to adolescents (MoH, 2000).

2.3.2 Literacy

Studies indicate varied opinions on the effect of maternal education on breastfeeding practices. Shwetal et al., (2012) showed that the rate of mothers initiating breastfeeding was higher in literate mothers compared to illiterate mothers. Anandaiah & Choe (2000) suggested in their report that in India the proportion of children age two months who are not breastfed at all is highest in the medium- mortality states and lowest in the high-mortality states. However, in both states two month old infants whose mothers are literate are less likely to be breastfeed than are children of illiterate mothers.

Odu & Dotun (2007) studied breastfeeding patterns in Nigeria and the findings showed no significant difference in the breastfeeding pattern of literate and illiterate mothers. Whether a mother is literate or illiterate, she sees breastfeeding as an important factor in fulfilling her child's right to live.

2.3.3 Marital status

Papp (2012) indicated that mothers report that their partners provide a significant and unique source of emotional and instrumental support especially during the early weeks of breastfeeding. Mothers with higher levels of marital satisfaction following their child's birth were more likely to breastfeed as planned throughout the first year.

In Eastern Uganda, only women well provided for could afford to practice exclusive breastfeeding. Men consider exclusive breastfeeding as a sign of poverty and as a sign of them failing to provide for the infant (Engebresten et al., 2010).

2.3.4 Occupation

Employment, maternity leave and the length of maternity leave are very influential on the incidence of exclusive breastfeeding and thus affect mother's choice of feeding practice (Jahangeer et al., 2009). The length of maternity leave is positively associated with the duration of breastfeeding (Chen et al, 2006; Singh, 2010).

Breastfeeding has declined significantly in the United States over the last few years. Breastfeeding dropped from 60% in 1984 to 52% in 1989. Prolonged breastfeeding declined from 24% to 18% in the same period (Hilts, 1991). Mothers who work full time tend to breastfeed for shorter intervals than those who work part time or are unemployed (Johnston & Esposito, 2007). It is also evident that mothers that work full time stop breastfeeding their infants earlier than other women due to lack of areas for breastfeeding at work (Hilts, 1991). Employed women in Jordan were more likely not to practice full breastfeeding compared to unemployed women (Khassawneh et al, 20006).

Heck et al., (2006) indicates that employment may decrease breastfeeding because women in lower-status occupations may have more obstacles to expressing breast milk at work, or women with hazardous occupations might be concerned their exposures might affect breast milk.

However, Poduval & Poduval (2008) suggest that in Asian countries, and in many joint family systems, grandparents and other nonworking family members fulfill the need for childcare when the mother is at work thus provides her the necessary support to perform her dual role efficiently.

2.3.5 Area of residence

Levels of malnutrition among slum dwelling infants are much higher compared to those in rural areas. In Urban slums, families either receive incorrect or little information about proper feeding practices and this lack of information contributes to high infant and child mortality rates (ICDDR, 2012).

Most Indian studies show a low exclusive breastfeeding rate among slum dwelling residents. Paul et al., (2009) studied infant feeding and weaning practices in slum dwellers of a district in Bangladesh and concluded that only 20% infants feed on breast milk while 45.5% feed on sugar water as their first food. Mixed feeding and early weaning was observed with majority of respondents citing lack of money as the reason for not giving nutritious foods to their children. Still in India, Swamy (2010) found exclusive breastfeeding rates at 4% as opposed to the high predominant breastfeeding rates in an urban slum. Discarding colostrums was still a common practice as well as giving pre-lacteal feeds. Although exposed to urbanisation some women still delayed to initiate breastfeeding. Similarly Roy, Dasgupta & Pal (2009) concur that in urban slums there is a serious erosion of breastfeeding practices. Exclusive breastfeeding rates range between 30-40% of infants while 90% discard colostrum with a universal pre-lacteal feeding practice.

Kimani-Murage et al., (2011) in a study of two urban slums in Nairobi, Kenya indicated neighbourhood (slum of residence) as one of the factors associated with sub-optimal infant breastfeeding and feeding practices. Slum children are reported to be sicker and to have higher mortality rates than any other sub-group in Kenya including the rural areas.

2.4 Feeding practices in relation to cultural factors

2.4.1 Culture

In humans, breastfeeding behaviour is highly variable from one culture to the next. Cultural tradition dictates the initiation, frequency and termination of breastfeeding. Learning plays a key role in the lactation process, but is focused on beliefs, attitudes and values of culture (Lawrence, 2011). The practice of exclusive breastfeeding is hindered by many cultural and practical obstacles. Some traditional beliefs, practices and rites encourage use of pre-lacteal feeds as well as giving extra water, tea and herbs to breastfeeding babies (Nankunda et al, 2006).

In the West, early weaning is encouraged because it is seen as a sign of infant development. An infant who does not easily wean at a socially expected (early) age is seen as overly dependent, demanding and spoiled (Mojab, 2000). In North and Western Europe, breastfeeding in public is not accepted since it is embarrassing (Agnew et al., 1997). Independence is valued in the American society and children should be taught from early infancy to be independent. As such, bottles are introduced so that others can feed the baby thus facilitating mother-child separation. Thumb sucking is perceived as a step towards independence. Babies and children sleep in a separate bed and room from parents. The American reverence for science is partly rooted in the belief that humans are masters of nature which cannot be trusted to properly manage itself. It is believed that scientists can create an infant food that is superior or equivalent to the milk produced by nature. Thus many mothers have fed their infants with formula believing it is as, or more hygienic than their own milk. Such cultural beliefs are often the basis of the distrust that many American women have in the quality and quantity of their own milk. This leads to supplementation with formula, early introduction of solids and early weaning (Mojab, 2000).

In India however, Sinhababu et al., (2010) revealed that although the practice was common among cultures, there was an international consensus that providing other liquids in addition to breast milk in the first six months of life was unnecessary and harmful. Similarly Agampondi et al., (2007) agrees that feeding a baby with mother's milk is a well accepted and well praised behaviour in the Sri Lankan culture.

However, Inayati et al (2012) in a retrospective study on infant feeding practices in Nias Indonesia established a widespread perception that prolonged breastfeeding would interfere with the child's growth. The belief that pregnant women should not breastfeed since it would harm the foetus by reducing its food intake resulting in the birth of a thin, sickly and feeble minded baby was another factor hindering breastfeeding. Birth spacing was short and as such a new pregnancy led to the decision to wean too early. Mothers if ill were not to breastfeed due to supposed transmission of illness to the breastfed child through breast milk in which case breastfeeding was halted and family foods were given to young children. Grandmothers had a negative influence as far as exclusive breastfeeding duration and time of introduction of complementary feeding was concerned. Singh (2010) reports of rural Rajasthan district in India where 77% of study population discard colostrum.

In Nigeria, Ogunbiade & Ogunleye (2012) established that the breastfeeding culture is well enshrined in various ethnic groups but the low practice of exclusive breastfeeding persists. Women do not breastfeed due to fear that breasts become flabby and they become unappealing to their husbands. The Nigerian Demographic Health Survey 2008 showed that only 13% of children below six months were breastfed exclusively while 87% of infants below six months receive complementary liquids or foods. Colostrum is not given to the baby sometimes due to fear that the yellow milk will give the baby jaundice (Qinn et al.). Early introduction of

complementary feeding affects breastfeeding initiation and sustainability. A common belief among the Yoruba people is that exclusive breastfeeding is beneficial to the mother and infant, but complementary feeding is essential for babies to adapt to other meals with ease (Ogunbiade & Ogunleye, 2012).

In Third World countries, exclusive breastfeeding is the safest way to nourish an infant for 3-6 months. However, many women in Eastern Africa practice mixed feeding which includes substitutes such as water, sugar water and other traditional beverages used for traditional or cultural reasons (Weber, 2012).

In Uganda, breastfeeding remains culturally acceptable with up to 99% initiating breastfeeding. Exclusive breastfeeding rates are however low and poor weaning practices predispose infants to malnutrition (MoH, 2000). Pre-lacteal feeds, water-based liquids commonly, are given to infants since "mothers have to wait for milk to start flowing, the baby is hungry, cleaning the baby's throat, relief from pain and exhaustion of delivery, traditions and advice from health staff" (Engebresten et al., 2007).

Many women in Kenya, especially in rural areas and among urban poor populations, do not exclusively breastfeed their children due to cultural beliefs and practices. Culture is a major obstacle to exclusive breastfeeding for six months. In some cultures a mother is not to breastfeed if she has had a quarrel with her husband since it would pass 'bad blood' between her and the person she quarrelled with to the child. Some are prevented from eating foods rich in protein to prevent them from increasing their weight and that of their babies (Coastweek, 2012). IRIN Africa (2012) notes that poor childcare practices such as diluting breast milk with water expose children to diarrhoea and worm infestation thus preventing proper nutrient absorption and retention.

2.5 Feeding practices in relation to infant factors

2.5.1 Birth Weight

Several studies have shown an influence of birth weight on breastfeeding. Low birth weight babies are less likely to breastfeed (Barros et al, 1986). Feeding at the breast is quite challenging for mothers and very low birth weight infants. Many infants who initially receive their mother's milk are not successful in transition to feeding at the breast and most problems are attributed to feeding limitations of the infant as opposed to maternal milk production (Facts for Feeding, 2006). Infants who are small for gestational age or hypoglycemic may require supplemental feedings as opposed to their healthy counterparts (Howard et al., 2003). This may have to be given in the form of bottle feeding since they are too small to latch on or suckle effectively at the breast. Sometimes the baby's mouth appears too small for the mother's nipple and areola (Facts for Feeding, 2006).

2.5.2 Bottle feeding

Howard et al., (2003) proposes that infants must learn to attach and suckle properly at the breast during the first few days of life to breastfeed successfully. Exposures to artificial nipples are believed to contribute to breastfeeding problems and early weaning. Bottle feeding is routinely used to provide supplements to breastfed infants and supplemental formula is strongly associated with early breastfeeding termination. In the study the authors conclude that supplemental feedings regardless of method (cup or bottle) have a detrimental effect on breastfeeding duration.

Shepherd, Power & Carter (2000) reported that fathers of both breastfeeding and bottle feeding babies were unaware of the health benefits of breastfeeding to both mother and child. Bottle

feeding mothers were supportive of the practice although less negative towards breastfeeding. Breastfeeding mothers, however, were more supportive towards breastfeeding than their partners. Fathers of both bottle and breastfed babies were more embarrassed than their partners about mothers breastfeeding in front of non family members.

2.5.3 Method of delivery

Internationally, studies have shown decreased breastfeeding initiation and continuation with cesarean birth (Sutherland et al, 2011).

Ahluwalia, Li & Morrow (2012) studied breastfeeding practices in relation to method of delivery. There was no significant association between delivery method and breastfeeding initiation. Breastfeeding duration to four weeks was less in induced vaginal delivery compared to the spontaneous vaginal delivery group while no significant association was observed in those who had planned or emergency cesarean deliveries. At 6 months, the induced vaginal and emergency cesarean delivery groups were less likely to breastfeed compared to the spontaneous vaginal delivery group. Breastfeeding duration varied substantially with the method of delivery at 45.2 weeks among spontaneous vaginal delivery, 38.7 weeks among planned cesarean delivery, 25.8 weeks among induced vaginal delivery and 21.5 weeks among emergency cesarean delivery groups respectively. Similarly in Jordan, women who had caesarian delivery were more likely not to practice full breastfeeding compared to those who had vaginal delivery (Khassawneh et al, 2006).

2.5.4 Birth order (Parity)

Breastfeeding initiation decreases as birth order increases hence multiparous women are less likely to initiate breastfeeding (Sutherland et al., 2011). An Indian study shows that breastfeeding within one hour decreases and infant mortality increases with increase in birth order (Pandey, 2006). However, Taylor et al., (2008) assert that U.S. mothers are likely to choose the same feeding method for each of their children regardless of the number of children they have. In their study mothers with two, three, four and five or more children breastfed all their children 52.6%, 48.4%, 44.7% and 57.1% of the time. Mothers made the same feeding choice whether breast or bottle feeding for each of their children.

2.5.5 Morbidity

Exclusive or predominant breastfeeding can significantly reduce morbidity rates (Mihreshahi et al., 2008). Various studies have shown a protective effect of breastfeeding against diarrhea, acute respiratory and gastrointestinal infections respectively. It is however important that mothers continue breastfeeding their infants during illness as well as when well.

Bentley et al., (1991) studied maternal feeding behavior and children acceptance of food during diarrhea, convalescence and health in Sierra Peru and revealed that child acceptance of food increased during health compared to diarrhea. This decrease during diarrhea was attributed to anorexia rather than withdrawal of food by mothers who in response to a reduction in child appetite during illness were likely to encourage them to eat. However, mothers tended to be passive feeders after the diarrhea had stopped.

2.6 Other factors affecting infant feeding practices

2.6.1 Knowledge on breastfeeding

The influence of maternal knowledge on breastfeeding initiation and duration has been described. Knowledge of the benefits of breastfeeding has been shown to predict breastfeeding. Paternal knowledge and social support may also be involved with the decision not to breastfeed (Heck et al, 2006).

Giugliani et al., (1995) studied maternal knowledge on breastfeeding and related factors and concluded that mothers who received prenatal orientation about breastfeeding and had at least 5 prenatal visits had better knowledge compared to those who received postnatal orientation. Although maternal knowledge on many breastfeeding aspects was low, postnatal orientation did not increase this knowledge whereas prenatal orientation had a positive impact on breastfeeding knowledge. However, even with the increase in knowledge there was still prevalence of early interruption of breastfeeding.

2.6.2 Antenatal and Maternity Care

It is imperative for a woman going through a pregnancy to have access to absolute care for herself and her unborn child (Epitales, 2012). Lack of proper information regarding breastfeeding sometimes acts as a barrier to its practice. The place of antenatal treatment and delivery can have an impact on the mother's feeding practices since public health sectors offer more information on proper feeding practices and have adopted the Baby Friendly Hospital Initiative (BFHI), thereby encouraging proper breastfeeding initiation and successful exclusive breastfeeding for six months. This is however not the case in the private sector (Jahangeer et al., 2009).

2.6.3 Health education

Encouragement by health care providers positively impacts a mother's decision to initiate breastfeeding especially in populations that are less likely to breastfeed (lahealth, 2004). Efforts must be intensified to educate prospective mothers on the need and benefits of breastfeeding (Salami, 2006).

In India, very few women have access to counselling services on infant and young child feeding. As such the mother's main source of information is through family and friends which is often inadequate (Ekambaram et al., 2010).

2.6.4 Media exposure

Mass media content is likely to influence the decision of women to breastfeed their newborn children (Foss and Southwell, 2006). In the U.S.A low levels of breastfeeding have been reported even with exposure to mass media. Foss & Southwell (2006) agree that through advertising media not only alerts the public to new merchandise, but also teaches people why they need a product. Thus by informing new parents of commercial milk substitutes and emphasizing the need for a new product, media outlets are likely to encourage widespread adoption of breast milk substitutes.

In Jordan studies show that women with a high media exposure were significantly more likely to initiate breastfeeding within six hours if the birth was after the media campaign (McDivitt et al., 1993).

The effectiveness of mass media promotion can be seen in results of formula advertising. Green (1989) reviewed literature that showed a four country survey found that majority of women

recalled mass media advertisements of commercial infant foods, even though the advertisements had been discontinued prior to the survey.

2.6.5 Workload

Women do the majority of unpaid work that sustains their families and the workload that results from this gender unequal division of work affects the time and energy available for breastfeeding (ILCA, 2007).

Most child-rearing work can be shared with others, but it is only mothers who carry a child through pregnancy, give birth, and provide their milk to feed and protect the child. When compared to men and to women without young children, this additional work of reproduction puts childbearing women at a competitive and financial disadvantage for supporting themselves and their families (ILCA, 2007). Women had to perform income generating activities for an average of six hours per day in informal sectors mostly away from their homes and as such it would be difficult to breastfeed during their absence from home. As a result there was a decline in breastfeeding frequency and ultimately cessation of breastfeeding (Adeyinka et al., 2008).

Engelbrechten et al., (2010) asserts that among women in Eastern Uganda exclusive breastfeeding was regarded as extremely difficult to combine with domestic chores and is seen as an obstacle to pursuing income generating activities. "Women felt they were constrained in their daily life: obligations, exhaustion, studies, domestic work, employment and family pressure were factors which made exclusive breastfeeding difficult. "

2.6.6 Socio-economic status

Differing aspects of socio-economic status may be associated with knowledge, attitudes, experiences and beliefs leading a woman to a particular infant feeding choice. Paternal and maternal income have been shown to affect breastfeeding in different directions since maternal income is associated with employment hence breastfeeding loses its worth. Higher socio-economic status women are more likely to have supportive workplace and/ or home environments for breastfeeding. Socio-economic status is associated with attitudes towards breastfeeding which may reflect experience with a peer group or a health care provider whose opinions the mother values (Heck et al., 2006).

Similarly, Bently, Dee and Jensen (2003) assert that women who make decisions about how to feed their infants live in communities where they are exposed to local organisations or workplace environments that can either support or discourage breastfeeding. For example, hospitals that encourage 'rooming in' and providing in hospital lactation to women who need it to build their skills and help them gain confidence in breastfeeding.

Contrary to both studies, Watt et al. (2006) suggests that although middle class mothers report health visitors as a valuable source of advice on infant feeding, the working class groups reported personal and family experience as well as practical support to be more helpful.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

The chapter presents the methodology that was used in the study. It highlights the research design, study area, study population, study variables, sample size calculation, the data collection techniques and instruments, data management, quality control, ethical issues, time frame and limitations of the study.

3.1 Study design

A descriptive cross-sectional study design was used to collect data through a quantitative approach. The design was chosen as it focuses on collecting data concerning factors affecting mothers or caregiver knowledge, attitudes and practices on optimal infant feeding practices at one point in time.

3.2 Study Area

Lang'ata health center is a city council health facility that offers both out-patient and in-patient services including antenatal care, basic emergency obstetric care, postnatal care, immunisation, growth monitoring and promotion, curative in-patient and out-patient services, family planning, HIV counselling and testing, prevention of mother to child transmission of HIV, home based care and rural health training centre/ rural health. It was chosen as the study area since most mothers reporting to the health center are residents of Kibera slum that is characterised by a gross unavailability and inaccessibility to basic vital goods and services which could have a direct impact on the practice of optimal infant feeding.

3.3 Study population

The target population comprised all breastfeeding mothers or caregivers with infants between ages zero to six months in Kibera Estate. The accessible population consisted of breastfeeding mothers or caregivers of infants zero to six months in Kibera attending Lang'ata Health Centre.

3.4 Sample size calculation

The sample size selection will be calculated using the kish and leslie formula.

$$N = \frac{Z^2 * P(1-P)}{d^2}$$

- Z^2 - Standard value of 1.96
- P- Estimated prevalence of variable being measured according to (KDHS, 2008-09) 32% hence 0.32
- d^2 - margin error at 5% (standard value of 0.05)

$$\text{Therefore } n = \frac{1.96^2 * 0.32 (1 - 0.32)}{0.05^2}$$

$$n = \frac{0.83593216}{0.0025}$$

$$n = 334$$

3.4.1 Inclusion criteria

The study population included breastfeeding mothers and caregivers with children zero to six months and reside in Kibera estate.

3.4.2 Exclusion criteria

Mothers with children between zero to six months that do not consent were excluded from the study as well as those with children more than six months of age.

3.4.3 Sampling technique

The sampling frame consisted mothers reporting to Lang'ata Health Centre from Monday to Friday for immunisation clinic as well as those in the postnatal unit. Systematic sampling technique was used to randomly select every third mother in the line awaiting services as it is cheaper and easier to implement. Only 330 mothers were available at the time of the study. Out of these, 15 declined to be included in the study, 4 were unavailable and 11 dropped out of the study.

3.5 Study variables

The study was based on the following variables:

3.5.1 Independent variables

- Social-demographic factors:- Age, Literacy, Marital status, Occupation and Area of residence
- Cultural factors:- Beliefs, norms and cultural breastfeeding practices.
- Infant factors: - Birth weight, method of delivery, birth order, bottle feeding, nutritional status and morbidity.

3.5.2 Dependent variable

- Feeding practices.

3.6 Data collection techniques

3.6.1 Instrument

Interviewer administered questionnaires were used to collect data from mothers and caregivers. The questionnaire contained sections to assess feeding practices and factors that affect child feeding practices. The questions included were both open and closed ended. The researcher was concerned with identifying variables that could not be directly observed such as views, opinions, perceptions and feelings of the mothers towards infant feeding practices.

3.6.2 Data collection procedure

Quantitative data was collected from 300 respondents from Kibera estate at Lang'ata Health Centre in October 2012 using questionnaires. The questionnaires were personally administered by the researcher with the help of two trained research assistants to facilitate fast data collection. The purpose of the study was clearly and concisely explained to the participants who signed the consent form before answering the questions. Data was collected from mothers or caregivers of children in the age group zero to six months after obtaining the authorization for research.

3.7 Data Management

The data collected was analysed using the Statistical Package for Social Sciences (SPSS) version 16. Socio-demographic data was analysed using univariate analysis to obtain descriptive statistics. In this study, the independent variables are categorical while the dependent variable is continuous. Chi-square test was used to compare differences between the categorical frequencies. $P < 0.05$ level of significance was used for analysis. The analysed data is presented in tables and figures.

3.8 Quality control

Quality control entails ensuring acceptable levels of validity and reliability of the study through proper control of extraneous variables. In this study tribe/ethnicity, religion and mental instability were some of the extraneous variables that may affect the dependent variable and confound the results of the study. Randomisation was used in order to create equivalent representative samples that are essentially similar in all the relevant variables that could influence the dependent variable. The instrument was pre-tested on a sample of 10 mothers who were not included in the study sample so as to maintain validity and reliability of at least 0.70. The questionnaire was written in English and translated to Swahili, and then again back-translated to English. This was done because the respondents were largely from a Swahili speaking area. The interviewer was fluent in both Swahili and English.

3.9 Ethical issues

Following research approval by the supervisor, an introductory letter (*Appendix B*) was obtained from the research committee of International Health Sciences University School of Nursing. Permission was also granted by the heads of department in the health centre, the District Health Officer and from participants of the study. Once the permission was granted, the researcher proceeded to collect data.

The major ethical issues in this study were informed consent, privacy and confidentiality, anonymity and researcher's responsibility. An informed consent was provided for the respondents (*Appendix A*) and was attached to each questionnaire. It informed them about the procedure and purpose of the study including their rights especially the right to refuse to

participate in the study. Confidentiality and Privacy of the respondents was upheld by use of codes. The study was descriptive in nature and no experimentation or interventions took place.

4.0 Limitations

The major limitations of this study were recall bias where respondents may have given information that the researcher would have liked to hear as opposed to what is true and participant response bias causing impatience due to either the length of the instrument or lengthy time spent in the assessment process. These limitations were minimised by the use of well structured questionnaires.

CHAPTER FOUR

DATA PRESENTATION

4.0 Introduction

This study assessed factors affecting the infant feeding practices of mothers with children zero to six months in Kibera. This was in light of the suboptimal infant feeding practices among mothers with children in this age group. The data collected was analysed using univariate and bivariate data analysis techniques. This chapter presents results of the analyses.

Table 1: Distribution of respondents by their Social-demographic characteristics

Variable	Frequency (N= 300)	Percentage (%)
Age		
18 years or less	74	24.7
19-24 years	105	35.0
25 years and above	121	40.3
Level of education		
No education	73	24.3
Nursery	91	30.3
Primary	86	28.7
Secondary	50	16.7
Tertiary	0	0.0
Marital status		
Single	56	18.7
Married	113	37.7
Divorced/ Separated	45	15.0
Widowed	35	11.7
Cohabiting	51	17.0
Occupation		
Employed	65	21.7
Unemployed	235	78.3
Parity		
One	94	31.3
Two	80	26.7
Three or more	126	42.0
Residence		
Urban formal settlement	32	10.7
Urban informal settlement	268	89.3

4.1 Social demographic characteristics

The frequency distributions for social demographic characteristics are presented in Table 1 above. Majority of respondents were 25 years and above. Most (28.7%) were educated to Primary level while (16.7%) to Secondary level respectively. Less than half (37.7%) were married while widows comprised the least (11.7%). More than half (78.3%) of respondents were unemployed while (21.7%) were employed or self employed. Most respondents had three or more children (42.0%) while (26.7%) had two children. The largest number of respondents (89.3%) resided in urban informal settlements.

4.2 Infant factors affecting infant feeding practices

Feeding practices were defined either as breastfed and/or bottle fed with breast milk only or bottle fed with cow's or formula milk respectively. The results are presented in Figure 2.

Fig 2: Pie chart showing infant feeding practices

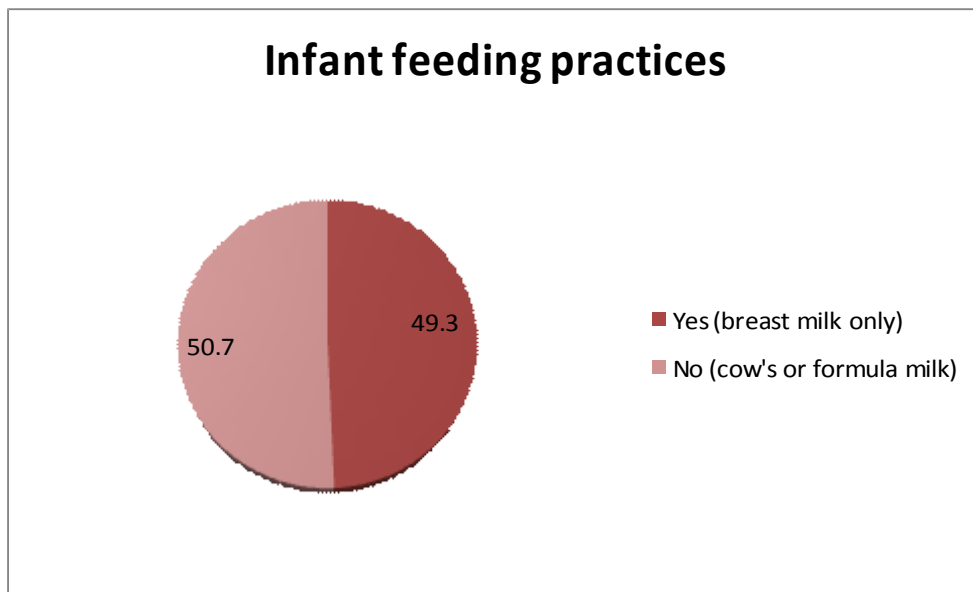
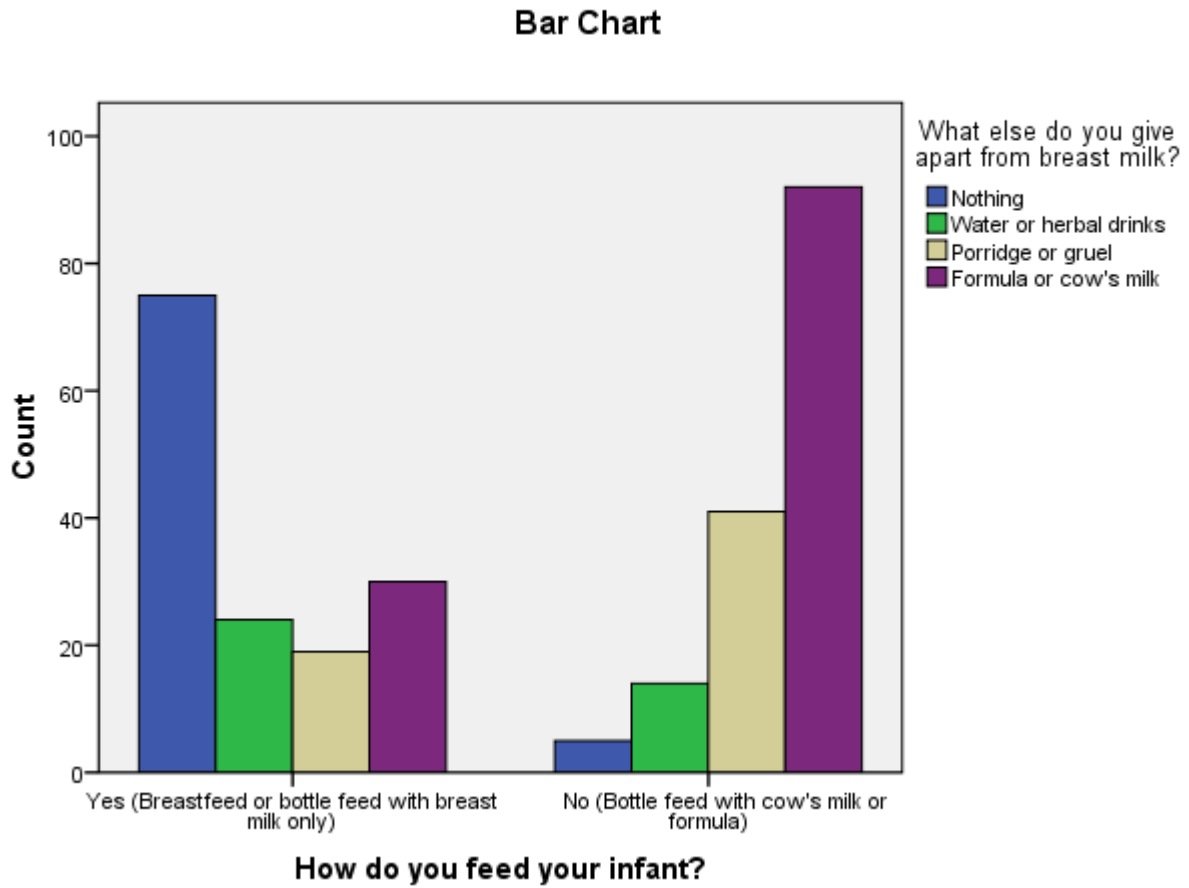


Fig 3: Bar graph showing other feeding practices



A large proportion of respondents in the breastfeeding group gave nothing else apart from breast milk to their infants. However, majority gave water and herbs compared to the infants given other types of milk. More than half of the infants fed on cow's or formula milk and most received porridge or gruel compared to the breastfeeding group.

Table 2: Infant factors affecting infant feeding practices

Variable	N (%)	Infant feeding practices		χ^2	P- value
		Yes	No		
What was your infant's birth weight?					
3kgs or more	184 (61.3%)	113(61.4%)	71 (38.6%)	31.176	0.000
2.5-2.9 kgs	66 (22.0%)	15 (22.7)	51 (77.3%)		
2.4kgs or less	50 (16.7%)	20 (40)	30 (60.0%)		
Method of delivery					
Spontaneous vaginal delivery	226 (75.3%)	125 (55.3)	101 (44.7)	13.162	0.001
Induced vaginal delivery	34 (11.3%)	10 (29.4%)	24 (70.6)		
Planned caesarean section	0 (0.0%)				
Emergency caesarean section	40 (13.3%)	13 (32.5%)	27 (67.5%)		
Feeding problems (Nutritional status)					
Yes	123 (41%)	37 (30.1%)	86 (69.9%)	30.913	0.000
No	177 (59%)	111(62.7%)	66 (37.3%)		
Morbidity/ recent illness					
Yes	111 (37.0%)	46 (41.4%)	65 (58.6%)	4.390	0.036
No	189 (63.0%)	102(54.0%)	87 (46.0%)		
Birth order					
First born	94 (31.3%)	68 (72.3%)	26 (27.7%)	32.304	0.000
Second born	80 (26.7%)	32 (40.0%)	48 (60.0%)		
Third born	78 (26.0%)	25 (32.1%)	53 (67.9%)		
Fourth born	35 (11.7%)	16 (45.7%)	19 (54.3%)		
Fifth born or above	13 (4.3%)	7 (53.8%)	6 (46.2%)		
Bottle feeding					
Breast milk not enough	108 (36%)	36 (90.0%)	72 (47.4%)	24.028	0.000
Breast pain	54 (18%)	4 (10.0%)	50 (32.9%)		
No time to breastfeed	30 (10%)	0 (0.0%)	30 (19.7%)		
N/A	108 (36%)				

4.3 Social-demographic factors

Social-demographics were defined as mother's age, educational level, marital status, occupation, husband's occupation and level of education respectively. Results are presented in table 3.

Table 3: Social-demographic factors affecting infant feeding practices

Variable	N(%)	Infant feeding practices		χ^2	P-value
		Yes	No		
Age					
18 or less	74 (24.7)	20 (27.0)	54 (73.0)	20.975	0.000
19-24	105 (35)	55 (52.4)	50 (47.6)		
25 and above	121 (40.3)	73 (60.3)	48 (39.7)		
Education level					
None	73 (24.3)	15 (20.5)	58 (79.5)	42.068	0.000
Nursery	91 (30.3)	56 (61.5)	35 (38.5)		
Primary	86 (28.7)	40 (46.5)	46 (53.5)		
Secondary	50 (16.7)	37 (74.0)	13 (26.0)		
Tertiary	0 (0.0)				
Marital status					
Single	56 (18.7)	14 (25.0)	42 (75.0)	37.019	0.000
Married	113 (37.7)	64 (56.6)	49 (43.4)		
Divorced/ Separated	45 (15.0)	33 (73.3)	12 (26.7)		
Widowed	35 (11.6)	8 (22.9)	27 (77.1)		
Cohabiting	51 (17.0)	29 (56.9)	22 (43.1)		
Occupation					
Employed	65 (21.7)	59 (90.8)	6 (9.2)	56.998	0.000
Unemployed	235 (78.3)	89 (37.6)	146 (62.1)		
Area of Residence					
Urban formal	32 (10.7)	24 (75.0)	8 (25.0)	9.441	0.002
Urban informal	268(89.3)	124 (46.3)	144(53.7)		

4.4 Culture

The respondents were asked questions intended to establish how different cultural practices impact on infant feeding practices.

Table 4: Cultural factors affecting infant feeding practices

Variable	N%	Infant feeding practices		χ^2	P-value
		Yes	No		
Do you think culture affects your decision to feed your child?					
Yes	67 (22.3)	44 (65.7)	23 (34.3)	9.213	0.002
No	233(77.7)	104 (44.6)	129(55.4)		
Do the cultural practices have a negative effect for you and your child?					
Yes	82 (27.3%)	59 (72.0%)	23 (28.0%)	23.095	0.000
No	218 (72.7%)	89 (40.8%)	129(59.2%)		
Is breastfeeding in public acceptable in the community you reside?					
Yes	268 (89.3%)	135(50.4%)	133 (49.6)	1.087	0.297
No	32 (10.7%)	13 (40.6%)	19 (59.4%)		

Table 5: Other factors affecting infant feeding practices

Variable	N (%)	Infant feeding practices		χ^2	P-value
		Yes	No		
Health education material or counseling on infant feeding practices					
Yes	296(98.7)	146 (49.3)	150(50.7)	0.001	0.979
No	4 (1.3)	2 (50.0)	2 (50.0)		
Does media affect infant feeding					
Yes	31 (10.3)	22 (71.0)	9 (29.0)	6.474	0.011
No	269(89.7)	126 (46.8)	143(53.2)		
Does your work environment, conditions at home and partner's source of income affect your feeding choices?					
Yes	239(79.7)	87 (36.4)	152(63.6)	78.638	0.000
No	61 (20.3)	61 (100)	0 (0.0)		
Do you think living in a place other than where you are now would influence your choice of feeding?					
Yes	83 (27.7)	54 (65.1)	29 (34.9)	11.354	0.001
No	217(72.3)	94 (43.3)	123(56.7)		
Workload					
5 hours or less	40 (13.3)	17 (42.5)	23 (57.5)	0.862	0.353
More than 5 hours	260 (86.7)	131 (50.4)	129 (49.6)		
Do you get time to rest and breastfeed?					
Yes	154 (51.3)	90 (58.4)	64 (41.6)	10.503	0.001
No	146 (48.7)	58 (39.7)	88 (60.3)		
Attendance of Antenatal Care					
Yes	155 (51.7)	112 (72.3)	43 (27.7)	67.427	0.000
No	145 (48.3)	36 (24.8)	109 (75.2)		
Is breastfeeding good for you and child?					
Yes	281 (93.7)	148 (52.7)	133 (47.3)	19.751	0.000
No	19 (6.3)	0 (0.0)	19 (100)		

CHAPTER FIVE

DISCUSSION

5.1 Discussion of findings

5.1.1 Demographic characteristics

Most mothers were aged 25 years and above (40.3%) while the least number were aged 18 years or less (24.7%). Younger mothers are less likely to practice appropriate infant feeding due to diminished exposure to motherhood or inexperience. A greater proportion of mothers had primary education (28.7%) whereas (16.7%) mothers had secondary education. This could impact on infant feeding practices since most uneducated mothers are less likely to practice the ideal feeding. Many mothers were married (37.7%) while (18.7%) were single mothers. This could possibly result in sub-optimal feeding for single mothers due to too many responsibilities, the need to provide for her family, make ends meet and lack of partners emotional support. Greater than half of the mothers (78.3%) were unemployed while (21.7%) were employed. Unemployment is likely to warrant increased toiling in a bid to provide for the family and such failure to appropriately care for the infant. 89.3% mothers were residents of urban informal settlements. Infant care could probably be sub-standard due to the poor livelihood conditions of such areas including poverty, poor access to health centers, insufficient water and sanitation facilities.

5.1.2 Feeding practices

Majority, 184 (61.3%) infants weighed 3 kilograms or more at birth and 61.4% (113) of them were breastfed or bottle fed with breast milk compared to only 40.0% (20) of 50 (16.7%) low birth weight babies. Birth weight had a significant relationship with infant feeding practices (0.000). The poor feeding practices in these infants were possibly due to either poor attachment

or failure to latch on the breast. As such most mothers preferred using bottles to feed their babies. These findings were similar to Facts for Feeding (2006).

More than half of the infants, 226 (75.3%) were born by spontaneous vaginal delivery and comprised the greater percentage 55.3% (125) of all breastfed babies than those born by induced vaginal delivery and caesarean section combined. The method of delivery had a significant relationship with infant feeding practices (0.001). Mothers who gave birth by spontaneous vaginal delivery demonstrated further increased likelihood to breastfeed frequently and for a longer duration than their counterparts. These findings were consistent with both Ahluwalia, Li & Morrow (2012) and Khassawneh et al (2006).

Both nutritional status and morbidity were shown to significantly influence infant feeding practices ($p= 0.000$ & $p= 0.036$) respectively. 177 (59%) of respondents reported no feeding problems for their infants and most, 62.7% (111) were practicing breast or bottle feeding with breast milk. 111 (37.0%) respondents reported infant recent illness and less than half, 41.4% (46), of them gave breast milk to their infants compared to 102 (54.0%) of those who reported no recent infant illness. There was a significant relationship between recent illness and infant feeding practices ($p=0.036$). This could probably be due to the fact that most infants are likely to have a reduced appetite in the course of illness a period in which most mothers experience feeding problems. Similarly, Bentley et al (1991) revealed that child acceptance of food decreased during ill health.

The proportion of infants breastfed or bottle fed with breast milk reduced significantly with the birth order of the child. First borns were 72.3% (68) likely to be breastfed than children born fifth or above 53.8% (7). Birth order was significantly related to infant feeding practices ($p=0.000$). This could possibly result from diminishing motivation or enthusiasm as mother gets

more children or the monotony of practicing the same routine repeatedly. Similarly Sutherland et al (2011) revealed in their study that breastfeeding decreases with increasing birth order.

Majority of respondents, 108 (36%) attributed bottle feeding to lack of enough breast milk and 66.7% (72) practiced bottle feeding with cow's or formula milk. There was a significant relationship between bottle feeding and infant feeding practices (0.000). This could cause a barrier to successful and efficient infant feeding practices by either resulting to breast refusal or increased infections as a result of poor hygiene. The duration of breastfeeding among mothers of bottle fed infants reduced drastically with increasing infant age dropping to zero at two years. This finding was consistent with Howard et al (2003) that bottle feeding is associated with early termination of breast feeding and has detrimental effects on duration of breast feeding.

5.1.3 Social-demographic characteristics affecting infant feeding practices

The findings in table 1 show majority, 121 (40.3%) respondents were aged 25 years and above and 60.3% (73) of them practiced breastfeeding while only 27% (20) mothers aged 18 years or less practiced breastfeeding. There was a significant relationship between mother's age and infant feeding practices ($p= 0.000$). This could be due to the fact that teenagers are least exposed to peer and emotional support, experience in motherhood as well as guidance and counseling which can help them identify with the required infant care. These findings were synonymous with Park, Meier & Song (2003) as well as Tucker, Wilson & Samandari (2011).

A few, 86 (28.7%) mothers were educated up to primary school level and less than half 46.5% (40) breastfed whereas 50 (16.7%) had secondary education and 74% (37) of them breastfed. The level of education was thus a significant factor for infant feeding practices ($p= 0.000$). Similarly, Shwetal et al (2012) found that the rate of breastfeeding initiation was higher in literate

compared to illiterate mothers. However, Odu & Dotun (2007) found no significant difference in breastfeeding patterns of both literate and illiterate mothers.

Married respondents comprised a majority 113 (37.7%) respondents, 56.6% (64) gave breast milk as the feeding method of choice compared to their unmarried counterparts. There was a significant relationship between marital status and infant feeding practices ($p= 0.000$). These findings were similar to Papp (2012) that partners provide a significant and unique source of emotional and instrumental source of support during the early weeks of breastfeeding.

Majority mothers, 235 (78.3%) were unemployed and comprised majority 62.1% (146) of those who did not give breast milk as the infant feeding choice while 59 (90.8%) of the 65 employed practiced breastfeeding. Maternal occupation had a significant relationship with infant feeding practices ($p= 0.000$). This could be due to the fact that most employed mothers could afford to pay for house helps or bring family members to carry out household duties while they cared for their infants. Employed mothers were probably more likely to express breast milk and leave at home. These findings were similar to Poduval & Poduval (2008) whose study suggested that nonworking family members fulfill the need for childcare when the mother is at work hence providing her necessary support to perform her dual role efficiently.

The area of residence had a significant relationship with infant feeding practices ($p= 0.002$). More than half of respondents 89.3% (293), resided in the urban informal settlement and 53.7% (144) of them bottle fed with cow's or formula milk compared to 8 (25.0%) of those in urban formal settlements. In this study, mothers residing in the slum were least likely to breastfeed and comprised the largest proportion of those practicing mixed feeding, discarding colostrums and giving prelacteal feeds. Mothers in the slum also reported history of recent illness in their children more than those in urban formal settlements. This could be attributed to the fact that in

slums it is easier to access these commodities in small quantities at affordable prices. The lack of sufficient water and sanitation facilities prevented proper hygiene. Similarly Roy, Dasgupta & Pal (2009) and Swamy (2010) revealed discarding colostrums and giving prelacteals as common practice in slums. Kimani-Murage et al (2010) revealed that slum children are most affected health wise than any other sub-group including rural areas.

5.1.4 Cultural characteristics affecting infant feeding practices

Most, 233 (77.7%), respondents thought culture did not affect their decision to feed their children. 55.4% (129) of these mothers practiced bottle feeding with cow's or formula milk. There was a significant relationship between culture and infant feeding practices ($p= 0.002$). In this study some respondents discarded colostrums and gave prelacteal feeds to their infants. Others practiced the use of herbs and introduced other foods too early. Most mothers believed that breast milk is not fully satiating and that traditional family foods were more nutritious. These findings are indicative of culture's significance in the choice of infant feeding and are similar to Nankunda et al (2006), Singh (2010) and Weber (2012). Contrary to Agnew et al (1997) who attributed breastfeeding in public as unacceptable, most respondents in this study had a universal consensus that breastfeeding in public is acceptable in their communities of residence. This could probably be due to the difference in geographical locations of both studies.

5.1.5 Other factors affecting infant feeding practices

Greater than half, 296 (98.7%) of respondents had received health education material or counseling on infant feeding practices. However, 50.7% (150) of the mothers did not practice breastfeeding for their infants.

There was no statistical significance between health education and infant feeding practices. ($p= 0.979$).

Most, 269 (89.7%), of respondents had no media exposure and as such 53.2% (143) mothers did not practice breastfeeding as the infant feeding method of choice. There was a significant relationship between media exposure and infant feeding relationship ($p= 0.011$).

Many of the respondents, 239 (79.7%), agreed that work environment, conditions at home and partners source of income affected their feeding choices. As such, 63.6% (152) of them gave formula or cow's milk to their infants as opposed to breast milk. There was a statistical relationship ($p= 0.000$) between socio-economic status and infant feeding practices.

A greater proportion, 217 (72.3%), of respondents did not think a different place of residence would influence their feeding practices. 56.7% (123) mothers would still practice bottle feeding with cow's or formula milk. There was a significant relationship between place of residence and infant feeding practices (0.001).

Majority, 260 (86.7%) experienced more than 5 hours workload a day and 50.4% (131) gave breast milk while only 42.5% who worked less than 5 hours gave breast milk to their infants. There was no statistical significance between infant feeding practices and maternal workload ($p=0.353$).

Half of the respondents, 155 (51.7%), attended antenatal clinics. 72.3% (112) of them gave breast milk as the infant feeding choice compared to 24.8% of those that did not. Antenatal clinic attendance had a significant relationship with infant feeding practices ($p= 0.000$).

Most respondents, 281 (93.7%), demonstrated adequate knowledge on breastfeeding and 52.7% (148) gave breast milk as the infant feeding choice. There was a statistical significant relationship between knowledge of breastfeeding and infant feeding practices ($p= 0.000$).

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

1. Not all infants aged zero to six months are being exclusively breastfed.
2. Social-demographic factors have a significant effect on infant feeding practices. The risk groups include younger adolescent mothers, the uneducated and those that resided in the informal settlements.
3. Culture is significantly related to infant feeding practices.
4. Infant factors are significantly related to infant feeding practices

As such, the study concludes that social-demographics, culture and infant characteristics are factors affecting feeding practices of mothers with children zero to six months in Kibera.

6.2 Recommendations

On the basis of general findings of this study, the researcher recommends the need to implement the various infant feeding policies by the government working hand in hand with the help of medical personnel as soon as infants are born and follow-up to at least six months.

The government should strive to make available social amenities and necessary infrastructure for slum dwellers mostly health centers, safe water and toilet facilities and in turn residents should maximise these facilities accordingly to ensure health maintenance is a continuous process.

Communities should be urged that even as they uphold and respect their cultural practices to put the need for health first.

Public health sectors should offer more information on proper feeding practices and hospitals should adopt the Baby Friendly Hospital Initiative (BFHI), so as to encourage proper breastfeeding initiation and successful exclusive breastfeeding for six months.

The WHO's 10 steps to successful breastfeeding should be availed to mothers in each facility providing maternity services and care for newborn infants.

The researcher recommends the assessment of the effect of other factors like religion and tribe/ethnicity on infant feeding practices.

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APPENDIX A

Informed Consent Form for mothers participating in the study

Assessing the factors affecting the feeding practices of mothers with children zero to six months

Dear respondent,

You are kindly invited to participate in a research on factors affecting the feeding practices of mothers with children zero to six (0-6) months of age. The research is being conducted by Cynthia Mukolwe of International Health Sciences University in partial fulfilment for the requirement of the award of a degree in nursing. The research will help you identify your problems with infant feeding and is also expected to suggest significant policy statements through its recommendations on age appropriate feeding practices for your infant. As such, it could enable policy formulation in the country that will sustain the recommended standards of infant feeding.

Please note that all information gathered from this study will remain private and confidential. It will be used to enhance knowledge of the common good in a bid to improve infant feeding practices and reduce child morbidity and mortality. Ethical measures will be undertaken to ensure privacy and anonymity. You are free to withdraw consent and discontinue participating in the study although your full participation will be highly appreciated.

CONSENT

I have read and fully understood the purpose of this study. I agree to participate and provide all necessary information. Respondent's Signature..... Or thumb print

QUESTIONNAIRE
INTERNATIONAL HEALTH SCIENCES UNIVERSITY
SCHOOL OF NURSING

Researcher code		
Study number		
Date of interview	/	/

This questionnaire is intended to assess the factors affecting the feeding practices of mothers with children 0-6 months.

SECTION A: BIODATA

1. Age of mother

1. ≤18 years {} 2. 19- 24 years {} 3. 25 years and above {}

2. Level of education

1. No education {} 2. Nursery {} 3. Primary {}
4. Secondary {} 5. Tertiary {}

3. a. Marital status

1. Single {} 2. Married {} 3. Divorced/ Separated {}
4. Widowed {} 5. Cohabiting 6. Other..... (specify)

b. If married, at what age did you marry?

1. ≤ 18 years {} 2. 19-24 years {} 3. Other (specify).....

4. a. Occupation

1. Employed {} 2. Unemployed {}

b. If employed, what work do you do?.....

5. a. Husband's occupation

1. Employed {} 2. Unemployed {}

b. Husband's level of education?.....

6. Residence

1. Urban formal settlement {} 2. Urban informal settlement {}

7. a. How many children do you have?.....

b. What age/ ages are they?.....

c. What birth order is your current child?.....

d. What age is your current child?.....

8. a. Whom do you live with?

1. Husband {} 2. Maternal relatives {} 3. Paternal relatives {}
4. Other(Specify).....

b. How many people live in your household?.....

SECTION B: MATERNAL FEEDING PRACTICES

9. a. How do you feed your infant?

1. Breastfeed only {} 2. Bottle feed with breast milk {}
3. Bottle feed with cow's milk {} 4. Bottle feed with formula {}

b. Do you think it is the best method for feeding your infant?

1. Yes {} 2. No {}

c. If breastfeeding, how often do you breastfeed?.....

d. i) What else do you give apart from breast milk?.....

ii) How long will you breastfeed your infant?.....

e. i) If bottle feeding, why?.....

ii) How do you prepare the milk before giving your infant?.....

iii) How do you clean the bottle you use for feeding your child?.....

10. Do you have any knowledge concerning antenatal and maternity care?

1. Yes {} 2. No {}

11. a. Did you attend antenatal clinics during your pregnancy?

1. Yes {} 2. No {}

b. If yes, how many times did you attend?.....

c. If no, why?.....

12. a. Is breastfeeding good for you and your child?

1. Yes 2. No

b. If yes, why?

c. If no, why?.....

13. Where did you get information about breastfeeding?.....

14. a. How many hours a day do you work?.....

b. Do you get some time to rest and breastfeed?

1. Yes {} 2. No {}

c. Who takes care of your child when you are off to work?.....

d. Does breastfeeding interfere with your work?

1. Yes {}

2. No {}

di. If yes, how?.....

e. Do you have anyone to help around with housework while you are away?

1. Yes {}

2. No {}

f. Are you given time off from work to go and nurse your baby?

1. Yes {}

2. No {}

SECTION C: SOCIO-CULTURAL FACTORS

15. a. Have you ever received any health educational material or counseling on infant feeding practices?

1. Yes {}

2. No {}

b. If yes, where was it and did you find it helpful?.....

1. Yes {}

2. No {}

16. a. Does the media affect your choice of feeding?

1. Yes {}

2. No {}

b. If yes, how?.....

17. a. Does your work environment, conditions at home and partner's source of income affect your feeding choices?

1. Yes {}

2. No {}

b. If yes, how do they affect your feeding choice?.....

c. What do you think could be done differently to improve these choices?.....

18. a. Do you think living in a place other than where you are now would influence your choice of feeding?

1. Yes {}

2. No {}

b. If yes, how will it affect your feeding choice?.....

c. If no, why?.....

19. a. Do you think culture affects your decision to feed your child?

1. Yes {}

2. No {}

b. How does culture affect your feeding choices?.....

c. Do you think it would cause a problem for you if you did not obey?.....

d. Do the cultural practices have a negative effect for you and your child?

1. Yes {}

2. No {}

e. If yes, what are they?.....

f. Do you think they are harmful? Given a chance would you engage in these practices?.....

g. What other attitudes and beliefs do people in your community have regarding breastfeeding or other methods of feeding the infant?.....

h. Is breastfeeding in public acceptable in the community you reside?

1. Yes {}

2. No {}

h.i. If no, why?.....

SECTION D: INFANT CHARACTERISTICS

20. What was your infant's birth weight?.....

21. At what gestational age did you go into labour?.....

22. How was the progress of labour?

1. Normal {}

2. Prolonged {}

3. Complicated {}

23. What was the method of delivery?

1. Spontaneous Vaginal delivery {}

2. Induced vaginal delivery {}

3. Planned caesarean section {}

4. Emergency caesarean section {}

5. Others.....(specify)

24. a. Has the infant had any feeding problems?

1. Yes {}

2. No {}

b. What are they?.....

c. What do you do to ensure your baby still feeds?.....

25. a. Has the baby suffered from any recent illness?

1. Yes {}

2. No {}

b. Has the illness affected the baby's feeding?.....

c. What did you do to ensure the baby still feeds?.....

d. What did you do after the baby got well?.....

Thank you for your cooperation

APPENDIX B



making a difference to Health Care in Uganda

Office of the Dean, School of Nursing

Kampala, On the 8th Day of October, 2012.

TO WHOM IT MAY CONCERN

Dear Sir/Madam

Re: Assistance for Research

Greetings from International Health Sciences University.

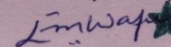
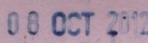

This is to introduce to you **Ms. Cynthia Mukolwe Kinisu Reg. No. 2008-BNS-FT-026**, who is a student of this University. As part of the requirements for the award of a Bachelor of Nursing Sciences on Direct entry of this University, the student is required to carry out field research for the submission of a Research Project.

Ms. Mukolwe would like to carry out research on issues related to: **Assessing factors affecting the feeding practices of mothers with children zero to six months in Kibera attending Lang'ata Health Centre**

I therefore request you to render the student such assistance as may be necessary for her research.

I, and indeed the entire University are thanking you in anticipation for the assistance you will render to her.

Sincerely Yours,

  
Mrs. Wafula Elizabeth
Ag. Dean,
School of Nursing
International Health Sciences University.

International Health Sciences University
P.O. Box 7782 Kampala - Uganda - East Africa
Tel (+256) 0312 307400 email: deanson@ihsu.ac.ug
web: www.ihsu.ac.ug
the teaching college of International Hospital Kampala