EFFECT OF PEER SUPPORT GROUP COUNSELLING ON INFANT FEEDING PRACTICES OF MOTHERS IN SELECTED RURAL AREAS IN IBADAN, OYO STATE, NIGERIA

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ABSTRACT

Poor Infant and Young Child Feeding (IYCF) practices contribute to high burden of child malnutrition in Nigeria. Community-based support group intervention has the potential to improve IYCF coverage and reach the rural population; however, its effects on infant feeding practices of mothers in Nigeria remain unexplored. This study was therefore conducted to determine the effects of peer support group counselling on infant feeding practices of mothers in selected rural areas of Ido and Oluyole Local Government Areas in Ibadan, Nigeria.

This quasi experimental design study involved systematic random sampling of 240 non-primigravid pregnant women (26-34 weeks). Respondents were assigned into Experimental Group (EG) (Ido) and Control Group (CG) (Oluyole) of 120 each based on area of residence. Baseline and endline data were collected using a semi-structured, interviewer-administered questionnaire comprising socio-demographic characteristics, 21-point knowledge, 17-point attitude and 36-point practice scales on infant feeding. All respondents were exposed to conventional antenatal nutrition education. Respondents in experimental group were followed up with 15-months peer support counselling including action-oriented group discussion, use of pictorial counselling booklet and home visits. Complementary feeding practice indicators were assessed using multiple pass 24-hour dietary recall. Weight and length of index children were measured at age 12 months using standard procedure and analysed for anthropometric characteristics using WHO Anthro software. Factors influencing IYCF practices and mothers' strategies for responsive feeding were determined using Focus Group Discussions and analysed thematically. Quantitative data were analysed using descriptive statistics and students't-test at $\alpha_{0.05}$.

Age of Mothers was 28.7±5.1 years, 98.8% were married, 97.1% were Yoruba and 60.8% had secondary education. Mothers' infant feeding knowledge significantly increased from 12.0±4.6 at baseline to 20.7±2.0 in EG and 16.9±3.1 to 18.9±3.2 in CG. Mothers' attitude to breastfeeding significantly increased from 7.5±2.7at baseline to 15.2±2.1in EG and 11.0±2.5 to 13.6±3.4 in CG.Mothers' attitude to complementary feeding significantly increased from 4.3±1.6 at baseline to 9.0±0.1in EG and 7.7±1.3 to 8.1±1.8 in CG. Mothers' practice of IYCF improved significantly from 16.6±2.9 at baseline to 18.1±2.8 in EG with no significant improvement among the CG (16.6±3.2 at baseline to 16.4±2.6). Early initiation (57.5%; 42.2%), exclusive breastfeeding (61.3%; 33.9%),), timely introduction of complementary feeding (62.2%; 39.4%), and children

that met minimum dietary diversity (64.2%; 30.6%) were higher in EG than CG, respectively. At age 12 months, prevalence of wasting (24.8%; 17.4%); stunting (11.0%; 2.8%), underweight (18.3%; 1.8%) and overweight (6.4%; 2.8%) was significantly higher among index children in CG compared to EG, respectively. Decision of mothers on IYCF practices was solely personal but the practice was influenced by the introduction of pre-lacteal foods, mainly water and local concoctions by extended family members. Responsive feeding was practised by mothers mainly in form of singing and praising to encourage child's cooperation during feeding.

Peer support group counselling increased infant feeding knowledge, attitude and practice among women in rural areas of Ibadan with good nutrition outcomes among infants. Efforts to promote infant feeding practices and reduce child malnutrition could therefore include the use of peer support groups.

Keywords: Infant and Young Child Feeding, Prelacteal foods, Responsive feeding

Word count: 498

CERTIFICATION

This is to certify that this study was carried out by Olusa, Rachael Funmilayo under my supervision in the Department of Human Nutrition, Faculty of Public Health, College of Medicine, University of Ibadan.

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Supervisor **Date**

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DEDICATION

This work is dedicated to the immortal, invincible and only wise God. He is the Alpha and the Omega of this work and in him I live, move and have my being.

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ABBREVIATIONS

BFHI	Baby Friendly Hospital Initiative
FGD	Focus Group Discussion
FMOH	Federal Ministry of Health
LGA	Local Government Area
NDHS	Nigeria Demographic Health Survey
NNHS	National Nutrition and Health Survey
MICS	Multiple Indicator Cluster Survey
UNICEF	United Nations Children Fund
WHO	World Health Organization
EBF	Exclusive Breastfeeding
EIB	Early Initiation of breastfeeding
MDD	Minimum Dietary Diversity
CF	Complementary Feeding
SG	Support Group
NPC	National Population Commission
NBS	Nigeria Bureau of Statistics
NPopC	National Population Commission
FMoH	Federal Ministry of Health
C4D	Communication for development

OPERATIONAL DEFINITION OF TERMS

Action-Oriented Group Discussion: Traditionally, group talks are organized to commnunicate Ideas or convey information to a group. Usually, a leader directs the group talk, and group participants ask and answer questions. An 'action-oriented' group is slightly different. Facilitators encourage the group, personalize the information and to try something new or different (an action) from what they normally do by following the sequence of activities or applying the steps; observe,think,try and act.

Health talks are effective for giving information, but do not necessarily lead to changes in Behaviour. Using the steps observe, think, try and act during health talks can motivate group participants to change their behavior (The community Infant and Young Child Feeding Counselling package, 2012)

EBF (Exclusive Breastfeeding): means giving a baby only breastmilk and no other foods or drinks (Liquids or solids), not even water. Drops or syrups consisting of vitamins, mineral supplements or medicines are permitted if medically indicated.

Complementary Feeding: The process starting when breastmilk alone is no longer sufficient to meet the nutritional requirement of infant and therefore other foods and liquids are needed, along with breastmilk. The target age for complementary feeding is generally taken to be from 6 up to 24 months.

Complementary Foods: Any locally prepared foods suitable as a complement to breastmilk when breastmilk becomes insufficient to satisfy the nutritional requirements of the infant.

Peer Support: Peer support oocurs when people provide knowledge, experience, emotional, social or practical help to each other. It commonly refers to an initiative consisting of trained supporters and can take a number of forms such as peer mentoring, reflective listening or counselling.

Support Group (IYCF): A group of mothers/fathers/caregivers, who promote recommended breastfeeding and complementary feeding behavior, share their own experiences and provide mutual support.

Pre-Lacteal Food: Foods introduced to an infant other than breastmilk before lactation commences e.g Glucose, water, infant formular or local concoction.

Responsive Feeding: Feeding infants directly, assisting older children when they feed themselves and being sensitive to their hunger and satiety cues.

Behaviour Change Communication (BCC): a systenmatic change methodology based on initial data gathering, adaptation of change message and agreement to change

Socio-ecological Framework: this concept indicates that health improvements and behavior change are mediated by several levels of influence and therefore an intervention should consider at least these five levels; person, family, community structure, service structure, political /governmental.

CHAPTER ONE

INTRODUCTION

1.0 Background to the Study

Poor Infant and Young Child Feeding (IYCF) practices contribute to high burden of child malnutrition in Nigeria (NPC and ICF Macro 2014, 2019; NBS, NPopC and FMOH, 2018). Child malnutrition remains a major problem in many developing countries resulting in high burden of disease, deficit in development, poor health and death (Mukuria, Kothari *and Adbderrahim* 2006; Black, Allen *and Bhutta* 2008; Bejon, Mohammed and Mwangi 2008). Nigeria is one of the 20 countries that account for 80% of undernourished children in the world, directly or indirectly contributing to more than 50% of deaths among under-five children (FMoH, 2010). Though there was a decline in under-five mortality between 2009 and 2013, the rate remains high at 128 deaths per thousand live births (NPC and ICF Macro, 2014). The persistent high rate of mortality may be attributed to the slow improvement in nutritional indicators in Nigerian children between 2013 and 2018. Stunting remains at 37%, however, underweight and wasting declined from 29% to 23% and 18% to 7% respectively (NPC and ICF Macro, 2014; 2019).

IYCF intervention in Nigeria is huge, yet burden of malnutrition among under-five children remains high. Efforts to improve IYCF and child nutrition require holistic approach including improved coverage of intervention. Though community- based IYCF intervention has the potential to increase coverage and reach the underserved population, its effect on infant feeding practices in Nigeria remains unexplored. Different initiatives had been implemented in Nigeria, such as the Nigerian IYCF policy, strategy and plan of action, the Baby Friendly Hospital Initiatives (BFHI), and training programmes for different categories of health workers on infant and young child feeding counselling skills to improve IYCF practices.

Despite these efforts, exclusive breastfeeding (EBF) and complementary feeding (CF) indicators remain suboptimal in Nigeria. The key indicators of Infant and Young Child

Feeding practices in Nigeria are far from being impressive with early initiation of breastfeeding declining from 38.0% to 19.2%; exclusive breastfeeding rate increased from 17% to 27.2% and children 20-23 months who were still breastfeeding dropped from 35.0% to 23.5% (NPC and ICF Macro, 2009; 2014; NBS, NPopC and FMOH, 2018).Similarly, infants age one month and below who have received water, non-milk liquids, other milk and complementary foods were 39.0%, 4-0%, 4.0% and 22.0% respectively (NPC and ICF Macro, 2019).

The high prevalence of malnutrition among under-five Nigerian children is largely due to poor infant and young child feeding (IYCF) practices which remain high despite several interventions at the various levels of health service delivery. Infant and young child feeding practices are multidimensional and age specific practices comprising of breastfeeding and complementary feeding, which together rank among the most effective means to improve nutritional status and the survival of a child (WHO/UNICEF, 2003). It has been widely recognized that under-nutrition occurs as a result of several behavioural deficits with respect to health and nutrition. Based on well-established evidence, theWorld Health Organization (WHO) and the UnitedNations Children's Fund (UNICEF) recommended thatmothers put newborns to the breast within one hour ofbirth, breastfeed infants exclusively for the first six monthsand continue to breastfeed for two years and beyond, together with nutritionally adequate, safe, age-appropriate,responsive feeding of solid, semi-solid and soft foods starting in the sixth month (Butte, Lopez-Alarcon, and Garza, 2002;WHO/UNICEF, 2003). All these components together form the basis of IYCF.

Increasing number of studies have shown the significant impact of early initiation ofbreastfeedingwithin the first hour after birth,on reducing overall neonatal mortality (Singh, 1992; Edmond, Zandoh, and Quigley, 2006). Early initiation and exclusive breastfeeding appeared to be very responsive to community efforts in developing country settings where ambient breastfeeding levels and duration is the norm (USAID, 2012). Likewise, continued breastfeeding beyond six months, accompaniedby sufficient quantities of nutritionally adequate, safe andappropriate solid, semi-solid and soft foods, also helps ensure good nutritional status and protects against illnesses. Appropriate complementary feeding is therefore critical for the achievement of healthy growth and development and survival of young children (Menon, 2012). Lack of

appropriate breastfeeding and complementary feeding practices are main causes of under-nutrition in children (Stewart, Lannott and Dewil, 2013).

Studies by various authors have also shown poor IYCF practices from some geographical regions of Nigeria (Oparaocha, Ibadin, and Muogbo 2002; Uchendu, Ikefuna and Emodi 2009; Ekanem, Ekanem and Asuquo 2012). These poor indices could be attributed to sole reliance on health facilities using the BFHI initiative to promote IYCF practices and the fact that many pregnant women in most developing countries still deliver their babies at home, or with a brief stay, if delivered in the hospital (Haider, Rasheed and Sanghui,2010).

Hence, there is a need to identify and explore factors that can aid in recognizing the individuals or the population groups at risk of having suboptimal infant feeding practice (WHO/UNICEF,2003)Furthermore, a holistic approach needs to be adopted in promoting good infant feeding practices. Thus there is the need to build community structure to promote, support and sustain infant feeding practices among community members in addition to health facility based approaches (UNICEF, 2012). The community has been identified as a veritable point of intervention to promote healthy behaviour and practices by ensuring participation and mobilization that will lead to a long-term behaviour change of individuals andcommunities at large (UNICEF, 2012; Elizabeth Kimani-Murage,Wekesah, 2014).

The use of community support groups in the promotion of IYCF practices has been reported to improve breastfeeding through peer support (Humphreys, Thompson, Miner, 1998). Such support helps women overcome their breastfeeding problems, improve mental health, increase self-esteem, confidence and wellbeing (Britton, McCormick and Renfrew 2007) however, various studies have shown that breastfeeding practices and supports vary with localities (Senarath, Dibley and Agho 2006; Dibley, Roy and Senarth 2010; Agho, Dibley and Odiase 2011). Likewise, the relationship between area of residence and complementary feeding practices has been documented (Chen, 2000; Vaahtera, Kulmala and Heitanen, 2001;Dang, Yan and Yamamoto 2005; Faber, 2005; Lande, Anderson and Bearug, 2007). Urban residence has been reported to favour consumption of quality and varied diets. Dang *et al.* (2005) reported that urban children were given eggs, milk powder, formula and fresh vegetables than rural children in China because many urban dwellers have better

income. Studies have found that consumption of fresh fruits and vegetables to most of rural Malawian and South African children was uncommon (Vaahtera *et al.* 2001; Faber, 2005). These evidences suggest the need for specific interventions in community-based promotion of IYCF practices.

1.1 Statement of the Problem

The burden of malnutrition remains high in Nigeria despite series of interventions with stunting, underweight and wasting prevalence of 37%, 23% and 7% respectively among under-five children (NPC and ICF Macro, 2019). The key IYCF indicators in Nigeria are poor with early initiation of breastfeeding at 19.2%, 27.2% exclusive breastfeeding rate, 23.5% of children 20-23 months still breastfeeding and infants aged one month and below who have received water, non-milk liquids, other milk and complementary foods were 39.0%, 4.0.%, 4.0% and 22.0% respectively (NPC and ICF Macro, 2019).

With competing priorities, poor motivation and inadequate funding, health facilities are underperforming in promoting good infant and young child feeding practices. Interventions to improve infant and young child feeding need increased attention and commitment if sustainable achievements in child survival, growth and development are to be attained (Tapsoba, 2009;Alipui, 2012). Successful IYCF interventions rely on behaviour and social change implemented at scale, which can only be reached through political commitment, adequate resource allocation, capacity development and effective communication majorly at the community level (Tapsoba, 2009; Baker, Sanghui and Hajeebhoy 2013).

High stunting rates persist in Nigeria with complementary feeding and maternal nutrition receiving little attention (UNICEF, 2012). However, improving maternity practices through the standard BFHI process has generally been slow and poorly institutionalized UNICEF, 2012) Early initiation and exclusive breastfeeding, among other indicators are less practiced in Nigeria. Exclusive breastfeeding is suggested from the day a child is born up to a minimum of six months without the introduction of solid foods, infant formulas and other liquid mixtures. Similarly, with complementary feeding, preparing the proper mixtures and varieties of food is challenging because the process involves a large time-commitment (Black, Morris and Bryce 2008; Bhutta, Ahmed and Black, 2008). Guidelines for infant feeding practices in Nigeria rely

primarily on health facilities even when there are evident bottlenecks in health service delivery. Total reliance on health facilities for the communication of IYCF practices may leave out a large proportion of children whose parents rarely access health facilities (Federal Ministry of Health, 2010).

Furthermore, health facilities are underperforming in promoting good IYCF practices. Hence, there is a need to identify and explore factors that can aid in recognizing the individuals or the population groups at risk of having suboptimal infant feeding practices (WHO/UNICEF, 1999). Also, it shows that a holistic approach needs to be adopted in promoting good infant feeding practices. Thus there is the need to build community structure to promote, support and sustain infant feeding practices among community members in addition to health facility based approaches. Support group intervention is a recognized component of the ten steps to successful breastfeeding, which recommends the establishment of breastfeeding support groups and referring mothers to them on discharge (WHO/ UNICEF, 1999).

Although the role of peer support in promoting breastfeeding has been identified (WHO/UNICEF 2009), the concept of community support groups has not been fully explored in Nigeria. Support groups have been largely used in many developed and developing countries to promote optimal infant and young child feeding while very few studies in Nigeria have adopted this approach. Though support groups could be used to promote adoption of optimal IYCF practices without heavy budget and is readily sustainable, there is presently no provision for the approach in Nigeria's health programming. IYCF has been described as the corner stone of successful nutrition programming and success is possible by scaling up practical, cost effective community based IYCF interventions with a significant impact.

Futhermore, mothers' care of their children are influenced by a host of 'Significant Others'which includes grandmothers, husbands and peers. These evidences suggest the need for context–specific interventions in community-based promotion of IYCF practices. This study therefore determined the effects of Peer support groups on IYCF practices using the community –level approach.

1.2 Justification

Investment in IYCF intervention in Nigeria is huge, yet burden of malnutrition among under-five children remains high. Efforts to improve IYCF and child nutrition require holistic approach including improved coverage of intervention. Though community-based IYCF intervention has the potential to increase coverage and reach the underserved population, its effect on infant feeding practices in Nigeria remains unexplored.

In Nigeria, institutional delivery rate is still very low, thus many reproductive age women will not be reached with key IYCF intervention driven by health facilities alone. Health workers constitute the major source of information on infant feeding practices especially breast feeding among Nigerian mothers (Awogbenja, 2010). Thus the community-based IYCF interventions can be used to improve coverage for maternal and child health interventions. The use of community driven pro-IYCF activities becomes imperative because breastfeeding is a daily activity and must be built into the social fabric of a community for it to succeed (USAID, 2012).

Nigeria adopted the IYCF guideline and implemented a number of different initiatives to improve IYCF practices, such as the Nigerian IYCF policy, strategy and plan of action, the Baby Friendly Hospital Initiatives (BFHI), and training programmes for different categories of health workers on infant and young child feeding counselling skills. Despite these efforts, exclusive breastfeeding (EBF) and complementary feeding (CF) indicators remain suboptimal in Nigeria. The key indicators of infant and young child feeding practices in Nigeria are far from being impressive with early initiation of breastfeeding at 19.2%, 29.0% exclusive breastfeeding rate and 23.5% of children 20-23 months were still breastfeeding (NPC and ICF 2008; 2013; 2019).

Similarly, adequate care practices for Nigerian children is dwindling; about one-third (35.3%) of children aged 20-23 months are being breastfed, infants aged one month and below who have received water, non-milk liquids, other milk and complementary foods were 39.0%, 4.0%, 4.0% and 22.0% respectively (NPC and ICF Macro, 2019). Evidence has shown that if sustainable achievements in child survival, growth and development are to be attained then there needs to be quality and appropriate IYCF programming (UNICEF, 2012). Further, there is an increasing recognition of the need to learn from each other and ensure that the ‘best’ tools and systems are in place to

improve IYCF practices through community based approaches (UNICEF, 2012). The community is a veritable point of intervention to promote healthy behaviour and practices by ensuring participation and mobilization that will lead to a long-term behaviour change of individuals and communities at large.

Evidence supports that breastfeeding is a complex phenomenon influenced by such factors as parental preference (Shaker, Scott and Reid, 2004), healthcare providers (DiGirolamo *et al.*, 2003), social support (Dennis, Hodneet and Gallop 2002), and employment status (Johnston and Esposito, 2007). Lack of knowledge about feeding practices and limited access to appropriate complementary foods can result in poor diet and nutrition among infants and young children. Salami, (2006) identified the need to intensify efforts at educating mothers and prospective mothers on breastfeeding.

Thus, the focus of this study is on the use of community-based support groups in improving knowledge, attitude and infant feeding practices of mothers. Specifically, the study investigated the effectiveness of peer support groups in promoting knowledge, attitude and practices of infant feeding in selected rural areas in Ibadan, Oyo State, Nigeria.

1.3 Objectives of the Study

1.3.1 Broad Objective

The broad objective of this study is to examine the effects of peer support group counselling on infant feeding practices of mothers in selected rural communities in Ibadan, Oyo State, Nigeria.

1.3.2 Specific Objectives

The specific objectives are to:

1. assess knowledge of mothers on infant feeding processes in selected communities.
2. assess attitude of mothers on infant feeding in selected communities.
3. determine feeding practices of mothers in selected communities.
4. document factors influencing infant feeding practices in selected communities.

5. design and implement peer support group intervention to promote optimal infant and young child feeding practices of mothers in selected communities using outcome of objectives 1- 4.

6. evaluate the effects of peer support on infant feeding knowledge, attitude and practice of mothers.

1.4 Main Research Question

What are the effects of peer support groups on optimal infant feeding practices of mothers in the study area?

1.5 Research Hypotheses

The hypotheses of the study are as stated below:

Ho_1: Peer support groups do not significantly influence infant feeding practices of mothers in rural areas.

Ho2: Peer support groups do not significantly influence mothers' infant feeding knowledge in rural areas.

Ho3: Peer support groups do not significantly influence mothers' attitude on infant feeding practices in rural areas.

CHAPTER TWO
LITERATURE REVIEW

2.0 Introduction

This chapter is a review of literature and works relevant to the present study, which is done under eight major sub themes. Literature was obtained from both local and international sources.

2.1 Childhood malnutrition

In many developing countries, child malnutrition remains widespread. Studies have shown that undernutrition contributes to more than one-third of all deaths and is responsible for 35 percent of the burden of disease among children aged less than five years (Black, Morris and Bryce 2003; Bejon *et al*., 2008). Malnutrition also deprives surviving children the ability to reach their full developmental potential, thus having both short and long term consequences on health, well-being and developmental potentials of children (Mukuria *et al.,* 2006).

Nigeria is one of the 20 countries that account for 80% of undernourished children in the world, directly or indirectly contributing to more than 50% of deaths among under-five children (Federal Ministry of Health, 2010). Nigeria Demographic and Health Survey (NPC and ICF Macro, 2014) shows 36.0% decline in under-five mortality between 2009 and 2013, however, the rate remains high at 128 deaths per thousand live births. Demographic and Health Survey further shows slow improvement in stunting and worsening cases of wasting and underweight in Nigerian children between 2008 and 2013. Stunting remains at 37%, however, underweight and wasting declined from 29% to 23% and 18% to 7% respectively (NPC and ICF Macro, 2014; 2019). This scenario suggests the need to adopt and/or intensify strategies that have been proven to promote child nutrition and health. The period between birth and 2 years is widely recognized as a critical period because of the need for appropriate nutrition to support the rapid rate of physical growth and brain development (Mukuria *et al.,* 2006). Therefore, interventions to reduce child undernutrition and mortality must take into consideration this critical period.

2.2 Infant and young child feeding

Infant and young child feeding (IYCF) practices are multidimensional and age specific practices-comprising of breastfeeding and complementary feeding, which together rank among the most effective means to improve nutritional status and the survival of a child (UNICEF, 2011)It has been widely recognised that undernutrition occurs as a result of several behavioural deficits with respect to health and nutrition. Based on well-established evidence, theWHO and the UnitedNations Children's Fund (UNICEF) recommend thatmothers put newborns to the breast within one hour ofbirth, breastfeed infants exclusively for the first six monthsand continue to breastfeed for two years and beyond, together with nutritionally adequate, safe, age-appropriate,responsive feeding of solid, semi-solid and soft foods starting in the sixth month (Butte *et al.,* 2002; WHO, 2003).

These components together form the nucleus of IYCF. Increasing number of studies have shown the significant impact of early initiation ofbreastfeedingwithin the first hour after birth,on reducing overall neonatal mortality (Singh, 1992; Edmond *et al.,* 2006; Mullany *et al.,* 2008). Early initiation and exclusive breastfeeding appeared to be very responsive to community efforts in developing country settings where ambient breastfeeding levels and duration may already have been substantial (USAID, 2012).

For the firstsix months of life, breast milk alone is the ideal nourishment, providing all of the nutrients , including vitaminsand minerals, an infant needs, meaning that no other liquid or food is needed (Butte *et al.,* 2002). In addition, breast milk carriesantibodies from the mother that help combat disease, protecting babies from diarrhoea and acute respiratory infections.

Breastfeeding also stimulates an infant's immunesystem and response to vaccination and, according tosome studies, confers cognitive benefits as well (Anderson *et al.,* 1999; Drane and Logemann, 2000; Mortensen *et al*., 2002; Dorea, 2009).Continued breastfeeding beyond six months, accompaniedby sufficient quantities of nutritionally adequate, safe andappropriate solid, semi-solid and soft foods, also helps ensure good nutritional status and protects against illnesses. Appropriate complementary feeding is critical for the achievement of healthy growth, development and survival of young

children. Lack of appropriate breastfeeding and complementary feeding practices are main causes of undernutrition in children. The latter, was confirmed by (Olatona, 2017) in his study carried out among mothers of under-5 children in Lagos state Nigeria, which reported that complementary feeding practice was poor especially among the mothers who are not literate. The Global strategy for infant and young child feeding emphasized the need for comprehensive national policies on IYCF, ensuring that all health services protect, promote and support appropriate breastfeeding and complementary feeding practices (WHO, 2003). Some of the policies recommended include implementation of the International Code of Marketing of Breast milk substitutes, the Baby Friendly Hospital Initiative (BFHI), and the Maternity protection.

The International Code of Marketing of Breast milk substitutes provide guidelines for the marketing of breast milk substitutes and use of bottles (WHO, 1981). The BFHI is a worldwide programme that supports optimal breastfeeding practices. The programme was launched by the World Health Organization and UNICEF in 1991 (UNICEF, 1991; WHO, 1991), following the adoption of the Innocente Declaration on breastfeeding promotion in 1990. The BFHI is a global effort to ensure that all maternity became centres for protecting, promoting and supporting breastfeeding, in accordance with the International Code of Marketing of Breast milk Substitutes (UNICEF, 1990). The BFHI also aims to increase the number of infants who are exclusively breastfed worldwide, as a goal that could contribute to reduction of millions of child deaths every year (WHO, 2012).

Nigeria adopted the IYCF guideline, thus the Nigerian IYCF policy, strategy and plan of action was produced in 2005. Nigeria has implemented a number of different initiatives to improve IYCF practices, such as the Nigerian IYCF policy, strategy and plan of action, the Baby Friendly Hospital Initiatives (BFHI), and training programmes for health workers on infant and young child feeding counselling skills. The BFHI was introduced in 1992 with the aim of improving the quality of health care that are provided and reducing morbidity and mortality among women and children. Despite these efforts, rates of breastfeeding (BF) and complementary feeding (CF) indicators remain suboptimal in Nigeria. The key indicators of infant and young child feeding practices in Nigeria are still far from being impressive with early initiation of

breastfeeding declining from 38.0% to 17.2%, exclusive breastfeeding rate increased from 17.0 to 29.ss0% and only 23.5% of children 20-23 months were still breastfeeding (NPC and ICF Macro, 2014; 2019). Similarly, adequate care practices for Nigerian children is dwindling; about one-third (35.3%) of children aged 20-23 months are being breastfed, infants age one month and below who have received water, non-milk liquids, other milk and complementary foods were 39.0%, 4.0%, 4.0% and 22.0% respectively (NPC and ICF Macro, 2019).

Furthermore, the prevalence of malnutrition among Nigerian children remains very high; children suffering from wasting, stunting and underweight as depicted by the last national survey were 7.0%, 37.0.0% and 23.0% respectively (NPC and ICF Macro, 2019). This information highlightsa need to identify and explore factors that can aid in recognizing the individuals or the population groups at risk of having suboptimal IYCF practices. Dennislew *et al* 2017 in a community based cross sectional study carried out among mothers with 0-24 months- old children in Ethiopia also revealed poor IYCF practices and recommended the need to strengthen its promotion.

2.3 **Breastfeeding**

Breastfeeding improves child's overall health and chances of survival. (USAID, 2012). Improving breastfeeding practices requires behavior change, which does not happen just at once, but involves encouragement and support at the family and community levels. (Horton, 2008). The first few hours of a newborn's life are a critical window for establishing lactation and mothers need support to breastfeed successfully. (UNICEF/WHO, 201**8)**

2.3.1 **Baby Friendly Hospital Initiative (BFHI)**

The Baby Friendly Hospital Initiative was launched byWHO/ UNICEF in 1992. It promotes the ten steps to successful breastfeeding.(Appendix 1X). This followed the innocenti declaration of 1990 which stated that all health facilities providing maternity services must protect, promote and support breastfeeding.

The ten steps to successful breastfeeding emphasize the need to train all health care providers on the promotion, protection and support of breastfeeding at their various levels, initiate breastfeeding within an hour of birth, breastfeed infants exclusively for the first six months of life, and breastfeeding to be continued for at least two years or beyond. It further states the need for the mother and the baby to stay together in the

same room and on the same bed. (Rooming-in and bedding –in).This allows the mother to breastfeed the baby on demand, with no use of feeding bottle or pacifier. Step ten of the ten steps successful breastfeeding states the establishment of community support groups and mothers to be refered to them on discharge from the hospital.

Early initiation of breastfeeding within one hour of birth refers to the process of putting a newborn baby to the breast immediately after birth. Early initiation of breastfeeding within one hour of birth is vital as it facilitates emotional bonding of the mother and the baby (Mukuria, 2006), determines the successful establishment of breastfeeding (Mukuria, 2006), and has a positive impact on duration of exclusive breastfeeding (Perez-Escamilla *et al.,* 1994; 2012). Furthermore, early initiation of breastfeeding within one hour protects the newborn from acquiring infection and reduces mortality in the newborn (Edmond *et al.,* 2007). In spite of these benefits, in many developing countries early initiation of breastfeeding rates were still unsatisfactory as compared to developed countries. The rates of early initiation of breastfeeding within one hour of birth in developed countries are high and range from 75% in United States (CDCP, 2005) to 92% in Australia (AIFS, 2008).

Estimations have shown that high rates of exclusive breastfeeding during the first months of life and continued breastfeeding with complementary feeding can potentially prevent 13% and 6% respectively of under-5 deaths each year (WHO, 2003; Kumar *et al.,* 2012).

Exclusive breastfeeding means feeding infants only breast milk from the mother for the first six months of life to achieve optimal growth, development and health (PAHO/WHO, 2002). Thereafter, infants should receive nutritionally adequate and safe complementary foods while breastfeeding continues for up to 24 months or beyond. Benefits of exclusive EBF for 6 months compared to partial or non-exclusive breastfeeding include reduced morbidity and mortality among infants and young children (Jones *et al*., 2003; UN, 2005; Black *et al*., 2008). Despite these benefits, exclusive breastfeeding is still not widely practiced.

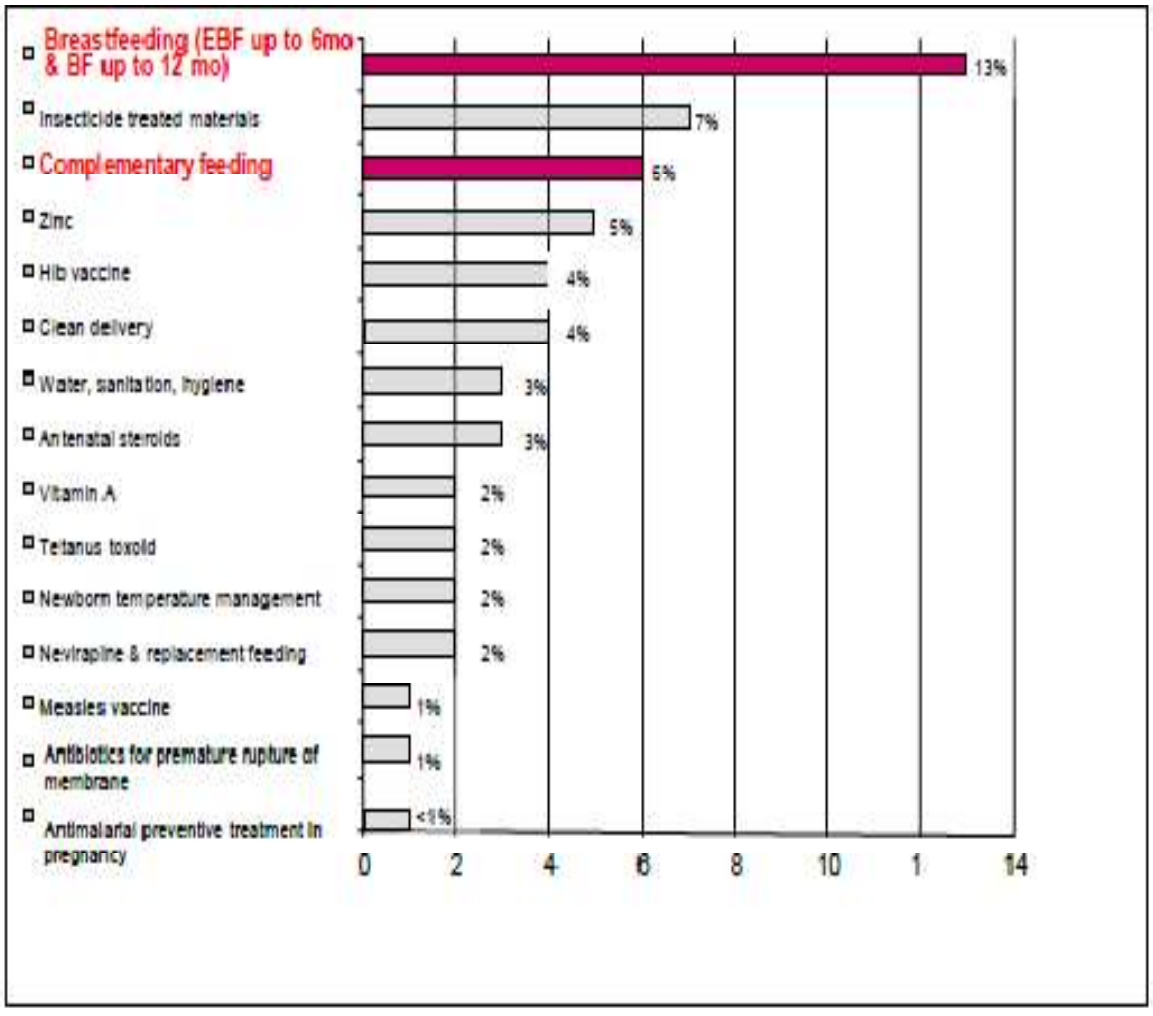
The practice of exclusive breastfeeding has been documented to vary across geographical regions of Nigeria. A study in Benin City showed that about 24.5% of interviewed women ever practised exclusive breastfeeding (Oparaocha *et al.,* 2002).

Ekanem *et al*. (2012) also reported exclusive breastfeeding rate of 24% among women in Calabar, Cross River State and further showed ethnic variation in the practice of exclusive breastfeeding.

A study in Enugu identified that though 90% of interviewed women had adequate knowledge of exclusive breastfeeding, the practice was only 21.2% (Uchendu *et al*., 2009). Uchendu *et al*. (2009) further identified educational level, small family size and absence of opposing family beliefs as factors that promote practice of exclusive breastfeeding among the mothers. Studies have identified family and community based counsellors as strong influencers of infant feeding practices of mothers (Haider *et al.,* 2000).

Good infant and young child feeding practices provide a safety net for a child in the first 1000 days of life which has been widely recognised as a "critical window" for the promotion of optimal growth, health and behavioural development. The consequences of poor nutrition in terms of both food and feeding behaviours during the first 2 years of life include significant illnesses, delayed mental and physical development, and death. (USAID, 2012). Malnutrition is known to predispose infants to the recurrent severity of diarrhoea and acute respiratory infections among other diseases. In the long term, early nutritional deficits are linked to impairment in intellectual performance, work capacity, reproductive outcomes and overall health during adolescence and adult hood. Poor breastfeeding practices and early or late introduction of adequate and appropriate complementary foods are linked to all the above. Several scientific evidences have shown the essential role of infant and young child feeding as a major factor in child survival, growth and development (Jones *et al.,* 2003; Black *et al.*, 2008).Also,results from efficacy and effectiveness trials have demonstrated the effects of community based approaches to improve breastfeeding and complementary feeding practices. There are also growing evidences reaffirming the importance of breastfeeding as the single largest impact intervention in reducing child mortality and improvement of complementary feeding as the most effective strategy to improve child growth and reduce stunting (WHO/UNICEF, 2003).

IYCF has been described as the corner stone of successful nutrition programming and success is possible by scaling up practical, cost effective community based IYCF interventions with a significant impact. A study in rural Ghana found that early initiation within the first hour of birth could prevent 22% of neonatal death, and initiation within the first day, 16% of death (Edmond *et al.*, 2006). A similar study in Nepal reported that approximately 19.1% and 7.7% of all neonatal deaths could be avoided with universal initiation of breastfeeding within the first hour and first day of life respectively (Mullany *et al.,* 2008).Similarly,exclusive breastfeeding for the first six months of life has been reported to significantly reduce infant mortality associated with diarrhoea and pneumonia (Black *et al.*, 2003).



Source: Jones *et al.,* 2003

Figure 1: Percentage of child deaths that could be prevented with 99% coverage of preventive interventions

Epidemiological evidence strongly supports the need for strengthening breastfeeding promotion, protection and support worldwide, with particular emphasis on the endorsement of exclusive breastfeeding and the timely initiation of breastfeeding within one hour of birth (Chapman *et al.,* 2010). This is majorly pursued at the health facility and using the BFHI initiative. However, the BFHI maynot have the desired positive effect since many pregnant women in most developing countries still delivertheir babies at home, or with a brief stay, if delivered in the hospital (Haider *et al.,* 2000).

2.4 Complementary feeding

The period of complementary feeding, when other foods are added to the diet of breastfed children is a critical time of being prone to nutritional deficiencies. This is because children at this stage are growing and developing rapidly. Yet, they do not consume enough quality and quantity of food (WHO /UNICEF, 1998). The food they eat must be nutrient densed to provide adequate amount of essential nutrients (Dewey, 2003). WHO /UNICEF (2003) recommends the introduction of nutritionally adequate, safe, age appropriate, responsive feedng of solid, semi solid or soft food starting in the sixth month. However, proportion of infants introduced to timely complementary foods remains low in many countries. In Nigeria, only 64% (NPC and ICF, 2004) and 72.0% (NBS, NPopC and FMOH, 2018), about half of children aged 6 to 8 months in India and Parkistan had timely introduction of complementary feeding (PDHS, 2013; NFHS-4, 2016).

Ogunba (2010) in a study on diet diversity in complementary feeding and nutritional status in Nigeria reported that diet was based on cereals, roots and tubers with little animal products, fewer than 30% of the children consumed legumes. Meat, fish and egg recorded below 50%, only 9.7% consumed vegetables and 12.9% consumed fruits. The nutritional status revealed 58.2% stunting, 7.8% wasting and 23.8% underweight. Also, Olatona (2019) in a study carried out in Nigeria reported inappropriate complementary feeding as a major cause of child malnutrition and death. In her findings, knowledge of complentasry feeding was low (14.9%), the prevalence of timely initiation of complementary feeding (47.0%), dietary diversity (16.0%) and minimum accepatable diet for 6 and 9 months (16%) were low.

In a study in Bangladesh, Owais et al (2019) reported that late introduction of complementary food is still widely prevalent. He further reported that improved maternal knowledge and favourable attitude towards complementary feeding were not associated with timely introduction of complementary food .The findings in the study of Owais (2019) further indicated that other factors might likely determine timing of complementaray feeding initiation.

2.5 Socio-ecological model—Key ideas

Factors at multiple levels affect behaviour and individuals will not change if barriers at higher levels are not removed (UNICEF, IYCF C4D TOT, 2015). Interventions should therefore address all or as many levels as possible using the appropriate medium of communication. Some of the guiding factors influencing individuals change in behaviour in respect to IYCF include the fact that no individual exists alone, individuals are from a larger community and a mother loves her child and tends to do everything she thinks is good for her (UNICEF, IYCF C4D TOT, 2015).

A woman is however influenced by others in her environment; who have expectations or beliefs about what they think are good. Health related behaviours do not occur in isolation. All the barriers are layers of influence and therefore, interventions for each barrier should be planned differently in order to reach the individual target. So, the cause of social circumstances can improve the infant feeding practices in our communities (Amir, 2011).

Unwritten and informally enforced, cultural norms are passed on from one generation to another and have a great influence on the practice of infant feeding viz -a-viz breastfeeding as a natural way of feeding, the diet of their family, her intake of fruit and vegetable intake (Fagerl&Wandel,1999; Amir 2009; Hannon, et al 2003; Groleau & Rodriguez, 2009). However, many mothers know that breastfeeding is the ideal food for babies (Lupton, 2000) but in most cases, their knowledge does not translate to practice (Williams, 1995) whereas, the attitude of some working class mothers may also be influenced by some socio-economic factors (Ekanem, 2012). In an environment or community where breastfeeding is the norm, the unconscious memories may be more influential than education from hospital staff. Furthermore, Groleau, 2009; Lupton 2000; Li et al, 2008 observed that low income mothers were more likely to cite “not enough breast milk syndrome” as a reason to stop breastfeeding than higher

income mothers in the US. They also noted that more educated families' value optimum nutrition, antibodies, brain development and so, avoid infant formula (Lupton, 2000). Also, women whose family and social environment are characterized by anti-breastfeeding practices are likely to formulate feed in order to conform to the norms of their environment or community. Therefore, the myth and erroneous belief of woman's "breast milk not enough or being good" leads to the need of health workers to investigate cultures and beliefs thereby improving education about exclusive breastfeeding.

2.6 Roles of community groups in IYCF

In the social ecological model, community factors refer to the relationships among community-based organizations and civic associations such as a cultural group or political association (McLeroy *et al.,* 1988).A key intervention to help improve breastfeeding and exclusive breastfeeding is the provision of breastfeeding peer support (Humphreys *et al.,* 1998). Lassi *et al.* (2010) reported the potential of community based intervention packages for reducing maternal and neonatal morbidity in enhancing early initiation of breastfeeding.

The World Health Organization recommends implementation of breastfeeding peer support projects (WHO, 2003) and in the UK, the National Institute for Health and Excellence (NICE) recommends, as a priority the implementation of sustainable peer guidelines for implementation of peer support (National Institute for Health and Excellence, 2008) . A support group refers to a group of people who meet together to provide one another with mutual assistance (Green, 1998). Members of such groups share their feelings and thoughts with the group and there is exchange of ideas, feelings, or thoughts. These groups rely on the knowledge and experience of some women to share their experiences with other mothers (CARE, 2012).Support groups have been used in various health programming areas such as HIV prevention, prevention of eating disorders,awareness of oral rehydration therapy (ORT), coping with cancer and HIV, and promoting optimal breastfeedingpractices(Albernaz, 1998; Dennis, 2002; Dearden, 2002; Ingram, Rosser & Jackson, 2004).

The use of community support groups in the promotion of IYCF practices has been reported to improve breastfeeding through peer support (Humphreys *et al.,* 1998). Such support helps women overcome their breastfeeding problems, improve mental

health, increase self-esteem, confidence and wellbeing (Britton *et al.,* 2007) however, various studies have shown that breastfeeding practices and supports vary with localities (Senarath *et al.,* 2006; Dibley *et al.,* 2010; Agho *et al.,* 2011). Likewise, the relationship between area of residence and complementary feeding practices has been documented (Lande *et al.,* 2003; Dang *et al.,* 2005; Faber, 2005; Vaahtera *et al.,* 2001; Chen, 2000). Urban residence has been reported to favour consumption of quality and varied diets. Dang *et al.* (2005) reported that urban children were given eggs, milk powder, formula and fresh vegetables than rural children in China because many urban dwellers have better income. Studies have found that consumption of fresh fruits and vegetables to most of rural Malawian and South African children was uncommon (Vaahtera *et al.* 2001; Faber, 2005). These evidences suggest the need for specific interventions in community-based promotion of IYCF practices.

Women value peer supporters as mothers with similar experiences can relate their own experience through a shared language (Scott and Mostyn, 2003; Dykes, 2005; Hoddinott *et al.*, 2006; Hegney *et al.,* 2008; Nankunda *et al.,* 2010; Rossman *et al.,* 2011). Women appreciate the increased social interaction that peer support provides (Nankunda *et al.,* 2010), the opportunities to question (Rossman *et al.,* 2011) and discuss personal choices in relation to infant feeding (Nankunda *et al., 2010*). Peer supporters help women overcome their breastfeeding problems and women report improved mental health through increased self-esteem, confidence and wellbeing (Britton *et al.,* 2007).

Women also value the emotional warmth supportive social interactions and advocacy that peer support provides (Hoddnott *et al.,* 2006; Hegney *et al.,* 2008; Nankunda *et al.,* 2010). Rossman *et al.* (2012) in a study of mothers with very low birth weight infants with neonatal intensive care, reported on how breastfeeding peer support enabled women to find hope to continue breastfeeding. This was achieved through sharing success stories and promoting the benefits of breast milk. Community-based interventions include a wide variety of approaches that may have different outcomes in different settings. Such interventions include outreach services from established facility programs, community generated activities, Non-Governmental Organization generated activities with village leadership, mother to mother groups, and grandmother//father support approaches, among others. Various levels of workers have also been reported, such as; peer counsellors, community-based health workers,

midwives, traditional birth attendants, nutritionists, lay health workers and lay volunteers

Previous studies have identified family and community based counselors as strong influencers of infant feeding practices of mothers (Haider *et al.,* 2000, Barni, 2010, Alive & Thrive, 2013, Komal *et al.,* 2014). To this end, community based approaches have been deployed in IYCF promotion including use of Mothers support groups/promoters, volunteers, Model mothers, monthly group education and mother support clubs (UNICEF, 2009). Community support intervention is a recognized component of the ten steps to successful breastfeeding which recommends the establishment of breastfeeding support groups and referring mothers to them on discharge. (WHO, 1991; UNICEF, 2001). Studies have identified family and community-based supports as strong influencers of IYCF practices of mothers, yet, hospital based IYCF promotion does not target these influencers.. Thus a complete approach that promotes good IYCF practices and build community structure to promote, support and sustain IYCF practices is necessary.

WHO developed two guidelines of indicators for assessing IYCF practices, so as to have a common set of measures to assess IYCF practices, which can be used to collect data to evaluate the progress of promotional programmes. The first guideline was published in 1991 and it provided a set of indicators for assessing breastfeeding practices and only one indicator for complementary feeding. This indicator provided information about whether complementary foods were consumed, but not about the quality or quantity of those foods.

In response to concerns about lack of adequate indicators of complementary feeding, in 2002, WHO began a process to review and develop indicators of complementary feeding practices, which were validated in 2004 to reflect dietary quality and quantity, using existing data sets from 10 different sites in developing countries. The development of these indicators were finalised and in 2008, WHO published the new guideline with fifteen indicators (eight core and seven optional) which are currently being used to assess infant and young child feeding practices (Appendix VIII).

2.7 Factors that affect breastfeeding practices

2.7.1 Individual-level factors influencing breastfeeding practices

The individual-level factors that influence breastfeeding practices (Early initiation of breastfeeding and Exclusive breastfeeding) have been well explored and include maternal age, maternal level of education, marital status, maternal work status, antenatal visits, place of delivery, mode of birth delivery, maternal nutritional status (as measured by Body Mass Index (BMI), infants gender and parity.

Adah et al, in his study (2018) on awareness of mothers about the benefit of breastfeeding and its influence on its practices noted that the socio economic status, age, education and awareness of mothers were leading factors of breastfeeding practices. Also Sholeye et al,(2016) reported that mothers' knowledge on infant feeding and its implication on nutrition education were assessed and it was noted that their knowledge was fair while their socio-economic characteristics and exposure to ante natal care was associated with their knowledge on infant feeding

2.7.2 Community-level factors associated with breastfeeding practices

There are inconsistent results regarding the association between area of residence and breastfeeding practices. Dibley *et al.* (2010) reported that living in urban areas was a risk factor for lower rates of timely initiation of breastfeeding in Bangladesh and lower exclusive breastfeeding in India. Conversely, Senarath *et al.* (2006) revealed that mothers who lived in the rural west region of Sri Lanka were significantly less likely to exclusively breastfeed than those from urban areas in Timor-Leste. Furthermore, Shirima *et al.* (2001) found that urban residence was positively associated with duration of exclusive but not predominant breastfeeding in Morogoro Tanzania.

Breastfeeding practices have been established to vary across regions/ ecological zones in many countries (Dahlen*et al.,* 2010; Agho *et al.,* 2011), which might be due to cultural differences. A study by Dahlen and Homer (2010) found that Chinese mothers in Australia initiated breastfeeding early and exclusivlely breastfed their infant's more than Australian mothers, despite living in the same geographical region.

Studies in Bangladesh, India and Nepal have also shown correlation between geographical differences ecological zones and exclusive breastfeeding practices (Mihrshahi*et al.,* 2010; Patel *et al.,* 2010;Pantel *et al.,* 2010).

A study in Nigeria by Agho *et al.* (2011) showed that mothers who lived in the North Central geopolitical region were more likely to exclusively breastfeed their babies than those mothers who lived in other North East, North West, South East and South West regions. Some researchers (Williams *et al.,* 1996; Patel *et al.,* 2010) have argued that, the discrepancies on breastfeeding practices across geographical regions could be due to different cultural practices existing across different regions in many countries. Considering the complex and diverse social and cultural settings in Nigeria, there may be an association between geographical regions and breastfeeding practices.

Likewise the relationship between area of residence and complementary feeding practices has been documented (Chen, 2000; Vaahtera *et al.,* 2001; Lande*et al.,* 2003; Li *et al.,* 2003; Dang *et al.,* 2005; Faber, 2005). Urban residence has been reported to favour consumption of quality and varied diets. Dang *et al.* (2005) stated that urban children were given eggs, milk powder, formula and fresh vegetables than rural children in China because many urban dwellers have better income. Studies have found that consumption of fresh fruits and vegetables to most of rural Malawian and South African children was uncommon (Vaahtera *et al.* 2001; Faber, 2005). In addition, Chen (2000) reported that rural Chinese children are often given food that is mainly carbohydrate and low in protein.

In an analysis of breastfeeding and complementary feeding practices of children under two years in rural China, Wand *et al.* (2000) concluded that most rural women did not know the proper time of introduction and appropriate methods of complementary foods. Analysis of association between area of residence and complementary feeding practices is critical in Tanzania as majority of people live in rural areas and are less educated. The available literature indicates the existence of association between complementary feeding practices across different geographical regions and ethnic groups. At the community level, the geographical differences may influence complementary feeding in various ways. The type of food production in a given area has a bearing on the quality and quantity of

complementary foods that can be used to feed infants and young children. Existence of poor cultural practices in a given geographical area which restricts consumption of certain foods by women and young children also has an impact on complementary feeding practices. Different food habits across many regions in Nigeria influence what communities feed their infants and young children.

2.7.3 Community factors in promotion of IYCF

Several barriers for women's breastfeeding experience have been related to the workforce (Wambach *et al.,* 2005; OlaOlorun and Lawoyin, 2006; Johnson and Esposito, 2007). Women who are breastfeeding infants may have to return to work soon after delivery due to economic necessity (Wambach *et al.,* 2005). For these women, societal support of breastfeeding in the workplace has a great impact. A return to the workforce has been cited as a primary factor in early breastfeeding cessation. The transition from a maternity leave of absence back to the workplace can be eased by an employer who is supportive of breastfeeding (Wambach *et al.,* 2005).

Other factors that contributed to early cessation of breastfeeding included lack of support from both fellow workers and employers, no time off to breastfeed an infant or to pump breast milk, and lack of a designated area in the work setting for pumping and storing breast milk (Johnston and Esposito, 2007). Employers can be pivotal in creating a supportive environment to continue breastfeeding. Several large corporations have lactation support programs that have kept breastfeeding rates of employed women at levels similar to their unemployed counterparts (Neilsen, 2004). These programs often feature educational opportunities such as breastfeeding classes, lactation rooms equipped with a breast pump, sink, and a small refrigerator, on-site daycare, and flexibility in scheduling. Women committed to continuing breastfeeding without workplace support have reported the need to express milk in their car and storing the breast milk in a portable cooler (Neilsen, 2004).

An increasing number of researchers have attempted to link social support to the promotion of health and well-being among people of all ages and with various health conditions (Bowling, 1991). In research specific to health care needs, lack of social support has been associated with increased mortality risk, delayed recovery from disease, poor morale, and poor mental health (Bowling, 1991). Research has found

that effective social support groups can provide a socure. Furthermore, some studies have shown that support groups for breastfeeding mothers have increased exclusive breastfeeding and breastfeeding compliance (Dennis, 2002; Ingram *et al.,* 2004).

2.8 Systematic review of other available literatures on community based approaches to support IYCF

There have been available evidences on how effective peer support Intervention for mothers (one-on-one or group counseling) can be used to improve IYCF Practices (Briton *et al.,* 2007; Jolly *et al.,* 2012). Studies have shown that community-based approach is one of the important ways to support IYCF. In Southern Zambia (Fjeldf *et al.,* 2008), Health workers, Traditional birth attendant, fathers and grandmothers have been noted to be important factors in ensuring good IYCF practices. However, Fathers and grandmothers were noted to have poor knowledge and attitude on EBF.

The poor awareness of the benefits associated with IYCF practices contributes to the inadequacies of IYCF practice among mothers (Haider *et al.,* 2010) and also, the inadequacy of knowledge results in early introduction of complementary feeding among rural western Kenya (Mbagaya, 2009). The Poor knowledge and Support from other key stakeholders were also noted to be a constraint to EBF (Agunbiade and Ogunleye, 2012) which may be a major determinant in the poor awareness of IYCF practices. This may also have contributed to the inadequacies of IYCF practices among mothers (Haider *et al.,* 2010). However, in a study (Mostafa *et al.,* 2019) carried out among interns to know the effect of an educational intervention on their breastfeeding knowledge and attitude, it was worthy of note that, the baseline knowledge and attitude significantly improved after the intervention.

The breastfeeding behavioural change communication during post natal period was noted to be a critical point in promoting optimal practice in early initiation of breastfeeding (Setegn *et al.,* 2011) and also the presence of companion during labor contributed to the early initiation of breastfeeding among first time mothers (Morhason-Bello *et al.,* 2009). The attitude of mothers towards EBF cannot be overemphasized, mothers who had normal delivery had positive attitude towards breastfeeding than mothers who gave birth through caesarian section (Imhonde *et al.,* 2012). To improve EBF practices among mothers, the use of community based peer

support counselor cannot be ruled out (Haide *et al.,* 2010). It was noted that home visits and attendance at meetings improved IYCF practices (Dearden *et al.,* 2002).

A study carried out in India also made known the effectiveness of the use of volunteers in building capacities of change agents on IYCF (Meenakshi *et al.,* 2011). To reach a satisfactory level of Breastfeeding practice, attention and education need to be given among general populace (Banu and Khanan, 2012). Therefore, the scaling up of EBF among mothers requires concerted effort (Agunbiade and Ogunleye, 2012).

2.9 Role of community-based approach on infant and young child feeding

2.9.1 Impact of support groups on exclusive breastfeeding

In various studies, the role of support groups as a form of community based approach was assessed and noted to be of great importance in the practice of exclusive breastfeeding. A study carried out in India noted that the use of community health activists, mass media and home visits improved exclusive breastfeeding among the intervention group, the intervention group was 20.5% while the control group was 11.7% (Achanya *et al.,* 2015). According to Brown (2011), there was a significant difference and positive association between mothers who live in urban areas and attends breastfeeding support groups and those who did not. Also, Edward (2013) in his study stated that mothers who had child birth educators visit them at home attempted breastfeeding at a higher (64%) rate than those who did not (50%). A study conducted in Delhi (Gupta, 2018) recorded 67.5% who practiced exclusive breastfeeding after the intervention as compared to the 4.2% in the control group. However, In Bristol (Ingram, 2005) peer support workers gave only one ante natal sessions to mothers and also followed them up for only two weeks of delivery on exclusive breastfeeding and the findings was that at baseline, the Intervention group was 25.3% and increased to 27.2% at end line.

For the control group, it was 48.3% at baseline and 47.7% at end line. This points to the importance of consistency in the use of support groups for mothers. It is suggested that the promotion of exclusive breastfeeding be continued for at least a month after delivery (Ara, 2018). In rural area of Bangaldesh (Khan *et al.,* 2013), home based counseling on exclusive breastfeeding was adopted and carried out till 6 months after delivery of the baby, it was noted that the Intervention group was 15% and 4% for

control group. These findings (Lewyckwa, 2013; Kushawa 2014) furthermore strengthened the importance of consistency in the use of community peer support to influence mother's decision on Infant feeding practices.

Home visits approach was adopted in a study carried out in India (Kushwaha *et al.,* 2014), and visitation was conducted till the first two years of the child birth, it was discovered that exclusive breastfeeding at baseline was 7% which increased to 50% at pre intervention and 60% at post intervention, showing us the importance of consistency in the community based approach.

In the study in Kenya by Ochola *et al.,* (2013) home based method of counseling was adopted against facility based counseling and it was discovered that home based counseling was 23.9% while facility based counseling group was 9.2% and control group was 5.6% which strongly affirms the community based approach of peer support counseling. In a similar survey carried out in rural Bangladesh, a group of mothers were exposed to monthly meetings and 81.4% of the intervention group engaged in Exclusive Breastfeeding for at least 6 months while only 50.6% of the control group engaged in exclusive breastfeeding (Haide *et al.*, 2012).

In a study carried out in Northern Nigeria on strengthening Infant and young child feeding practices (Adeyemi, 2015), the use of community volunteers and community meetings with fathers and grandmothers of infants less than two years were adopted. Also, in a randomized study carried out in Denmark, ante-natal training was noted to equip women with sufficient knowledge about breastfeeding after birth, but not sufficient to increase the duration of breastfeeding. Hence, there is need to follow up with post natal breastfeeding support (Hanne *et al.,* 2011). To improve the practice of exclusive breastfeeding among mothers, the use of community based peer support group cannot therefore be ruled out. (Haide *et al.*, 2012).

2.9.2 Consistency of support groups and its effect on early initiation of breast feeding

In a study carried out to note the determinants of timely initiation of breastfeeding among mothers in Ethiopia, it was discovered that the practice of timely initiation of breastfeeding is low as half of the mothers did not start breastfeeding within one hour after delivery (Setegn *et al.,* 2011). It was suggested that there should be targeted specific and community oriented promotion.

A study carried out in North Eastern Kenya, observed that maternal, infant and young child feeding (MIYCN) programme partly contributed to the marked improvement in the early initiation of breastfeeding (Muruka and Ekisa, 2013). Consequently, community-based peer support counseling need to be integral components of any IYCF program, which integrate an understanding of social norms as part of any health workers' training on infant feeding support and counseling (Kounnavong, 2013). In a study carried out in Nepal, lack of awareness among mothers about infant and young child feeding was concluded to have contributed to the poor knowledge of mothers while the baby friendly initiative program in baby friendly hospitals will help in improving breastfeeding initiation (Kumar, 2011). This initiation is a form of community based support group for mothers.

The mothers who had peer counselor support during pregnancy were likely to initiate breast milk than those who did not (Sharma *et al.,* 2017). Also, one-on-one breastfeeding peer support service targeted at young mothers in the ante-natal and post natal routine care was recorded to be beneficial in increasing the early initiation of breastfeeding among mothers in the United Kingdom. These points to the importance of peer support group in improving early initiation of breastfeeding. In a study carried out in India, the initiation of breast milk within one hour of delivery was spurred by mother's support group and it was noted that early initiation of breastfeeding within 1 hour of delivery was 11% at baseline, and 71% at post intervention (Kushwaha *et al.,* 2014).

Although, the use of breastfeeding support group at one time of ante natal visit and 48 hours after delivery proved not to be sufficient in a study carried out in United Kingdom (Ingram, 2013), however, the increase in the consistency of support workers in Bangladesh (Haider, 2000) where the support workers visited the mother up to 5 months after delivery proved that the consistency of support groups cannot be over emphasized in the early initiation of breast milk. The use of multiple peer support groups was significant in the early initiation of breast feeding where 77% of the mothers initiated breast feeding within 1 hour of delivery (Lewkycka, 2013). In a study carried out in Bangladesh (Ara, 2018), the early initiation of breastfeeding was noted to significantly improve in the intervention group (89.1% than in the control group 77.4%. This study positively demonstrates how peer support counseling influenced early initiation of breastfeeding amongmothers living in urban areas

2.9.3 Effect of peer support on complementary feeding

The promotion of optimal complementary feeding can be achieved through the consistency and monitoring of implemented interventions (Vandara, 2014). In a study carried out in India, community peer support group improved complementary feeding practice among the intervention group where 96% practiced appropriate complementary feeding after intervention as opposed to the control group which was 54%.

According to Arifeen (2009), home visits by community and Nutrition health workers improved complementary feeding practice with continued breastfeeding which is similar to a study conducted in Delhi where 75.1% of the intervention group started complementary feeding at 6 months as compared to 19.4% of the control group (Vandara, 2014).

This also commensurate a finding carried out in south Asia, where intervention in form of counselling was delivered by community health workers which improved the timeliness, frequency, diversity and adequacy of complementary feeding (Aguayo, 2017), thereby strengthening the importance of counseling in the complementary feeding practice of mothers.

In a study conducted by Sabharwal *et al* (2014) it was indicated that it is possible to promote optimal complementary feeding practices through adequately trained and motivated peer counsellors along with back up mechanisms rendering the necessary support. The results revealed 75.1% of children between 6 and 7 months were introduced to solid, semi solid or soft food.

CHAPTER THREE

METHODOLOGY

This chapter describes the design, population, location of the study, its sampling steategies and the data collection procedures. Quantitative data was used to elicit information on infant feeding knowledge, attitude and practices of the mothers. Focus Group Discussions conducted on the mothers gave additional information on the practice of responsive feeding and factors influencing infant feeding attitude and practice**.**

3.1 Study design

The study is quasi experimental in design. This was conducted in three phases (Baseline, Intervention and Endline phases) in the selected rural Local Government Areas (LGAs) of Oyo State. The study assessed mothers' compliance to core infant feeding indicators viz a viz early initiation of breastfeeding, exclusive breastfeeding, continued breastfeeding at 1 year, introduction of solid, semi-solid, or soft foods, minimum dietary diversity, meal frequency, minimum acceptable diet, consumption of iron rich or iron fortified foods and optional infant feeding recommendations among mothers of under five in the selected communities.

3.2 Study area

Oyo State with coordinates (8°00′N 4°00′E8°N 4°E) is in the moist savannah agro-ecological zone of Nigeria and is mainly inhabited by the Yorubas. Yorubas are primarily agrarian but have a fondness for living in high density urban centers, however many are involved in various other occupations. The indigenes mainly comprise the Oyos, the Oke-Oguns, the Ibadans and the Ibarapas, all belonging to the Yoruba family and peoples of Africa city in Africa, south of the Sahara, people from within and outside the country trade and settle in the state mostly in the urban areas. Oyo State is an inland state with its capital at Ibadan. It is bounded in the north by Kwara State, in the east by Osun State, in the south

by Ogun State and in the west partly by Ogun State and partly by the Republic of Benin. The state was created in 1976 and covers approximately an area of 28,454 square kilometers with a population of 5, 580, 894 (NPC, 2006) and population density of 196.1/Km^2.

The state climate is equatorial, the dry season lasts from November to March and the wet season starts from April and ends in October with relatively high humidity; thereby favouring the cultivation of crops like maize, yam, cassava, millet, rice, plantains, cocoa, palm produce, cashew etc. Average daily temperature ranges between 25 degrees Celsius and 35 degrees Celsius, almost throughout the year.

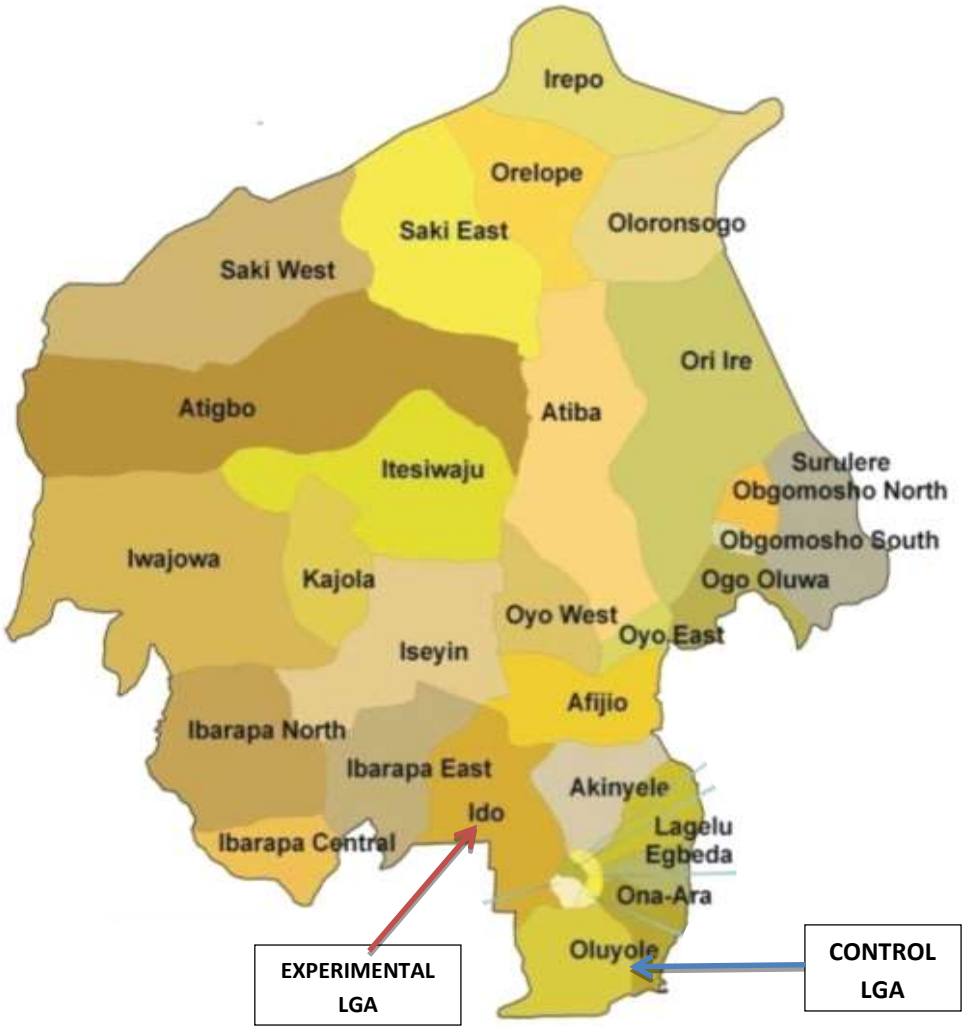


Figure 3.1: Map of Oyo State showing the selected Local Government Areas

Two rural LGAs in Oyo State were purposively selected for the study and rural communities that were non-contiguous were selected from these LGAs and further assigned to Experimental and control using simple random sampling. The LGAs were Ido and Oluyole LGAs for experimental and control communities respectively.

3.2.1 Brief description of Ido Local Government Area

Ido Local Government Area was created in 1989 with the Administrative Headquarters located at Ido. It shares boundaries with Iseyin and Afijio Local Government Area to the North, Akinyele Local Government Area to the East, Ibarapa East Local Government Area to the West. It also shares boundaries with Ogun State to the south. The Local Government Area is largely rural and opens to the hinterland of the state. It has a land mass of 1,010.954 square kilometres with the 2006 population of 103,261 composed of 51,750 males and 51,511 females (NPC, 2006). Population of under- five, and under-one children are 28,852 and 5770 respectively.

It has a population density of 102 persons per square kilometres. The residents of the Local Government Area are mostly farmers, traders, transporters and civil servants. Soil fertility in the area enhances the production of maize, cocoa, oil palm, kola nuts, cassava and vegetables.

3.2.2 Brief description of Oluyole Local Government Area

Oluyole Local Government is one of the 11 LGAs in Ibadan and has its administrative headquarters situated at Idi Ayunre. It covers a land area of 629 square kilometres and consists of ten (10) wards. The Local Government Area consists of 202,725 people according to 2006 Nigerian census (NPC, 2006). Population of under-five, and under- one children 56,663 and 11,329 respectively. The LGA is bounded by Ibadan South East, Ido and Ona Ara LGAs as well as Ogun State. The predominant occupation in the LGA is farming.

3.3 Study population

The study population consisted of pregnant mothers in their third trimester, having at least one under-five child, attending antenatal clinics within the study communities. This study was a community based study; however, participating women were recruited from the health facilities. The inclusion criteria included being a Nigerian, being presently pregnant (in the third trimester) and attending antenatal care services within the study communities, having a child aged not more than fifty nine months (five years), being mentally fit for

communicative interaction, healthy, not on any medical regimen and willingness to participate. All primi-gravid women were exempted from the study.

3.4 Sample Size determination

The sample size for this study was determined using Kirkwood (1998) sample size formula below:

$$n = 2\left[\frac{(Z\alpha + Z1\text{-}\beta)^2 \pi (1-\pi)}{d^2}\right]$$

Where

n = required sample size

Zα= standard normal value corresponding to 95% confidence level set at 1.96

Z1-β = standard normal value to a power of 80% set at 0.84

P1= prevalence of women with three IYCF practices in Oyo State 2.6% (NPC and ICF Macro, 2014).

$$P2 = \frac{P1 \times OR}{P1 + (OR - 1) + 1} = 0.05 \text{ (control group)}$$

d = design effect 5%

π = Average proportion of the experimental and control groups

$$\pi = \frac{0.026 + 0.05}{2} = 0.038$$

$1-\pi = 1 - 0.038 = 0.962$

$$n = 2\left[\frac{(1.96 + 0.84)^2 (0.038) (1 - 0.038)}{(0.05)^2}\right]$$

n = 2 x 115

n = 230

Therefore, a total of 240 (120 experimental and 120 control groups) were recruited into the study.

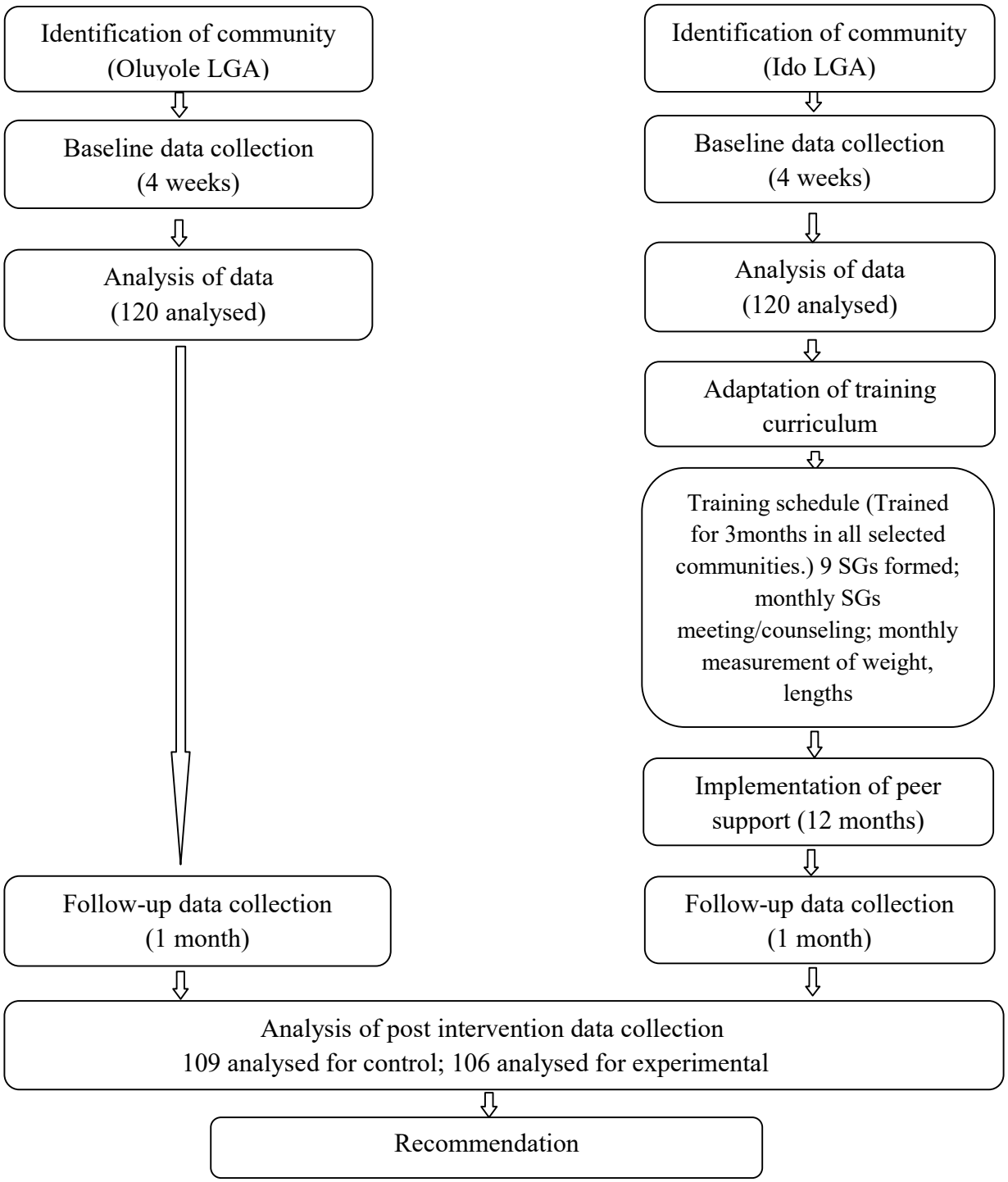


Figure 3.2: SCHEDULE FOR THE STUDY DESIGN

Adapted from Oshiname (1990); A health education approach to the training of patent medicine vendors (PMV) in Igbo-Ora. An MPH dissertation submitted to the University of Ibadan.

3.5 Sampling strategy

Oyo State is selected as the study area by purposive sampling technique being the state with highest burden of severe underweight and one of the three states with high use of pre-lacteal feed in South West Nigeria (NPC and ICF Macro, 2014). The study Local Government Areas, communities and study participants were selected using a three-stage sampling technique.

In the first stage, Oyo State thirty three (33) LGAs were disaggregated into urban and rural areas based on the Ministry of Health grouping. Two rural LGAs were selected and further assigned to experimental and control areas by simple random sampling respectively.

In the second stage of sampling, lists of Wards in the selected LGAs were collected from the community development/Social mobilization officers of the LGAs. Five wards each from the selected areas were randomly selected. From the selected communities, health facilities offering maternity services viz a viz antenatal care, delivery and infant welfare services were purposively selected. The selected facilities equally had skilled birth attendants and good patronage.

The third stage of sampling involved total sampling of all pregnant women with at least one under-five child and attending antenatal care services at the selected clinics. This was done with the assistance of the officers in charge of the facilities in collaboration with the community leaders attached to each ward and who had been working closely with the health facilities in the selected communities.

Respondents were recruited on weekly basis until the target population was reached. Recruited pregnant women were then grouped together to constitute Infant and young child feeding community–based support groups in the experimental LGA. Altogether, there were nine support groups within the selected experimental communities.

3.6 Inclusion criteria

The inclusion criteria included being presently pregnant (in third trimester), having at least one under five child, not on any medical regimen, and willingness to participate.

3.7 Exclusion criteria

All primi-gravide women, pregnant women with complication or on medical regimen and those who were not willing to participate were exempted from the study**.**

3.8 Data collection procedure

3.8.1 Data collection tools and processes

Both qualitative and quantitative methods were used for data collection; this was followed by peer support group intervention at the experimental group only and follow-up data collection at both experimental and control groups.The quantitative method consisted the use of a pre tested semi structured questionnaire for the collection of baseline and endline data at both experimental and control communities and anthropometric measurements of weight, length and mid upper arm circumference (MUAC) of index infants (infants resulting from the recruited pregnancy) on monthly basis for a period of twelve (12) months at the experimental communities only, while weight, length and MUAC measurements were carried out for the index infants at the control communities only at 12 months of age.

The qualitative component consists of the use of Focus Group Discussion (FGDs) at both the experimental and control groups. The information from the FGDs complemented the information from the questionnaire (the quantitative component) on mothers' practice of infant feeding and to explore the factors influencing the adoption and sustenance of optimal infant feeding practices in the study communities.

The data collection was conducted simultaneously at both experimental and control LGAs for baseline survey and follow-up (endline) survey. Data was collected by the investigator with the assistance of trained experienced field workers.

3.9 Study tools

1. Socio-demographic and household characteristics questionnaire: This questionnaire was used to elicit information on age, marital status, educational status, and work status, socio-economic and household characteristics of the respondents.
2. Focus Group Discussion guide for mothers: This was used to conduct the qualitative aspect of the study. The guide gave additional information on the practice of responsive feeding and factors influencing infant feeding attitude and practice of the mothers.

3.10Baseline surveyA semi-structured questionnaire was used to elicit information on the infant feedin guidelines, attitudes and current practice of mothers. Mothers' IYCFknowledge was assessed using a validated IYCF KAP scale.

The core indicators in this study relating to mothers' IYCF practice included; early initiation of breastfeeding, exclusive breastfeeding for children under six months, timely introduction of solids, semi-solids or soft foods, minimum dietary diversity and minimum meal frequency. To assess dietary diversity, information was collected on dietary intake using multiple pass 24-hour dietary recall.

Mothers' strategies for encouragement while feeding (responsivefeeding practices)was assessed based on four questions from a set of questions formulated onrecommendations from WHO that included; What do you say to your infant or child toencourage him to eat more?, What do you do to encourage your infant or young child to eat more?,What do you do when your infant or young child refuses to eat? and What do you do if yourinfant or young child asks for more food? (Infants might not be able to verbally request for more food,they indicate with signs like; crying, reaching out to where the food is regularly kept, stored or served at home, reaching out to the caregiver or mother,while carrying his or her plate and spoon, picking up crumbs from the floor to eat,craving for someone else' food) The responses to the questions regarding responsivefeeding were coded as either positive or negative response based on the interviewers'judgment.

A food frequency interview was also conducted to identify the complementary foods used in the study areas in relation to the seven food groups (grains, legumes, dairy products,

fish or meat and egg, yellow fruits and vegetables and other fruits and vegetables) recommended by WHO.

Qualitative study was conducted to explore the factors influencing the adoption and sustenance of optimal infant feeding practices in the study communities. This involved focus group discussions with the participating mothers of between five and seven in each group.Each discussion time lasted between forty and sixty minutes. Eight FGDs with mothers were conducted in the experimental and control study LGAs. FGD discussion guide was developed and used for this aspect of the study (Appendix II). The guide gave additional information on the practice of responsive feeding and factors influencing infant feeding attitude and practice of the mothers.

3.11 Intervention stage

The intervention comprised of three -months (3) training of the recruited pregnant women and twelve months (12) Peer support group intervention of the same set of mothers with their infants (outcome of the pregnancy).Altogether, the duration of the intervention was 15months.

The training of the recruited pregnant women at the experimental communities was conducted by the researcher fortnightly for three months (6 times) based on the identified gaps from the baseline survey. Relevant, pictorial, Information, Education and Communication (IEC) mateials as take home bronchures (Appendix V1) were given as training packages to the mothers to complement the information they received at the training. Further to this training, they (the pregnant mothers) received the conventional ante natal care and education.

Pregnant mothers in the experimental LGA were grouped into peer support groups of not more than 15 members each and each group had a trained community- based leader with adequate knowledge and experience in appropriate infant feeding practices. The peer support and monitoring of the mothers were sustained after delivery until the infants were 12 months old.

The experimental LGA had nine peer support groups and these support groups were assisted to meet once monthly. The meeting place and meeting time varied with location and these were the joint decisions of the group members. The peer support group leaders were from the same community who were taught on appropriate infant feeding practices using theWHO and UNICEF/IYCF guidelines and training package. Action Oriented Group Discussion approach was adopted during the training.

The support leaders were trained by the researcher in anthropometry skills, interview andcounseling techniques. Pictorial counseling card booklet was used by the team leaders to encourage, counsel and support team members to adopt optimal infant feeding practices. UNICEF IYCF Key message booklet and counselling card booklet were adapted as the training module for IYCF support groups leaders: This tool was used for the intervention aspect of the study. The module was used to enhance the interview skills, counseling techniques and anthropometry skills of the leaders of the support groups. The tool also included the aids used by support groups' leaders. Home visits were periodically conducted by the support group leaders to support the team members with the aid of pictorial counseling card booklet and sharing of personal experience to help them overcome barriers to adoption of optimal infant feeding practices.

Once every month, anthropometric measurements of weight, length and MUAC of infants were recorded by the support groups leaders. Growth monitoring and promotion of the index infants (outcome of the pregnancy) was conducted monthly for a period of twelve months at the experimental communities until the infants were twelve (12) months old. In order to reduce measurement error, at least twomeasurements of length and MUAC in centimeters and weight in kilograms were taken These measurements were recorded in the register and the child health card also.Life experiences of individuals were rewarded within the groups.

The control group also received the conventional ante natal care education on Infant and Young Child Feeding (IYCF) but they were not aided by the formation of IYCF support groups within their communities.The infants' anthropometric measurements of Weight, length and Mid Upper Arm Circumference at the twelveth month of age were taken and recorded in the register and child health card.

3.12 Endline survey

Endline survey was conducted in both experimental and control LGAs to re-assess the infant feeding practices of the mothers with respect to the child resulting from the recent pregnancy. Information was collected on infant feeding knowledge, attitude and practice of the mothers. The same study instrument used for the baseline assessment was used for the endline assessment.

Mothers' current responsivefeeding practices was assessed. A food frequency interview was also conducted to identify the complementary foods used in relation to the seven food groups (grains, legumes, dairy products, fish or meat and egg, yellow fruits and vegetables and other fruits and vegetables) recommended by WHO.

3.13 Training and pretesting

Training of the Research assistants was conducted to ensure that data collected was valid and reliable. Data was collected by qualified nutritionists and nurses who were selected on the basis of their familiarity with IYCF indicators and trained as research assistants for two days to ensure standardization of measurements and good probing techniques. The two days training content included an overview of the study, introduction to IYCF indicators, interviewing skills and pair practice..

The research instruments (the semi-structured questionnaire and focus group discussion guide) were administered to a pilot group of 50 pregnant mothers in selected communities of Afijio Local Government Area of Oyo State to ensure validity and reliability.

3.14 Physical examination procedure

Anthropometric method such as length, weight and MUAC were measured to determine the nutritional status of the children.IYCF practices assessed using early initiation of breastfeeding, exclusive breastfeeding for children under six months, timely introduction of solids, semi-solids or soft foods, minimum dietary diversity and minimum meal frequency, dietary diversity information was collected using multiple pass 24-hour dietary recall.

3.15 Data analysis

The effect of intervention on growth was measured in terms of growth in length andweight in relation to age and MUAC. For the calculation of z-scores, WHO Anthro software was used.The three z-scores indicating child's growth; the weight-for-age z-scores (WAZ), length-for-age z-scores (HAZ) and weight-for-length z-scores (WHZ) were computed using WHO Anthro Software. Children below -2SD were classified as either stunted, underweight or wasted. Underweight was defined when WAZ is below <-2SD. Stunting andwasting refer to <-2SD of HAZ and WHZ, respectively.

Data was coded, entered, and analyzed using SPSS version 20.0. Descriptive statistics was computed to determine proportion of mothers knowledge, attitude and practice with respect to key infant and young child feeding practices. Chi square analysis and T-Test was used to determine significant variation in results between intervention and control group. Qualitative data was analysed using thematic approach. The measurement of variables for achieving specific objectives is as shown in Table 3.3

Table 3.3: Measurement of variables for achieving specific objectives of the study

Objective	Measurements	Measurement indicators	Analysis
Infant feeding knowledge	What the mothers know about infant feeding	Knowledge were assessed using a 21 items knowledge scale	Chi Square/ANOVA
Infant feeding attitude	Attitudes of mothers toward infants feeding	Attitude were assessed using a 17 items adapted Iowa Infant Feeding Attitude Scale	Chi Square/ANOVA
Infant feeding practices	Mothers adherence to recommended infant feeding practices	Breastfeeding and complementary feeding practices	Chi Square/ANOVA
Factors influencing infant feeding practices	Who influences and makes recommendation for infant feeding	Factors were assessed using a 3 items influencing scale	Descriptive statistics, Chi Square and. Thematic analysis of Focus Group Discussion
Socio-economic status	Description of socio-economic status of the mothers	Age, marital status, education, experience etc.	Descriptive statistics and Chi square

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3.16 Limitations of the study

Baseline information on their practice of infant feeding was on the previous children they had before the current pregnancy at the beginning of the study.This was overcome by asking probing questions that assisted the mothers to overcome this challenge.

.3.17Ethical considerations

Ethical approval to conduct the study was obtained from the University of Ibadan/University College Hospital Ethics committee and the Ethical committee of the Oyo State Ministry of Health, Ibadan and leaders of the communities involved.

3.17.1 Confidentiality

The principles of respect for autonomy, human dignity, beneficence and non-maleficence were adhered to in the conduct of this study. Informed consent of all the respondents was obtained and confidentiality was ensured. Participants were informed of their right to withdraw from the study whenever they wanted. Confidentiality of all information collected in this study was ensured as information was properly coded. The questionnaire containing the interview would be stored for the duration of 2 years after which it would be destroyed. Identifier would not be used in any publication or reports from this study.

3.17.2 Informed consent

Informed consent of all the respondents was obtained. Participants were informed of their right to withdraw from the study whenever they wanted. A written informed consent which was translated to the local language (Yoruba) was provided for the respondents.

3.17.3 Beneficence to participants

The researcher gave behavioural change communication and peer support and counseling on Infant and Young Child Feeding (IYCF) practices packages to the participating women which further improved their IYCF practices with consequent improvement in their nutritional status.

3.17.4 Non- maleficence to participants

This study did not expose the volunteers to any risk. Full disclosure of the procedures, benefits and most importantly confidentiality were ensured.

3.17.5 Voluntary Participation

Participation in this research was entirely voluntary. Study participants were allowed to withdraw from the study at any time without loss of benefits.

CHAPTER FOUR
RESULTS

4.0 Introduction

The analysis and results of data obtained from the fieldwork are presented in this chapter. The presentation is sequentially arranged according to the study objectives as shown in chapter one. Following these are the findings from the qualitative investigation (Focus Group Discussions), which complemented information from the quantitative data presented.

4.1 Socio-demographic characteristics of respondents

The mean age of respondents in both experimental and control groups were 28.3±5.5 and 29.0±4.7 years respectively. Respondents aged 20-29 years constituted 53.3 % in both groups. In both groups, more of the respondents were of the Yoruba ethnic group, had secondary education, ever given birth to 1-2 children who were under-5 and above and were traders. Very few mothers were unemployed in the experimental (1.7%) and control group (9.2%) respectively. In the experimental and control groups 45.8 % and 51.7% practiced Christianity respectively while 53.3% and 48.3% practiced Islam (Table 4.1). There was no significant difference in all socio-demographic characteristics of mothers in both experimental and control groups.

Table 4.1: Socio-demographic and economic characteristics of mothers

Character	Categories	Groups Experimental n (%)	Control n (%)	Total n (%)	χ^2	p-value
Age (years)	≤19	3 (2.5)	2 (1.7)	5 (2.1)	5.553	0.136
	20-29	64 (53.3)	64 (53.3)	128 (53.3)		
	30-39	48 (40.0)	54 (45.0)	102 (42.5)		
	≥ 40	5 (4.2)	0 (0.0)	5 (2.1)		
	Mean± STDs	**28.3±5.5**	**29.0±4.7**	**28.7±5.1**		
Ethnicity group	Yoruba	116 (96.7)	117 (97.5)	233 (97.1)	0.147	1.000
	Igbo	4 (3.3)	3 (2.5)	7 (2.9)		
Religion	Christianity	55 (45.8)	62 (51.7)	117 (48.8)	1.714	0.424
	Islam	64 (53.3)	58 (48.3)	122 (50.8)		
	Traditional belief	1 (0.8)	0 (0.0)	1 (0.4)		
Marital status	Single	0 (0.0)	1 (0.8)	1 (0.4)	3.038	0.219
	Married	120 (100.0)	117 (97.5)	237 (98.8)		
	Widowed/Separated	0 (0.0)	2 (1.7)	2 (0.8)		
Highest level of formal education	None	6 (5.0)	1 (0.8)	7 (2.9)	10.090	*0.018
	Primary	12 (10.0)	7 (5.8)	19 (7.9)		
	Secondary	77 (64.2)	69 (57.5)	146 (60.8)		
	Tertiary	25 (20.8)	43 (35.8)	68 (28.3)		

*Significant difference

Table 4.1: Socio-demographic and economic characteristics of mothers (continued).

Character	Categories	Groups Experimental n (%)	Control n (%)	Total n (%)	χ^2	p-value
Occupation	Artisan	46 (38.3)	37 (30.8)	83 (34.6)	10.985	*0.027
	Trading	54 (45.0)	53 (44.2)	107 (44.6)		
	Farming	3 (2.5)	1 (0.8)	4 (1.7)		
	Wage earner/civil servant	15 (12.5)	15 (12.5)	30 (12.5)		
	Unemployed	2 (1.7)	14 (11.7)	16 (6.7)		
Number of children per mother	1-2 children	91 (75.8)	*92 (76.7)*	183 (76.3)	0.023	0.500
	≥3 children	29 (24.2)	*28 (23.3)*	57 (23.8)		
	Mean±SD	**1.9±1.1**	***1.8±1.0***	**1.8±1.0**		

*Significant difference

4.2 Demographic characteristics of the children at baseline

As shown in Table 4.2, there was no significant difference in all socio-demographic characteristics of children in both experimental and control groups at baseline. Mean age of index children was 37.4±17.0 months and 42.1±21.3 months in experimental and control groups respectively. Children aged 24 months and older at baseline constituted 87.5% and 89.2% in experimental and control groups respectively. Index children that were first child of the family constituted 50.9% and 61.1% in experimental and control groups respectively

4.3 Demographic Characteristics of the infants at endline

There was no significant difference in all socio-demographic characteristics of infants in both experimental and control groups at endline. All infants at endline were aged 12 months old in both groups at the time of data collection. (Table 4.3).

Table 4.2 Demographic characteristics of the children at baseline

Character		Experimental n (%)	Control n (%)	Total n (%)	χ^2	p-value
Age of index child	0-5 months	0 (0.0)	0 (0.0)	0 (0.0)	1.056	0.590
	6-11 months	1 (0.8)	0 (0.0)	1 (0.4)		
	12-23 months	14 (11.7)	13 (10.8)	27 (11.3)		
	≥ 24 months	105 (87.5)	107 (89.2)	212 (88.3)		
	Mean ± STD	37.4±17.0	42.1±21.3	39.7±19.3		
Sex of the index child	Male	55 (45.8)	60 (50.0)	115 (47.9)	0.417	0.303
	Female	65 (54.2)	60 (50.0)	125 (52.1)		
Position of the index child in the family (number)	First	55 (50.9)	66 (61.1)	121 (56.0)	3.626	0.459
	Second	29 (26.9)	23 (21.3)	52 (24.1)		
	Third	15 (13.9)	15 (13.9)	30 (13.9)		
	Fourth	7 (6.5)	3 (2.8)	10 (4.6)		
	Five & above	2 (1.9)	1 (0.9)	3 (1.4)		
Total	n (total)	120 (100.0)	120 (100.0)	240		

Table 4.3: Demographic characteristics of the children at Endline

Character		Experimental n (%)	Control n (%)	Total n (%)	χ^2	p-value
Age of index child	0-5 months	0 (0.0)	0 (0.0)	0 (0.0)		
	6-11 months	0 (0.0)	0 (0.0)	0 (0.0)		
	12-23 months	106 (100.0)	109 (100.0)	215 (100.0)		
	≥ 24 months	0 (0.0)	0 (0.0)	0 (0.0)		
	Mean±SD					
Sex of the index child	Male	59 (55.7)	66 (60.6)	125 (58.1)	0.528	0.278
	Female	47 (44.3)	43 (39.4)	90 (41.9)		
Position of the index child in the family (number)	First	0 (0.0)	0 (0.0)	0 (0.0)	2.295	0.513
	Second	59 (55.7)	64 (58.7)	123 (57.2)		
	Third	32 (30.2)	35 (32.1)	67 (31.2)		
	Fourth	11 (10.4)	9 (8.3)	20 (9.3)		
	Five & above	4 (3.8)	1 (0.9)	5 (2.3)		
Total	n (total)	106 (100.0)	109 (100.0)	215 (100.0)		

4.4 Awareness of infant feeding

All mothers (100.0%) in both groups had heard of breastfeeding at endline, while at baseline, it was 95.0% each for both control and experimental groups respectively. There was no significant difference in the proportion of respondents who had heard about colostrum in both groups. However, there was a significant difference in the proportion of respondents who had heard about exclusive breastfeeding (80.8%; 89.2%) and appropriate complementary feeding (70.0%; 83.3%) in experimental and control groups respectively. At endline, there was no significant difference in the proportion of respondents who had heard about exclusive breastfeeding (100.0%; 99.1%) and appropriate complementary feeding (100%; 99.1%) (Table 4.4).

Table 4.4: Awareness of infant feeding

Awareness of infant Feeding	Baseline (%): N=240					Endline (%): N=215				
	Exp n (%)	Control n (%)	Total n (%)	χ^2	p-value	Exp n (%)	Control n (%)	Total n (%)	χ^2	p-value
Ever heard of breastfeeding	114 (95.0)	114 (95.0)	228 (95.0)	0.000	0.616	106 (100.0)	109 (100.0)	215 (100.0)		
Ever heard of Colostrum	96 (80.0)	98 (81.7)	194 (80.8)	0.108	0.435	106 (100.0)	109 (100.0)	215 (100.0)		
Ever heard of exclusive breastfeeding	97 (80.8)	107 (89.2)	204 (85.0)	3.268	0.051	106 (100.0)	108 (99.1)	214 (99.5)	0.977	0.507
Ever heard of appropriate complementary feeding	84 (70.0)	100 (83.3)	184 (76.7)	5.963	0.011	106 (100.0)	108 (99.1)	214 (99.5)	0.977	0.507

4.5 Knowledge on infant feeding

Majority of the respondents at baseline knew that first food for babies is breast milk; though knowledge was significantly higher (p=0.009) among control (96.7%) compared to experimental group (87.5%). At endline, there was no significant difference between both groups; nevertheless, significant (p=0.011) proportion of respondents in experimental group (99.1%) knew that breastfeeding should be initiated within the first hour of birth compared to the control group (91.7%). Further, significant (p=0.034; p=0.001) proportion (98.1%; 96.2%) in experimental group knew that colostrum is the yellowish secretion that came out of the breasts within the first 3-days of delivery and that it helps to protect infants against diseases compared to respondents in control group (91.7%; 69.9%) respectively. However, at baseline (p=0.008) and endline (0.011) knowledge of respondents in experimental groups on high tendency of bottle fed infants becoming sick was significant compared to control group.

Table 4.5: Mothers' knowledge on infant and young child feeding

Knowledge of mothers	Baseline (%): N=240				Endline (%): N=215			
	Exp n (%)	Control n (%)	χ^2	p-value	Exp n(%)	Control n (%)	χ^2	p-value
Breastfeeding should be initiated within the first hour of birth	87 (72.5)	80 (66.7)	0.965	0.326	105 (99.1)	100 (91.7)	6.481	0.011
The first food for babies should be breast milk	105 (87.5)	116 (96.7)	6.916	0.009	105 (99.1)	108 (99.1)	0.001	0.984
Colostrum is the first yellowish secretion of the breast milk within the first two to three days of lactation	81 (67.5)	89 (74.2)	1.291	0.256	104 (98.1)	100 (91.7)	4.492	0.034
Colostrum is rich in antibodies to promote a baby's immunity	52 (43.3)	65 (54.2)	2.818	0.093	102 (96.2)	74 (67.9)	29.059	0.000
Breast milk alone satisfies the nutritional requirement of a baby in the first six months of life	82 (68.3)	105 (87.5)	12.810	0.000	105 (99.1)	102 (93.6)	4.002	0.034

4.5 Knowledge on infant feeding (continued)

There was no significant difference in the knowledge of exclusive breastfeeding and infants given water at age five and half months is not exclusively breastfed at baseline and endline in both groups.However, significant (p=0.000; p=0.034) proportion (87.5%; 99.1%) of respondents in the experimental group at baseline and endline respectively knew that breast milk only can provide the nutritional requirements for infants in the first six months of life compared to respondents in control group. There was no significant difference in the knowledge of respondents on breastfeeding of infants on demand in both experimental and control groups at baseline and endline respectively. Knowledge on having enough breastmilk for feeding infants adequately and benefits of social bonding between mother and her infant were significantly high among control group at baseline; at endline, respondents in experimental group had significantly higher knowledge compared to control group. Similarly, knowledge of respondents in experimental group on health promoting benefits of breastfeeding to mother was higher compared to control group (Table 4.5).

Table 4.5: Mothers' knowledge on infant and young child feeding (continued)

Knowledge of Mothers	Baseline (%): N=240				Endline (%): N=215			
	Exp n (%)	Control n (%)	χ^2	p-value	Exp n (%)	Control n (%)	χ^2	p-value
EBF entails giving breast milk only for 6 months	92 (76.7)	99 (82.5)	1.257	0.262	104 (98.1)	103 (94.5)	3.549	0.060
Most women makes enough BM to adequately feed their baby	74 (61.7)	91 (75.8)	5.605	0.018	103 (97.2)	92 (84.4)	10.381	0.001
BF promotes mothers health	72 (60.0)	73 (60.8)	0.017	0.895	104 (98.1)	78 (71.6)	29.113	0.000
Breastfeeding enhances social bonding	77 (64.2)	98 (81.7)	9.305	0.002	102 (96.2)	73 (67.0)	30.370	0.000
A bottle fed baby is more Prone to illness than breastfed babies	90 (75.0)	106 (88.3)	7.124	0.008	105 (99.1)	100 (91.7)	6.481	0.011
A child should be breastfed on demand	103 (85.8)	112 (93.3)	3.617	0.057	104 (98.1)	108 (99.1)	0.367	0.545
A baby given water at age five and half month is not exclusively breastfed	59 (49.2)	80 (66.7)	7.539	0.006	101 (95.3)	98 (89.9)	2.254	0.133
Other foods in addition to BM can be given to a child after age 6 months	106 (88.3)	113 (94.2)	2.557	0.110	104 (98.1)	108 (99.1)	0.367	0.545

*BF- Breast feeding, BM – Breast milk, CF – Complementary feeding

4.5 Knowledge on infant feeding (continued)

At baseline, respondents in control group had high level of knowledge on the need to increase the number of times a child should eat as age increases; this knowledge was not significant at endline when compared to experimental group. Similarly, knowledge on inclusion of many food varieties in complementary food was high in control group at baseline (p=0.039) but no significant difference at endline (p=0.105) compared to experimental group. Further, no significant difference in knowledge of increasing the quality of complementary food by adding soy bean powder, oil, blended crayfish and groundnut at baseline (p=0.207) comparing both groups; however, at endline respondents (99.1%) in experimental group showed a significant (p=0.000) increase in knowledge compared to control group (81.7%) (Table 4.6).

Table 4.5: Knowledge on infant and young child feeding(continued)

Knowledge of Mothers	Baseline (%): N=240				Endline (%): N=215			
	Exp n (%)	Control n (%)	χ^2	p-value	Exp n (%)	Control n (%)	χ^2	p-value
Breastfeeding should continue with complementary foods till a child is at least 24 months	93 (77.5)	98 (81.7)	0.641	0.423	104 (98.1)	103 (94.5)	1.963	0.161
The quantity of food a child eats increases with age	97 (80.8)	106 (88.3)	2.588	0.108	105 (99.1)	107 (98.2)	0.301	0.577
The number of times a child eats increases with age	92 (76.7)	105 (87.5)	4.788	0.029	105 (99.1)	107 (98.2)	0.301	0.577
The texture (thickness/consistency) of a child's meal increases as the child gets older	79 (65.8)	90 (75.0)	2.420	0.120	105 (99.1)	104 (95.4)	2.630	0.105
Feeding times must be necessarily made enjoyable for a child	102 (85.0)	116 (96.7)	9.808	0.002	105 (99.1)	96 (88.1)	10.649	0.001
Complementary food should include as many food varieties as possible	98 (81.7)	109 (90.8)	4.251	0.039	105 (99.1)	104 (95.4)	2.630	0.105
Addition of soya beans powder, oil, blended crayfish and groundnut can increase the quality of complementary food	79 (65.8)	88 (73.3)	1.595	0.207	105 (99.1)	89 (81.7)	18.427	0.000
Water should be given to a child not earlier than six months old	80 (66.7)	83 (69.2)	0.172	0.678	105 (99.1)	105 (96.3)	1.758	0.185
The number of times a child eats increases with age	92 (76.7)	105 (87.5)	4.788	0.029	105 (99.1)	107 (98.2)	0.301	0.577

*BF- Breast feeding, BM-Breast milk, CF-Complementary feeding

4.6 Knowledge score on infant feeding

At baseline, mean knowledge score in experimental group was 12.0±4.6 and control group was 16.9±3.2. 30.0% of the respondents in the control group had adequate knowledge compared to 0.0 % in the experimental group. At endline, mean knowledge score in experimental group was 20.6±2.1 and control group was 18.9±3.2 (Table 4.6). More respondents in experimental group (94.3%) compared to the control group 60.6%) had adequate knowledge (Figure 4.1).

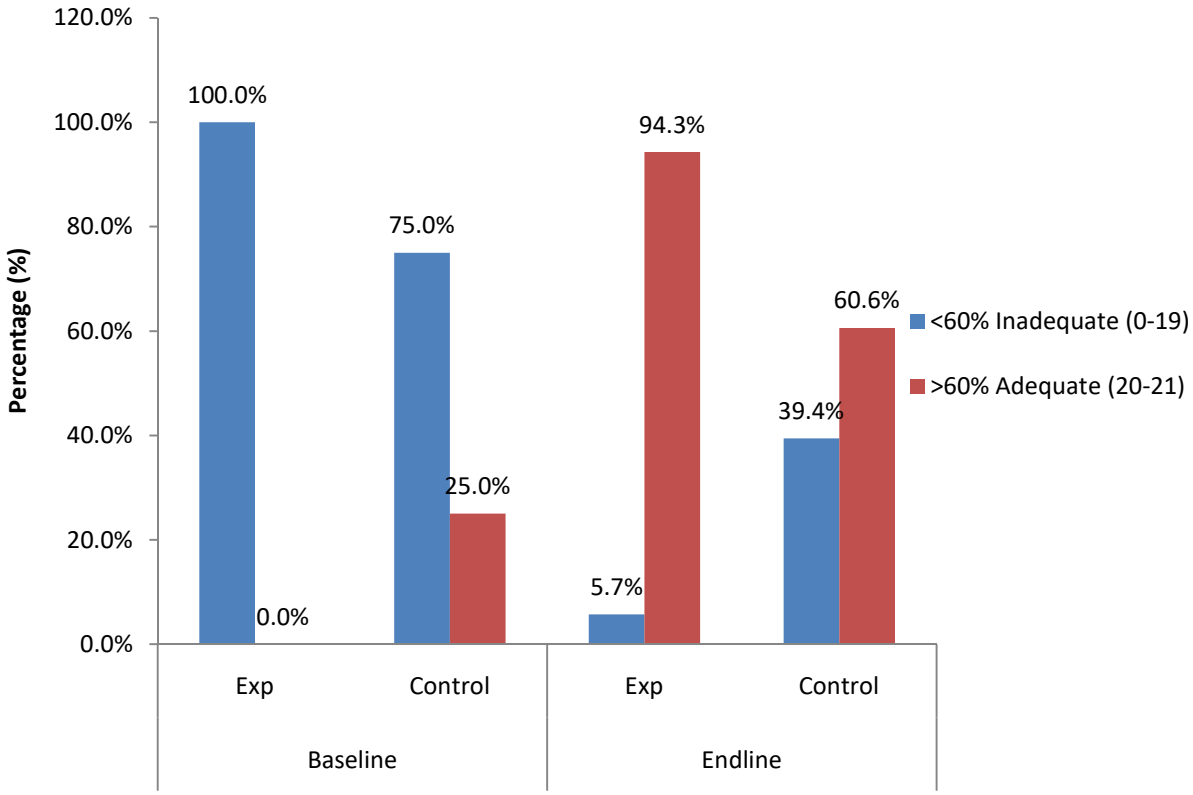


Figure 4.1: Categorisation of knowledge scores on infant feeding

Table 4.6: Mothers' mean knowledge scores for experimental and control groups at baseline and endline

Group	**Knowledge scores**				
	Baseline	**Endline**	**t-value**	**p-value**	**Remark**
Experiment	12.0±4.6	20.6±2.1	17.640	0.000	**Significant**
Control	16.9±3.2	18.9±3.2	4.799	0.000	**Significant**
t-value	9.442	4.743			
Mean difference	4.866	1.752			
P-value	0.000	0.000			
Remark	**Significant**	**Significant**			

4.7 Attitude of mothers towards infant feeding (Breast feeding) at baseline

Contradictory attitudes existed on statement of "nutritional benefits of breast milk last only until the baby is weaned from breast milk" in both groups, where 41.7% of respondents in experimental agreed with the statement, 40.8% in control group disagreed .Majority of the respondents in both groups agreed that breastfeeding is more convenient compared to formula-feeding and that breastfeeding increases mother-infant bonding respectively.

More respondents in control group (45.0%) compared to experimental group (39.2%) agreed that formula-fed infants are more likely to be overfed than breastfed infants. However, 36.7% of respondents in both groups agreed that formula-feeding is the better choice for mothers who plan to work outside home. In addition, more than half of the respondents in experimental and control groups agreed on the following statements:

- Mothers who formula-feed miss one of the great joy of motherhood.
- Lactating mothers should not breast-feed in open/public place like market and social gatherings
- Mothers who drink alcohol occasionally should not breastfeed their infants

Also, majority of the respondents in experimental and control groups agreed on the following statement:

- Babies fed with breast milk are healthier than babies who are formula fed.
- Breast milk is the ideal food for babies
- Breast milk is more easily digested than formula
- Breast-feeding is more convenient and less expensive than formula feeding

However, majority of the respondents in experimental and control groups disagreed to the following statements:

- Breast-fed babies are more likely to be overfed than formula-fed babies.
- Fathers feel left out if a mother breast-feeds.

More than half of the respondents in experimental and control group also disagreed on the statement “Formula is as healthy for an infant as breast milk” (Table 4.7).

Table 4.7: Attitude of mothers towards infant feeding (Breast feeding) at baseline

Attitude of mothers towards infant feeding	Exp No (%)					Control No (%)				
	SD	D	N	A	SA	SD	D	N	A	SA
Nutritional benefits of BM last only until the baby is weaned from breast milk	18 (15.0)	36 (30.0)	3 (2.5)	50 (41.7)	13 (10.8)	13 (10.8)	49 (40.8)	13 (10.8)	27 (22.5)	18 (15.0)
Formula-feeding is more convenient than breast-feeding	25 (20.8)	62 (51.7)	18 (15.0)	13 (10.8)	2 (1.7)	23 (19.2)	64 (53.3)	11 (9.2)	13 (10.8)	9 (7.5)
Breast-feeding increases mother-infant bonding	5 (4.2)	4 (3.3)	9 (7.5)	84 (70.0)	18 (15.0)	0 (0.0)	3 (2.5)	3 (2.5)	87 (72.5)	27 (22.5)
Breast-milk is lacking in iron	19 (15.8)	56 (46.7)	18 (15.0)	24 (20.0)	3 (2.5)	7 (5.8)	52 (43.3)	33 (27.5)	24 (20.0)	4 (3.3)
Formula-fed babies are more likely to be overfed than breast-fed babies	10 (8.3)	34 (28.3)	23 (19.2)	47 (39.2)	6 (5.0)	9 (7.5)	20 (16.7)	20 (16.7)	54 (45.0)	17 (14.2)
Formula-feeding is the better choice if a mother plans to work outside the home	7 (5.6)	34 (28.3)	23 (19.2)	44 (36.7)	12 (10.0)	2 (1.7)	36 (30.0)	17 (14.2)	44 (36.7)	21 (17.5)
Mothers who formula-feed miss one of the great joys of motherhood	7 (5.8)	15 (12.5)	29 (24.2)	52 (43.3)	17 (14.2)	2 (1.7)	19 (15.8)	23 (19.2)	60 (50.0)	16 (13.3)
Women should not breast-feed in public places such as market places, social gathering or open places	11 (9.2)	32 (26.7)	10 (8.3)	53 (44.2)	14 (11.7)	12 (10.0)	34 (28.3)	3 (2.5)	60 (50.0)	11 (9.2)

SD=Strong disagree, D=Disagree, N=Neutral, A=Agree, SA=Strong agree

Table 4.7: Attitude of mothers towards infant feeding (Breast feeding) at baseline (continued)

Attitude of mothers towards infant feeding	Exp No (%)					Control No (%)				
	SD	D	N	A	SA	SD	D	N	A	SA
Babies fed with breast milk are healthier than babies who are formula fed	2 (1.7)	4 (3.3)	13 (10.8)	79 (65.8)	22 (18.3)	2 (1.7)	1 (0.8)	8 (6.7)	79 (65.8)	30 (25.0)
Breast-fed babies are more likely to be overfed than formula-fed babies	6 (5.0)	46 (38.3)	19 (15.8)	37 (30.8)	12 (10.0)	14 (11.7)	55 (45.8)	22 (18.3)	20 (16.7)	9 (7.5)
Fathers feel left out if a mother breast-feeds	8 (6.7)	49 (40.8)	26 (21.7)	24 (20.0)	13 (10.8)	17 (14.2)	48 (40.0)	26 (21.7)	24 (20.0)	5 (4.2)
Breast milk is the ideal food for babies	2 (1.7)	1 (0.8)	7 (5.8)	91 (75.8)	19 (15.8)	1 (0.8)	5 (4.2)	5 (4.2)	83 (69.2)	26 (21.7)
Breast milk is more easily digested than formula	4 (3.3)	9 (7.5)	12 (10.0)	77 (64.2)	18 (15.0)	2 (1.7)	6 (5.0)	19 (15.8)	72 (60.0)	21 (17.5)
Formula is as healthy for an infant as breast milk	25 (20.8)	51 (42.5)	16 (13.3)	24 (20.0)	4 (3.3)	29 (24.2)	62 (51.7)	12 (10.0)	16 (13.3)	1 (0.8)
Breast-feeding is more convenient than formula feeding	2 (1.7)	2 (1.7)	9 (7.5)	88 (73.3)	19 (15.8)	4 (3.3)	4 (3.3)	11 (9.2)	75 (62.5)	26 (21.7)
Breast milk is less expensive than formula	1 (0.8)	2 (1.7)	3 (2.5)	90 (75.0)	24 (20.0)	1 (0.8)	2 (1.7)	4 (3.3)	83 (69.2)	30 (25.0)
A mother who occasionally drinks alcohol should not breast-feed her baby	7 (5.8)	15 (12.5)	14 (11.7)	58 (48.3)	26 (21.7)	7 (5.8)	11 (9.2)	30 (25.0)	54 (45.0)	18 (15.0)

SD=Strong disagree, D=Disagree, N=Neutral, A=Agree, SA=Strong agree

4.8 Attitude of mothers towards infant feeding (Breast feeding) at endline

At endline, contradictory attitude on "nutritional benefits of breast milk last only until the baby is weaned from breast milk" in both groups disappeared where 88.7% and 76.9% of respondents in experimental and control groups disagreed with the statement respectively.

Majority of the respondents in both groups agreed that breastfeeding is more convenient compared to formula-feeding. In experimental and control groups, 63.2% and 78.9% respectively agreed on breastfeeding increases mother-infant bonding.

Slightly above three quarter of the respondents in control and experimental group agreed that formula-fed infants are more likely to be overfed than breastfed infants. Further, 58.5% and 32.1% respondents strongly disagreed and disagreed respectively in experimental groups on formula-feeding is the better choice for mothers who plan to work outside home while only 33.9% and 29.4% showed strong disagreement and agreement on this statement.

In addition, 51.9% and 39.6% respondents in experimental group were strongly favorable and favorable respectively to the statement "mothers who formula-feed miss one of the great joys of motherhood" while only 367% and 34.9% in control group were strongly favorable and favorable respectively. More than half of the respondents in experimental group had strong attitude to the statement "lactating mothers should not breast-feed in open/public place like market and social gatherings" while only 37.0% in control group showed strong desire to the statement. Majority of the respondents in experimental and control groups agreed on the following statements at endline:

- Babies fed with breast milk are healthier than babies who are formula fed.
- Breast milk is the ideal food for babies
- Breast milk is more easily digested than formula
- Breast-feeding is more convenient and less expensive than formula feeding

However, more than half of the respondents in experimental and control groups disagreed to the following statemens at endline:

- Breast-fed babies are more likely to be overfed than formula-fed babies.
- Fathers feel left out if a mother breast-feeds.

Only 60.4% respondents in experimental and 45.0% in control group strongly disagreed on the statement “Formula is as healthy for an infant as breast milk” (Table 4.8).

Table 4.8: Attitude of mothers towards infant feeding (Breast feeding) at endline

Attitude of mothers towards infant feeding	Exp No (%)					Control No (%)				
	SD	D	N	A	SA	SD	D	N	A	SA
The nutritional benefits of breast milk last only until the baby is weaned from breast milk	59 (55.7)	35 (33.0)	2 (1.9)	6 (5.7)	4 (3.8)	47 (43.1)	37 (33.9)	4 (3.7)	21 (19.3)	0 (0.0)
Formula-feeding is more convenient than breast-feeding	69 (65.1)	33 (31.1)	0 (0.0)	4 (3.8)	0 (0.0)	46 (42.2)	44 (40.4)	5 (4.6)	13 (11.9)	1 (0.9)
Breast-feeding increases mother-infant bonding	3 (2.8)	3 (2.8)	0 (0.0)	34 (32.1)	66 (62.3)	1 (0.9)	2 (1.8)	20 (18.3)	40 (36.7)	46 (42.2)
Breast-milk is lacking in iron	66 (62.3)	36 (34.0)	0 (0.0)	4 (3.8)	0 (0.0)	45 (41.3)	42 (38.5)	9 (8.3)	12 (11.0)	1 (0.9)
Formula-fed babies are more likely to be overfed than breast-fed babies	4 (3.8)	8 (7.5)	13 (12.3)	53 (50.0)	28 (26.4)	4 (3.7)	6 (5.5)	8 (7.3)	62 (56.9)	29 (26.6)
Formula-feeding is the better choice if a mother plans to work outside the home	62 (58.5)	34 (32.1)	2 (1.9)	7 (6.6)	1 (0.9)	37 (33.9)	32 (29.4)	8 (7.3)	29 (26.6)	3 (2.8)
Mothers who formula-feed miss one of the great joys of motherhood	4 (3.8)	2 (1.9)	3 (2.8)	55 (51.9)	42 (39.6)	3 (2.8)	4 (3.7)	24 (22.0)	40 (36.7)	38 (34.9)
Women should not breast-feed in public places such as market places, social gathering or open places	63 (59.4)	32 (30.2)	0 (0.0)	10 (9.4)	1 (0.9)	40 (37.0)	25 (23.1)	3 (2.8)	37 (34.3)	3 (2.8)

SD=Strong disagree, D=Disagree, N=Neutral, A=Agree, SA=Strong agree

Table 4.8: Attitude of mothers towards infant feeding (Breast feeding) at endline (continued)

Attitude of mothers towards infant feeding	Exp No (%)					Control No (%)				
	SD	D	N	A	SA	SD	D	N	A	SA
Babies fed with breast milk are healthier than babies who are formula fed	1 (0.9)	3 (2.8)	2 (1.9)	39 (36.8)	61 (57.5)	3 (2.8)	5 (4.6)	1 (0.9)	57 (52.3)	43 (39.4)
Breast-fed babies are more likely to be overfed than formula-fed babies	48 (45.3)	42 (39.6)	8 (7.5)	7 (6.6)	1 (0.9)	40 (37.4)	44 (41.1)	8 (7.5)	12 (11.2)	3 (2.8)
Fathers feel left out if a mother breast-feeds	42 (39.6)	31 (29.2)	21 (19.8)	11 (10.4)	1 (0.9)	39 (35.8)	32 (29.4)	30 (27.5)	5 (4.6)	3 (2.8)
Breast milk is the ideal food for babies	2 (1.9)	0 (0.0)	1 (0.9)	42 (39.6)	61 (57.5)	0 (0.0)	0 (0.0)	3 (2.8)	63 (57.8)	43 (39.4)
Breast milk is more easily digested than formula	0 (0.0)	2 (1.9)	1 (0.9)	43 (40.6)	60 (56.6)	4 (3.7)	0 (0.0)	5 (4.6)	60 (55.0)	40 (36.7)
Formula is as healthy for an infant as breast milk	64 (60.4)	37 (34.9)	1 (0.9)	2 (1.9)	2 (1.9)	49 (45.0)	41 (37.6)	5 (4.6)	13 (11.9)	1 (0.9)
Breast-feeding is more convenient than formula feeding	6 (5.7)	0 (0.0)	1 (0.9)	41 (38.7)	58 (54.7)	2 (1.8)	1 (0.9)	3 (2.8)	59 (54.1)	44 (40.4)
Breast milk is less expensive than formula	6 (5.7)	0 (0.0)	1 (0.9)	42 (39.6)	57 (53.8)	1 (0.9)	0 (0.0)	0 (0.0)	64 (58.7)	44 (40.4)
A mother who occasionally drinks alcohol should not breast-feed her baby	49 (46.2)	20 (18.9)	7 (6.6)	27 (25.5)	3 (2.8)	46 (42.2)	26 (23.9)	5 (4.6)	31 (28.4)	1 (0.9)

SD=Strong disagree, D=Disagree, N=Neutral, A=Agree, SA=Strong agree

4.9 Attitude score on infant feeding (Breast feeding)

At baseline, mean attitude scores in experimental group was 7.5±2.7 and control group was 11.0±2.6, and differ significantly (p=0.000) ((Table 4.8). 28.8% of respondents in control group had positive attitude compared to 3.3% in experimental group.

At endline, mean attitude score in experimental group was 15.1±2.1 and control group was 13.6±3.4. Significant (p=0.001) majority of respondents in experimental group (75.0%) had positive attitude compared to 46.9% in control group (Table 4.9 and Fiure 4.2).

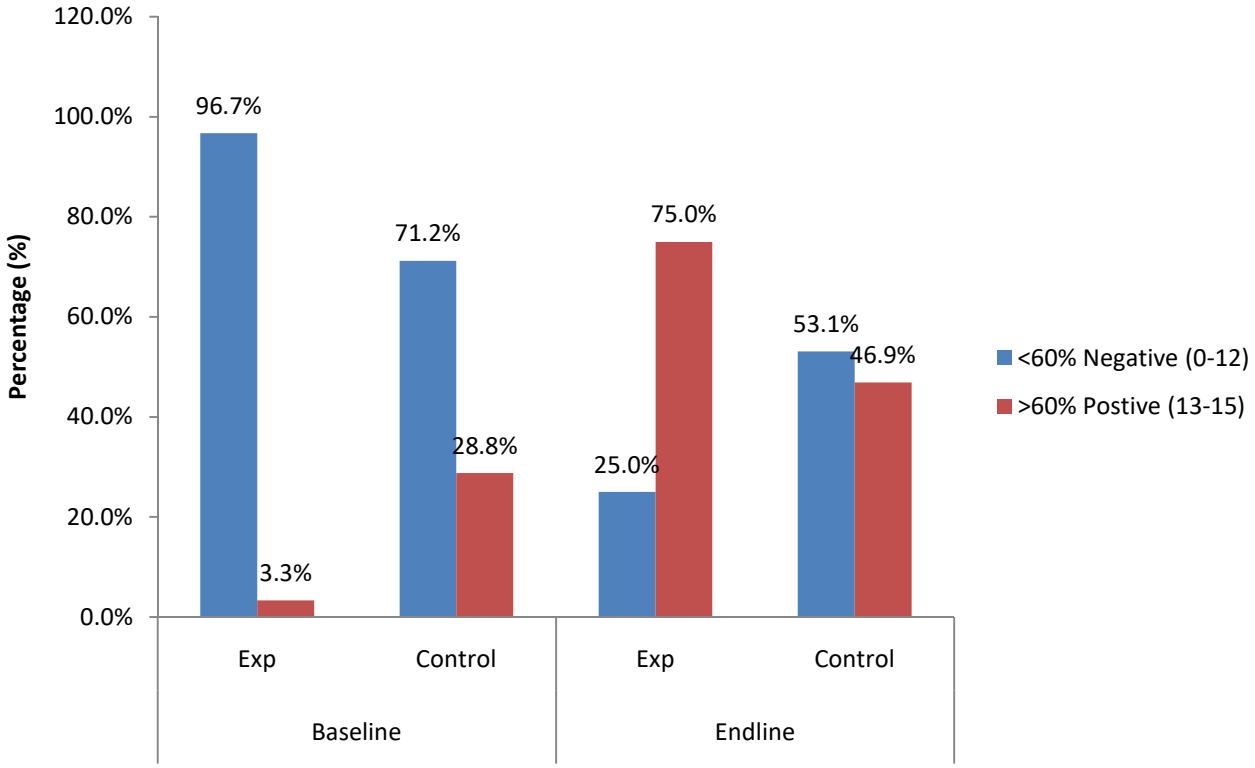


Figure 4.2: Categorisation of attitude scores on infant feeding (Breast feeding)

Table 4.9: Mothers' mean attitude scores (breast feeding) for experimental and control groups at baseline and endline

Group	Attitude score (breast feeding)				
	Baseline	**Endline**	**t-value**	**P-value**	**Remark**
Experiment	7.5±2.7	15.1±2.1	23.397	0.000	**Significant**
Control	11.0±2.6	13.6±3.4	6.626	0.000	**Significant**
t-value	10.229	3.758			
Mean difference	3.508	1.461			
P-value	0.000	0.000			
Remark	**Significant**	**Significant**			

4.10 Attitude of mothers towards complementary feeding at baseline

As shown in Table 10 below, majority of the mothers in both groups had positive attitude towards the following statements

3 Mothers require adequate knowledge on the foods given to children.

4 The need to consider age, frequency of feeding, amount of food, texture of thickness of food, variety of food, responsive feeding and hygiene when introducing complementary food.

5 Different varieties of locally available foods should be given to the baby alongside breast milk from 6 months old.

6 Fruits and vegetables such as pear, apple, orange, water melon, tomato, eggplant, cabbage, pumpkin, carrot, cucumber, mango, banana, pineapple, water leaf should be given to a child at age 6 month and beyond.

7 Infant at 6 month should start consuming different variety of foods.

Mother should sit and monitor how her child eats (Table 4.10).

Table 4.10: Attitude of mothers towards complementary feeding at baseline (N=240)

Attitude of mothers towards complementary feeding	Exp No (%)					Control No (%)				
	SA	A	N	D	SD	SA	A	N	D	SD
Mothers need adequate knowledge on the foods given to children	25 (83.3)	75 (62.5)	16 (13.3)	4 (3.3)	0 (0.0)	30 (25.0)	78 (65.0)	9 (7.5)	3 (2.5)	0 (0.0)
First thing to think of when introducing other foods to the child includes; Age group, frequency of feeding, amount of food, texture of thickness of food, variety of food, responsive feeding and hygiene.	16 (13.3)	56 (46.7)	35 (29.2)	13 (10.8)	0 (0.0)	18 (15.0)	52 (43.3)	31 (25.8)	19 (15.8)	0 (0.0)
Different varieties of locally available foods should be given to the baby alongside breast milk from 6 months of age.	20 (16.7)	83 (69.2)	3 (2.5)	12 (10.0)	2 (1.7)	21 (17.5)	86 (71.7)	7 (5.8)	6 (5.0)	0 (0.0)
More fluids (water) should be given to a child that has diarrhoea for rehydration	15 (12.5)	47 (39.2)	14 (11.7)	40 (33.3)	4 (3.3)	20 (16.7)	52 (43.3)	13 (10.8)	29 (24.2)	6 (5.0)

SD=Strong disagree, D=Disagree, N=Neutral, A=Agree, SA=Strong agree

Table 4.10: Attitude of mothers towards complementary feeding at baseline (N=240) (continued)

Attitude of mothers' towards complemnetary feeding	Exp No (%)					Control No (%)				
	SA	A	N	D	SD	SA	A	N	D	SD
Fruits and vegetables (pear, apple, orange, water melon, tomato, eggplant, cabbage, pumpkin, carrot, cucumber, mango, banana, pineapple and water leaf) should be given to a child (6-24 months).	18 (15.0)	74 (61.7)	6 (5.0)	18 (15.0)	4 (3.3)	21 (17.5)	82 (68.3)	6 (5.0)	11 (9.2)	0 (0.0)
A child should eat different variety of foods from 6 months of age.	15 (12.5)	87 (72.5)	6 (5.0)	10 (8.3) S	2 (1.7)	21 (17.5)	86 (71.7)	5 (4.2)	8 (6.7)	0 (0.0)
A mother should sit and monitor how her child eats?	25 (20.8)	86 (71.7)	4 (3.3)	5 (4.2)	0 (0.0)	29 (24.2)	88 (73.3)	1 (0.8)	2 (1.7)	0 (0.0)
Breastfeeding a child alongside with other foods is good for your baby's health.	20 (16.7)	97 (80.8)	1 (0.8)	2 (1.7)	0 (0.0)	28 (23.3)	90 (75.0)	2 (1.7)	0 (0.0)	0 (0.0)
Feeding times for the child should be fun and a happy moment.	21 (17.5)	91 (75.8)	4 (3.3)	4 (3.3)	0 (0.0)	29 (24.2)	88 (73.3)	1 (0.8)	2 (1.7)	0 (0.0)

SA=strongly agree, A=Agree, N=Neutral, D=Disagree, SD=Strongly disagree

4.11 Attitude of mothers towards complementary feeding at endline

At endline all mothers in experimental group compared to majority in control group had positive attitude towards the following statements: mothers require adequate knowledge on the foods given to children, the need to consider age, frequency of feeding, amount of food, texture of thickness of food, variety of food, responsive feeding and hygiene when introducing complementary food. Different varieties of locally available foods should be given to the baby alongside breast milk from 6 months old. Also, fruits and vegetables such as pear, apple, orange, water melon, tomato, eggplant, cabbage, pumpkin, carrot, cucumber, mango, banana, pineapple, and water leaf should be given to a child at age 6 months and beyond. Infants at 6 months should start consuming different varieties of foods and mother should sit to monitor how her child eats (Table 4.11).

Table 4.11: Attitude of mothers towards complementary feeding at endline (N=215)

Attitude of mothers towards infant feeding	Exp No (%)					Control No (%)				
	SA	A	N	D	SD	SA	A	N	D	SD
Mothers needs adequate knowledge on the foods given to children	71 (67.0)	35 (33.0)	0 (0.0)	0 (0.0)	0 (0.0)	48 (44.0)	48 (44.0)	9 (8.3)	4 (3.7)	0 (0.0)
First thing to think of when introducing other foods to the child includes; Age group, frequency of feeding, amount of food, texture of thickness of food, variety of food, responsive feeding and hygiene	68 (64.2)	38 (35.8)	0 (0.0)	0 (0.0)	0 (0.0)	49 (45.0)	38 (34.9)	22 (20.2)	0 (0.0)	0 (0.0)
Different varieties of locally available foods should be given to the baby alongside breast milk from 6 months of age.	67 (63.2)	39 (36.8)	0 (0.0)	0 (0.0)	0 (0.0)	49 (45.0)	55 (50.5)	5 (4.6)	0 (0.0)	0 (0.0)
More fluids (water) should be given to a child that has diarrhoea for rehydration	64 (60.4)	41 (38.7)	1 (0.9)	0 (0.0)	0 (0.0)	43 (39.4)	46 (42.2)	19 (17.4)	1 (0.9)	0 (0.0)
Fruits and vegetables (pear, apple, orange, water melon, tomato, eggplant, cabbage, pumpkin, carrot, cucumber, mango, banana, pineapple, water leaf) should be given to a child (6-24 months).	68 (64.2)	38 (35.8)	0 (0.0)	0 (0.0)	0 (0.0)	49 (45.0)	55 (50.5)	3 (2.8)	2 (1.8)	0 (0.0)

SA=Strongly agree, A=Agree, N=Neutral, D=Disagree, SD=Strongly disagree

Table 4.11: Attitude of mothers towards complementary feeding at endline (N=215) (continued)

Attitude of mothers towards infant feeding	Exp No (%)					Control No (%)				
	SA	A	N	D	SD	SA	A	N	D	SD
A child should eat different variety of foods from 6 months of age.	69 (65.1)	37 (34.9)	0 (0.0)	0 (0.0)	0 (0.0)	48 (44.0)	55 (50.5)	5 (4.6)	1 (0.9)	0 (0.0)
A mother should sit and monitor how her child eats?	67 (63.2)	39 (36.8)	0 (0.0)	0 (0.0)	0 (0.0)	46 (42.2)	49 (45.0)	10 (9.2)	0 (0.0)	0 (0.0)
Breastfeeding a child alongside with other foods is good for your baby's health.	70 (66.0)	36 (34.0)	0 (0.0)	0 (0.0)	0 (0.0)	47 (43.1)	59 (54.1)	2 (1.8)	1 (0.9)	0 (0.0)
Feeding times for the child should be fun and a happy moment.	70 (66.0)	36 (34.0)	0 (0.0)	0 (0.0)	0 (0.0)	45 (41.3)	54 (49.5)	7 (6.4)	3 (2.8)	0 (0.0)

SA=Strongly agree, A=Agree, N=Neutral, D=Disagree, SD=Strongly disagree

4.12 Categorisation of mothers attitude score on complementary feeding

Mean attitude score at baseline was 4.3±1.6 and 7.7±1.3 in experimental and control groups respectively while that of endline was 9.0±0.1 and 8.1±1.8 in experimental and control groups respectively. In control group, 27.3% of mothers had positive attitude towards complementary feeding, which differ significantly from mothers in experimental group. However at endline, 99.1% of the mothers in experimental group had positive attitude that differ significantly from mothers in control group, 63.3%(Table 4.12 and Figure 4.3).

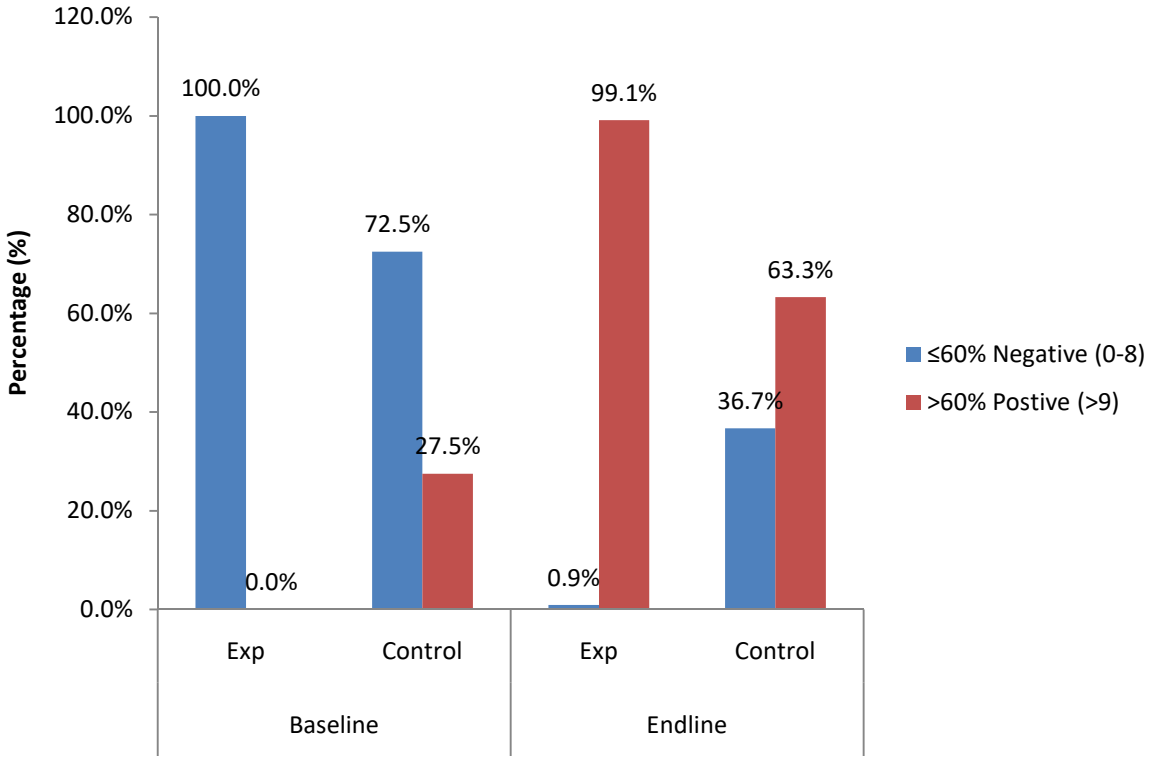


Figure 4:3: Categorisation of mothers' attitude scores on complementary feeding

Table 4.12: Mothers' mean attitude scores (complementary feeding) for experimental and control groups at baseline and endline

Group	Attitude score (complementary feeding)				
	Baseline	**Endline**	**t-value**	**P-value**	**Remark**
Experiment	4.3±1.6	9.0±0.1	31.096	0.000	**Significant**
Control	7.7±1.3	8.1±1.8	2.209	0.028	**Significant**
t-value	18.532	5.277			
Mean difference	3.392	0.899			
P-value	0.000	0.000			
Remark	**Significant**	**Significant**			

4.13 **Breastfeeding practices**

4.13.1 **Ever breastfed and currently breastfeeding mothers**

At baseline 93.3% of mothers in both groups reported to have ever breastfed the children given birth to prior study. At endline, all mothers in experimental group practiced ssbreastfeeding, while 99.1% of mothers in control group practiced breastfeeding (Figure 4.4).

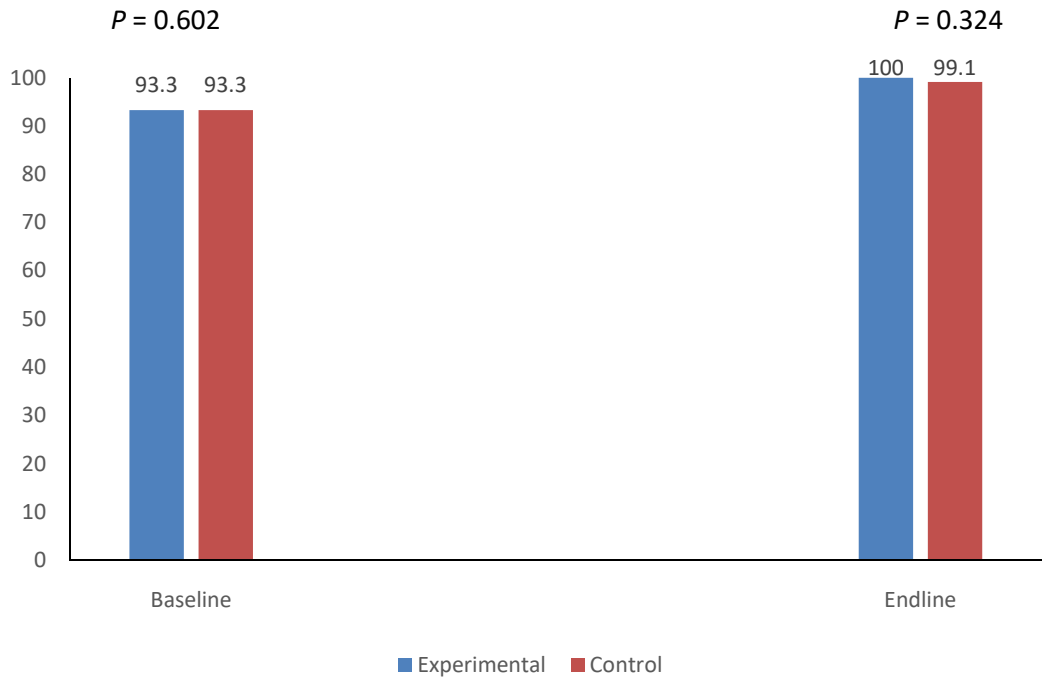


Figure 4.4: Ever breastfed and currently breast feeding mothers

4.13.2 Breastfeeding initiation

At baseline, 38.3% and 50.8% in experimental and control groups respectively initiated breastfeeding within 30 minutes with their previous deliveries; though, 40.8% mothers in experimental group previously initiated breastfeeding after 1-24 hours of delivery while 27.5% mothers in control group had similar practice. At endline, 57.5% and 22.6% mothers in experimental group initiated breastfeeding within 30 minutes and 1-24 hours respectively. Mothers in the control group that initiated breastfeeding within 30 minutes and 1-24 hours of delivery at endline were 42.2% and 36.7% respectively (Figure 4.5).

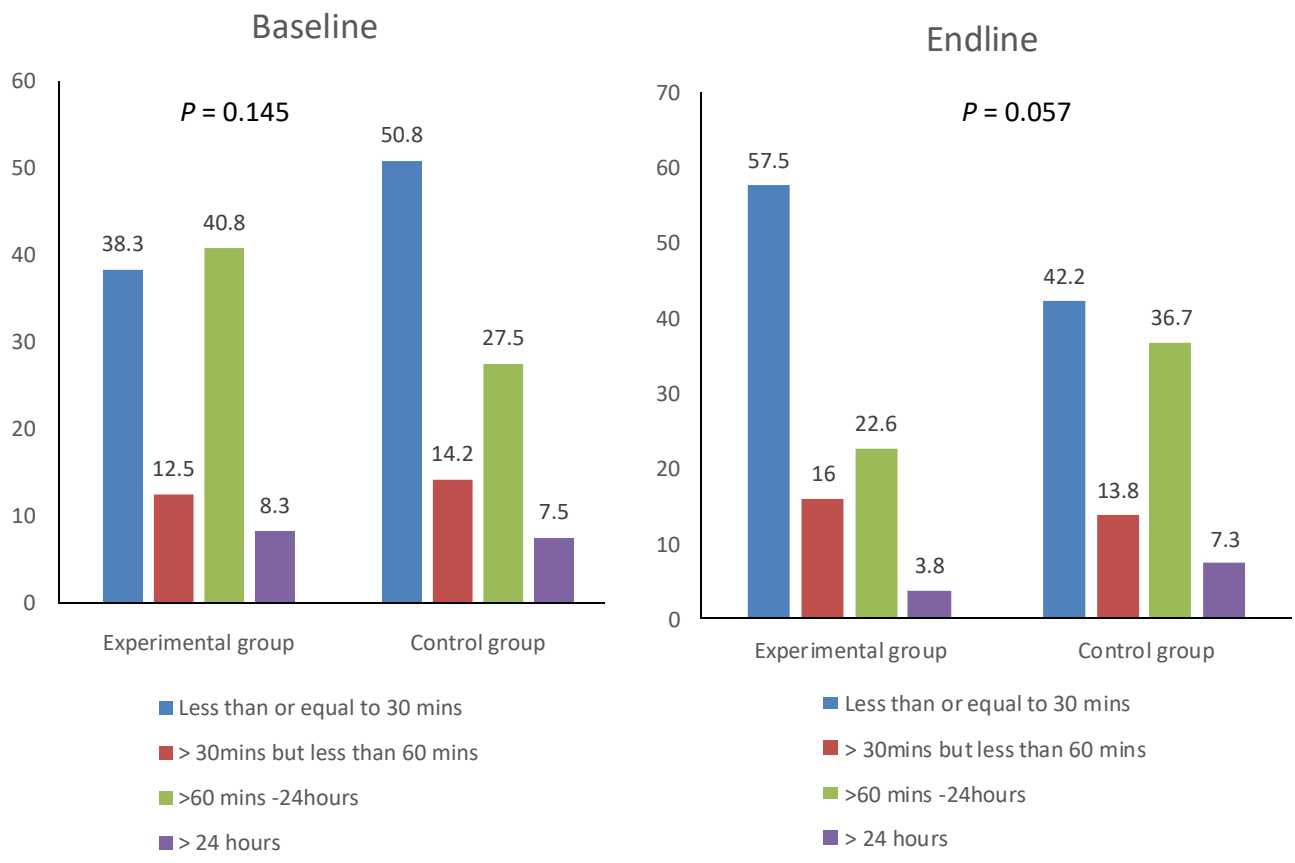


Figure 4.5: Breastfeeding initiation

4.13.3 Colostrum and prelacteal feeding

At baseline, majority of mothers in both experimental (85.0%) and control (82.5%) groups reported feeding their previous child with colostrum. At endline, nearly all mothers in both experimental (95.3%) and control (93.6%) groups practiced colostrum feeding after delivery. However, 31.7% and 17.0% of mothers in experimental group practiced prelacteal feeding at baseline and endline respectively. Also, 25.8% of mothers in control group practiced prelacteal feeding with their previous child (baseline) while 42.2% reported given prelacteal to their neonates at endline (Figure 4.5a and 4.5b).

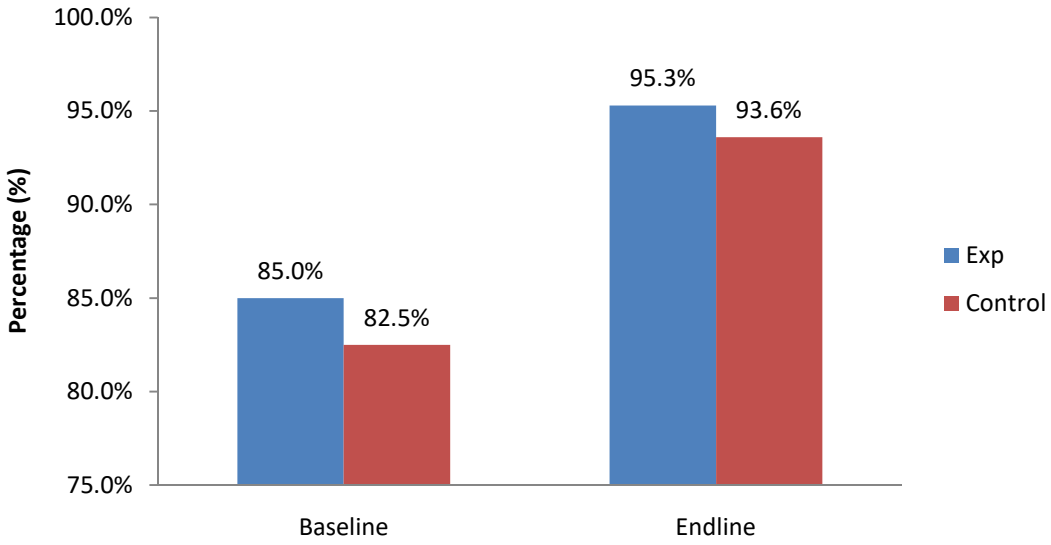


Figure 4.5a: Colostrum feeding

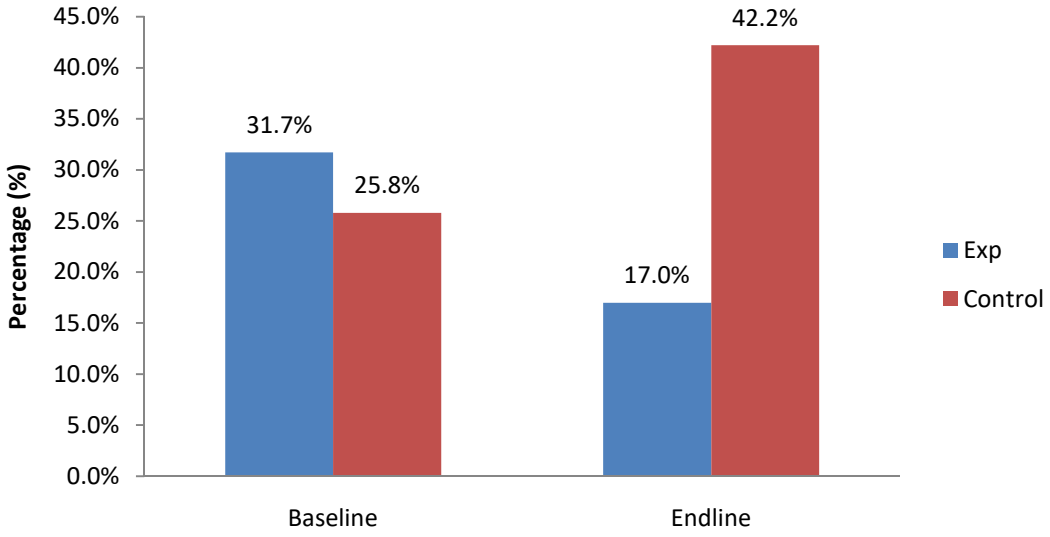
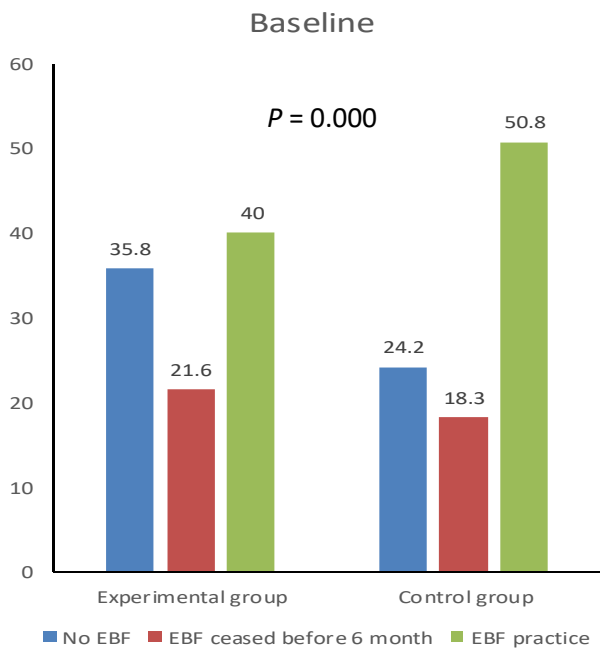


Figure 4.5b: Pre-lacteal feeding

4.13.4 Exclusive breastfeeding practices

At baseline, 35.8% mothers in experimental group reported not breastfeeding their previous child exclusively, though 40% practice exclusive breastfeeding. Slightly above half of mothers in control group breastfed their previous child exclusively. At endline, 61.3% of mothers in experimental group significantly breastfed their infants with breast milk only for 6 months compared to 33.9% of mothers in control group practiced exclusive breastfeeding (Figure 4.6).



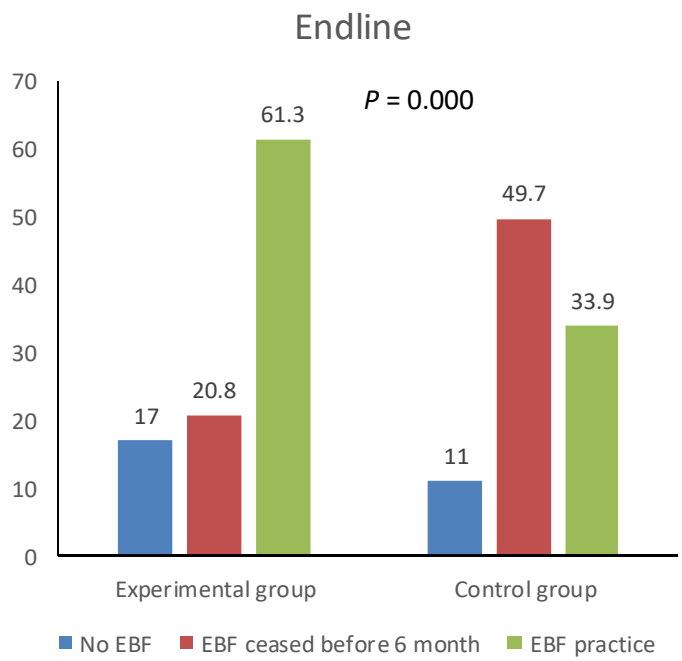


Figure 4.6: Exclusive breastfeeding practices

4.13.5 Intention and duration of breastfeeding

The intention for the duration of breastfeeding between 18 and 24 months at baseline was 59.2% and 45.8% in experimental and control group respectively. While at endline the intention for the same duration of breastfeeding was 76.4% and 62.0% in experimental and control group respectively. The proportion of infants on continued breastfeeding for one year at endline was 97.2% and 94.5% for experimental and control group respectively (Table 4.13)

Table 4.13: Infants feeding practices (continued)

Infants feeding practice	Baseline (%): N=240					End line (%): N=215				
	Exp n (%)	Control n (%)	Total n (%)	χ^2	p-value	Exp n (%)	Control n (%)	Total n (%)	χ^2	p-value
Mothers' intended duration of breastfeed the index child (Months)?:										
<12	6 (5.0)	3 (2.5)	9 (3.8)	8.107	0.044	2 (1.9)	0 (0.0)	2 (0.9)	8.369	0.015
12-17	36 (30.0)	57 (47.5)	93 (38.8)			23 (21.7)	41 (38.0)	64 (29.9)		
18-24	71 (59.2)	55 (45.8)	126 (52.5)			81 (76.4)	67 (62.0)	148 (69.2)		
>24	7 (5.8)	5 (4.2)	12 (5.0)			0 (0.0)	0 (0.0)	0 (0.0)		
Mean± SD	41.5±18.3	28.7±13.0	35.1±15.8			18.1±3.3	17.8±3.2	17.9±3.3		
Status of continued breast feeding:										
Yes	6 (5.0)	2 (1.7)	8 (3.3)	2.069	0.150	103 (97.2)	103 (94.5)	206 (95.8)	0.958	0.328
No	114 (95.0)	118 (98.3)	232 (96.7)			3 (2.8)	6 (5.5)	9 (4.2)		
Number (total)	120 (100.0)	120 (100.0)	240 (100..0)			106 (100.0)	109 (100.0)	215 (100.0)		

4.13.6 Introduction of solids, semi-solids or soft food

At baseline, 57.5% of the respondents in control group introduced solids, semi-solids or soft food at 6 months while 42.5% of respondents in experimental group had similar practices. However, at endline 62.3% respondents introduced solids, semi-solids or soft food at 6 months in experimental group while 39.4% of the control group had similar practice (Figure 4.7). The p-value at both baseline and endline are significant $p<0.05$.

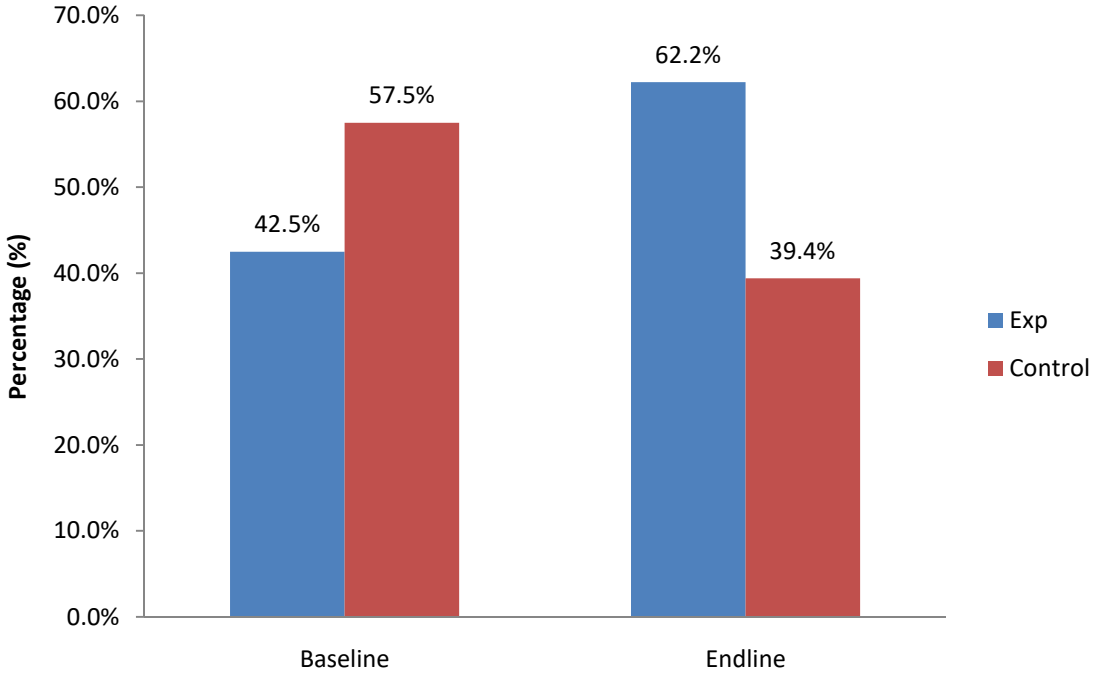


Figure 4.7: Introduction of solids, semi-solids or soft food

4.13.7 Food groups consumption pattern

At baseline, 98.3% and 85.5% children consumed grains, root and tubers experimental and control groups respectively, while at endline all children in experimental was reported to consume grains, root and tubers and 94.5% children in control group consumed similar food group. Eggs, animal protein and dairy products were consumed by 38.3%, 52.5% and 28.3% children respectively in experimental group at baseline, while 35%, 55.8% and 20.8% children respectively consumed similar food groups at baseline in control group. At endline, eggs, animal protein and dairy products were consumed by 40.6%, 33% and 54.7% children respectively in experimental group, while 38.5%, 28.4% and 47.7% children respectively consumed similar food groups in control group. Fruit and vegetable food group was consumed by 56.7% and 48.3% children in experimental and control groups respectively, few children (10% and 6.7%) consumed vitamin A rich food group in the respective groups at baseline.

At endline, fruit and vegetable food group consumption were 71.7% and 45% in experimental and control groups respectively. Vitamin A rich food group consumption in experimental group was 61.3%, while consumption of similar food group in control was 13.8% at endline. At baseline 57.5% and 42.5% children in experimental and control groups consumed legumes and nuts food group respectively. At endline, in experimental group 38.7% children consumed legumes and nuts food group while 28.4% children consumed similar food group in control group (Figures 4.8 and 4.9).

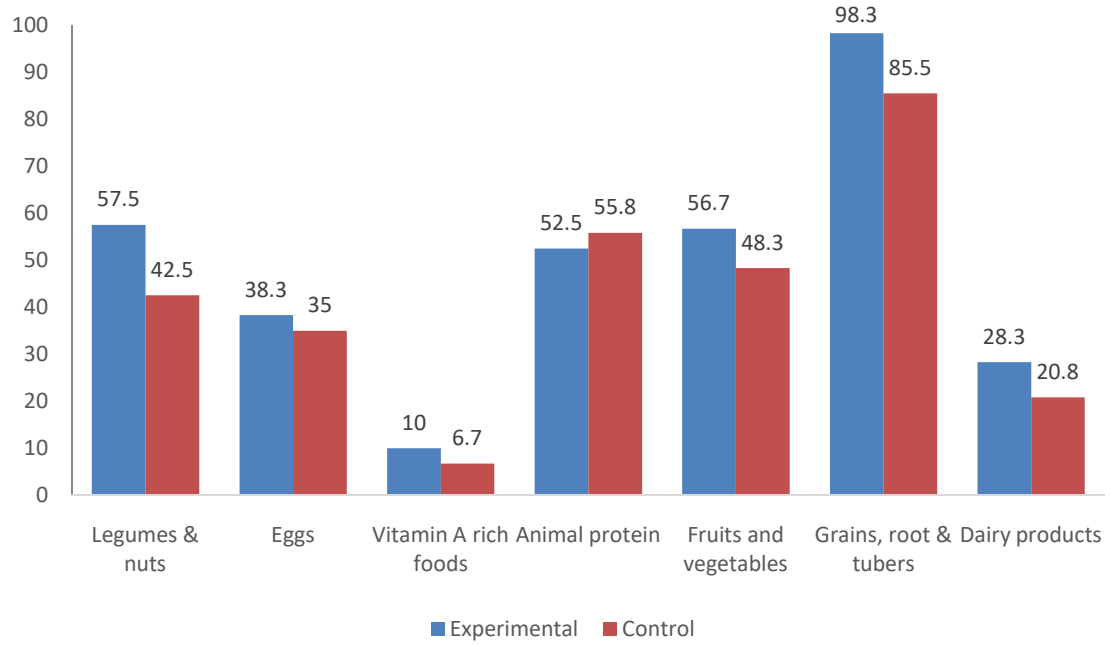


Figure 4.8: Food groups consumption pattern at Baseline

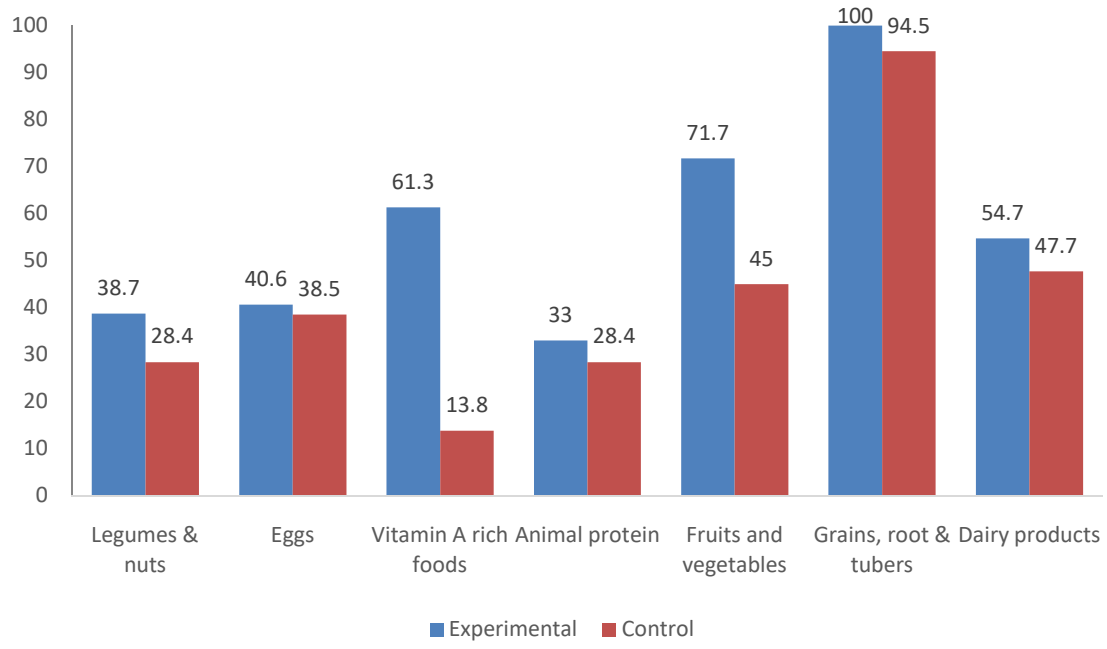


Figure 4.9: Food groups consumption pattern at Endline

4.13.8 Minimum dietary diversity

Mean dietary diversity score at baseline was 3.4±1.2 and 2.9±1.4 in experimental and control group respectively. At endline, mean dietary diversity score was 4.0±1.1 in experimental group while control group mean score was 3.0±1.1.

At baseline, 48.3% and 35.7% children had minimum dietary diversity in experimental and control groups respectively. At endline, significant number of children (64.2%) in experimental group had the minimum dietary diversity compared to 30.6% in control group (Figure 4.10).

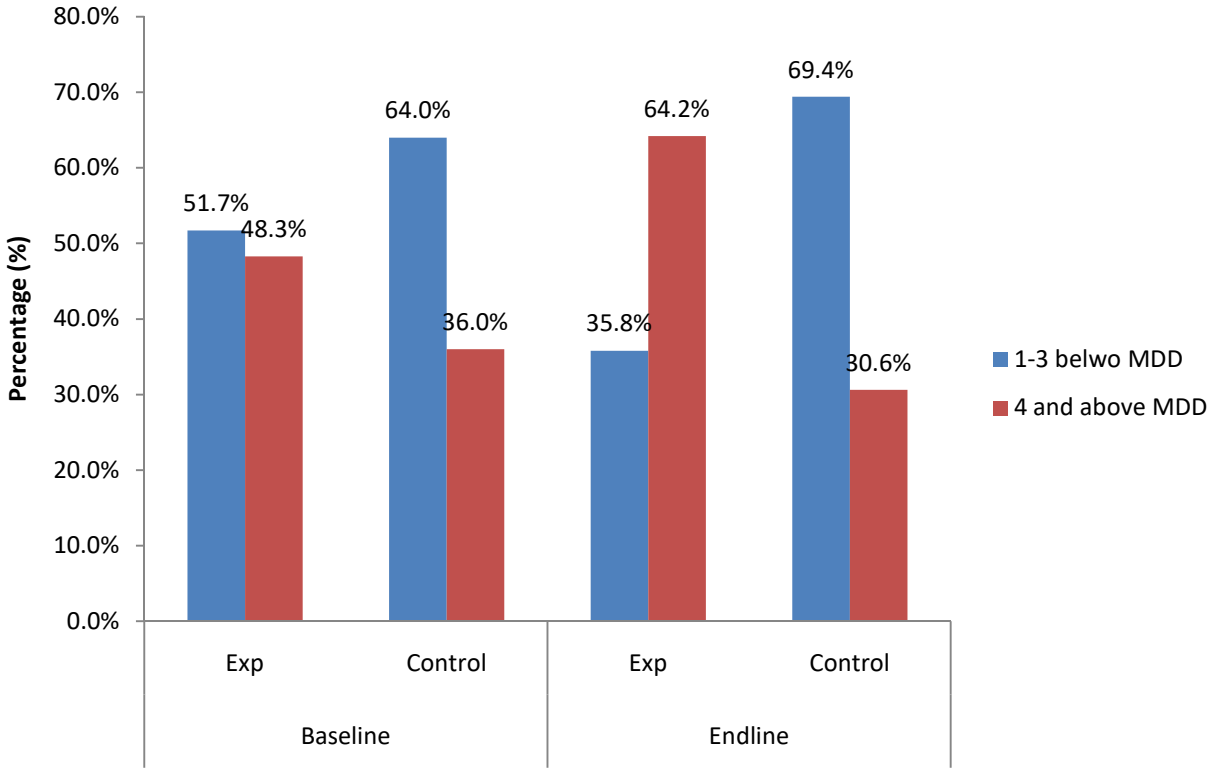


Figure 4.10: Minimum Dietary Diversity (MDD)

4.13.9 Number of times child ate solid, semi-solid, other than liquids the previous day, during the day or at night (Minimum Meal Frequency)

At baseline, 29.2% and 30.0% children ate less than 3 times solid, semi-solid, other than liquids the previous day in experimental and control groups respectively. At end line, a higher percentage of children, 50.9% in experimental group met the minimum no of eating times per day, compared with 38.5 % in control group (Figure 4.11).

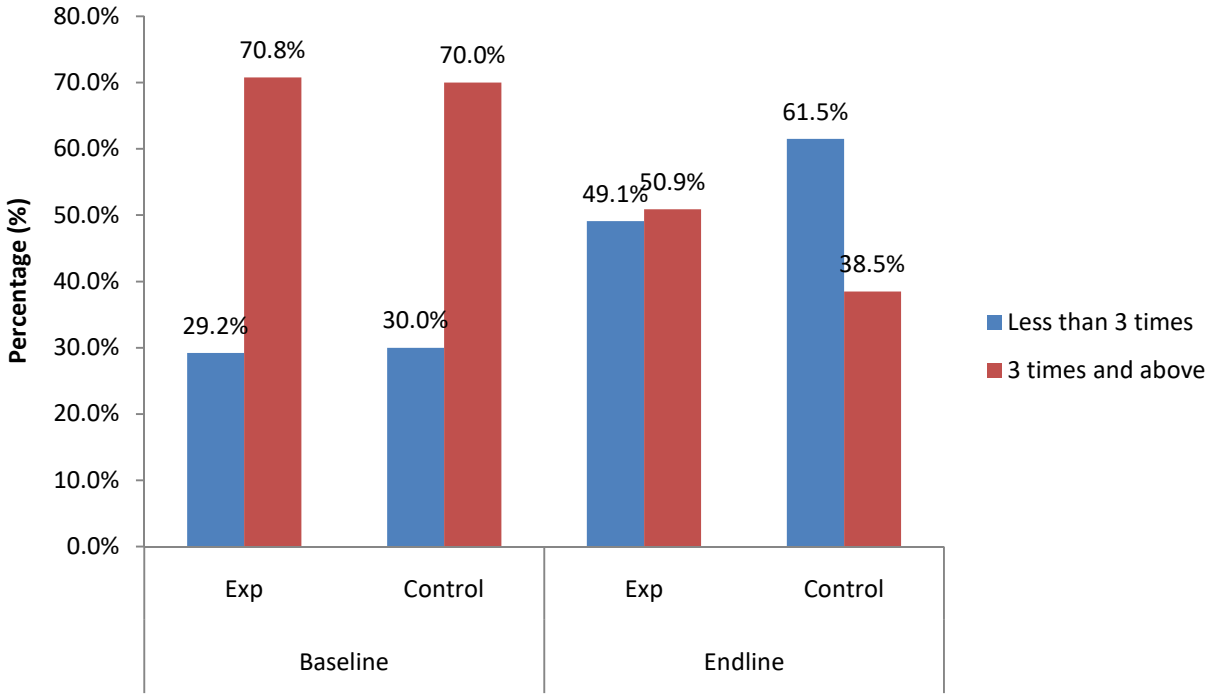


Figure 4.11: Number of times child ate solid, semi-solid, other than liquids the previous day, during the day or at night (MMF)

4.13.10 Proportion of children who had at least the minimum dietary diversity and minimum meal frequency- Minimum Acceptable Diet (MAD)

At baseline, 59.6% and 51.7% children had minimium acceptable diet in experimental and control groups respectively. At endline, 56.7% in experimental group met the minimum intake of adequate diet compared with 38.5 % in control group (Figures 4.12).

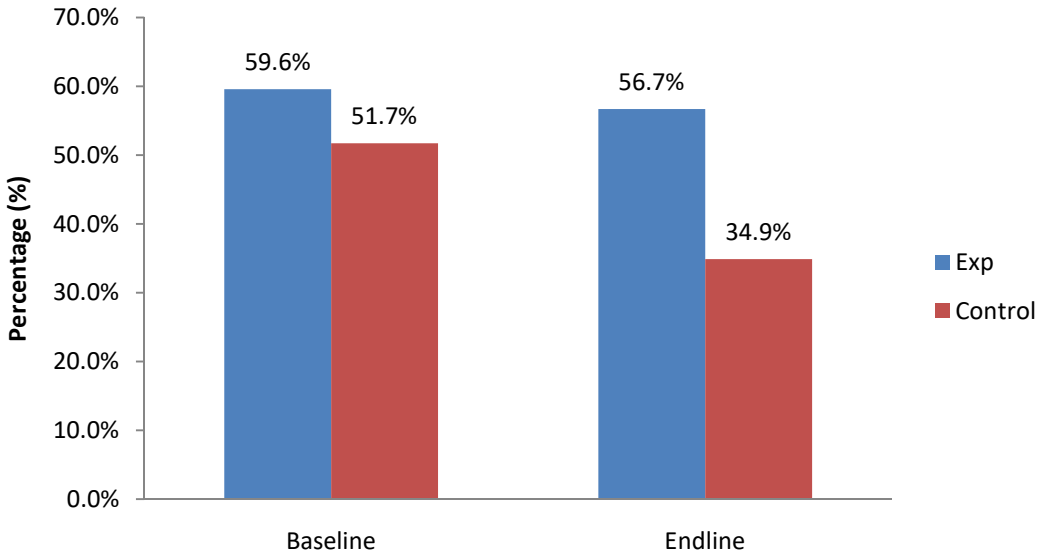


Figure 4.12: Minimum Acceptable Diet (MAD)

4.13.11 Practice of responsive feeding (FGD result) after intervention

Majority of the mothers had good practice of responsive or active feeding .as indicated by their responses to the questions posed to them during the focus group discussion. Many of the mothers said that they played, danced and sang to make the feeding times enjoyable to the infants.

The followings were the responses given to the questions on what mothers say to their infant/child to encourage them to eat more;

- "I sing praise songs like (child' name) is a good boy"
- "Take, take, take" (Kamu, kamu, kamu)" a Yoruba expression meaning take ,take, take while holding the food and demonstrating putting the food into the mouth.
- ."*O dun, gba, je* "which means "it is sweet, take and eat"
- ."I play with the baby/child while saying praise words to him like;
    - 'My fine baby", "good boy", "you are doing well/great"

All these were said while trying to feed the baby with the food at hand.

With the responses on what the mothers' do to encourage their infants or young child to eat more, the followings were said:

- "I prepare and give the food that the baby likes".
- "I play and smile with the baby"
- "I dance and sing for the baby"
- "My baby eats well, so there is no need for any act of encouragement"
- "I try to put the food into my mouth with the word expression like "Oh, it is sweet (o dun)"
- "Open your mouth and take"
- Only one mother said she gave multivitamin to encourage the baby to eat more.

The followings were the responses on what the mothers do when their infants or young children refused to eat:

1) "I give multivitamins to make him/her eat"
2) "I play with him"

3) “I prepare and give foods that he likes”
4) “I sing for him/her and try to offer him the already prepared food”
5) “I dance with the baby and try to eat in his presence and with the expression that shows that the food is sweet. For example:

Hmn, it is sweet, take it, while the mother tries to feed the baby.

6) ‘’I offer the child different types of food’’.

Some of the things the mothers do if their infants or young children ask for more food are as reported below:’

7) “I praise him to eat more”.
8) “If I feel it is just a comfort demand” i.e. the child is already full and not eating to satisfy hunger, I try to move him away by distracting his or her attention from the food.
9) “I praise him by singing, clapping, moving him around with encouraging words”.

4.13.12 **Mothers who gave other infant/children 'care supports'**

There was no significant difference in other related-feeding practices (care supports) of mothers in both experimental and control groups at baseline and endline. Further, nearly all mothers in both groups at baseline and endline kept utensils used to prepare, store and serve child's meal clean always and wash hands before preparing, serving and feeding their children with food. Use of iron supplement inform of pill, or syrup was common. However, the use of mosquito nets was observed to decrease after 12 months of delivery (Table 4.14).

Table 4.14: Mothers who gave other infant/children 'care supports'

Mothers who gave other infant/children 'care supports'	Baseline (%): N=240					End line (%): N=215				
	Exp n (%)	Control n (%)	Total n (%)	χ^2	p-value	Exp n (%)	Control n (%)	Total n (%)	χ^2	p-value
Utensils used to prepare, store and serve child's meal were kept clean always	118 (98.3)	113 (94.2)	231 (96.3)	2.886	0.089	104 (98.1)	108 (99.1)	212 (98.6)	0.367	0.545
Mother wash hands before preparing, serving and feeding child's with food	111 (92.5)	115 (95.8)	226 (94.2)	1.214	0.271	104 (98.1)	109 (100.0)	213 (99.1)	2.076	0.150
Child took drugs for intestinal worms in the past 6 months	88 (73.3)	81 (67.5)	169 (70.4)	0.980	0.322	91 (85.8)	101 (92.7)	192 (89.3)	2.610	0.106
Child took iron pill, sprinkles with iron or iron syrup in the last 7 days prior to study	73 (60.8)	76 (63.3)	149 (62.1)	0.159	0.690	81 (76.4)	78 (71.6)	159 (74.0)	0.658	0.417
Household has mosquito nets that can be used while sleeping	72 (60.0)	77 (64.2)	149 (62.1)	0.443	0.506	38 (35.8)	28 (25.7)	66 (30.7)	2.608	0.106

4.13.13 **Mothers' practice on quantity of fluids given to a child with diarrhoea**

There was no significant difference in proportion of mothers who gave more fluid to child that presented with diarrhoea at baseline in both groups. At endline significant number of mothers (89.6%) who gave more fluid to child that presented with diarrhea was observed in experimental group compare to mothers in control (72.5%) group (Table 4.15).

Table 4.15: Mothers' practice on quantity of drinks given to a child with diarrhea

Mothers' practice on quantity of drinks given to a child with diarrhea	Baseline (%): N=240					End line (%): N=215				
	Exp n (%)	Control n (%)	Total n (%)	χ^2	p-value	Exp n (%)	Control n (%)	Total n (%)	χ^2	p-value
More than usual	60 (50.0)	64 (53.3)	124 (51.7)	2.638	0.756	95 (89.6)	79 (72.5)	174 (80.9)	12.052	*0.017
About the same	14 (11.7)	14 (11.7)	28 (11.7)			5 (4.7)	18 (16.5)	23 (10.7)		
Less than usual	34 (28.3)	30 (25.0)	64 (26.7)			3 (2.8)	8 (7.3)	11 (5.1)		
Nothing in drink	3 (2.5)	2 (1.7)	5 (2.1)			0 (0.0)	1 (0.9)	1 (0.5)		
Don't know	9 (7.5)	8 (6.7)	17 (7.1)			3 (2.8)	3 (2.8)	6 (2.8)		
No response	0 (0.0)	2 (1.7)	2 (0.8)							

*Significant

4.13.14 Categorisation of infants feeding practices

On 36-point Scale, mean complementary feeding practice score at baseline was 16.6±2.9 and 16.6±3.2 in experimental and control group respectively. At endline, mean infant feeding score was 18.3±2.7 in experimental group while control group mean score was 16.4±2.6

At baseline, 19.8% and 33.0% of mothers had adequate infant feeding practices in experimental and control groups respectively. At endline, 41.7% in experimental group significantly had adequate infant feeding practice compared to 25.8% in control group (Figure 4.13 and Tables 4.16).

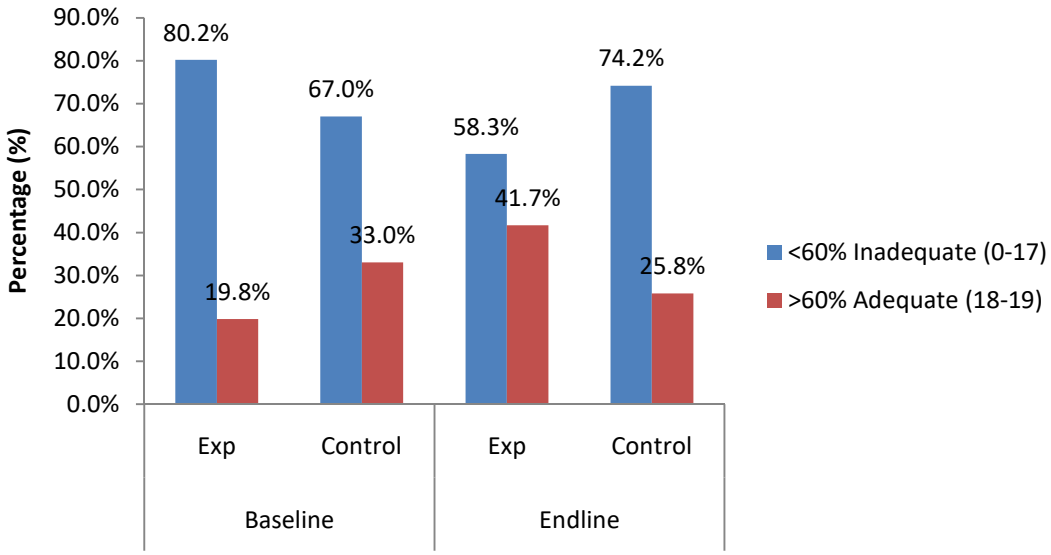


Figure 4.13: Categorisation of infants feeding practice scores

Table 4.16: Mothers' mean practice scores for experimental and control groups at Baseline and Endline

Group	Practice scores				
	Baseline	**Endline**	**t-value**	**p-value**	**Remark**
Experiment	16.6±2.9	18.3±2.7	4.689	0.000	**Significant**
Control	16.6±3.2	16.4±2.6	0.505	0.614	**Not Significant**
t-value	0.193	5.156			
Mean difference	0.075	1.871			
P-value	0.847	0.000			
Remark	**Not Significant**	**Significant**			

4.14 Factors influencing IYCF practices (Focus Group Discussion)

4.14.1 Introduction

Findings of the Focus Group Discussion (FGD) on factors influencing the practice of IYCF conducted among the selected mothers' at both the experimental and control groups are presented below

The FGDs complemented the information gathered from the quantitative aspect of the study.

4.14.2 Findings from Focus Group Discussion sessions

Factors influencing infant and young child feeding practices: Generally, majority of the selected mothers' who constituted the primary audience said they decided on their own on how and what to feed their babies with but due to cultural practices and beliefs, the family members (who constituted the secondary audience) especially grandmothers, mother-in-laws, sisters, aunts, or occasionally neighbors or friends often influence the practice of infant feeding negatively contrary to the information given to them by the infant and young child feeding counselors

These close family members often in a bid to give the cultural support and assistance to newly delivered mothers, often introduced prelacteal foods like water and *agbo*' (local concussion) which conflict with the counsel and information provided by the peer counselors. Consequently, these practices adversely contributed to the lower rates of early initiation of breast feeding, exclusive breast feeding and timely introduction of semi-solid, soft and solid foods.

According to the mothers, the following were the responses:

> "Nobody decided for me on how to feed my baby"
>
> "I am the owner of my baby, I decide on what to feed my baby with."
>
> "I feed my baby based on the information received from the counselors and health workers during the antenatal visits".

"When we delivered our babies, family members like mothers', mother-in-laws come to assist us in taking care of the baby and without even consulting anybody, give the baby water or '*agbo*' (local concussion).

"There are times, if am not around, my mother, mother-in-laws gave water or other liquids before my arrival. Often we disagree on this issue but it does not change their negative practice"

"My mother/mother-in-law usually baths my baby and gives a handful of water or *agbo* during this session on regular basis".

"Ï give only breast milk only to my baby but during the time of taking care of the baby as a means of assistance, the traditional handful of *agbo* alternating with water is given to the child".

"Even if you don't want to give any other thing before six months, *áwon iya yen o ni gba*". This means the grandmothers will not allow you to give only breast milk to the baby for the first six months of life.

"My neighbours and friends discouraged me that I should give water and because of their pressure, I gave water right after the first month, though I didn't give any other thing apart from breast milk before the child was 6 months of age".

"There is no way breast milk alone can be enough for a baby, so I gave water in addition to the breast milk".

"My baby cries often mostly at night and so, one day my sister-in-law offered him water and he was quiet and that was how I introduced water after the eight (8^{th}) day of delivery"'

"How I take care of my baby with respect to feeding is my personal decision with the support of my husband".

Another identified factor was delayed initiation of breast feeding and early ceasation of breast feeding among mothers with caesarian section.

According to them, the followings were the responses.

Ï delivered my baby through caesarian section and I was not able to put my baby to the breast immediately. Lactation was delayed and so the baby was started on glucose water alternated with infant formula.

Ï had caesarian section and and when I tried to breastfeed the baby, the breast milk coming out was not enough to satisfy him. So, I practiced mixed feeding.

On the response to the question on the challenges that could limit mothers' ability to exclusively breast feed their babies. The followings were said by few of the mothers':

> "The babies are so much attached to their mothers for attention and breast feeding which makes it somehow stressful for the mother to do other things"
>
> "Most babies refuse complementary food at six months"'
>
> "My baby cries a lot even after breast feeding but keeps quiet when given water in addition"
>
> "I get lean/lose weight when breast feeding and so my neighbors discouraged me on the practice of exclusive breast feeding"'
>
> "My baby will not sleep without the breast in his mouth even after being fed with complementary food".
>
> "It is not easy'
>
> "It is stressful".

On the benefits of breast feeding, majority of the mothers were able to list the benefits and advantages of breastfeeding both to the baby and the mother.

The followings were the responses given:

"It makes the child grow well"

"It makes the child strong"

"It protects the baby from illness"

"It helps the brain of the baby to be sharp"

"It helps the mother-child bonding"- The love between the mother and the child is established and strengthened.

4.14.3 General Discussion on IYCF

Majority of mothers/respondents understood the word exclusive breast feeding to mean ''Giving breast milk alone without giving any other food or liquid''.

- Majority of them knew that breast feeding should be given exclusively for six months;
- Majority of the mothers' believed that breast feeding should continue till one year (12 months) at most for 18 months ($1^1/_2$ years);
- Majority of the respondents understood that complementary feeding should start at six months but a few of the respondent believed it could start as early as 4 months if the baby has a very sharp appetite (*O yannu)*.
- Majority of the mothers' understood that complementary feeding should start with pap and water and to be followed with the family diet.
- A few of the mothers'/respondents believed that the complementary foods should include foods like custard, indomie and some other commercially produced or processed foods.

Table 4.17: Factors affecting mothers' decision on infant feeding practices

Mothers' decision on infant feeding practices	Baseline (%): N=240					End line (%): N=215				
	Exp n (%)	Control n (%)	Total n (%)	χ^2	p-value	Exp n (%)	Control n (%)	Total n (%)	χ^2	p-value
Influencers of mothers decision on infant feeding practices (reported by mothers):										
Personal decision	90 (75.0)	65 (54.2)	155 (64.6)	19.977	*0.003	81 (76.4)	51 (46.8)	132 (61.4)	27.269	*0.000
Health Workers	3 (2.5)	15 (12.5)	18 (7.5)			0 (0.0)	0 (0.0)	0 (0.0)		
Mother	16 (13.3)	32 (26.7)	48 (20.0)			16 (15.1)	37 (33.9)	53 (24.7)		
Mother-in-Law	4 (3.3)	5 (4.2)	9 (3.8)			5 (4.7)	19 (17.4)	24 (11.2)		
Husband	5 (4.2)	3 (2.5)	8 (3.3)			0 (0.0)	1 (0.9)	1 (0.5)		
Hospital	1 (0.8)	0 (0.0)	1 (0.4)			3 (2.8)	0 (0.0)	3 (1.4)		
Medial Internet	1 (0.8)	0 (0.0)	1 (0.4)			0 (0.0)	0 (0.0)	0 (0.0)		
Sister-in-law	1 (0.8)	0 (0.0)	1 (0.4)			0 (0.0)	0 (0.0)	0 (0.0)		
Friends	0 (0.0)	0 (0.0)	0 (0.0)			1 (0.9)	1 (0.9)	2 (0.9)		

*Significant

Table 4.18: Factors affecting mothers' decision on infant feeding practices (continued)

Mothers' decision on infant feeding practices	Baseline (%): N=240					End line (%): N=215				
	Exp n (%)	Control n (%)	Total n (%)	χ^2	p-value	Exp n (%)	Control n (%)	Total n (%)	χ^2	p-value
Reasons why infant feedings recommendations are not practiced:										
Socio-cultural beliefs	18 (15.0)	3 (2.5)	21 (8.8)	27.825	*0.001	1 (0.9)	4 (3.7)	5 (2.3)	5.205	0.269
Religious beliefs	4 (3.3)	0 (0.0)	3 (2.5)			2 (0.9)	0 (0.0)	2 (0.9)		
Personal perception	62 (51.7)	65 (54.2)	127 (52.9)			97 (91.5)	100 (91.7)	197 (91.5)		
Poverty	0 (0.0)	0 (0.0)	0 (0.0)			6 (5.7)	4 (3.7)	10 (4.7)		
Delay lactation	1 (0.8)	0 (0.0)	1 (0.4)			0 (0.0)	0 (0.0)	0 (0.0)		
Lack of time	0 (0.0)	5 (4.2)	5 (2.1)			0 (0.0)	0 (0.0)	0 (0.0)		
Lack of knowledge	0 (0.0)	1 (0.8)	1 (0.4)			0 (0.0)	0 (0.0)	0 (0.0)		
Place of work/Busy scheduled	8 (6.7)	7 (5.8)	15 (6.3)			0 (0.0)	0 (0.0)	0 (0.0)		
Peer influence	1 (0.9)	4 (3.7)	5 (2.3)			0 (0.0)	1 (0.9)	1 (0.5)		
Not applicable	9 (7.5)	6 (5.0)	15 (6.3)			0 (0.0)	0 (0.0)	0 (0.0)		
Belonging to infant feeding peer support group:										
Yes	0 (0.0)	0 (0.0)	0 (0.0)			106 (100.0)	0 (0.0)	106 (49.3)		
No	120 (100.0)	120 (100.0)	240 (100.0)			0 (0.0)	109 (100.0)	109 (50.7)		

*Significant

4.15 Comparison of the anthropometric measurements of children in experimental and control group at 12 months of age

At age 12 months, prevalence of wasting (24.8%; 17.4%); stunting (11.0%; 2.8%), underweight (18.3%; 1.8%) and overweight (6.4%; 2.8%) was significantly higher among index children in control group compared to experimental group, respectively (fig 4.8)

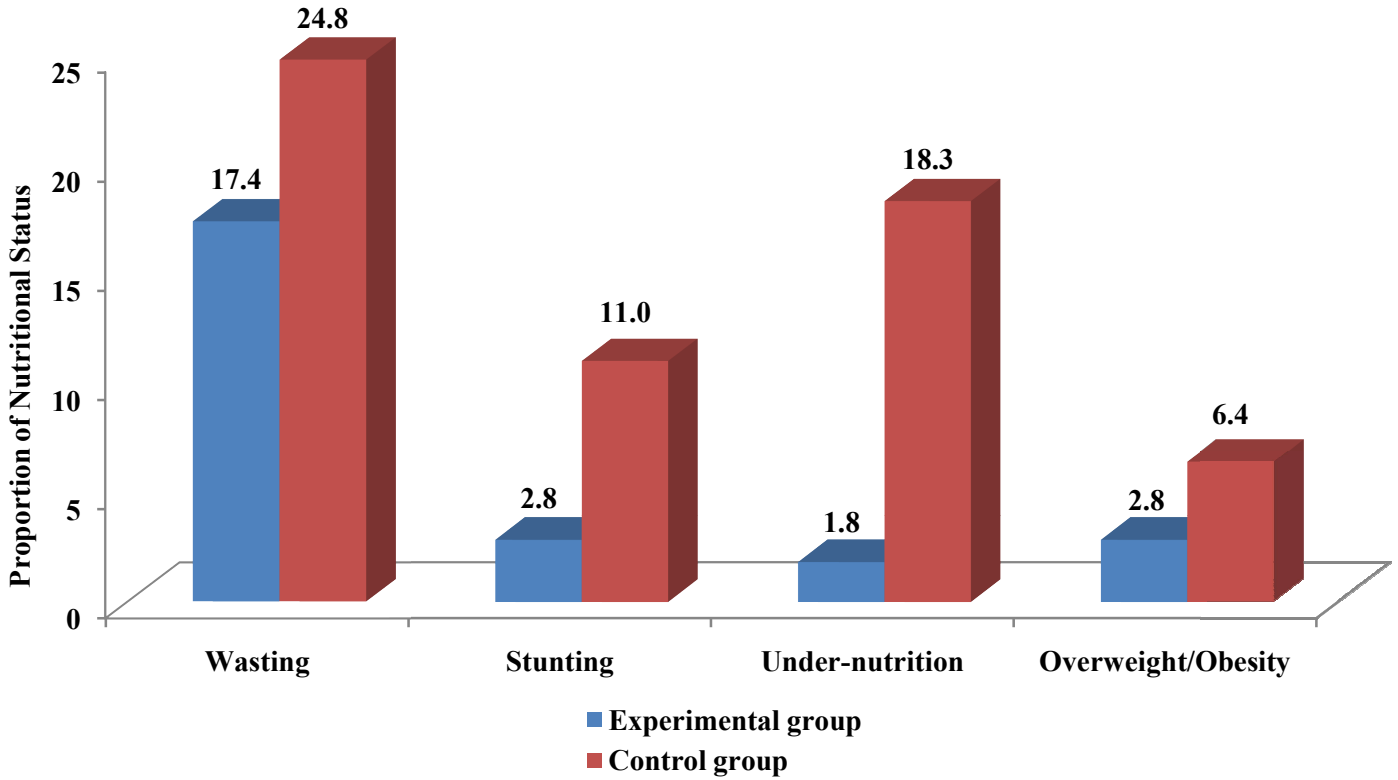


Figure 4.14: Comparison of anthropometric measurements of the children in Experimentaland Control Group at 12 months of age

4.16 Effect of peer support on the knowledge of mothers on infant feeding

A paired sample t-test was conducted to evaluate the effect of peer support groups on infant feeding practices of mothersin the study.

Experimental group: In the experimental group the knowledge of mothers who were exposed to the peer support intervention(20.7±2.00), was significantly higher than at baseline (12.0±4.63)t (119) = 18.78, p< 0.000 (two tailed). Given an improvement of8.69 ± 5.07 (95% CI, 7.78 to 9.61) in the level of knowledge.

Thus this study found that peer support had significantly (p<0.05) increased the level of knowledge on infant feeding among the mothers.

The magnitude of the mean difference (effect size) using Eta squared statistics $\frac{t^2}{t^2 + (N - 1)}$

Effect size (Eta squared) = $\frac{18.78^2}{18.78^2 + (119)} = 0.75$

.According to Cohen (1988) classification (0.2 = small effect; 0.5 = medium effect, 0.8 = large effect). The intervention had a medium (0.75) effect on the selected mothers in the study

Control group: For the control group there was also a significant increase in the knowledge of mothers on infant feeding at end line. The knowledge of mothers at endline was significantly higher (Mean = 18.89±3.17) than baseline (Mean=16.89±3.11), t (119) = 4.58, p< 0.005 (two tailed). However the improvement in mean score of 2.00±4.55 at 95% CI (1.13 to 2.87) was lower compared to the experimental group of 8.69±5.06at 95% CI (7.78 to 9.61)

Table 4.19: Effect of peer support on the knowledge of mothers on infant feeding

Effect of intervention on mothers level of knowledge		Descriptive Statistics			Paired Differences				
						95% CI			
		N	Mean	SD	Mean±SD	Lower	Upper	t-value	Sig.
Experimental group	Level of knowledge **(Endline)**	106	20.68	2.00	8.69±5.06	7.78	9.61	18.78	*0.000
	Level of knowledge **(Baseline)**	120	11.99	4.63					
Control group	Level of knowledge **(Endline)**	109	18.89	3.17	2.00±4.55	1.13	2.87	4.58	*0.000
	Level of knowledge **(Baseline)**	120	16.89	3.11					

*Significant

4.17 Effect of peer support on the attitude of mothers on infant feeding (Breastfeeding)

A paired sample t-test was conducted to evaluate the effect of peer support groups on the attitude of mothers on infant feeding (breast feeding)in the study.

For experimental group: The study revealed a statistically significant improvement in the attitude of mothers after exposure to the peer support intervention(15.2±2.1) over their attitude at baseline (7.5±2.7) (t (119) =25.32, p= 0.000) (two tailed). The attitude of mothers improved by 7.67±3.32 (95%CI, 7.07 to 8.28).

Thus this study found that peer support had significantly impacted the attitude of mothers on infant feeding (breast feeding).

Calculating the magnitude of mean difference (effect size) using Eta squared statistics

The magnitude of the mean difference (effect size) using Eta squared statistics $\frac{t^2}{t^2 + (N - 1)}$

Effect size (Eta squared) = $\frac{25.32^2}{25.32^2 + (119)} = 0.84$

The intervention had a large effect (0.84) on the attitude of mothers on infant feeding.

Control group: For the control group there was also a significant improvement in the attitude of mothers. The attitude of mothers significantly improved at end line (Mean = 13.63±3.41) than baseline (Mean=11.0±2.5), t (108) = 6.11, p< 0.005 (two tailed). However, the improvement in mean score of 2.6±4.4 at 95% CI (1.75 to 3.44) was lower to the experimental group of 7.7±3.3 (95%CI, 7.07 to 8.28).

Table 4.20: **Effect of peer support on the attitude of mothers on infant feeding (Breastfeeding)**

Effect of peer support group on mothers' attitude		Descriptive Statistics			Paired Differences				
		N	Mean	SD	Mean±SD	95% CI Lower	95% CI Upper	t-value	Sig.
Experimental group	Attitude infant feeding **(Endline)**	106	15.15	2.08	7.7±3.3	7.07	8.28	25.32	*0.000
	Attitude infant feeding **(Baseline)**	120	7.48	2.69					
Control group	Attitude infant feeding **(Endline)**	109	13.63	3.41	2.6±4.4	1.75	3.44	6.11	*0.000
	Attitude infant feeding **(Baseline)**	120	11.04	2.47					

*Significant

4.18: Effect of peer support on the attitude of mothers on infant feeding (Complementary feeding)

A paired sample t-test was conducted to evaluate the effect of peer support groups on the attitude of mothers on infant feeding (complementary feeding)in the study.

For experimental group: the study revealed a statistically significant improvement in the attitude of mothers after exposure to the peer support intervention (9.0±0.1) over their attitude at baseline (4.3±1.6) (t (119) =33.48, p= 0.000) (two tailed). The attitude of mothers improved by 4.7±1.6 (95% CI, 4.45 to 5.01).

Thus this study found that peer support had statistically significantly increased the attitude of mothers on complementary feeding.

Calculating the magnitude of mean difference (effect size) using Eta squared statistics

The magnitude of the mean difference (effect size) using Eta squared statistics $\frac{t^2}{t^2 + (N - 1)}$

Effect size (Eta squared) = $\frac{33.48^2}{33.48^2 + (119)} = 0.90$

The intervention had a large effect (0.90) on the attitude of mothers on infant feeding. According to Cohen (1988) classification (0.2 = small effect; 0.5 = medium effect, 0.8 = large effect). The intervention had a large effect on the selected mothers in the study

Control group: For the control group there was also a significant improvement in the attitude of mothers. The attitude of mothers significantly improved at end line (Mean = 8.1±1.8) than baseline (Mean=7.7±1.3), t (108) = 1.99, p< 0.05 (two tailed).

However, the improvement in the control group (0.42±2.22 at 95% CI (0.01 to 0.84)) is minimal compared with 4.73±1.55 at 95% CI (4.45 to 5.02) in the experimental group.

Table 4.21: Effect of peer support on the attitude of mothers on infant feeding (Complementary feeding)

Effect of peer group on mothers attitude complementary feeding		Descriptive Statistics			Paired Differences				
						95% CI			
		N	Mean	SD	Mean±SD	Lower	Upper	t-value	Sig.
Experimental group	Attitude on complementary feeding **(Endline)**	106	8.99	0.09	4.7±1.6	4.45	5.01	33.47	*0.000
	Attitude on complementary feeding **(Baseline)**	120	4.26	1.56					
Control group	Attitude on complementary feeding **(Endline)**	109	8.09	1.75	0.4±2.2	0.00	0.84	1.99	*0.049
	Attitude on complementary feeding **(Baseline)**	120	7.67	1.28					

*Significant

4.19 Effect of peer support on the infant feeding practices of mothers

A paired sample t-test was conducted to evaluate the effect of peer support groups on the attitude of mothers on infant feeding (breast feeding)in the study.

For experimental group: the study revealed a statistically significant improvement in mothers infant feeding practices after exposure to the peer support intervention (18.07±2.78) as compared to mothers practices at baseline (16.55±2.86), (t (119) =3.94, p=0.000) (two tailed). The infant feeding practices of mothers improved by 1.52±4.22 (95% CI, 0.75 to 2.27).

Thus this study found that peer support had statistically significant effect on mothers' infant feeding practices.

Calculating the magnitude of mean difference (effect size) using Eta squared statistics

The magnitude of the mean difference (effect size) using Eta squared statistics $\frac{t^2}{t^2 + (N - 1)}$

Effect size (Eta squared) = $\frac{3.94^2}{3.94^2 + (119)} = 0.12$

The intervention had a small effect (0.12) on mothers infant feeding practices.

According to Cohen (1988) classification (0.2 = small effect; 0.5 = medium effect, 0.8 = large effect). The intervention had a small effect on the infant feeding practices of the selected mothers in the study

Control group: In the control group,there was no statistically significant (p=0.530) improvement in mothers' infant feeding practices.

Table 4.22: Effect of peer support on the infant feeding practices of mothers

Effect of intervention on mothers level of practice		Descriptive Statistics			Paired Differences				
						95% CI			
		N	Mean	SD	Mean±SD	Lower	Upper	t-value	Sig.
Experimental group	Infant feeding practices **(Endline)**	106	18.07	2.78	1.5±4.2	0.754	2.28	3.94	*0.000
	Infant feeding practices **(Baseline)**	120	16.55	2.86					
Control group	Infant feeding practices **(Endline)**	109	16.43	2.59	-0.2±3.5	-0.874	0.45	-0.63	0.530
	Infant feeding practices **(Baseline)**	120	16.64	3.17					

*Significant

4.20 Independent t-test comparing the mean scores of mothers at endline between experimental and control groups

Independent t-test with 95% confidence interval (CI) for the mean difference was performed to compare the mean scores of mothers at endline between experimental and control groups. For the knowledge of mothers on infant feeding, there was a significant difference in the mean knowledge score of mothers on infant feeding between the experimental group after the intervention and the control group at endline ($t_{189.57}$ = 4.768, $p < .001$).

For the attitude of mothers on infant feeding (breast feeding), there was a significant difference between the experimental group after the intervention and the control group at endline ($t_{181.801}$ = 3.78, $p < .001$). On the attitude of mothers on infant feeding with regards to complementary feeding, there was a significant difference between the experimental group after the intervention and the control group at endline ($t_{108.683}$ = 5.351, $p < .001$).

For the practices of mothers on infant feeding, there was a significant difference in the mean score between the experimental group after the intervention and the control group at the end of the study (t_{213} = 5.156, $p < .001$). Therefore, this study found that peer support significantly ($p<0.05$) increased the knowledge, attitude and practices of mothers on infant feeding in the study area.

Table 4.23: Independent T-test comparing the mean scores of mothers at endline between experimental and control groups

		Descriptive Statistics		Paired Differences 95% CI			
		N	Mean±SD	Lower	Upper	t-value	Sig.
Knowledge	Experimental Group	106	20.6±2.1	1.03	2.48	4.768	0.000
	Control Group	109	18.9±3.2				
Attitude (Breast feeding)	Experimental Group	106	15.1±2.2	0.70	2.22	3.782	0.000
	Control Group	109	13.6±3.4				
Attitude (complementary feeding)	Experimental Group	106	9.0±0.1	0.57	1.23	5.351	0.000
	Control Group	109	8.1±1.8				
Practice	Experimental Group	106	18.3±2.7	1.15	2.59	5.156	0.000
	Control Group	109	16.4±2.6				

*Significant

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter discusses the results in chapter four which revealed that the peer support group intervention had a positive effect on the key infant and young child feeding practices of mothers in the study.

5.1.1 Socio demographic characteristics of mothers The mean age of mothers in both experimental and control groups were 28.3±5.5 and 29.0±4.7 years respectively. In both groups, more of the respondents were married, from Yoruba ethnic group and had secondary education. Very few mothers were unemployed in experimental group and control group respectively. The demographic characteristics of mothers correspond to the findings of NDHS (2018) which reported a comparatively young age structure of the population in Nigeria. Majority of the women in south west were married and employed. It is also similar to Adah et al., (2018) who reported that most mothers in their study were within 21 to 30 years of age with a large proportion of the mothers having secondary education.

5.1.2 Demographic characteristics of the children at baseline

Majority of the index children at baseline were older than 24 months in both groups (the mean age were 37.4±17.0 and 42.1±21.3 months in experimental and control groups respectively). The findings indicated that more than half of the children were the first in their respective families. This is lower than that of Adah et al., (2018) who reported that 34% of children in their study were the first born in their respective families. The study also shows that almost all the infant were on continued breast feeding at 12 months which

proves that the implementation of the peer support intervention improves the duration of breast feeding.

5.1.3 Mothers' awareness on infant feeding

There was a significant improvement in the level of awareness on the practice of optimal breast feeding and appropriate complementary feeding practices among the mothers after their exposure to the intervention. The improvement in the level of awareness in this report corresponds with the report of Sholeye et al., (2016) which reported same in exclusive breastfeeding and complementary feeding practices.

Furthermore, it reveals a high level of awareness about the benefits of optimal breastfeeding and appropriate complementary feeding practices (vis a vis putting the baby to breast within one hour of birth, breastfeed infants exclusively for the first six months and continued breastfeeding till two years of age and beyond, together with nutritionally adequate, safe, age appropriate, responsive feeding of solid, semi-solid and soft foods starting in the sixth month). This is similar to the report of Adah et al., (2018) on awareness of mothers about the benefits of breastfeeding and its practices. They noted that awareness of mothers was one of the factors influencing optimal breastfeeding practices.

5.1.4 Mothers Knowledge on Infant Feeding

The study shows an improvement in mothers' knowledge on infant feeding at both the control and experimental groups. This improvement in knowledge of the two groups might suggest their exposure to conventional antenatal information. Though there was an improvement in the knowledge of mothers in the control group, it did not translate to the practice of optimal breastfeeding and appropriate complementary feeding practices as compared to those in the experimental group with improved knowledge and practices after the exposure to the intervention. Thus, revealing that peer support intervention greatly increased the level of mothers' knowledge on infant feeding.

This finding is in agreement with that of Hanne *et al.,* (2011) in a randomized study carried out in Denmark which revealed that the proportion of mothers with sufficient knowledge about breastfeeding was significantly higher in the intervention group post-

partum and it was associated with longer breastfeeding duration. They further reported that antenatal training was noted to equip women with sufficient knowledge about breastfeeding after birth but not sufficient to increase the duration of breastfeeding. Hence, they suggested the need to follow up with postnatal support.

However, this study is not in agreement with the report of Olatona *et al*., (2017) which reported a low knowledge (14.9%) of complementary feeding among mothers of under-five.

5.1.5 Mothers' Attitude on Infant Feeding

This study reveals a significant improvement in the attitude of mothers on infant feeding practices at both the control and experimental groups. However, the improvement in the control group was minimal compared to the experimental group. This corresponds to the findings of Mostafa et al., (2019) of a statistically significant improvement on mothers' breastfeeding attitude and knowledge immediately after and 3 months after the educational intervention was given. Other studies in agreement was that of Sabharwal et al., (2014) which indicated that it is possible to promote optimal complementary feeding practices through adequately trained and motivated counsellors.

5.1.6 Infant Feeding practices of mothers

The infant feeding practices of mothers in this study are discussed based on the key indicators. This study shows that peer support group counseling had a positive effect on infant feeding practices of mothers in the intervention group. There were statistically significant improvement recorded in all the key indicators in the intervention group viz-a-viz early initiation of breast feeding, exclusive breastfeeding, continued breastfeeding at one year, introduction of solid, semi-solid and soft food, frequency of complementary foods i.e. the number of times the child was fed with solid and semi-solid foods and minimum dietary diversity.

5.1.7 Breastfeeding Initiation

There is a significant increase in the rate of breastfeeding initiation following the exposure to peer support intervention compared to the findings in the control group. Several studies have revealed similar findings. The use of multiple peer support groups was significant in the early initiation of breastfeeding where 77% of the mothers initiated breastfeeding within one hour of delivery (Lewkycka, 2013). In a study carried out in Bangladesh by Ara *et al* (2018), the early initiation of breastfeeding was also noted to significantly improve in the intervention group (89.1%) than in the control group (77.4%). Campbell (2013) reported similar findings of mothers who had peer conunsellor support during pregnancy with consequent improvement in early initiation of breastfeeding. Also, one-on-one breastfeeding peer support service targeted at young mothers in the antenatal and postnatal routine care was recorded to be beneficial in increasing the early initiation of breastfeeding among mothers in the United Kingdom. Further study in agreement is that of Kushwaha (2014) who reported that the initiation of breastfeeding within one hour of delivery was spurred by mothers' support group and it was noted that early initiation of breastfeeding within one hour of delivery was 11% at baseline and 71% at post intervention. All these findings point to the importance of peer support group intervention in improving early initiation of breastfeeding. This increase is worthy of note as early initiation of breastfeeding has been proven to reduce the rate of neonatal mortality among infants and improves child survival.

5.1.8 Colostrum and prelacteal feeding

The study indicates improvement in the proportion of mothers who fed their children with colostrum within the first three days of delivery. However, a higher proportion of mothers gave prelacteal foods in the control group compared with the experimental group. This lower rates of prelacteal feeding (17%) in the intervention group is lower than the findings of the National Demographic Health Survey (NDHS, 2019) which revealed 39.0%, 4.0%, 4.0% and 22.0% respectively of infants aged one month and below who have received water, non-milk liquids, other milk and complementary foods respectively. The prelacteal foods reported in this study are mainly in form of water and local concoction (*agbo*). The

high proportion of mothers who introduce prelacteal foods might be suggestive of the low rate of exclusive breastfeeding especially among the control group.

5.1.9 Exclusive breastfeeding

The intervention (peer support counseling) has a positive effect on the practice of exclusive breastfeeding (EBF) among mothers. The EBF rate (61.3%) in the intervention group is higher than the NPC and ICF Macro (2019) with 29.0% and NBS and NPopC (2018) with 27.2%. The improvement in the rate of EBF is in agreement with the reports of the available evidences of how effective peer support intervention for mothers can be used to improve early initiation of breastfeeding and exclusive breastfeeding (Komal *et al.,* 2014; Shakya *et al.,* 2017; Ara *et al.,* 2018). Similar studies in agreement with these findings are those of: Lewkeya (2013); Ekisa (2013); Vandara (2014) and Kushawa (2014).

5.1.10 Continued breastfeeding at 1 year

The proportion of infants on continued breastfeeding at 1 year reveals 97.2% and 94.5% for experimental and control groups respectively. The improvement over the proportion obtained at baseline is higher than the National Nutrition and Health Survey, (2018) average of 84.1%. The study also reveals that the intention rates for the duration of breastfeeding between 18 and 24 months is higher in the experimental group. The intention rates for the duration of breastfeeding between 18 and 24 months was obtained because the study ended with the mothers under this study at 12 months of the children's age in both experimental and control groups.

5.1.11 Food groups' consumption pattern

The study indicates a higher percentage in the food groups' consumption pattern at endline for the experimental group. Though there is an improvement in the rate of consumption pattern in the experimental group after the exposure to the intervention, the results revealed lower percentages in the consumption of animal protein, legumes and nuts. The finding in this study is similar to the report of Ogunba (2010) which revealed that fewer than 50% of the children consumed meat, fish, egg and legumes. Although the consumption of grains, roots and tubers, vitamin A rich foods and other fruits and

vegetables among the intervention group are higher than the control group after exposure to the intervention. The low rate of consumption of animal proteins calls for intensified nutrition education among mothers and other care givers, on the need to improve on the consumption of animal protein alongside other food groups in order to improve on the appropriateness of complementary feeding with consequent positive effect on the nutritional status and survival of under-5 children.

5.1.12 Minimum dietary diversity

This research work reveals that higher proportion of children in the experimental group (64.2%) has the minimum dietary diversity compared to the control group (30.6 %). This finding is higher than the figure (16.0%) reported by Olatona (2019). Though there is improvement in the practice of minimum dietary diversity among mothers in the intervention group, the percentage obtained in this study calls for increased effort to improve mothers and care givers practices on improved quality of complementary foods for proper growth, development and survival of children.

5.1.13 Minimum meal frequency

The study indicates an improvement in the minimum number of times that complementary foods were consumed per day in addition to breast milk. Though, there is improvement in the intervention group over the control group at endline, efforts in the area of nutrition education, using the appropriate communication strategy towards a change in behavior to improve the rate of meal frequency should be enhanced among mothers and other caregivers to meet up with the age appropriate recommended minimum number of times a child must be fed to enhance proper growth, development and survival.

5.1.14 Minimium acceptable diet

A higher proportion of children (56.7%) in the experimental group received the minimium acceptable diet after the exposure to the peer support intervention, compared with 38.5% in the control group. This percentage recorded in this study is greater than the report of the National Nutrition and Health Survey (2018) which revealed 17.0%

5.1.15 Timely introduction of solid, semi-solid or soft food

The study shows a significant improvement in the practice of timely introduction of solids, semi solids or soft foods at six months. This is not in agreement with the study of Owais *et al.,* (2019) who reported that improved maternal knowledge or favourable attitude towards complementary feeding were not associated with timely introduction of complementary foods.

5.2 Nutritional Status of Infants

5.2.1 Comparison of Nutritional Status of Infants at 12 months between experimental and control group

The anthropometric measurements of weight and length of the children at 12 months revealed higher rates of malnutrition among the control group, with wasting, stunting, undernutrition overweight put at; 17.4%, 2.8%, 1.8%, 2.8% for experimental group and 24.8%, 11.0%, 18.3% 6.4% for control group respectively. The rates of wasting, stunting and underweight among the intervention group in this study are lower than the findings in the study of Ogunba (2010) with 7.8%, 58.2%, and 23.8% for wasting, stunting and underweight respectively and also lower than the rates for stunting and underweight reported in NPC and ICF Macro (2019) while wasting in this study shows a higher rates than that of NPC and ICF Macro (2019). The high rate of wasting reported in this study could be suggestive of an inappropriate consumption of complementary food after the period of exclusive breast feeding. This therefore calls for enhanced efforts to identify the probable barriers to appropriate complementary feeding and to enhance that mothers/caregivers are equipped with adequate information and skills necessary for appropriate complementary feeding after six months of exclusive breast feeding so as not to lose the benefits of the period of exclusive breastfeeding.

5.3 Focus Group Discussion

5.3.1 Introduction

Findings of the Focus Group Discussion (FGD) on the factors affecting the practice of IYCF and responsive feeding conducted among selected mothers' at both the experimental and control groups are discussed below:

5.3.2 Factors influencing infant and young child feeding practices:

Majority of the mothers' who constituted the primary audience said they decided on their own on how and what to feed their babies with but due to cultural practices, the extended family members especially grandmothers, mother-in-laws, sisters, aunts, or occasionally neighbors or friends often influence the practice of infant feeding negatively contrary to the information given to them by health workers and the infant and young child feeding counsellors.

These close family members often in a bid to give the cultural support and assistance to newly delivered mothers, often introduced prelacteal foods like water and *agbo*' (local concoction) which conflict with the counsel and information provided by the peer counsellors. Consequently, these practices adversely contributed to the lower rates of early initiation of breast feeding, exclusive breast feeding and timely introduction of semi-solid, soft and solid foods.

Though the practice of infant feeding was influenced by extended family members who came to give the socio-cultural support to the newly delivered mothers, there was reduction in the percentage of prelacteal feeds in the experimental group. This was similar to the findings of peer support counselling results from studies conducted in Bangladesh, Mexico (Gulshan Ara, 2018, Chapman,; Haider, Ash, worth, kabir & Hutty 2000)

5.3.3. Mothers' Practice of responsive feeding

Majority of the mothers had good practice of responsive or active feeding as indicated by their responses to the questions posed to them during the discussion. Many of the mothers said that they played, danced and sang to make the feeding times enjoyable and interesting to the infants.

5.3.4. General Discussion on IYCF:

A high proportion of mothers understood the word exclusive breast feeding to mean 'giving breast milk alone without giving any other food or liquid''.

- Majority of them knew that breast feeding should be given exclusively for six months;
- A large proportion of the mothers' believed that breast feeding should continue till one year (12 months) at most for 18 months ($1^1/_2$ years);
- Majority of the respondents understood that complementary feeding should start at six months but a few of the respondenst believed it could start as early as 4 months if the baby has a very sharp appetite (*O yannu in Yoruba language)*.
- Most mothers' understood that complementary feeding should start with pap and water and to be followed with the family diet.
- Few mothers believed that the complementary foods should include foods like custard, indomie and some other commercially produced or processed foods.

5.3.5 Effect of group support intervention on mothers' infant feeding practice at endline.

The study shows that support group intervention has a positive effect on the knowledge, attitude and practice of mothers on infant feeding. This therefore, indicates that peer support intervention has significantly ($p<0.05$) increased the knowledge, attitude and practices of mothers on infant feeding in the study area. The effect of the intervention on the mothers was in line with the studies of Ara et al., (2018), Shakya et al., (2017) and Kushawaha (2014) which demonstated improvement in the practice of IYCF after exposure to community-based peer support intervention for mothers on infant feeding practices.

5.4 Conclusion

This study has proven that community-based intervention using the peer support counselling increased IYCF knowledge and attitude positively with a positive effect on the practice of the key IYCF indicators. These include early initiation, exclusive breastfeeding, colostrum feeding, continued breastfeeding, responsive or active feeding, introduction of semi-solid, soft food and solid food. Among other improved infant feeding

practices in this study are: minimum dietary diversity, minimum meal frequency and hygiene practices.

Though the decision of mothers on IYCF was majorly personal, the practice was influenced by cultural practices by extended family members, mostly grandmothers, mother-in-laws, opinion leaders in the family who came around to render their socio-cultural support to mothers after delivery. The cultural practices of giving prelacteal foods, mainly water and local concoction (agbo) has been observed to negatively influence infant feeding practices in the communities.

The nutritional status of the children at 12 months in both experimental and control groups revealed a higher prevalence of wasting, stunting, underweight and overweight among the control group.

5.5 Recommendations

The following recommendations were made based on the findings of this study;

1. Efforts to promote IYCF practices could be suggested to include the use of peer support group intervention and IYCF education using the action–oriented group discussion targeted at opinion leaders, fathers, grandmothers and mother in-laws who might influence the decision and practice of IYCF. The involvement of the above mentioned members, who constitute the secondary audience/participant, is highly recommended as factors at multiple levels affect behaviour and individual will not change if barriers at higher levels are not removed
2. Establishment of Infant feeding support groups at the community levels, and mothers to be referred to them on discharge from the health facilities after delivery. This community support groups should be linked to the primary health care facilities to enhance counselling, follow up and home visiting by trained counsellors where necessary.This is in compliance with the ‘Ten Steps to Successful Breastfeeding’.
3. Regular supportive supervision of the community workers and monitoring and supervision of the mothers support groups to ensure compiace to the IYCF guidelines and pracices.

4. Provision of IEC materials on Infant and Young Child Feeding practices for the mothers/caregivers (as take home bronchures). This complements the information that mothers receive from the health facilities and the support group meetings and further enhances the process of behavioural change and sustainance of IYCF practice.
5. Interventions should address all or as many levels as possible, of the socio-ecological system, using the appropriate medium of communication as factors influencing individuals' change in behaviour with respect to infant feeding include the fact that no individual exists alone and individuals are from a larger community.
6. Training of community IYCF counsellors to provide group or one to one counselling, home visits, and other supports on infant feeding to mothers and other care givers is recommended. This will assist the health/nutrition professionals at the various health facilities and sustain the IYCF practices at the community levels.

5.6 Contribution to knowledge

This study has established the effectiveness of peer support counselling to promote and sustain infant feeding practices in the rural communities. It has therefore contributed positively to the efforts of the health/ nutrition professionals to improve and sustain IYCF practices at the community levels.

The implementation of peer support group intervention using the action oriented group discussion approach in this study has been proven to improve knowledge, attitude and practice of infant feeding in the selected rural communities.

The use of trained peer counsellors improved the skill for group and one-on-one communication of the IYCF key messages to mothers and other care givers, using the pictoral counselling cards booklet. This enhanced the process of behavioural change

The rates of optimal breastfeeding and appropriate complementary feding practices improved as a result of the exposure to the peer support intervention as revealed in the results of this study.

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APPENDIX Ia

UNIVERSITY OF IBADAN
DEPARTMENT OF HUMAN NUTRITION
UNIVERSITY OF IBADAN

EFFECT OF PEER SUPPORT GROUPS ON INFANT FEEDING PRACTICES OF MOTHERS IN SELECTED RURAL ARAES OF OYO STATE

Local Government: Community: Ward:

House No: Household No: Questionnaire No:

SOCIO-DEMOGRAPHIC CHARACTERISTICS OF MOTHER AND INDEX CHILD

1. Age of mother as at last birthday (years): ……

2. Ethnic group: (a) Hausa ☐ (b) Igbo ☐ (c) Yoruba ☐ (d) Others specify…

3. Religion: (a) Christianity ☐ (b) Islam ☐ (c) Traditional ☐ (d) Others specify…

4. Marital status: (a) Single ☐ (b) Married ☐ (c) Widow(er) ☐
(d) Separated ☐ (e) Divorced ☐

5. Highest Education: (a) None ☐ (b) Primary ☐ (c) Secondary ☐
(d) Tertiary ☐ (e) Others _____

6. Primary occupation of mother (a) Artisan ☐ (b) Trading ☐ (c) Farming ☐
(d) wage earner ☐ (e) Unemployed ☐ (f) others specify……

7. Number of children in the family …….

8. Date of Birth of index child ……..

9. Sex of the index child: (a) Male ☐ (b) Female ☐

10. Position of the index child among the child(ren) in the family ……..

11. AWARENESS AND KNOWLEDGE OF INFANT FEEDING

a. Have you ever heard of breastfeeding? 1. Yes ☐ 2. No ☐

b. Have you ever heard of Colostrum? 1.Yes ☐ 2.No ☐

c. Have you ever heard of exclusive breastfeeding? 1.Yes ☐ 2.No ☐

12. Knowledge Questions: Please tick the appropriate column that is applicable to you

S/N	KNOWLEDGE QUESTIONS	Yes	No
1	Breastfeeding should be initiated within the first hour of birth		
2	The first food for babies should be breastmilk		
3	Colostrum is the first yellowish secretion of the breast milk within the first two to three days of lactation		
4	Colostrum is rich in antibodies to promote a baby's immunity		
5	Breastmilk alone satisfies the nutritional requirement of a baby in the first six months of life		
6	Exclusive breastfeeding entails breastfeeding for the first six months without giving water/supplementary feeds/herbal remedies		
7	Most women can make enough breastmilk to adequately feed their baby		
8	Breastfeeding may promote the health of the mother		
9	Breastfeeding enhances social bonding between a mother and her baby		
10	A bottle fed baby is more prone to illness than breastfed babies		
11	A child should be breastfed regularly and on demand		
12	A baby given water at age five and half month is not exclusively breastfed		
13	Other foods in addition to breastmilk can be given to a child after age 6 months		
14	Breastfeeding should continue with complementary foods till a child is at least 24 months		
15	The quantity of food a child eats increases with age		
16	The number of times a child eats increases with age		
17	The texture (thickness/consistency) of a child's meal increases as the child gets older		
18	Feeding times must be necessarily made enjoyable for a child		
19	Complementary food should include as many food varieties as possible		
20	Addition of soya beans powder, oil, blended crayfish and groundnut can increase the quality of complementary food		
21	Water should be given to a child not earlier than six months old		

13a. For each of the following statements, please indicate how much you agree or disagree by ticking the number that most closely corresponds to your opinion (1=strong disagreement (SD), 2=disagreement (D), 3=neutral (N), 4 = agreement (A), 5=strong agreement (SA)). You may choose any number from 1 to 5.

	ATTITUDE QUESTIONS (BREASTFEEDING)	SD	D	N	A	SA
*1	The nutritional benefits of breast milk last only until the baby is weaned from breast milk					
*2	Formula-feeding is more convenient than breast-feeding					
3	Breast-feeding increases mother-infant bonding					
*4	Breast-milk is lacking in iron					

5	Formula-fed babies are more likely to be overfed than breast-fed babies					
*6	Formula-feeding is the better choice if a mother plans to work outside the home					
7	Mothers who formula-feed miss one of the great joys of motherhood					
*8	Women should not breast-feed in public places such as market places, social gathering or open places					
9	Babies fed with breast milk are healthier than babies who are formula fed					
*10	Breast-fed babies are more likely to be overfed than formula-fed babies					
*11	Fathers feel left out if a mother breast-feeds					
12	Breast milk is the ideal food for babies					
13	Breast milk is more easily digested than formula					
*14	Formula is as healthy for an infant as breast milk					
15	Breast-feeding is more convenient than formula feeding					
16	Breast milk is less expensive than formula					
*17	A mother who occasionally drinks alcohol should not breast-feed her baby					

Note. Items marked with asterisks (*) are reverse-scored and the scores for each are then summed. Higher scores indicate more positive attitudes towards breast feeding

13b. Please tick as appropriate(SA-strongly agree, A-agree, N-neutral, DA-Disagree,SD-strongly disagree)

S/N	ATTITUDE QUESTIONS (COMPLEMENTARY FEEDING)	SA	A	N	DA	SD
1	M others need adequate knowledge on the foods given to children.					
2	First thing to think of when introducing other foods to the child includes; Age group, Frequency o feeding, Amount of food, Texture of thickness of food, Variety of food, Responsive feeding and hygiene.					
3	Different varieties of locally available foods should be given to the baby alongside breast milk from 6 months of age.					
4	More fluids (water) should be given to a child that has diarrhea for rehydration.					
5	Fruits and vegetables (pear, apple, orange, water					

	melon, tomato, eggplan t, cabbage, pumpkin, carrot, cucumber, mango, banana, pineapple, water leaf) should be given to a child (6-24months).					
6	A child should eat different variety of foods from 6 months of age.					
7	A mother should sit and monitor how her child eats?					
8	Breastfeeding a child along side with other foods is good for your baby's health.					
9	Feeding times for the child should be fun and a happy moment.					

14. Please indicate whether the following statements about Practice are Yes orNo

S/N	PRACTICE QUESTIONS		
1	Did you ever breastfeed the index child?	Yes	No
2	How long after birth did you first put the index child to the breast? **If <1 Hour, Record '00' Hours.** **If <24 Hours, Record Hours. Otherwise,Record Days.**	……	
3	During the first three days after delivery, did you give the index child the liquid that came from your breasts?	Yes	No
4	In the first three days after delivery, was the child givenanything to drink other than breast milk?	Yes	No
5	What was the index child given to drink?Anything else? ***Do not read the listrecord all mentioned by circling letter foreach one mentioned***		
	a. Milk (other than Breastmilk) ..... 01 b. Plain Water ..... 02 c. Sugar or Glucose Water..... 03 d. Gripe Water ..... 04 e. Sugar/Salt/Water Solution ..... 05 f. Fruit Juice ..... 06 g. Infant Formula ……..... 07 h. Tea/Infusions ..... 08 i. Honey ..... 09 j. Herbal Mixture ……..... 10 x.Other (Specify) ……..... 11		
6	Are you still breastfeeding the index child?	Yes	No
7	For how many months did you exclusively breastfeed the index child? **If<1 Month, Record "00" Otherwise Record Actual Months...**	….....	
8	For how many months did you breastfeed the index child? **If<1 Month, Record "00" Otherwise Record Actual Months...**	……..	
9	Did the child drink anything from a bottle with a nippleyesterday or last night?	Yes	No

10	**Liquids or foods the child hadyesterday during the day or at night.Did the child drink/eat:**		
a.	Breast milk?	Yes	No
b.	Juice or juice drinks	Yes	No
c.	Plain water?	Yes	No
d.	Commercially produced infant formula?	Yes	No
e.	Yoghurt	Yes	No
f.	Clear broth (liquid derived from cooking meat, fish, and vegtables)?	Yes	No
11	Any fortified, commercially available infantand young child food e.g. NAN, Cerelac, SMA Gold, My Boy, Friso, Peak Milk 123, Cow and Gate Lactogen? **If YES: How many times did your child take the mentioned infant formula?**	……..	
12	Any (other) porridge or gruel?	Yes	No
13	**Other liquids or foods the child had yesterday during the day or atnight even if it was combined with other foods.Did the index child drink/eat:**		
a.	Milk: tinned, powdered, or fresh animal milk?	Yes	No
b.	Tea or coffee?	Yes	No
c.	Any other liquids?	Yes	No
d.	Bread, rice, noodles, or other grain foods?	Yes	No
e.	Pumpkin, carrots, squash, or yellow or orange sweet potatoes?	Yes	No
f.	White potatoes, white yams, manioc, cassava, or roots and tubers?	Yes	No
g.	Any dark green leafy vegetables?	Yes	No
h.	Ripe mangoes, papayas or vitamin A rich fruits	Yes	No
i.	Any other fruits or vegetables?	Yes	No
j.	Liver, kidney, heart or other organ meats?	Yes	No
k.	Meat: beef, pork, lamb, goat, chicken, or duck?	Yes	No
l.	Eggs?	Yes	No
m.	Fresh or dried fish or shellfish?	Yes	No
n.	Legumes: beans, peas, lentils, or nuts?	Yes	No
o.	Cheese, yogurt, or other milk products?	Yes	No
p.	Fats, oils, butter, or such foods?	Yes	No
q.	Foods with red palm oil, palm nuts, palm nut sauce etc	Yes	No
r.	Small protein foods, edible insects, snails etc	Yes	No
14	Any sugary foods such as chocolates, sweets, candies,pastries, cakes, or biscuits?	Yes	No
15	**How many times** did the child eat solid, semi-solid, or softfoods other than liquids yesterday during the day or at night? Please indicate numbers	……..	
16	Has the child ever received a vitamin A dose	Yes	No
17	Did the child receive a vitamin A dose within the last 6months?	Yes	No
18	In the last seven days, did the child take iron pills, sprinkleswith iron, or iron syrup?	Yes	No
19	Has the child taken any drug for intestinal worms in the past6 months?	Yes	No
20	Do you regularly wash your hands before preparing, serving and feeding your child's food	Yes	No

21	Are the utensils to prepare, store and serve child's meal kept clean always	Yes	No
22	When a child has diarrhea, how much should he or she be given to drink?		
	a. More than usual b. About the same c. Less than usual d. Nothing to drink e. Don't know	1 2 3 4 8	
23	Does your household have any mosquito nets thatcan be used while sleeping?	Yes	No

15.1. Who influences your decision on how to feed your infants?

(a) Personal decision ☐ (b) Husband ☐ (c) Mother ☐

(d) Mother-in-Law ☐ (d) Friends ☐ (e) Others specify…...

2. What are the reasons why infant feedings recommendations are not practiced?

(a) Socio-cultural beliefs ☐ (b) Religious beliefs ☐

(c) Personal perception ☐ (d) Poverty ☐ (e) Others specify…..

3. Do you belong to any infant feeding peer support group? (a) Yes ☐ (b) No ☐

Anthropometric measurement at endline

Weight _____ kg Length _____ cm MUAC _____ cm

APPENDIX Ib

QUESTIONNAIRE YORUBA VERSION

UNIVERSITY OF IBADAN
EKAOUNJEEDA ENIYAN
IPA ATI ÈTÒ IRANWO ELEGBEJEGBE FUN AWON IYA NIPA YIYAN OUNJE AWON ÌKÓKÓ NI IGBERIKO EKUN OYO STATE

Eka Ijoba: _____ Agbegbe Ilu: _____ Woodu _____

Nomba ile_____ Nomba idile: _____ Nomba foomu Ibeere _____

SOCIO-DEMOGRAPHIC CHARACTERISTICS OF MOTHER AND INDEX CHILD

1. Ojo ori ti iya pe kẹhin ki ibi miran towaye (Odun):……

2. Eya Ẹgbẹ: (a) Hausa (b) Igbo (c) Yorùbá (d) Awọn miran ni pato …

3. Esin:: (a) Kristiẹniti(b) Islam (c) Ibile (d) Awọn miran ni pato

4. Ipo igbeyawo: (a) Apon (b) Eniti gbe ìgbéyàwó (c) Opó (D) Awon to ti pínyà (e)Awon to ti korasile

5. Eko to Gaju: (a) Kò si (b) Alakobere (c) Iwe girama (D) Iwe giga (e) Awọn miran

6. Ise ayo ti iya: (a) Onise-owo (b) Oun taja (c)Ise- ogbin (D) Onise- oya (e) alaini-ṣẹ (f) Awon miran nipato

7.Iye awọn ọmọ ninu ebi ……..

8 Ọjọ Ìbí tiọmọ .... ……..

9.Iru Ìwé ọmọ: (a) Okunrin (b) Obirin

10.Ipo ti ọmọ wa lãrin awọn ọmọ ninu ebi……..

11. AKIYESI ATI IMO NIPA OUNJE OMO IKÓKÓ

a. Nje o ti gbọnipa fun fomo loyanri? 1.**Bẹẹni** 2.**Bẹko**

b. Nje o ti gbọ nkan ti a npe ni omi-oyan akoko riColostrum)?1.**Bẹẹni**2.**Bẹko**

c.Nje o ti gbọ nipa fifomo loyan lailabula ri?1. **Bẹẹni** 2.**Bẹko**

12. Ìbéèrè nipa Imo: Jowo fala sieyi ti se gbogi si o ju lo

S/N	ÌBÉÈRÈ NIPA IMO	Bęęni	Bęko
1	Fifomo loyan yẹ ki o bere laarin wakatikan akoko ti ibi		
2	Ounje akọkọ ti yẹ fun ikoko ni omi oyan		
3	Colostrum je omi oyan akoko alawo esuru ti o koko jade laarin ojo meji si meta ti a bere si nfomo loyan		
4	Omi oyan ti a npe ni colostrum o kun fun orisirisi nipa sise igbelaruge fun ajesara ọmọ		
5	Omi oyan nikan nse itelorun ounje ibere fun omo ni osu mefaakoko aye re		
6	Oyan alailabula ni fifomo loyan fun osu mefa akoko lai fun un ni omi / onjemiran/egbo-igi-ibile		
7	Ọpọlọpọ awọn obirin le ṣe fifomo loyan lekun rere lati fi bo omo		
8	Fifomo loyan le se igbelaruge fun ilera ti awọn iya		
9	Fifomo loyan ma se igbelaruge isopo ati ajosepo laarin iya ati omore		
10	Awon omo ti a fun lounje lati inu fida sese lati lugbadi aisan ju awon ti a fun loyan lo		
11	O yẹ ki a ma fun omoloyan deede ati nigba ti won ba fe		
12	Omo ti a fun ni omi larin osu- marun ati aabo osu ti kuna oyan lailabula		
13	Afikun ounje miiran pelu oyanle waye lẹhin ti ọmọ ba ti rekoja osu mefa		
14	Fifomo loyan yẹ ki o tẹsiwaju pẹlu afikun ounje miran titi di nigba omo na o pe omo osu-merinlelogun		
15	Opolopo ounje ti ọmọ o ma je ma nposi bi won se dagba pẹlu ojo-ori e		
16	Iye igba ti omo jeun n posi pẹlu ojo-ori e		
17	Ounjeafikunomo gbodo maa ki si i bi omo ba se ndagba si		
18	Akoko ounje fun ọmọ gbọdọ je akoko igbadun		
19	Afikun ounje leyin osu mefa yẹ ki o je ounje orisirisi		
20	Afikun ti ewa lubulubu soya, epo, ede lilo ati epa lilo le se afikun didara fun ounje leyin osu-mefa		
21	Fifọmọ lomi ko yẹ ki o waye lai pe osu mefa.		

13. Fun okanọkan ninu awọn wọnyi gbólóhùn, jọwọ fihan bi o ti gba tabi okogba nipa yigika awọn nọmba ti feran julọ ni pẹkipẹki ni ibamu si rẹ ero (1 = nmogba to lagbara (SD), 2 = Ngba (D), 3 danfo (N) , 4 = Mogba (A), 5 =Mogba to lagbara (SA). O le yan eyikeyi nọmba lati okan si marun.

	ÌBÉÈRÈ NIPA IWA	SD	D	N	A	SA
*1	Okun ohun anfani ti o wa ninu fifomo loyan nikanṣe titi ti omo o fi ja lenu oyan mimu					
*2	Fifun omo ni ounje alagolo (formula) jẹ rọrun ju fifomo loyan lo					
3	Fifomo loyan mu ki iya-ìkókó ati omo re ni isopo ati ajosepo to lagbara					
*4	Omi oyan ko ni eroja ayonu (iron)					
5	Omo ti a fi ounje formula bo ma n yo ju omo ti a fun loyan nikan lo					

*6	Fifun omo ni ounje alagolo (formula) jẹ ona abayoto dara ni yiyan ti iya ba ngbero lati sise ni ita ile					
7	Iya ti o fi ounje formula bo omo padanu ọkan ninu awọn ayo abiyamọ					
*8	Awon abiyamo ko ye ki won ma a fun omo loyan nita gbangba bi apere oja,ibi ayeye,ita gbangba.					
9	Omo ikoko ti a fi oyan bo ji pepe ju ju ikoko egbe reti a fi ounje formula bo lo					
*10	Omo ikoko ti a fi oyan bo a ma yo ju omo ikoko ti a fi ounje formula bo lo					
*11	Awon baba maa nlerope won ti pa awon ti ti iya ba nfun omo loyan lowo.					
12	Omi oyan ni ounje ti o dara julo fun awon omo ikoko					
13	Omi oyan maa ntete da ju ounje formula lo					
*14	Ounje formula dara fun ilera omo gege bi omi oyan na a se dara.					
15	Fifomo loyanrọrun ju fifomo lounje formula lo					
16	Fifomo loyan ko gbowolori rara biounje formula					
*17	Iya ti oba nmu oti lẹẹkọọkan ko yẹ ki o maa fun omo loyan					

SECTION C- Ibeere ihunwasi (Attitude Questions);

SA- mo fi ara mo gan-an, A – mo fi ara mo, N – mo duro laarin mejeeji, DA – mo ko/ mi ko fara mo

SD – mo ko pelu gbogbo ona

S/N	**Ibeere ihunwasi**	SA	A	N	DA	SD
1	Awon iya nilo imo kikun lori ounje ti won fun omo.					
2	Orisirisi ounje ibile pelu wara oyan ni o oye ka ma fun omo lati osu mefa					
3	Igbese kini ti oye ki o wasi okan ni igba ti a o bere si fun omo ni ounje miran; ojo ori, iye igba ti a bo o mo, iwon ounje, bi ounje na yio se ki si ,orisirisi ounje/ itewogba ounje ati imototo.					
4	Opo omi lo gbodo fun omo to ya igbe sisan ki omi ara lee tete bo sipo					
5	Eeso ati ewebe (ope oyinbo,osan, tomato,ogede, mangoro, ati bebelo) loye ki a ma fun omo osu mefa si odun meji.					
6	Orisirisi oni ruru awon isori ounje loye ki a ma fifun omo lati osu mefa.					
8	Fifun omo loyan pelu awon ounje miran dara fun ilera omo.					
9	Akoko ounje ye ki o je igba idunnu fun omo.					

14.Jọwọ fihan boya awọn gbólóhùn wonyi je Bẹẹni tabi Bẹẹkọ

S/N	IBEERE NIPA ASA		
1	Nje o fun omo o re loyan ri?	Bẹẹni	Bẹẹkọ
2	O to akoko wo leyin ibimo, ni o to gboyan somo lenu ? **Ko to wakati kan<1,'00'.** **Wakati merinlelogun Wakati <24,bi beeko so pato iye wakati.**		
3	Laarin ọjọ mẹta aakọkọ ibimo, nje o fun omo ikoko na ani omi ti o wá lati inú oyan rẹ?	Bẹẹni	Bẹẹkọ
4	Laarin ọjọ mẹta lẹhin ibimo, nje a fun ọmọ na ni ohunkohun lati mu yato si omi oyan?	Bẹẹni	Bẹẹkọ
5	Ki ni a fun ọmọ ikoko lati mu?Nkan miran? ***Ma se ka awọn akojọ wonyi funun, fala si lẹta kọọkan ti a darukọ***		
	a. Miliki (yato si omi oyan) .... b. Omi nikan..... c. Suga tabi omi onisuga..... d.Omi osan ..... e. Suga/Iyo/Omiiyo ohun suga ..... f. Oje eeso..... g. Ounje formula……..... h. Tii / ounje onififa senu..... i. Oyin..... j. Nkan ibile aladalu.(agbo)..... x.Nkan miran (nipato).....	01 02 03 04 05 06 07 08 09 10 11	
6	Nje o si n fun omo re lomu	Bẹẹni	Bẹẹkọ
7	Osu melo lo fin fun omo re ni omu alailabula ? **Ko to osu kan <1 "00" Tabi ki o koi ye igba osu na a**		
8	Bi osu melolo fi fomo owo na loyan ? **ko to osu kan <1 "00" Tabi ki o ko iye igba osu na**		
9	Ṣé ọmọ na a mu ohunkohun lati inu fida ni ana tabi ni ale ana.?	Bẹẹni	Bẹẹkọ
10	ounjẹ olomi tabi ounjẹ gidi ti omo na je ni oju ojo tabi ni ale. Nje o je tabi mu;	Bẹẹni	Bẹẹko
A	Omi oyan	Bẹẹni	Bẹẹko
B	O un mimu aladun (juice)	Bẹẹni	Bẹẹkọ
C	omi lasan?	Bẹẹni	Bẹẹkọ
D	Ounje alagolo(formula)?	Bẹẹni	Bẹẹkọ
E	Yoghurt(wara agbele se)	Bẹẹni	Bẹẹkọ
F	Omi toro eja, eran ati efo..?		
11	Eyikeyi ounje ti won nta fun awon omo weere, bi apeere e.g.NAN, Cerelac, SMA Gold, My Boy, Friso, Miliki Alagolo 123, Cowand Gate Lactogen**?**Ti o ba je pe BẸẸNI:darukọ iye igba ti ọmọ rẹ ti je awọn ounje wonyi		
12	Eyikeyi (miiran) bi asaro tabiegbo.?	Bẹẹni	Bẹẹkọ
13	**Awon ounje miran tabi oun mimu ti omo na a je lana tabi lale .Boya adaapo pelu ounje miran.Nje omo ikoko na a je tabi mu;**		

a.	Miliki: alagolo, onilubulubu, tabi miliki eranko ti asese se?	Bẹẹni	Bẹẹkọ
b.	. Tii tabi kofi?	Bẹẹni	Bẹẹkọ
c.	Eyikeyi miiran ounje olomi?	Bẹẹni	Bẹẹkọ
d.	Buredi, iresi, nudulu, tabi awọn ounje miran.?	Bẹẹni	Bẹẹkọ
e.	Elegede, Karooti, oun mimu elerin dodo, tabi anamo?	Bẹẹni	Bẹẹkọ
f.	Anamo funfun ,isu funfun,, paki/ege tabi isu miran .?	Bẹẹni	Bẹẹkọ
g.	Eyikeyi alawọ ewegirini?	Bẹẹni	Bẹẹkọ
h.	Mangoro pipọn , ibepe tabi awon eeso ti oni vitamin A``````````````````````	Bẹẹni	Bẹẹkọ
i.	Eyikeyieso tabi awọn ẹfọ miiran?	Bẹẹni	Bẹẹkọ
j.	Ẹdọ, kidirin, okan tabi awon nkan inu eran.?	Bẹẹni	Bẹẹkọ
k.	eran malu, ẹran ẹlẹdẹ, eran-agutan,eran- ewúrẹ, adie, tabi pepeye?	Bẹẹni	Bẹẹkọ
l.	Eyin	Bẹẹni	Bẹẹkọ
m.	Eja tuntun tabi eja gbigbe tabi eja odo.?	Bẹẹni	Bẹẹkọ
n.	Awon ewa lorisirisi ati epa?	Bẹẹni	Bẹẹkọ
o.	Wara, yogurt, tabi awon miran ti afi miliki se.	Bẹẹni	Bẹẹkọ
p.	Ounje bi ora, epo, bota, tabi iru ounje bee.	Bẹẹni	Bẹẹkọ
q.	Onjẹ pẹlu epo pupa, eso ọpẹ, eyin ọpẹ ati be be lo	Bẹẹni	Bẹẹkọ
r.	Ounje amaradagba bi I monimoni,esusu, ati igbin.amuaradagba(protein) ounjẹkekere, kokoro ji je, igbin ati be be lo	Bẹẹni	Bẹẹkọ
14	Eyikeyi ounjẹ didun bi chocolates, suti, candies, pastries, àkara oyinbo, tabi bisikiti?	Bẹẹni	Bẹẹkọ
15	Iye igba melo le fun omo yin ni ounje owe je yato si ounje olomi ni ana nigba owuro tabi ale. Jowo ko iye igba		
16	Nje omo ti gba ajesara Vitamin A ri..	Bẹẹni	Bẹẹkọ
17	Nje ọmọ re ti gba ajesara eroja Vitamin A ni aarin osu mefa si isinyi. ?	Bẹẹni	
18	Larin ọjọ meje seyin, nje ọmọ re yii lo ogun atejese bi iron yala onikoro tabi olomi?	Bẹẹni	Bẹẹkọ
19	Nje omo yi ti lo ogun aran ri niwon igba osu mefa seyin?	Bẹẹni	Bẹẹkọ
20	Nje o wẹ ọwọ rẹ ṣaaju ki o to ngbaradi lati se ounje tabi fun omo ni ounje?	Bẹẹni	Bẹẹkọ
21	Ṣe àwọn ohun èlò lati fun omo lounje,bi awo,sibi ati bebe lo, maa nwa ni mimo nigbagbogbo	Bẹẹni	Bẹẹkọ
22	**Nigbati a ọmọ ba ni aisan igbe gbuuru, bi igba meloni o ye ki omu nkanmimu?**		
	a. Ju bi otiyelo b. Nigba kanna c. Igba to kere ju d. Ko ye lati mu ohun mimu e. Emi ko mo	1 2 3 4 8	
23	Ṣe ìdílé rẹ ní apo efon ti o maa ndena efon nigba ti e ba fe sùn?	Bẹẹni	Bẹẹkọ

15.

1. Talo nipalori rẹ nipa ipinnu lori yiyan ounje omode?

(a)ipinnu mi ni ☐ (b)Ọkọ mi ☐ (d)Iya mi ☐

(e)Iya-oko mi ☐ (f)Ore mi ☐ (g) Awọn miran (ko nipato)_____

2. Kini ohun ti o fa idi re ti awọn ounje ìkókó ti abuwolu se di nkan ti a ko sile?

(a)igbagbo ninu asa ☐ (b) igbagbo ninu esin☐

(d) ero ngba temi ni ☐ (e) Osi tabi aini☐ (f) Awọn miran nipato

3. Ṣe o waninu eyikeyi egbe ka fomo ìkókó lounje?(a) Bẹẹ☐ (b) Beeko ☐

APPENDIX II

FOCUS GROUP DISCUSSION GUIDE

1. What does infant feeding mean to you? Probe for the womens' understanding of exclusive breastfeeding, duration, complementary feeding, ideal starting time etc.

2. Do you think all mothers should exclusively breastfeed their babies? Why or why not? For how long should this last.

3. Do you think all mothers would want to exclusively breastfeed their babies? Why or why not?

4. What are some of the benefits mothers could derive when they exclusively breastfeed their babies? **Probe** for the benefits for both the baby and the mother/family.

5. What are the challenges that could limit mothers ability to exclusively breastfeed their babies?

6. What makes it easier for mothers to exclusively breastfeed their babies?**Probe** for resources like commitment of mothers, husband, in-laws, community people, knowledge and experience about exclusive breastfeeding, time to exclusively breastfeed the baby etc.**Probe** for socio-cultural issues such as cultural practices associated with childcare and feeding.**Probe** for systems factors such as commitment of health care providers, consistency in type of information provided to mothers about exclusive breastfeeding, and communication and continuity of support when the mother is discharged from the maternity unit.

7. What makes it harder for mothers to exclusively breastfeed their babies?**Probe** for resources like commitment of mothers, knowledge and experience about exclusive breastfeeding, time to exclusively breastfeed the baby, adequacy of breast milk, etc.**Probe** for socio-cultural issues such as cultural practices associated with childcare and feeding, adequacy and appropriateness of breast milk during different maternal health conditions.**Probe** for systems factors such as commitment of health care providers, consistency in type of information provided to mothers about exclusive breastfeeding, and

communication and continuity of support when the mother is discharged from the maternity unit.

8. Who would approve of mothers to exclusively breastfeed their babies?**Probe** for decision makers on issues concerning childcare and feeding.

9. Who would disapprove of mothers to exclusively breastfeed their babies?**Probe** for decision makers on issues concerning childcare and feeding.

10. Who else would influence mothers to exclusively breastfeed their babies?

11. Are there any other thoughts you have about exclusive breastfeeding that I haven't asked you?

12. Are you aware of any infant feeding support group in this community? Probe for names and type of activities? Size of such groups, if existing?

PRACTICE OF RESPONSIVE FEEDIING

1. What do you say to encourage your infant or young child to eat more?

2. What do you do to encourage your infant or young child to eat more?

3. What do you do when your infant or young child refuses to eat?

4. What do you do if your infant or young child asks for more food?

APPENDIX III

Topics of IYCF in SupportGroups

Exclusive Breastfeeding(EBF)SupportGroup	Complementary Feeding(CF)SupportGroup
Pregnant women in the lasttrimesterand lactating mothers withinfants under 6 monthsold	Lactating mothers and caregiverswith children from 6 up to 24 monthsold
10) Nutrition during pregnancyand breastfeeding 11) Importance of early initiation of breastfeeding 3a) Exclusive breastfeeding during the first 6 months 3b) Dangers of mixed feeding during the first 6 months 4) Positioning and attachment of a baby at breast 5a) Breastfeeding and working mothers 5b) How to hand-express and cup-feed. 6a)Preparation for complementary feeding 6b) Good hygiene practices	7) Feeding children, according toage,with a sufficient frequency ofmeals and sufficient amount andthickness of food eachday 8) Feeding children diverse foodsat each meal (4 foodgroups) 9) Feeding the sick baby less than 6 months 10) Feeding the sick child more than 6 months 11) Nutrition care for child withdiarrhoea 12) Responsive feeding – helping achild to eatwell 13) Regular growth monitoring.

APPENDIX IV

INFORMED CONSENT FORM

IRB Research approval number:

Title of the research: Effect of Peer support groups on infant feeding practices of mothers in selected rural areas of Oyo State.

Name and affiliation(s) of researcher(s) of applicant(s): This study is being conducted by Olusa, Rachael Funmilayo a PhD student from the department of Human Nutrition, Faculty of Public Health, College of Medicine, University of Ibadan. And supervised by Dr. Folake O Samuel..

Sponsor(s) of research: the research is self-sponsored by the Student.

Procedure of the research, what shall be required of each participants and approximate number of participants: A total of 240 participants will be recruited into the study. Three staged sampling techniques will be used in selecting the participants from various communities. This study will require you to answer the questionnaire which seeks information about yourself and your under-five children after which there will be teachings /discussions on Infant feeding practices, monitoring of your infant till 12 months of age, and taking anthropometric measurements of your infant.

Expected duration of research and of participant(s) involvement: In total we expect you to be involved in this research for a maximum of 15 months.

Risk: there is no risk involved in this research

Cost to the participants for joining the research: Your participation in this research will not cost you anything.

Benefit: The researcher will give behavioural change information on Infant feeding practices to enhance good nutritional status, growth, development and survival of under five children.

Confidentiality: all information collected in this study will be given code numbers and no names will be recorded

Voluntariness: Your participation in this research is entirely voluntary

Alternatives to participation: You are free not to participate or withdraw from this research at any time you want to.

Due inducement: You will not be paid anything for participating in this research however the health education and Behavioral change communication materials given to you will be given freely.

Consequence of participants' decision to withdraw from research and procedure for orderly termination of participation: you can also choose to withdraw from the research at any time. Please note that some of the information that has been obtained about you before you chose to withdraw may have been modified or used in reports and cannot be removed anymore. However the researcher promises to make effort to comply with your wishes as is practicable.

Modality of providing treatments and action(s) to be taken in case of injury or adverse event(s): you will not suffer any injury as a result of participating in this research.

What happens to research participants and communities when the research is over: the researcher will inform you of the outcome of the research

Any apparent or potential conflicts of interest: there is no conflict of interest.

Statement of person obtaining informed consent

I have fully explained this research to ----------
---and have given sufficient information, including about risks and benefits, to make an informed decision.

DATE: _____SIGNATURE _____

NAME: _____

Statement of person giving consent:

I have read the description of the research and have also discussed with the researcher to my satisfaction. I understand that my participation is voluntary. I understand that I may freely stop being part of this study at any time. I have received a copy of this consent form and additional information sheet to keep with me.

DATE:_____ SIGNATURE _____

NAME: _____

WITNESS' SIGNATURE (IF APPLICABLE): _____

WITNESS' NAME (IF APPLICABLE): _____

This research has been approved by the Ethics committee of the University of Ibadan and the chairman of this committee can be contacted at Biode Buiding, room 210, 2nd floor, Institute for Advanced Medical Research and Training, College of Medicine, University of Ibadan, E-mail uiuchirc@yahoo.comanduiuchec@gmail.com

In addition, if you have any question about your participation in this research, you can contact the principal investigator,
Name……
Department
……..phone….....
E-mail
……..
Address
……

PLEASE KEEP A COPY OF THE SIGNED INFORMED CONSENT.

APPENDIX IVa
FOOMU TI OBI OMO FOWO SI

IRB Research approval number:

Akori iwadi:.

Oruko Olusewadi yi: Olusewadi yi ni Olusa, Rachael Funmilayo. Olukeko niile eko giga yunifasiti Ibadan.

Onigbowo Isewadi yi: Olusewadi eko ni o se onigbowo isewadi na a

Ilana Isewadi yi: Ogorun meji, o le ogoji (240) olukopa ni a o gba lati se iwadi yi. A o yan awon olukopa naa kaakiri agbegbe ilu ti a ti yan. A n fe ki o dahun ibeere ti a o beere nipa iwo tikalara re ati omo re ti ko ti pe odun marun, lehin eyi ni ao se idanileko nipa eto ati ilanaa fifun omo ikoko ni ounje ao si ma a wo iwon omo re titi yio fi pe omo osu mejila.

Akoko ti iwadi na a yi o gba olukopa: Lapapo iwadi naa yi o gba o ni osu meedogun

Ewu to wa ninu iwadi na a: Iwadi yi ko mu ewu Kankan lowo

Idiyele: Kikopa re ninu iwadi yi, ko lee na o ni owo kankan

Anfaani: Olusewadia fun olukopa ninu iwadi yii ni eko nipa eto fifun awon omode ni ounje funilera pipi ati idagbasoke ti o peye, won a si pese awon oun ikeko tabi ilera ti a o maa kaa lati le tele eko naa.

Pipa asiri mo: Idaun ti a ba gbo lenu re fun iwadi yi ni a o fi koodu si, a ko si ni fi oruko re sii tabi ba enikeni so.

Atinuwa (Voluntariness): Kikopa re ninu iwadi yi ni a ko fi agbara mu e.
Bi enikeni ko ba fe kopa ninun isewadi yi O leto lati pinnu lati ma kopa ninun isewadi yi tabi lati fopin si idaun re lasiko ti o wu e.

Ififuni (Due inducements): A ko ni san owo Kankan fun kikopa re ninu isewadi yi, awon oun ikeko tabi ilera ti a ba si ko fun o ni a ko ni gba pada.

Ere idi ipinu olukopa lati ma kopa ninu eto iwadi yi mo (Consequence of participants' decision to withdraw from research): Niwon igba ti o ti lee pinnu lati ma kopa mo ninu isewadi yi, sugbon awon idaun re si ibeere ti a ti ko sile, ki o topinnu lati ma te siwaju mo ni a ko lee pare mo. Sugbon olusewadi yi se ileri lati se bi e ti fe gege bi ise wa.

Oun ti o ma sele ti ipalara Kankan ba sele nitori iwadi yii: E ko ni ni ininu isewadi yi.

Ki ni a sele si olukopa ati ilu ti oun kopa nigbati eto iwadi yi ba pari: A o fi abajade iwadi yi to yin leti ti a ba pari iwadi naa.

Any apparent or potential conflicts of interest: Oniwadi ko ni se ounkankan ti o le ko ba olukopa ninu iwadi yi.

Akosile oro olusewadi:

Mo ti salaye isewadi yi ni kikun fun _____ati pe mo si ti so gbogbo oun ti o ro mo isewadi naa ni kikun fun olukopa yi lati lee je ki o se ipinnu fun ra re.

Deeti: _____

Ibowolu:_____

Oruko:

_____

Akosileoro Olukopa:

Mo ti ka alaye olusewadi yi daradara, mo si ti ba olusewadi naa soro to te mi lorun- Mo mo pe kikopa mi wa latokan mi. O si ye mi pe mo le yan lati pinnu lati ma kopa ninu isewadi naa ni igbakugba ti mo ba fe-Mo ti gba eda iwe ati awon iwe alaye miran sowo.

Deeti _____ Ibowolu _____

Oruko

_____

Ibowolu eleri

_____

Oruko eleri

_____

Isewadi yi ti gba oore-ofe igbimo oluwadi ti ile eko giga yunifasiti Ibadan, Alaga Igbimo yi ni a le ri ni yara igba-o-le-mewa, ti o wa ni aja keji, ile Biode, ti o wa ni oriko isewadi imo isegun, ti ile eko isegun oyinbo, ni yunifasiti Ibadan. Ero ifiweranse niuiuchirc@yahoo.comatiuiuchec@gmail.com

Siwaju si, ti e ba ni ibeere nipa oun koun ti o ba ru o loju lori kikopa re ninu isewadi yi, o le kan si oga agba isewadi yi ni,

Oruko_____

Oriko ikeko _____

Nomba ibara eni soro _____

Nomba ero ifiwe ranse _____

Alaye

Ibugbe,_____

EJOWO E MU EDA IWE TI E FOWO SI LOWO

APPENDIX V

ETHICAL APPROVAL

INSTITUTE FOR ADVANCED MEDICAL RESEARCH AND TRAINING (IAMRAT)
College of Medicine, University of Ibadan, Ibadan, Nigeria.

Director: **Prof. Catherine O. Falade,** *MBBS (Ib), M.Sc, FMCP, FWACP*
Tel: 0803 326 4593, 0802 360 9151
e-mail: cfalade@comui.edu.ng lillyfunke@yahoo.com

UI/UCH EC Registration Number: **NHREC/0/01/2008a**

NOTICE OF FULL APPROVAL AFTER FULL COMMITTEE REVIEW

Re: Effect of Peer Support Groups on Infant Feeding Practices of Mothers in Selected Rural Areas of Oyo State

UI/UCH Ethics Committee assigned number: UI/EC/16/0275

Name of Principal Investigator: **Olusa Rachael Funmilayo**

Address of Principal Investigator: Department of Human Nutrition
College of Medicine,
University of Ibadan, Ibadan

Date of receipt of valid application: 19/08/2016

Date of meeting when final determination on ethical approval was made: **N/A**

This is to inform you that the research described in the submitted protocol and other participant information materials have been reviewed and *given full approval by the UI/UCH Ethics Committee.*

This approval dates from **28/10/2016 to 27/10/2017.** If there is delay in starting the research, please inform the UI/UCH Ethics Committee so that the dates of approval can be adjusted accordingly. Note that no participant accrual or activity related to this research may be conducted outside of these dates. *All informed consent forms used in this study must carry the* UI/UCH EC *assigned number and duration of* UI/UCH EC *approval of the study.* It is expected that you submit your annual report as well as an annual request for the project renewal to the UI/UCH EC early in order to obtain renewal of your approval to avoid disruption of your research.

The National Code for Health Research Ethics requires you to comply with all institutional guidelines, rules and regulations and with the tenets of the Code including ensuring that all adverse events are reported promptly to the UI/UCH EC. *No changes are permitted in the research without prior approval by the* UI/UCH EC *except in circumstances outlined in the Code. The* UI/UCH EC *reserves the right to conduct compliance visit to your research site without previous notification.*

UI/UCH EC
APPROVED
COLLEGE OF MEDICINE, U.I.

Professor Catherine O. Falade
Director, IAMRAT
Chairperson, UI/UCH Ethics Committee
E-mail: uiuchec@gmail.com

APPENDIX VI

TAKE HOME BRONCHURES FOR MOTHERS

Safe preparation of food

- Good hygiene (cleanliness) is important to avoid diarrhoea and other illnesses.
- Use clean utensils and store foods in a clean place.
- Cook meat, fish, and eggs until they are well done.
- Wash vegetables, cook immediately for a short time and eat immediately to preserve nutrients.
- Wash raw fruits and vegetables before cutting and eating.
- Wash your hands with soap and water before preparing foods and after using the toilet and washing baby's bottom.

Other important tips

- Rest more and avoid heavy work, especially during the last three months of pregnancy and the first three months after delivery.
- To prevent malaria, sleep under an insecticide-treated mosquito net every night.
- In case of fever, seek treatment at the health facility immediately.
- Take de-worming tablets to treat worms and help prevent anaemia.
- Do not use alcohol, narcotics or tobacco products.

Nutrition and HIV care

- Know your HIV status. To know your HIV status you must take a test.
- If you are HIV-infected, consult your health care provider on your care and treatment, and on how best to feed your baby.

- If you are HIV-infected, you need extra food to give you extra energy.
- Protect yourself and your baby from HIV and other sexually transmitted infections during pregnancy and while you are breastfeeding by practicing safe sex.

- Use condoms consistently and correctly. Consult a family planning counsellor.

This brochure was adapted and updated for UNICEF New York from material developed by University Research Co., LLC in Tanzania, Kenya, Malawi, and recently in Uganda under the NuLife Program: USAID Cooperative Agreement 717-A-00-06-00006-00. February 2010.

Nutrition
During Pregnancy and Breastfeeding

Practice Good Nutrition

What you need to know

- During your pregnancy, eat three meals each day plus one extra small meal or "snack" (food taken in between main meals).
- During breastfeeding, eat three meals each day plus two extra small meals or "snacks".
- Eat different types of locally available foods each day.
- No special food is required to produce breastmilk.
- Adolescent mothers need more food, extra care, and more rest.
- Drink plenty of liquids.

Plan a Balanced Diet

Energy-giving foods including grains such as maize, rice, millet and sorghum and roots and tubers such as cassava and potatoes.

Body-protecting, vitamin A-rich fruits and vegetables such as mango, pawpaw, passion fruit, oranges, dark-green leaves, carrots, yellow sweet potato, and pumpkin **and other fruits and vegetables** such as banana, pineapple, avocado, watermelon, tomatoes, eggplant and cabbage.

Body-building legumes such as beans, lentils, peas, groundnuts, **and seeds** such as sesame.

Body-building animal-source foods such as meat, chicken, fish, liver, and eggs and dairy products.

Oil and fat such as oil seeds, margarine, ghee, butter, and palm oil improve the absorption of some vitamins and provide extra energy.

Protect Your Health

Pregnant and breastfeeding women need to:

- Attend antenatal care at least four times during pregnancy, beginning during the first three months.
- Drink plenty of clean water every day.
- Avoid tea or coffee during pregnancy.

What supplements do you need?

- You need iron and folic acid tablets during pregnancy and for at least three months after your baby's birth.
- Take iron tablets with meals to increase absorption.
- Always use iodised salt to prevent learning disabilities, delayed development, and poor physical growth in the baby; and goitre in the mother.
- Take vitamin A supplements immediately after birth or within six weeks after delivery to ensure that your baby receives the vitamin A in your breastmilk.

Feed more as the baby grows

Begin to feed at 6 months
Type of food:
Soft gruel, well-mashed food
How often:
Two to three times each day
How much:
Two to three tablespoons at each meal

From 6 up to 9 months
Type of food:
Mashed food
How often:
Two to three times each day and 1 to 2 snacks
How much:
Two to three tablespoons up to half (1/2) cup at each meal

From 9 up to 12 months
Type of food:
Finely chopped or mashed food and foods that baby can pick up with his or her fingers
How often:
Three to four times each day and 1 to 2 snacks
How much:
At least half (1/2) cup at each meal

From 12 up to 24 months
Type of food:
Family foods, chopped or mashed if necessary
How often:
Three to four times each day and 1 to 2 snacks
How much:
Three-quarters (3/4) up to one full cup at each meal

* A snack is extra food between meals ** A cup is 250 ml

Things to remember

- Between the age of 6 months and 2 years, a child needs to continue breastfeeding.
- If you are not breastfeeding, feed your baby two cups (500 ml total) of milk, divided throughout the day.
- Avoid giving a baby tea, coffee, soda, and other sugary or coloured drinks.
- Limit amount of fresh juices to accommodate the meal. Give your baby clean water.
- Always feed the baby using a clean, open cup. Do not use bottles, teats, or cup with a mouth piece.

- Continue to take your child for growth monitoring and promotion, immunizations, and to the clinic for well-baby check-ups.
- During illness give the baby small, frequent meals and more fluids, including breastmilk or other liquids. Encourage the baby to eat a variety of (his or her) favourite soft foods. After illness, feed more food and more often than usual for at least two weeks.

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How to Feed a Baby From 6 Months

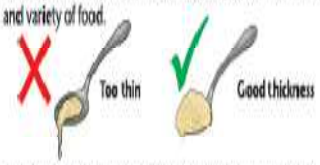
From 6 Months

What you need to know

- For the first 6 months, exclusively breastfeed your baby (no other milks, foods, or liquids, not even sips of water).
- When your baby reaches 6 months, begin to introduce other foods and continue breastfeeding on demand both day and night.
- Breastmilk continues to be an important part of the diet until the baby is at least 2 years.
- When feeding a baby between 6 and 12 months old, always give breastmilk first before giving other foods.
- After 6 months of age, children should receive vitamin A supplements twice a year. They also need de-worming medicine twice a year, beginning at 12 months. Consult your health care provider.

When your baby first starts to eat

- Give your baby one or two tablespoons of soft food three times each day. Gradually increase the frequency, amount, thickness, and variety of food.



- Enrich the baby's porridge (sorgum, maize, millet, wheat...) and with breastmilk, animal milks, mashed groundnuts, or soy flour. It is best to mix two to three types of flours. Make sure the groundnuts and soy beans are well pre-cooked.
- Your baby needs more than breastmilk and porridge. Offer a variety of foods, like mashed fruits, vegetables, and tubers and animal-source foods.
- Start animal-source foods as early and as often as possible.

- A little vegetable oil can be added to the baby's porridge or mashed foods. Infants only need a very small amount of oil (no more than half [½] teaspoon per day)

Hygiene, safe preparation, and storage of foods

- Wash your hands with clean, running water and soap before preparing food, and before feeding your baby. Baby's hands should be washed also. Wash your hands after changing nappies or going to the toilet.

- Wash all bowls, cups, and utensils with clean water and soap. Dry on a rack and keep covered before using.

- Prepare food in a clean area and keep it covered. A baby should have his or her own cup and bowl.
- Serve food immediately after preparation.
- Thoroughly reheat any food that has been kept for more than an hour.

- Babies gradually learn to feed themselves. An adult or an older child should encourage the baby to eat enough food and ensure that the food remains clean.
- Parents should ensure that the baby has received the food that he or she needs each day.

How to prevent common breastfeeding difficulties

- Position and attach your baby correctly on the breast to prevent engorgement and cracked nipples. Breastfeeding should not hurt.
- If you develop cracked nipples, put some breastmilk on them. Do not use creams or ointments except when prescribed by a health care provider.
- Feed frequently to prevent your breasts from becoming swollen.
- If the baby misses a feed or your breasts feel very full, you should express some milk to keep your breasts soft.
- You can keep expressed breastmilk in a cool place, but not for longer than six to eight hours.
- If one or both of your breasts become painful or hot to touch, see a health care provider.
- Check for sores and thrush in your baby's mouth. If you find any, see a health care provider.
- If you have trouble practicing exclusive breastfeeding, discuss your situation with a trained counsellor.

Things to remember

- Breastfeeding is good for your health and your baby's health, and is also good for your family and the bright future of Nigeria.
- Exclusive breastfeeding during the first 6 months protects you from getting pregnant as long as your periods have not returned. Consult a birth-spacing counsellor as soon as possible after giving birth.
- When your baby is 6 months old, continue breastfeeding and begin giving other foods.
- Watch for signs of diarrhoea, fever, difficulty in breathing, or refusal to feed because these need prompt attention.
- If you are an HIV-infected woman, you should not feed your baby from a nipple that is cracked or bleeding. Instead, feed from the other breast and express and discard the milk from the breast that is affected.

- Getting infected or re-infected with HIV while breastfeeding increases the risk of mother-to-child transmission. Practice safe sex by using condoms consistently and correctly.
- To protect your baby, know your HIV status.

This brochure was adapted for UNICEF New York from material developed by University Research Co., LLC. It was adapted for Nigeria and produced for World Breastfeeding Week (1-7 August, 2011) with support from the Infant and Young Child Nutrition Project (IYCN), funded by USAID Nigeria.

How to Breastfeed Your Baby

Breastfeeding

What you need to know

- It is very important to put the baby to your breast within the first 30 minutes after birth to stimulate milk production.

Make sure you feed your baby the first yellowish milk known as colostrum. Colostrum protects your baby from many diseases.

Breastmilk provides all the food and water that your baby needs during the first 6 months of life.

Exclusive breastfeeding means giving breastmilk only, and nothing else (no other milks, foods, or liquids, not even sips of water), except for medicines prescribed by a doctor or nurse.

Mixing breastmilk with other milks, foods, and liquids before 6 months is not healthy for your baby. It reduces the amount of milk that you produce and can make your baby sick.

If you need to be away from your baby, you can express some breastmilk for him or her.

Help baby attach to your breast

- Make sure you begin to breastfeed immediately after birth, within the first 30 minutes.
- Good attachment helps to ensure that your baby suckles well.
- Good attachment helps you to produce plenty of breastmilk.
- Good attachment helps to prevent sore and cracked nipples.

- To make sure your baby is attached well:
  - Touch baby's lips with your nipple.
  - Wait until your baby's mouth opens wide.
  - Quickly bring onto your breast from below, aiming your nipple up towards the roof of the baby's mouth.
  - Baby should take a big mouthful of breast.

- The four signs of good attachment are:
  1. Baby's mouth is wide open.
  2. You can see more of the darker skin (areola) above the baby's mouth than below.
  3. Baby's lower lip is turned outwards.
  4. Baby's chin is touching your breast.
- Your baby should take slow, deep sucks while breastfeeding, sometimes pausing.

How often should I breastfeed?

- Breastfeed your baby on demand, both day and night, at least 8 to 12 times each day.
- Frequent feeding will help your body to produce breastmilk.
- Continue to feed until your baby empties the breast and comes off on his or her own. Offer the other breast and let your baby decide if he or she wants more or not.
- You will know if your baby is taking enough breastmilk if he or she passes light-coloured urine at least six times a day and is gaining weight.
- Take time, sit or lay down to breastfeed, and pay attention to your baby. Keep your baby close to you, day and night.

APPENDIX VII

FIELD PICTURES








WARD

APPENDIXES VIII

Definition of infant and young child feeding indicators according to World Health Organization in 1991 and 2008

Indicator	1991 guideline	2008 guideline
Early initiation of breastfeeding	Proportion of infants <12 months who first suckled within one hour of birth.	Proportion of children born in the last 24 months who were put to the breast within one hour of birth.
Ever breastfed rate	Proportion of infants <12 months who were ever breastfed.	Proportion of children born in the last 24 months who were ever breastfed.
Exclusive breastfeeding	Proportion of infants <4 months who are fed exclusively on breast milk	Proportion of infants 0-5 months of age who are fed exclusively with breast milk.
Predominant breastfeeding*	Proportion of infants <4 months whose main source of nourishment is breast milk but receive other fluids.	Proportion of infants 0-5 months of age who receive breast milk as the predominant source of nourishment but also receive other fluids except non-human milk and food-based fluids.
Introduction of complementary foods**	Proportion of infants 6-9 months who are receiving complementary foods in addition to breast milk.	Proportion of infants 6-8 months of age who receive soft, semi-solid or solid foods.
Minimum dietary diversity		Proportion of children 6-23 months of age who receive foods from 4 or more food groups
Minimum meal frequency**		Proportion of breastfed and non-breastfed children 6-23 months of age who receive soft, semi-solid or solid foods but including milk feeds for non-breastfed children) the minimum number of times or more.
Minimum acceptable diet**		Proportion of children 6-23 months of age who receive a minimum acceptable diet apart from breast milk.
Continued breastfeeding at 1 year	Proportion of children 12-15 months who are breastfed.	Proportion of children 12-15 months of age who are fed breast milk.
Continued breastfeeding at 2	Proportion of children 20-23 months who are breastfed.	Proportion of children 20-23 months of age who are fed breast

years		milk.
Bottle feeding	Proportion of infants <12 months who are receiving any food or drink from a bottle.	Proportion of children 0-23 months of age who are fed with bottle.
Consumption of iron-rich or iron-fortified Foods		Proportion of children 6-23 months of age who receive an iron-rich food or iron-fortified food that is designed for infants and young children, or that is fortified in the home.
Age-appropriate breastfeeding		Proportion of children 0-23 months of age who are appropriately breastfed
Exclusive breastfeeding rate by mothers	Proportion of infants up to 4 months who are exclusively breastfed by their natural mother	

APPENDIX IX

TEN STEPS TO SUCCESSFUL BREAST FEEDING

1. Have a written breast feeding policy that is routinely communicated to all health care staff.
2. Train all health care staff in skills necessary to implement this policy.
3. Inform all pregnant women about the benefits and management of breast feeding.
4. Help mothers initiate breast feeding within half hour of birth…
5. Show, mothers how to breast feed andhow to maintain lactation even if they should be separated from their infants
6. Give new born infants no food or drink other than breast milk unless medically indicated.
7. Practice rooming-in, (bedding-in; matting-in) allow mothers and infants to remain together 24 hours a day.
8. Encourage breast feeding on demand.
9. Give no artificial teats or pacifiers (also called dommies or soothers) to breast feeding infants.
10. Foster the establishment of breast feeding support groups and refer mothers to them on discharge from the hospital or clinic.