Mothers' knowledge, Perception and Practice on child nutrition and Complimentary Feeding at Tara Gedam Kebele (South Gondar)

By

Eyayu Gebreselassie

Addis Ababa University School of social Work

Yania Seid-Mekiye Seid-Al (PHD)

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Approved by Board of Examiners:

Advisor	Signature	Date
Fikehimot Tebessa		10/01/17
Internal Examiner	Signature	Date
External Examiner	Signature	Date

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Acronyms

CF: Complimentary Feeding

CRC: Convention of the Right of the Child

CSA: Central Statistical Authority

EBF: Exclusive Breast Feeding

EDHS: Ethiopian Demographic Health Survey

FGD: Focus Group Discussion

HTP: Harmful Traditional Practices

HEWs: Health Extension Workers

MDG: Millennium Development Goals

NGO: Non-Governmental Organizations

NNP: National Nutrition Program

PAHO: Pan American Health Organization

SBCC: Social and Behavior Change Communication

SES: Socio-Economic Status

SNNPR: Southern Nations, Nationalities and Peoples Region

SPSS: Statistical Packages for Social Science

UNECA: United Nations Economic Commission for Africa

UNICEF: United Nations International Children Emergency Fund

WHA: World Health Assembly

WHO: World Health Organization

Abstract

The main purpose of this study was to assess the knowledge, perception and practice of child nutrition and complementary feedings among mothers' in Tara Gedam Kebele of Libokemkem Woreda. Mixed methods were used to study mothers' knowledge, perception and practice on child complementary feeding and mothers who have children below two years were selected purposively. For the focused group discussions eight mothers were selected by criteria sampling. Questionnaires were applied to collect quantitative data; and for qualitative data Focus Group Discussion and in-depth interview were used. The quantitative data were analyzed through SPSS and content analysis were applied for the qualitative data. Findings from this study showed that considerable number of mothers' gave cow's milk as the first complementary food to their infants. The finding also showed that mothers' introduced their child with complementary foods because their breast milk is no longer sufficient and influences were from social beliefs. About (57.5%) of the mothers feed their children only two to three times in day and inadequate complimentary foods at early stage has adverse impact on infant's physical and mental development in later years. Promotion of strong community based networks using Social Workers, Health Extension Workers and local community's resource people are key actors to tackle this problem.

Chapter One

Introduction

This chapter deals with background of the problem, problem statement, objective of the study, research questions, significance of the study and operational definitions.

1.1 Background

World Health Organization/United Nations International Children Emergency Fund(1998) defined complimentary feeding as the introduction of suitable and good foods to infants from 6 - 23 months. WHO points out that complimentary feeding enables children to meet the adequate nutritional needs for desirable physical and cognitive development. It is also emphasized that timely introduced complimentary foods to infants reduces the risk of infant mortality and inappropriate complimentary feeding brings undesirable impact on infants' weight and strongly associated with malnutrion. Stunting reflects a failure to receive adequate food intake over a long period of time, and is therefore, a measure of chronic malnutrition and wasting reflects the failure to receive adequate nutrition in the critical period which indicates acute malnutrition (WHO/UNICEF, 1998).

An estimated 805 million people worldwide are chronically undernourished; 159 million under five children are stunted; while 41 million under 5 children are overweight and obese (WHO, UNICEF and World Bank, 2015). In addition, at least 50 million are severely or moderately wasted (WHO, UNICEF and World Bank, 2015). Furthermore, there are about 2 billion children and adults who are deficient in vitamins or minerals, which can lead to anemia, blindness, cognitive impairment, greater susceptibility to many diseases, resulting in higher mortality.

Overall, it is estimated that 15% to 20% of all births worldwide are low birth weight (WHO, UNICEF and World Bank, 2015).

Though the Ethiopian government has been working to reduce poverty and child nutrition for the last decades by developing MDG (Millennium Development Goals) and NNP- I (National nutrition program) child malnutrition continue to be a major public health problem in the country and in 2011 more than 5 million Ethiopian children remained stunted (UNICEF, 2013). According to UNICEF (2013) maternal, infant and child under nutrition are still national problems with important consequences for survival, incidence of acute and chronic diseases, healthy development, and economic productivity of individuals and the society. In the past decade, since national nutrition strategy is developed, the government, implementers and nutrition development partners strived to create appropriate channels, capacity and resources through which the intergenerational cycle of malnutrition is halted (UNICEF, 2013).

As presented by CSA (2014) there is a downward trend in the proportion of children stunted and underweight over the last four years. The prevalence of stunting decreased by 31 per cent (from 58 per cent to 40 per cent) between 2000 and 2014. The decline in the proportion of stunted Ethiopian children shows improvement in chronic malnutrition over the past fifteen years. The proportion of children underweight declined even more substantially by 39 per cent over the same period. According to Mini EDHS (2014) almost 25 % of children under age five are under-weight, or too thin for their age. Underweight is a composite indicator combining both chronic and acute malnutrition (Mini Ethiopian Demographic and Health Surveys, 2014).

Regarding infant feeding practices, just over half (52%) of Ethiopian children under six months were exclusively breastfed, and, of even greater concern, only 4.3% of children aged older than six months consumed the recommended 4 food groups daily, and only 13% of children under two consumed iron rich foods (EDHS 2011). In addition, Silva (2005) reported that the prevalence rate of child malnutrition among Ethiopian infants is higher than the average prevalence rate for sub-Saharan African countries.

The causes of child malnutrition are complex. At the most basic level, malnutrition results from inadequate food consumption and inappropriate perception and practice. Haggerty et al (1999) emphasized that inappropriate feeding practices and insufficient availability of food at household level are the two possible reasons for children not to take adequate food. It is assumed that child malnutrition occurs because of disease or improper feeding practices by the caregiver, while food is available in the household. There for, apart from poverty, there can be other factor that directly or indirectly affects the nutritional status of children. With regard to child nutrition and development Kristi & Kendra (2013) confirmed that parental beliefs and perceptions play a key role in shaping child feeding behaviors. In the relationship between the mother and the child the development of parenting skills and promotion of change are also an important factor that should be considered in childhood growth and nutrition. In any nutritional intervention, knowledge of the beliefs and behaviors of mothers is an important consideration (Kristi and Kendra, 2013).

Furthermore, as reported by Kristi & Kendra (2013), majority of Greek parents believe that the parents need to determine what the child eats since their children are too young or irresponsible to make dietary decisions while other parents believe that children should know

what they should be eating and place the responsibility on the child to make the appropriate dietary choices. All in all a parent must not forget the critical role they play in influencing the development of their child's dietary habits and nutrition, although, several other factors may influence a child's diet, (Kristi and Kendra, 2013).

With regard to complementary feeding, lack of caregiver education has a strong and consistent relationship with poor child nutrition outcomes. According to Black and Allen (2003), lack of knowledge regarding the nutritional needs of children may lead to the withholding of needed food, even when it is available. This entails the importance of parental education in determining children's nutritional status. Education, especially maternal education, is a powerful predicator of children's nutritional status. Additionally, poor nutrition results not only from a lack of food and lack of knowledge but also from inappropriate feeding practices where the timing, quality and quantity of foods given to infants and young children are often inadequate (Black and Allen, 2003). Pan American Health Organization/World Health Organization (2003) report also confirmed that appropriate complementary feeding depends on accurate information and skilled support from the family, community and health care system. Inadequate knowledge about appropriate foods and feeding practices is often a greater determinant of malnutrition than the lack of food (PAHO/WHO, 2003).

1.2.Statement of the Problem

According to Mini Ethiopian Demographic Health Surveys (2014) child malnutrition is one of the most serious health and welfare problems among infants and young children in Ethiopia. It is a result of both inadequate food intake and illness. Inadequate food intake is a consequence of

insufficient food available at the household level, or improper feeding practices, or both. Improper feeding practices include both the quality and quantity of foods offered to young children as well as the timing of their introduction. This could be affected by knowledge, perception and practices on complementary feeding quality and quality. UNICEF (2013) also reported that child under nutrition in general is caused not just by the lack of adequate, nutritious food, but by frequent illness, poor care practices and lack of access to health and other social services.

Mini EDHS (2014) report shows that percentage of Ethiopian children stunted were 40 percent. There is a regional variation in the prevalence of stunting in children. The report also indicated that stunting levels are above the national average in Tigray and Affar (46 % each), SNNP (44 %) and Amhara (42 %), and relatively low in Gambela and Addis Ababa (22 and 23 %, respectively). The broader understanding of the devastating consequences of under nutrition on morbidity and mortality is based on well-established evidence. As described by Alderman (2004) impaired cognitive development, poor social and emotional functioning, behavioral problems, reduced school achievement, and low economic productivity are resulted from both sever and non-sever under-nutrition.

Mini EDHS (2014) report confirmed that mother's level of education has an inverse relationship with stunting levels of young children. For example, children of mothers with more than secondary education are the least likely to be stunted (8 %), while children whose mothers have no education are the most likely to be stunted (43 %). A study by Black and Allen (2003) also shows, an estimated 53 % of child deaths per year are attributable to being underweight are resulted not only from lack of availability of food but also lack of knowledge. Another study in

Zambia by H. Khunga, K.J. Okop, andT. Puoane (2014) revealed the lack of knowledge about causes, signs, symptoms, and treatment of malnourished children among mothers or caregivers and community members in Kalomo district in Zambia. According to the study some of the barriers to the poor management of malnourished children are due to a strong belief in traditional healers, linking malnutrition to traditional beliefs, poor reception at health care facilities, as well as a lack of confidence in the services offered by community health workers.

Appoh and Krekling (2005) in the Volta region of Ghana investigated the role of maternal nutritional knowledge on child nutritional status by measuring weight-for-age z-score. The questionnaire gathered information on mothers' knowledge about the importance of colostrums, the type of complimentary food fed to the children, the time breastfeeding was initiated and complimentary food was introduced and whether mothers had food taboos. The study demonstrated that there is a significant association between nutritional status of children and nutritional knowledge index.

With regards to nutrition, the perception and knowledge of mothers have got more attention than that of fathers, as mothers continue to spend significantly more time caring for their children, specifically the physical care activities such as feeding. All family tends to only have one 'nutritional gatekeeper' who controls the majority of the family food, and this role tends to belong to mothers (although some fathers do hold this role). Mothers tend to be in charge of food shopping and consequently their attitudes to food and approach to their children's diet is crucial (Kristi and Kendra, 2013). Kristi and Kendra (2013) further indicated that the way in which a parent perceives their child's diet quality or nutrition is very important in ensuring a healthy diet for optimal development and disease prevention. Parents rely on a wide variety of information,

strategies and personal beliefs when determining their child's diet, some of which are beneficial, while others may be harmful. There is no doubt that a child's diet quality is highly influenced by parental knowledge and beliefs (Kristi and Kendra, 2013).

According to my knowledge existing studies in Ethiopia have limited focus in considering mother's knowledge and perception on child nutrition as the major determinant factor rather they specifically focused on mother's knowledge and perception specifically on breast feeding. Desalegn Adugna (2014) studied women's perception and risk factors for delayed initiation of breastfeeding in Arba Minch area, Southern Ethiopia. Harold Alderman (2004) also studied about the impact of maternal knowledge and income in child nutrition in Ethiopia and they identify household resources, parental education, and food prices as key determinants of chronic child malnutrition in Ethiopia.

Another study was done by Wondu (2013) on knowledge, perception and practice of mothers/caretakers and family's regarding child nutrition (under five years of age) in Nekemte town, Ethiopia. The study has revealed that perception of mothers towards exclusive breast feeding for the first six months is very good and knowledge is an important factor that influences perception and practices in breast feeding. The study concentrated on perception and knowledge of mothers on exclusive breast feeding but gave little attention on mothers' perception and knowledge on complimentary feeding or child nutrition between six months and two years.

Though Ethiopia has launched National nutrition program (NPP- I) from 2013-2015 focused on integration and coordination of nutrition specific interventions that address the immediate causes of child development and the potential effects of nutrition sensitive

interventions that address the underlying determinants of malnutrition, child under nutrition is still a crucial problem. UNICEF also published a report in recent years that 11 millions of Ethiopian children are still under chronic and acute malnutrition that ranks among the top both in sub Saharan Africa and the world (UNICEF, 2013).

Dewey K.G. andAdu-Afarwuah S. (2008) systematically reviewed the efficacy and effectiveness of complementary feeding interventions in developing countries. They have indicated that in successful nutrition intervention programs, frequent, regular exposure to a few, simple, uniform, and age-appropriate messages, together with an opportunity for interaction between caregiver and counselor/social worker has been found to be important.

Mother's knowledge, perception and practices associated with infant and young child feeding are essential first step for any intervention program designed to bring about positive behavioral change in infant health, behavioral and social development.

Despite the importance of this issue, information on maternal knowledge, perception and practice on child nutrition in the study area was not yet well documented. Published data regarding the dietary counseling to mothers' child nutrition and complimentary feeding are also very limited. The researcher has also background in psychology and knows the study area very well. There for, knowledge, perceptions and practices of mothers on child nutrition is an issue that caught an attention of a researcher for a scientific study.

1.3. Objectives

1.3.1. General objective.

The major objective of this research is to assess mothers' knowledge, perceptions and practice on child nutrition and complimentary feeding and its associated factors.

1.3.2. Specific objectives.

The research specifically aims:

- To explore the knowledge base of mothers on child nutrition and complimentary feeding between six months and two years
- To asses mothers perceptions and beliefs about complementary feeding
- To examine current feeding practices in the villages
- To assess important factors that determine mother's knowledge, perception and practices on complimentary feeding

1.4 Research Questions

Major research question

The major research question of the study is: What is the mothers' knowledge, perceptions and practice on child nutrition and complimentary feeding?

Sub-research questions

- How do mothers in Tara Gedam Kebele understand child nutrition?
- What kind of perceptions and beliefs do mothers have about complementary feeding?

- How do mothers practice complimentary feeding to their children less than two years of age?
- What are the important factors that determine mother's knowledge, perception and practice on complimentary feeding?

1.5. Significance of the Study

The Tara Gedam mother's will be benefitted from the findings that they will get ample information on appropriate child feeding. The finding will be used as a guideline for social workers to provide better health education for mothers and to provide better nutrition for their children. The finding will also be used as the base for further study.

1.6. Operational Definitions

Complementary feeding. The infant receives breast milk and solid or semi-solid foods and allowed any food or liquid, including non-human milk.

Maternal attitude: it is the like and dislike of complementary infant feeding that mothers exhibit.

Maternal knowledge: refers to the extent to which the complementary infant feeding mothers respond correctly to items asking for their know-how or skills in feeding their infants.

Maternal practice: this refers to any behavior or action that breast and complementary feeding mothers disclose in relation to infant feeding.

Chapter Two

Literature Review

This chapter reviews about nutritional status of children in Ethiopia, significant socio demographic variables on child nutrition and complimentary feeding, introduction, process, and frequency, effects of complimentary feeding on nutritional status of children and the role of social worker, sex differences on practices of complimentary feeding and finally previous findings on mother's knowledge, perception and practices of complimentary feeding will be discussed.

2.1 Nutritional Status of Children in the World and in Ethiopia

Fifty five million children around the world are in acute malnutrition, and of these 19 million are severely wasted or undernourished. About 178 million children around the world are stunted. Of the estimated 178 million, 90 percent live in 36 countries, one of which is Ethiopia (Black, 2003). According to the 2014 survey, 40% of Ethiopian children under five are stunted or too short for their age. This indicates chronic malnutrition. One in five children is severely stunted. Stunting reflects a failure to receive adequate food intake over a long period of time, and is therefore, a measure of chronic malnutrition. One in ten children under five years is wasted, that is, they are too thin for their height. Wasting reflects the failure to receive adequate nutrition in the period immediately preceding the survey. It is a measure of acute malnutrition. Almost 25 % of children under age five are under-weight, or too thin for their age. Underweight is a composite indicator combining both chronic and acute malnutrition (Mini Ethiopian Demographic and Health Surveys, 2014).

2.2 Socio-Demographic Variables.

In this section only significant socio-economic and demographic variables such as household economic status and mother's education will be discussed.

2.2.1 Household economic status

The economic status of the women is an indicator of access to adequate food supplies, use of health services, availability of improved water sources, and sanitation facilities, which are prime determinants of child and maternal nutritional status (UNICEF, 2003). A study in the Southern Nations, Nationalities and Peoples Region (SNNPR) of Ethiopia (Teller and Yimar, 2000) showed that malnutrated children were from low economic status households. Similar studies were found in Nigeria. According to Ogbo FA.et al. (2015) there is a strong association between parental Socio Economic Status (SES) and a child's diet . The study confirmed that minimum acceptable diets were higher among Nigerian mothers from higher socioeconomic status groups and mothers who reported frequent health services use.

Another study by Omawale and Mcleod J. (1984) shows that family/household income is an important factor that determine nutritional status of the under five children in rural Jamaica. Children belonging to better income families were at a low risk of being wasted, underweight and stunted than children of lower income families. Though the economic differences in rural Jamaica appear to be quite similar, household income seems to be an important determinant of childhood nutritional status. The type and amounts of food available for consumption at home is influenced by income levels of the household/caregiver (Omawale and Mcleod J., 1984).

The significance of house hold income on nutritional status of children was also studied in Bangladesh in detail. David Navarro (1984) studied on social, economic, health, and environmental determinants of nutritional status of children .The study showed that the relationship between a mother and her children were highly influenced by the availability or scarcity of the resources at home. It may also be affected during harvesting seasons of the year or by general economic conditions caused by natural drought. Therefore the mother-child relationship may be directly influenced by the economic realities facing a family. When problems arise, like children's illness or lack of food grains, economically constrained mothers will be faced with a limited number of options, and choosing the right one may be very difficult. Perhaps the most difficult will be choice between using time for economically productive work or for child care and other domestic activities (David Nabarro, 1984)

2.2.3 Mother's educational status

As indicated by Michael Tirfe (2006) the level of education that mothers achieved is expected to have a positive influence on nutritional status of a child. That is to say Ethiopian children with better educated mother are likely to have better nutritional status score than those whose mothers are less educated. A recent study in Ethiopia by Wondu (2013) also pointed out that child growth and development is highly affected by mother's education. Infant's nutritional outcome and health is determined by mother's educational level. The study also describe that mothers' who has no formal education shows no idea in utilizing available resources for the improvement of their own and their children nutritional status. Wondu also indicated in his study that the mothers' knowledge and practice on timely starting complimentary foods to their children is enhanced by the mother's educational level. In addition to education, family income

were also mentioned as important determinant factor in influencing mother's knowledge and practices on child feeding (Wondu, 2013).

Another study in Nigeria by Ogbo F.A. et al. (2015) reported the importance of parental education for child nutrition and development. The study indicated that mothers with a higher education level and mothers who reported more health service contacts were more likely to meet the minimum dietary diversity in Nigeria. The study found significant association between maternal education and child nutrition. However results from a study by Appoh and Krekling (2005) in Ghana reported that mothers' practical knowledge about nutrition may be more important than formal education as a predictor of child nutrition outcomes. Therefore, formal education is not the only way to obtain appropriate knowledge of nutrition and child care.

A study in Mozambique by Mukuria A, Jeanne C. and Jasbir S. (2005) found out that there is no significant association between the mother's education and child under nutrition. According to the study children of mothers with secondary or higher levels of education are more likely to be wasted than children of less-educated mothers. Studies by Niameogo (1996) in England reported similar findings in that maternal education has an opposite effect on child nutritional status. The study indicated that children of mothers attaining higher levels of education, an unexpected negative association was found. It could be that maternal education had enabled women to participate in activities outside home without simultaneously ensuring adequate child care.

2.3 Complementary Feeding

2.3.1 Definition and importance of complementary feeding.

WHA defines complimentary feeding as additional suitable foods given to infants from 6 months to two years of age in addition to breast feeding; however the solid or liquid foods should be, adequate, appropriate and also be provided timely based on their age (World Health Assembly, 1999). According to World Health Assembly's children should be breastfed exclusively for the first 6 months of life and fed quality and quantity of foods from the age of 6 months, with continued breastfeeding and frequent feeding with safe and adequate amounts of local foods (WHA, 1999).

WHO also recommends regarding complementary feeding with an individual infant's feeding behaviors. Infants express hunger and preferred feeding methods through a variety of behaviors from which a mother acts upon according to her interpretation. Infants do not necessarily have the capability to choose which types of foods and beverages they should consume; this responsibility usually lies with the mother (WHO, 2000).

2.3. 2. Effects of complementary feeding on children and the role of social worker.

Not introducing additional foods until the child will be six months has important health advantages than early introduction of foods. WHO and UNICEF recommend that caregivers should not introduce additional complimentary foods to their children until six months of age. However, after six months of age, breast milk might not be adequate to satisfy infant's nutrient needs and additional foods should be introduced (WHO/UNICEF, 1998).

According to WHO/UNICEF (1998), introducing additional foods to children at the age of six months and even later probably protect them from food-borne diseases. Nevertheless, since infants start to vigorously discover their atmosphere at this time, they will be protected to bacterial contaminants through dust and soil, though they are not provided additional nutrients. Therefore, the conclusion is that, six months is the right age to provide additional foods to young infants which is very critical for their bodily and mental growth.

WHO (2000) endorses that suitable complimentary feeding is very important for the physical and mental development of young children, but if young children are not eating a nutritionally adequate diet they would be at potential threats. Furthermore, there is also strong evidence that under-nutrition making children susceptible to illness and infectious diseases such as diarrhea and measles. Alderman (2004) point out that malnourishment is a result of delayed psychological growth, low economic productivity, poor social and emotional functioning, low academic achievement, and reduced cognitive ability. Alderman also indicated that providing appropriate care and food to young infants determine the short and long term health outcomes of individuals in later life.

Ashworth A. (2006) studied on the efficiency and effectiveness of community based treatment of child malnutrition. In the study Ashworth indicated that quality of nutrition counseling were found advantageous, whether it be in growth monitoring and promotion programs, for improving complementary feeding, or for community based rehabilitation. Providing health and nutrition education to caregivers with the aim of improving mothers' nutritional and child-rearing practices were found important. Another study in Bangladesh by Roy SK. et al. (2005) on the effectiveness of dietary counseling in the management of moderate

child malnutrition showed social workers great importance on proper child health growth and healthy functioning. In the study mothers or caregivers who were counseled about rehabilitating their moderately malnourished children at home with family foods, showed an amazing recovery. The study recommended that dietary counseling and child rearing practices is important to care givers, family, and community in large for behavioral change on child nutrition and complimentary feeding. It implies that social worker with the help of health extension workers played a prominent role in alleviating child malnutrion by providing feasible and memorable messages that motivate behavior change on care givers about child nutrition and appropriate complimentary feeding.

2.3.3 Initiation of complementary food to children

WHO describes 'Weaning' as the first solid food introduced to children right at the age of six months besides breast or other milks given to children including formula milk (WHO, 2000).Complementary foods should be introduced to children at the age of six months as recommended by WHO (2000) for children aged below six months, breast milk and other breast milk substitutes are considered to have all kinds of the nutrients that children need for growth and development. It is after six months that children desperately need other nutrients including iron for their healthy growth and development. It is at six months that children will also be ready physically to take complementary foods (WHO, 2000).

The time that children are introduced to complementary food is critical to their development. The early introduction of complementary foods before six month is 'immature' and children are not in a position to digest and absorb solid food (WHO, 2000). Furthermore, if

children are introduced complementary foods before six months they will be highly vulnerable for infections and diseases (Kanoa J. B., 2011). As Kanoa J (2011) further documents that infants who take complementary foods at early age before six months will be highly vulnerable for respiratory and gastrointestinal complication and to develop obesity as compared to those who start foods at six month.

As WHO (2000) recommendations, mothers can increase the amount, frequency and variety of giving complementary foods to their children as the age of their young infant gets older, adjusting to infants need and ability to take foods. Infants can start eating semi-solid and smashed complementary foods at the age of six months and then can start to eat grinded family foods after age of 12 months.

2.3.4.Sex difference on early introduction of complementary foods

Research findings show that gender differences were observed in the introduction of complementary foods. For instance, in Egypt, male children were given complementary foods in a month earlier compared to female children. Gender differences in complementary foods shows the cultural and traditions practices grounded in the community and the differences in feeding will increases children morbidity and mortality rates (Haggerty, 1999). In the contrary to the above finding, Haggerty also found that Asian mothers introduced additional food to girls earlier than boys.

A study by Nidu Philips et al in rural areas of India showed that there were more males who had not been introduced to complementary foods than females. According to the study within the category of samples who had not been introduced to complementary foods 69.4

percent were males and 30.6 percent were females. The study reported that Indian communities place male children in high status and they associate delayed introduction with improved nutritional status as such male infants are introduced to complementary food later and breastfed longer.

2.3.5 Frequency of child feeding

The correct frequency of feeding will be determined by the energy contained in the local foods and the usual amount of foods consumed at each meal (WHO, 2000). WHO recommends that the frequency of complementary foods taken by healthy infant should be increased as the age increase, however the normal breastfeed infant should be feed two to three times per day at six to eight months of age and three to four times at nine to eleven and 12-24 months of age with additional extra snacks (such as fruits). More frequent feeds may be needed if the child is not breastfed or provided small food per meal with poor energy dense (WHO, 2000). A study by Ogbo FA, Page A, Idoko J, et al. (2015) in Nigeria reported about the minimum meal frequency infants take during a day. According to the report, the proportion of breastfed and non-breastfed children received solid, semisolid or soft foods (including milk feeds for non-breastfed children) were two times for breastfed infants aged six to eight months, three times for breastfed children aged 9–23 months and four times for non-breastfed children aged 6–23 months.

2.3.6 Practices of complementary feeding

Complimentary feeding typically covers the period from six months to two years of age, and due to the potential for inappropriate feeding practices and risk of malnutrition, this is a very critical period for infants and young children (WHO, 2000). According to WHO the first 1,000 days of life can have a profound impact on infant development from conception through the

second birthday, a time when the transition is made to complementary feeding. According to EDHS (2011) report, complementary feeding practice is very low with different contextual determinant factors in Ethiopia. Desalegn (2015) also studied in South Ethiopia that more than half (50.9%) of mothers in Arba Minch introduced complementary food like cow's milk, fruits and vegetables after five months; because they thought that breast milk was insufficient.

When inappropriately prepared complementary food is introduced, the child may unable to eat the recommended amount or may take so long to eat that food, and the consistency or thickness of foods makes a big difference on how well that food meets the young child's energy needs (WHO, 2000).

2.4 Mothers' Knowledge, Perception and Practice of Complementary Feeding

Previous studies have shown that lack of adequate information about suitable foods and feeding practices is considered as a major cause of malnourishment than the shortage of food or money (PAHO 2003). According to the study feeding behaviors and practices are highly influenced by traditional views, awareness and attitudes. PAHO report also indicated that caregivers following their naive knowledge of child feeding used to give their young infants herbal extracts or leaves to heal abdominal pains, and avoiding colostrum's.

On an explanatory study by Ntini (1998) in Zimbabwe, mother's characteristics, infant nutritional knowledge, practices and incomes which impact the nutritional status of children under five years, the study find out that caregivers' awareness would enhance the nutritional status of young infants. Similarly, caregivers' understanding and perception of optimal feeding positively influence the nutrition and wellbeing of their children. In order to implement

successful strategies to fight poor nutrition, one should understand the immediate causes of such behaviors and the mothers' associated knowledge, perception and beliefs (Akua, 2011). On the contrary to the above findings, a study by Grace Kerly et al. (2008) on mother's knowledge and perception on nutrition in Indonesia. This study found that caregiver's attitude and awareness has no impact on the nutritional status of children less than five years of age.

A study by Kristi and Kendra (2013) in Greek has directly compared the caregivers' attitude of the infant's required food ingredients with optimal infant's diet quality. In the study it was found that 83 percent of mothers overemphasized the quality of their infant's food. Because these mothers in the study do not have the correct attitude of their infant's food quality and may not understand a need for improvement, the infant's would be at risk of malnutrition related illnesses.

According to the study done by Okolo (1999) on complimentary child feeding practices in Sub-Saharan Africa, cow's milk and other liquids like water were regularly provided to children after birth and from six months on mothers begin to provide gruels frequently. The study also reported that since eggs, fish, meat products and other nutritious foods are reserved for the head of the family, these appropriate complimentary foods are hardly given to young infants. Similar studies in Ethiopia by Dessalegn (2013) shows that 81(46.29%) of mother's in Jimma provided cow's milk to their young children before six months of age. Desalegn also revealed in his study that mothers gave traditional medicine like *'tenaaddam'*, water and butter to their infants as they considered them as preventive medicine against stomachache and others infectious illnesses.

However, WHO (2000) guideline indicated that providing liquid or any semi -solid food to infants before 6 months is not a recommended practice. According to WHO from six months on young infants will be ready to eat smashed and semi-solid foods. Though feeding breast milk might continue over two years, additional complimentary foods is usually given to young infants from six months to two years of age since it is a critical time for the promotion of optimal physical and mental growth for children. Taking the infants appetite and ability to eat in to consideration, mothers should increase frequency of meals based on the age of the child. When infants are at the age of eight months they can also eat snacks which are prepared specifically for children alone. By the age of one year, most infants can eat family foods together with the rest of the family; however one should not forget to remind the meals should contain nutrition and protein ingredients (WHO, 2000).

2.5Socio-Economic Implications of Child Under-nutrition and Complimentary Feeding

United Nation Economic Commission for Africa (2014) report demonstrates the depth of the consequences of child under nutrition in health education and labour productivity. UNECA estimates that 67 percent of the working-age population in Ethiopia is currently stunted. According to the study undernourished children are faced with the challenge of competing favorably in school due to their lower cognitive and physical capacities than children who were able to stay healthy in the early stages of life. Stunted children become less educated adults, thus making malnutrition a long-term and intergenerational problem (UNECA, 2014).

According to H. Alderman (2004) under nutrition leads to life- long consequences in children, which can impact their physical productivity later stages in life and participation in skilled employment, this loss in human capital will be reflected in a reduced productive capacity

of the population. The treatment of under nutrition and related illnesses is a critical recurrent cost for the health system. UNECA study also estimates that child under nutrition generates health costs equivalent to 0.5 percent of the total public budget allocated to health in Ethiopia. These costs generate a significant burden not just to the public sector, but to society as a whole and for treatment of underweight children in 2009 alone the estimated costs were ETB1.8 billion.

Based on the analysis of Demographic and Health Survey Data in 36 countries in South Asia, Sub-Saharan Africa, and Latin America and the Caribbean Smith et al. (2003) found that increasing the status of women had a significant, positive effect on children's nutritional status in all three regions. There is strong evidence that increasing women's social position in society can reduce child under nutrition.

2.6. Psychosocial and Emotional Aspects of Complimentary Feeding

According to UNICEF (2013) globally over 200 million children do not reach their developmental potential in the first five years because they live in poverty, and have poor health services, nutrition and psychosocial care. Studies show that providing appropriate complimentary foods to young infants has long term benefits for the development of mental, psychomotor, cognitive, and behavioral functioning of the infant.

Early childhood is the period of life when infants are most dependent on secure, responsive relationships with others (mothers, siblings and peers), not just to ensure their survival, but also their emotional security, social integration and cognitive and cultural competencies. It is also a critical time in acquisition of skills and capacities, ways of relating, communicating, learning and playing etc. (UNICEF, 2013).

According to (Pollitt, 1990) young children's development is especially sensitive to negative impacts from early malnutrition, deprivation of care and responsive parenting, or disturbed and distorted treatment.

Chapter Three

Research Methods

This chapter presents the methodology of the study under the following headings, research design, research strategies, study area, sampling technique, inclusion criteria, target population, sampling frame and size, data collection procedure, ethical consideration, trustworthiness of the study, data collection tools, and analysis. According to Polit and Hungler (2004) research methods, are steps, procedures, and strategies for gathering and analyzing the data in a research investigation.

3.1 Research Design or Approach

According to Creswell (2009) a mixed methods design is useful to capture the best of both quantitative and qualitative approaches associated with field methods such as observations and interviews (qualitative data) were combined with traditional surveys (quantitative data). For example, a researcher may want to both generalize the findings to a population and develop a detailed view of the meaning of a phenomenon or concept for individuals. In this research, the inquirer first explores generally to learn about what variables to study and then studies those variables with a large sample of individuals.

3.2 Rationale for Application of Mixed Methods

The rationale for mixing both quantitative and qualitative data within one study is because one findings will elaborate the other findings and this helps to fully understand details of a situation (Creswell, 2009). Therefore, in this section, the researcher argued for the suitability of

chosen research framework both with the combination called mixed approaches method and with each isolated method.

At the first consideration, mixed approaches observations and interviews (qualitative data) are combined with traditional questionnaire surveys (quantitative data) with the hope of reducing limitations of approaches and methods if they are used alone; the biases inherent in any single method can neutralize the biases of other methods. Alternatively, one method can be mediated within another method to provide insight into different levels or units of analysis (Tashakkori and Teddlie, 1998). When used in combination, quantitative and qualitative methods complement each other and allow for a more powerful analysis, taking advantage of the strengths of each (Tashakkori and Teddlie, 1998).

The researcher believes that mothers knowledge, perception and practice on child nutrition and complimentary feeding is the big collection of traits that influenced by educational status, emotions, time, income, food availability and accessibility. Therefore, knowledge, perception and practice on child nutrition can best be understood when triangulated by data collected from different actions in their context.

At the second consideration, the reasons of using mixed methods is because it is a useful strategy to have a more complete understanding of research problems/questions as such it helps in explaining quantitative results with a qualitative follow-up data collection and analysis. In this approach, a researcher collects both quantitative and qualitative data, analyzes them separately, and then compares the results to see if the findings confirm or disconfirm each other.

3.3 Target Population

In Tara Gedam Kebele, there are 17 'Gotts'/clusters and 1540 mothers who are feeding their under two years children and whose age range is in between 18-60. Three 'Gotts' were purposefully selected due to their relative crowd population of feeding mothers. Among the total mothers of 1540, 80 mothers were selected by using availability and convenience sampling (Libokemkem Woreda Health Bureau Report).

3.4. Research Strategies

According to Creswell (2009), using sequential procedures is essential, because it helps the researcher to seek and elaborate on or expand the findings of one method with another method. This may involve beginning with a qualitative method for exploratory purposes and following up with a quantitative method with a large sample so that the researcher can generalize results to a population. Alternatively, the study may begin with a quantitative method in which theories or concepts are tested, to be followed by a qualitative method involving detailed exploration with a few cases or individuals.

3.5 Selection Criteria for the Study Area and Population

According to EDHS (2014) the percentage of children stunted is higher in rural areas (42 percent) than in urban areas (27 percent) and the prevalence of malnutrition in Amhara Region are among the highest in the country. Tara Gedam kebele is found in North of Amhara rural areas. Tara Gedam, which is one of the kebele in Addis Zemen area of libokemkem woreda, is the site that the study is base. The other most important reasons for conducting this study in Tara Gedam kebele include the following:

A. The researcher is familiar with the study area and expects high response rates and agro-ecological zone or it is a more fertile area than other kebeles around which helps the researcher to find out if there is withholding of food or not to their children because of lack of knowledge and perception, not lack of food.
B. The woreda is diversified in terms of socio-cultural setting and Tara Gedam kebele is the most populated area of the woredas with large family size norms which in one or another way affect the practice of child feeding among mothers.
C. According to my knowledge there are limited studies on knowledge, perception and practice of mothers on and complementary feeding in the study area and the finding may fill these gaps.

The study is confined only to Tara Gedam kebele which is found in south Gondar zone in Ethiopia because of limited time and cost, and to avoid data saturation. The study area is located at about 630 kilometers away from Addis Ababa.

3.6 The Sample Size

The participants are Tara Gedam mothers whose age range is from 18 to 60 years old. The mothers are currently practicing complementary feeding from six months to two years. According to Libokemkem Woreda Health Bureau Report, the total population of Addis Zemen area is approximately 55986 and among these Tara Gedam kebele holds around 7571, and the kebele has 17 'gotts'/clusters which are: Wiromeret, Ezkiyas, Naqo, Abiskerem, Tachtara, Gorkele, Asiba, Tibabosie, Tihod, Kibkab, Qwala, Kidanmihret, Embirawure, Washaendryas, Dengwa, Agwatmafsesha, and Telbaguwala. The total number of mothers who has children

between six months and two years old in Tara Gedam kebele there are 1540 mothers who are feeding their children from six months to two years..

According to Libokemkem Woreda health office, it is very difficult to have the exact number of mothers who have children from six months to two years in the kebele. But the information from kebele health extension workers indicate that there are around 1540 mothers who have children between six months and two years in Tara Gedam kebele. Among 1540 mothers of 80 mothers who fulfilled the sampling criteria were taken as sample using convenience sampling. The setting was selected using simple random sampling from among the list of three clusters/*gotts*. In Naqo there are 58 mothers and among these 27 mothers were selected, in Abiskerem 32 among these 14 mothers and finally Tach Tara there were 85 mothers among these 39 mothers were selected through population proportion.

3.7 Sampling Techniques

The sampling technique that was used is non- probability sampling in which case respondents meeting the required criteria and having children from six months up to two years of age has been selected by using convenience sampling. A no probability sample (or convenience sample), in which respondents are chosen based on their convenience and availability (Babbie, 1990). The researcher used the growth and monitoring data's found in Tara Gedam kebele health post to reach the respondents.

3.8 Instruments of Data Collection

The instruments of data collection includes:-

3.8.1. Interview.

According to Creswell (2009) interview is an interchange of views between two or more people on a topic of mutual interest, which focus on the centrality of human interaction for knowledge production, and emphasizes the social situations of research data. Eight mothers were selected for FGD through criteria sampling. The researcher conducts face-to-face interviews with two health extension workers. These interviews involve unstructured and generally open-ended questions that are few in number and intended to elicit views and opinions from the participants. It includes seven items which were developed by the researcher.

3.8.2. Focus Group Discussion (FGD).

The idea behind qualitative research is to purposefully select participants that will best help the researcher understand the problem and the research question (Creswell 2009).The purpose of focus group discussion is to obtain in-depth information on concepts, perceptions and ideas of a group. The idea is that group members discuss the topic among themselves, with guidance from the facilitator. The researcher purposefully selected 8 mothers for the proposed study who full fill the criteria that have infants between six months to two years and arranged group discussion in Tara Gedam kebele based on their willingness and availability to participate. All participants involved in the discussion are experienced mothers who have children between six months to two years. The research assistants who are a degree and diploma holder were selected and got half day training about the whole idea of the research. The researcher worked in pairs, with one conducting the interview while the other made notes and recorded the discussion on audiotape. The discussion guide was organized around specific topics and listed a series of open-ended questions for each topic. It has four items developed by the researcher and checked

their appropriateness to the culture studied. Topics included the woman's experience on the amount, frequency and variety of complementary foods given to children below two years, the time when to give their children the first complementary foods, their experience and the feeding situation of the child after six months in the area, the kind of foods they think are good and suitable complementary foods, and their opinions and practices on specific issues regarding childcare and complimentary feeding. Facilitators were encouraged to ask follow-up questions during the discussion to elicit details about infant feeding experiences.

3.8.3. Questionnaire.

This instrument is relevant to my study in that respondents can easily choose from multiple answers that were listed. The questionnaire items have been used to collect data on the respondent's socio-demographic data, source of information, awareness /knowledge, perception as well as practice of mothers who have children below age of two years and are presently introducing /providing their children with complementary foods. It consists of twenty six items developed by the researcher in line with the review literature and some were adopted from the previous studies. Among these nineteen items and seven were subscales developed by Rosenberg's to measure perceptions of mothers about complementary feeding.

In the line of investigating the perception of the respondents towards complementary feeding 20 close- ended items were employed, seven items for complementary feeding perception. Each item was followed by five alternatives: Strongly agree, agree, don't know, disagree, and strongly disagree.

Thus regardless of the direction of the statements, the higher mean value indicates general agreement with the items while lower mean value represents general disagreement with the propositions. Here Rosenberg's five point attitude scale comprising seven items for complementary feeding was checked by two PHD holders and senior researchers and employed so as to measure mothers' perceptions on complementary feeding.

3.9. Data Gathering Procedures

The quantitative data was collected by house to house survey. The researcher met the participants at their homes for collecting the data. After explaining the purpose of the study, ensuring the confidentiality and obtaining the consent, the tools were administered to the participants. As it has been mentioned so far the study was conducted in three 'Gotts' of Tara Gedamkebele, Addis Zemen area.

Concerning the focus group discussion participants who qualify the requirement like their children are between six months to two years were participated. The focus group discussion was held in open space setting for two hours. The focus group discussion was held among 8 mothers in Tara Gedam and took one hour and forty five minutes and the responses were recorded by the sound recorder with the consent of the participants.

3.10 Methods of Data Analysis

Both quantitative and qualitative date collected in parallel, were analyzed separately and then merged by triangulation. The methods used for the quantitative analysis is descriptive statistics such as frequency, percentages. For the qualitative analysis: The raw data/transcripts that have been obtained through focus group discussion (FGD) and interview was analyzed by

means of qualitative approach. The recorded raw data were organized and coded in to themes. Coding is the process of organizing the material into chunks or segments of text before bringing meaning to information (Rossman and Rallis, 1998).

3.11 Ethical Considerations

Mothers were given a full explanation about the purpose of the study and the participation was completely optional. The mothers who participated in the study received the awareness session regarding infant feeding issues. All the study participants were reassured that they would be anonymous. Names or any personal identifiers were not recorded. Respondents were clearly told about the study and the variety of information needed from them. They were given the chance to ask anything about the study and made free to refuse or stop the interview or filling questionnaire at any moment they want if that was their choice.

The researcher needs to protect their participants, guard against misconduct, promote integrity, develop trust and personal privacy (Isreal and Hay, 2006). The focus group discussion was conducted in private with participants at Tara Gedam kebele health center to minimize the risk of participant's argument with family members and other respected people in the community. The researcher developed an informed concept form for participants to sign before they engaged in the research. The concept form acknowledges that participants' right would be protected during data collection (Sarantakos, 2005). All study participants were reassured that the recorded documents would be used only for this study and wouldn't be shared.

3.12 Trustworthiness of the study

Validity is one of the strengths of qualitative research and it is based on determining whether the findings are accurate from the standpoint of the researcher, the participant, or the readers of an account (Creswell 2009). Terms abound in the qualitative literature that speaks to this idea, such as trustworthiness, authenticity, and credibility (Creswell, 2009). According to Lincoln and Guba (2000) a procedural perspective that are recommend for research proposals is to identify and discuss one or more strategies available to check the accuracy of the findings. The researcher had actively incorporated validity strategies into their proposal. The use of multiple strategies, and these should enhance the researcher's ability to assess the accuracy of findings as well as convince readers of that accuracy.

The researcher in this study has credible experience with the populations that are going to be studied and the methods that will be employed. The researcher has an academic background in psychology and health, participated in studies utilizing health promotion techniques and has experience investigating diverse populations and their related challenges. The researcher develops an in-depth understanding of the phenomenon under study and can convey detail about the site and the people that lends credibility to the narrative account. The more experience that a researcher has with participants in their actual setting, the more accurate or valid will be the findings (Creswell, 2009).

CHAPTER FOUR

Findings and Analysis of Data

4.1 Demographic and Socio-Economic Characteristics of Respondents /the Mothers

In this section, the selected household characteristics of the survey participants are presented to provide general demographic information (age, income, educational status, etc.) about the sample household mothers.

4.1.1 Background information about respondents.

Table 1-Respondents Age

Mothers age	Frequency	Percent
18-24	18	22.5
25-45	50	62.5
46-60	12	15

Table 2-Occupation Type

Occupation Type	Frequency	Percent
House Wife	70	87.5
Petty Trade	7	8.75
Government Employee	3	3.75

Table 3- Monthly Income

Monthly income	Frequency	Percent
<200 birr	24	30
201-500	48	60
501 and above	8	10

It is evident from the above (Table 1), between 25-45 years are the most frequently occurring age categories. 18 (22.5 %) of the respondents are mothers with age range of between 18-24 years. Smaller number of respondents 12 (15%) are found in the age range between 46-60.

With regard to Occupation, most of the respondents (87.5%) were housewives followed by petty trading (8.75%) and government employees (3.75%).

In relation to monthly income, as indicated by the above (table 3), majority of the respondents (60%) earn monthly income between 201-500 birr. 24 (30%) of respondents earn less than 200 birr monthly. Only ten percent of the respondents earn birr 501 and above. It indicates that most of Tara Gedam kebele mothers are found in low socio-economic status.

Table 4- Educational status

Educational Status	Frequency	Percent
Couldn't read & write	66	80.5
Read and write/		
Elementary	8	10
Secondary	4	5
Certificate	2	2.5
Total	80	100

Table 5- *The Age of Children*

Age of the child	Frequency	Percent
6-12 months	59	73.7
13 months-24 months	14	17.5
25 months-3 years	7	8.75
Total	80	100

Concerning mothers educational status, majority of the respondents, over 80.5% haven't got any form of formal education and while none of the respondents have attained education above diploma. Ten percent of the respondents attended can read and write, five percent secondary education and two and half percent certificate/diploma.

Regarding the age children, 73.5% of children between the age of six to twelve months, while 14 respondents out of 80 reported that their children are aged between 13 months and 24

months. Only seven mothers reported to have children between 25 months and three years of age. It implies that the researcher met the right respondents as such almost all mothers have children from six months to two years.

4.2. Knowledge, Perception and Practice of Mothers' on Complimentary Feeding

Under this section mothers' source of information on complimentary feeding, mothers' perception on CF and practices of Tara Gedam mothers' on complimentary feeding were presented.

Table 6

Sources of Information about Complementary Feeding

Source of information	Frequency	Percent
Husband	5	6.25
Elder mothers	18	22.5
Radio/TV	5	6.25
Cultural experiences	2	2.5
Health extension workers	43	53.75
No body	7	8.75
Total	80	100

The above table (6) indicates the sources of information about complementary feeding. The study has shown the influence of family and community including elder mothers, relatives, health institutions and media in providing information on child feeding practices. The role of

health extension workers in providing information to mother's about complimentary feeding was found to be (53.75%) followed by elder mothers (22.5%). The health extension workers in the interview also explains that the knowledge, perception and practice of mothers in the area has an amazing improvement after the health extension workers started to give training to mothers in the kebele about child nutrition and complimentary feeding.

4.2.1.Knowledge of mother about complimentary feeding.

The questions were forwarded to assess the knowledge of mothers about complimentary feeding. The major themes of the question were related to the age of starting additional food, whether the respondents know the advantage of complimentary feeding, their awareness on the initiation of complimentary child feeding, about preparation of food for the child from different crops and whether they know what complimentary feeding is all about.

Table 7

Respondents Awareness on Complimentary Feeding in Tara Gedam kebele, South Gondar

Variables		Frequency	%
Awareness on the initiation of complimentary child feeding	From 3 months after birth	6	7.5
	After 6 months	61	76.2
	After 1 year	9	11.25
	I don't know	4	5
	Total	80	100
Know what complimentary feeding is	Yes	72	90
	No	8	10
	Total	80	100
Know Advantage of preparing food from different crops?	Yes	67	83.75
	No	13	16.25
	Total	80	100
Early initiation of complimentary foods on sex of the child	Male	36	45
	Females	25	31.25
	Other\treat both sex in same way	19	23.75
	Total	80	100

Based on the above themes, the overall knowledge of mothers on complimentary feeding was found to be good among the women who participated in this study. Majority of respondents (74.4%) have awareness on the initiation of complimentary child feeding and about (87.8%) mothers also know what complimentary feeding is. In the quantitative study it was found that high proportion of mothers; approximately (83.7%) know the advantage of preparing food from different crops. In the qualitative study mothers also discussed about variety of good and suitable complementary foods that their children should eat. Porridge and eggs were often mentioned

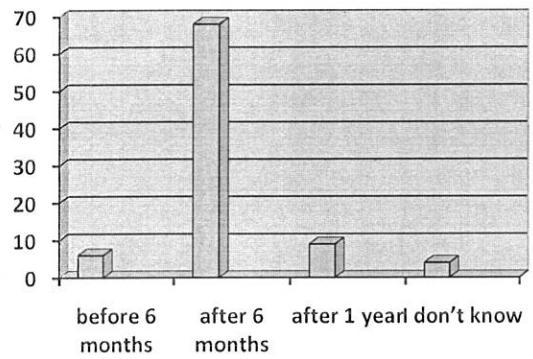
when mothers listed good foods. They were not considered especially healthy, rather they were regarded as easy to get at home and prepare and also it is something that would please children. One mother in the FGD said: "*I don't give salt and spicy foods to my infants since they are not suitable foods and young infants can't tolerate them, rather I mix different cereals and provide them in the form of gruels and porridge*". In contrary one mother reported: "*I give the same kind of food the whole year and no difference at all during summer or rainy time". 36 years old mother from the group discussion.*

Animal products were hardly mentioned in the discussion. However mixed cereals like one portion of beans and two portions of *eragrostis teff, qwanta*/dry meat and fruits came up in the discussions about foods mothers would like to prepare for their children. But fish is not widely available in the nearby market and it is not among the common food items mentioned in the group discussions. Meat, fish and egg were occasionally mentioned in the group discussions. Milk mixed with gruel was also thought to be good for children. It might be because of the fact that fish, meat and milk are consumed too rarely that they didn't occur to the mothers when listing good foods. Therefore, the lack of mentioning does not necessarily imply that they are considered to have a negative or even neutral effect.

Regarding awareness on the early initiation of complementary foods among both sexes, 36(45%) of participants replied that males should start complementary foods earlier for (they believed it helps them grow rapidly) the reason of making male infant grow fast. However in the qualitative findings all mothers agreed that sex of the child do not affect the early initiation of complimentary feeding. One mother from the group discussion said: "*I treat all my children, both male and female in the same way and I believe all mothers here agree with that*".

Out of the 80 mothers that participated in the study 67 (83.7%) had awareness of complimentary feeding and its advantage for their children during the first six months while some of them 13 (16.2%) were not have a knowledge at all.

Figure 1-*Time to Start Complimentary Foods*



As it is evident from figure 1 above, majority of the respondents were known as the complimentary feeding is stared at six months of age (86 %) but some responds as it was stared before six months (7.5%). The finding implies that most of the research respondents have favorable knowledge on proper child feeding. Qualitative findings also showed that mothers who had basic knowledge about dietary importance of complimentary feeding do not early introduced complementary food to their infants. Thirty two years mother respondents on FGD said:"*From six months onwards I give my infant gruels, porridge and Enjera with shiro sauce and some times in the morning I provide him bread and tea. I buy variety of fruits and vegetables from the market and feed them as well".*

4.2.2 Perception of mothers on complementary feeding.

The questionnaires have also entertained different questions aimed at assessing the level of maternal perception towards feeding children. The researcher prepared questions that include their knowledge on the advantages of complimentary feeding after six months of age, whether the family gives priority for children during feeding, when they gave priority, what prevented them from preparing food from different crops; weather a family had given special concern for child feeding, reasons for introducing complimentary feeding and where do they take their children when they are sick.

Table 8

Perceptions of mothers towards complementary child feeding

No	Statement	SA	%	A	%2	D	%3	SD	%4	DK	%5
1	I provide complementary foods because it makes my child fat	14	17.1	14	17.1	27	32.9	20	24.4	5	6.2
2	I have enough money to buy complementary food items instead of suffering myself by breast feeding	5	6.2	29	36.2	16	20	28	35	2	2.5
3	My breast milk is not sufficient to my child so I like to introduce complementary foods to my child	11	13.7	33	41.2	10	12.5	20	25	7.5	
4	Since others family members can help me by providing complementary foods I like it	10	12.5	39	48.7	8	10	20	25	3.7	
5	I give priority for the children to eat their food	10	12.5	31	38.7	11	13.7	25	31.2	3	3.7

6	Providing my child with complementary foods make him/her healthy and strong	11	13.7	43	53.7	6	7.5	16	20	4	5
7	After six months in addition to breast feeding complementary foods are preferable.	6	7.5	41	51.2	11	13.7	19	23.7	3	3.7

Note: SA =Strongly Agree, A=Agree, D=Disagree, SD=Strongly Disagree, DK=Don't Know

As indicated at above table (10) most respondents (24.4%) disagree with the item that states about complementary foods make the infants fat, while (17.1%) support the attitude that complimentary feeding helps children become fat. Some of the respondents (36.2%) reported that they do not want to breastfeed their infants, because they have enough money to buy additional foods and feed to their children.

As presented in the above (table 4), common reasons for starting complementary feeding, are perceived breast milk insufficiency, 41.2% of the respondents argued that they introduced their child with complementary foods because their breast milk is no longer sufficient. The other (24.4%) of the participants replied that even if their breast does not have sufficient milk they never introduced their new born infants with complementary foods. FGD with mothers similarly showed that breast milk insufficiency is often the most common reason for early introduction of complementary foods. Mothers often evaluate this based on child's crying. Mothers also make the decisions to start complementary feeding based on the child's perceived appetite. Good appetite of the child is often seen as a sign of good health or as a need to have more food on the part of the child. Twenty years old mother said: *"I start to give additional food to my infants when my breast has not producing enough milk and I feed my infant only until he is six months"*.

Most of the respondents (67.4 %) have knowledge on variety of food help the child for growth and development while some of them (27.5 %) were not have knowledge at all. Similarly, in the FGD mothers also mentioned the impact of not giving nutritious food to their children as a cause that leads to various diseases and stunting. However, mothers said that feeding children with variety of foods could only be possible, if the mother had money.

In the FGD regarding the advantage of complimentary feeding on the physical and mental development of infants, most mothers explained by arguing that a child who has not breast fed will not have strength. Moreover, they also pointed out that if the children do not get additional food after six months of age, he/she gets physically or mentally weak. Thirty years mothers said: "*If you don't give the child porridges, oranges, eggs or any other foods which are rich in vitamins, your child will become sick and stunted*".

From the total of 80 respondents, 19 (23.7%) disagreed with the idea that complimentary feeding is preferable after six months in addition to breast feeding. On the other hand 41 research participants (51.2%) reported the importance of complementary foods along with breastfeeding after children become six months old. On the other hand from the total respondents, 80, 31 (38.7%) gave them priority for their children to eat first before the other family and 25(31.2%) did not give priority for their children to eat first. In contrary to the above findings one mother in the FGD perceives that providing variety of foods may harm the baby and milk is adequate to the normal growth and health of the baby. Gruel, cow's milk, porridge and *shiro*, were the most common and culturally dominate foods for the children aged 6-24 months. These foods were the foods perceived by caregivers as first baby foods. Participants mentioned that these foods are

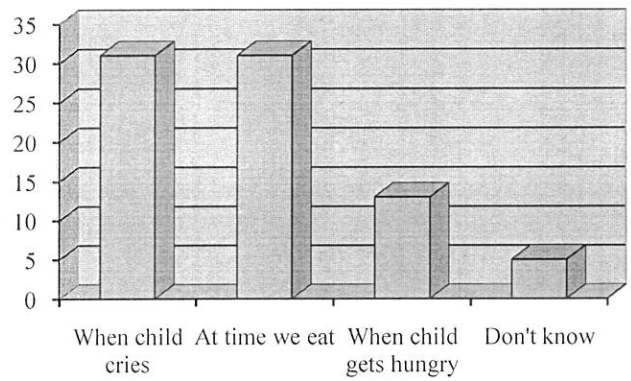
light and easily digestible foods for children at this age. Twenty nine old mother from the discussion reported the following:

"I breast feed my child until he is ten months and give porridge prepared from maize from six month onwards. The porridge prepared from maize, locally called 'genfo' is given to infants starting from the age of six months. The traditional food 'genfo' is not considered suitable for children before six months because it's believed to be 'dry' hence difficult to swallow".

Family food (food that prepared for the whole family) like bread with tea, *Enjera* with *shiro*, are the foods that were listed more after the above foods for the age group after one year. This indicates that when children turn one year, they start to be given family food. Majority of the respondents mentioned that at this age, families do not worry to prepare special foods for the children because they perceive that the children at this age can eat family foods.

Figure 2

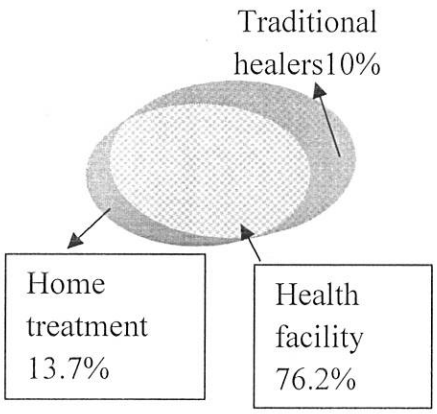
When Do They Usually Feed Their Children?



With regard to questions as to when they feed their children, 31 participants (38.7%) responded they provide food to their children whenever the children cry. Similarly equal number of respondents 31(38.7%) reported that they give food to their children when they (parents) eat. 13 of the research participants said they feed their children when they think they are hungry. The remaining five respondents said they just "don't know". Qualitative findings also support the quantitative data in that almost all mothers in the discussion agreed that sign of hunger like moving hands and crying is used as a sign to know if infants are in need of food or not.

Figure 3

Places Where Participants Take Their Children for Treatment When They Get Sick



From total of 80 respondents 61(76.2%) visited health institution when the child gets sick and (23.7%) did not visit the health facility. In the qualitative finding health extension workers were also mentioned the observed sickness or health complication in the area in relation to complementary child feeding caused by harmful traditional practices. They mentioned that they have observed that some mothers give traditional medicine like '*Aregeresa*' (kind of leaf) to their

children when they suffer from stomach-ache believing that it heals the children from their sickness.

"We haven't observed many complications as such but there are cases that mothers sometimes provide solid food like banana and egg for the first time without smashing and causes vomiting". Tara Gedam health extension worker.

Obviously the main reason for relying on traditional medicine was because it is easily accessible and cheap. It implies that the health extension workers should do more tasks in teaching mothers that they should take to health centers any time their infants get sick.

4.2.3 Mothers' practices of complementary feeding.

The researcher also prepared and adopted different questions from previous research to assess the practices of mothers when it comes to complementary feeding of their children. The questions in this category included whether they give food/fluid for their children before they reach six months of age and whether they prepare food from different crops; do they wash their hands before feeding their children; as well as how frequently they feed their children on daily basis.Therefore, mothers' knowledge, perception and practice on child feeding and nutrition were assessed.

Table 9

Initiation of mothers on complimentary feeding

Initiation/practices of mothers on complementary child feeding	Frequency	Percent
2 months after birth	7	8.7
4 months after birth	6	7.5
6 months after birth	67	83.7
Total	80	100

All mothers have already started complementary diet to their children. From the total of 80 research participants, 7 (8.7%) reported to have given food or liquid before their children became two months age and only 6 (7.5%) have given their children liquid or fluid before four months of age. However, the majority of the respondents (83.7%) started complementary diet to their children after six months of age. Similarly, in the group discussions mothers were asked the appropriate age to start complimentary feeding. Participants mentioned that the appropriate age to start complementary feeding was after six months on average, which was similar to the age they reported their youngest child have been, when s/he was given the first foods. In the group discussion, many mothers claimed that they start complementary feeding when the child is six months old. One mother in the discussion reported the following: *"From six months on I start giving additional food like 'shirofitfit' and 'genfo' to my children and I will continue until two years"*.

Table 10

The First Complimentary Foods Given to Children in Tara Gedam Kebele in 2016

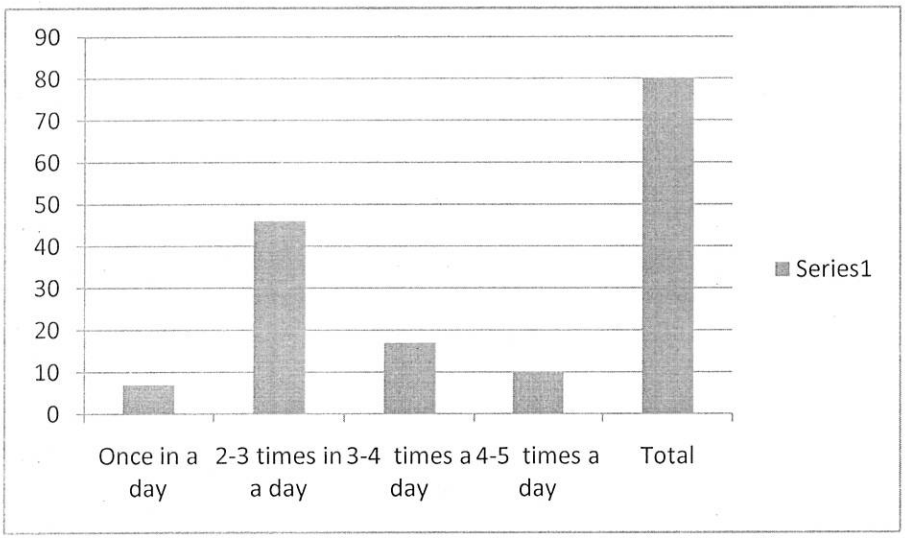
The first complimentary foods given to children	Frequency	Percent
Cow's milk	26	32.5
Gruels/*atmit*	23	28.7
Porridges/*genfo*	21	26.2
Other	10	12.5
Total	80	100

As portrayed in the above table (9) approximately about 87.5% of respondents had used cow milk, porridge and gruel as complementary food for their children. From these (32.5%) gave cow's milk as the first complementary food to their infants.. It is also reported in the qualitative findings that some mothers give water to their infants alongside with milk and gruel. A 36 old mother reported the following: *"I give cows' milk mixed with sugar to my child because it helps him for digestion".*

In-depth interview with the health extension workers however, admitted the fact that there are some mothers who give water, butter and milk before six months which might lead to children to be vulnerable to infections and diseases. This implies that though most mothers believe they have sufficient knowledge on complimentary feeding, however their practice is not appropriate.

Figure 4

Practices on the Frequency of Complementary Child Feeding



According to figure 4 above, most mothers feed their children two to three times per day (57.5%). Those who provide complementary foods to their infants three to four times a day account for 21.2% of the total respondents. Only 8.8% of the respondents replied that they give their infants complementary foods once a day. The rest12.5% of the respondents said they give food to their children four to five times a day.

The present finding implies that children below two years in the area do not get enough food but now days it has been improved and there are some mothers who can give food to their children four to five times in a day. *"I feed my infants four times a day: one time porridge and fruits, other time 'Enjera with shiro wot' which I buy from the local market". A 24 years old mother from group discussion.*

On the contrary other 34 years old mother in the discussion said: *"Feeding infants only three and four times a day is not enough, because as a mother I always feel children need food often may be within an hour difference but shortage of time and food availability matters"* and one can easily observe the psychological distress on her face that shortage of money and time affects them to feed their children appropriately.

4.3 Maternal Hygiene Practices

Table 11

Participants Hygiene Practices

Maternal hygiene practices	Frequency	Percent
Washing hands before eating	21	26.2
Before and after feeding children	43	53.7
After working from outside the house	9	11.2
Before food preparation	7	8.7
Total	80	100

Among the total respondents 53.7% reported washing hands before feeding the child, and 26.2% of the respondents wash their hands before eating. Eleven percent of mothers washed hands during food preparation (11.2%) and after working from outside the house (8.7%). In the

group discussion mothers also mentioned that until one year they wash their hands before feeding them and, but after one year they wash their infant hands and eat by themselves.

One mother in the group discussion said: "*my child for example got teqmat/diarrhea once; it was because he ate without washing his hands*".

In the interview the health extension workers were also described the sanitation and hygienic practices in preparation of complementary child foods in this area is poor.

"The sanitation and the hygienic practices in the preparation and feeding of complementary foods are not good. There is shortage of water and their toilets for example are not clean and some mothers also feed their children without washing their hands. And we have received reports of ''Atet'' or Diarrhea in the recent time in the kebele that was highly related with bad hygiene and sanitation practices".

Chapter Five

Discussion

The following chapter reflects the present results against the findings in previous studies. The researcher has analyzed the present finding in line with related literature on the knowledge, perception and practices of mothers on complimentary feeding, and secondly socio-economic, psychological and behavioral implications of child feeding have been discussed.

5.1. Knowledge, Perception and Practices of Mothers about Child Feeding

Awareness about the initiation of complementary child feeding is concerned, most respondents indicated that they started giving complementary foods to their children after six months of age.

This finding was also supported by WHO global infant feeding recommendations; WHO recommends that complementary feeding (solid food) should be started after six months. On the other hand, small number of the participants 11% replied that the infants were given complementary foods after one year of birth.

The timing of the introduction of solid food to an infant's diet is important for nutritional and developmental reasons. According to WHO global infant feeding recommendations (2000) early introduction of complimentary food before the age of four months an infant's bowel is immature therefore they are not able to digest and absorb food normally. There is evidence of increased risk of inflammation of the skin if complementary foods are given before four months and evidence of increased risk of Type- 1diabetes if foods containing gluten are given before the

age of three months. Infants who receive complementary foods too early are more likely to suffer from respiratory and gastrointestinal illness compared to those given complementary foods at a later stage. There is also evidence, to suggest that infants who receive complementary foods early are more likely to be overweight later in childhood (Kanoa J. B., 2011). Interestingly only (7.5%) of mothers reported that they gave complementary food to their children before six months because of its advantage for them.

Tara Gedam mothers' responses on perception towards complementary child feeding on the developmental effects about (32.9%) were not agreed with the item that states about complementary foods make the children fat. This is similar with the research finding by (Ekelund, 2006) found that there is highly significant positive associations between growth during infancy because of complementary foods and the risk of being fat/overweight later in life.

Regarding to the process of providing complementary foods, almost half of the respondents (48.7%) reported that they agreed with the item stated as since other help them in providing complementary foods because others family members can help them in feeding it. This finding was supported by Schwartz H.L (2008) complementary feeding is the most complex process that mothers should seek support from other people.

Concerning the issue of complementary foods with health effect, over half of the participants (53.7%) reported that complementary foods make their children healthy and strong. The finding is supported by WHO (2000) recommendations in which appropriate complimentary feeding is very important for the physical and mental development of young children, but if young children are not appropriately feed they would be at possible risks.

About 60% of the respondents agreed that complementary foods in addition of breast milk after six months are more preferable. This finding is consistent with the study conducted by WHO/UNICEF (1998) infants are developmentally ready at about six months to introduce complementary in addition to breast milk . Thus, the consensus is that six months is the appropriate age at which to introduce complementary foods to infants which is very important for their physical and cognitive development.

In the present study, (83.7%) of mothers timely started complementary feeding at six months to their children, while small number of participants started complimentary feeding diet to their children early and beyond six month . This is consistent with the World health assembly (WHA) recommendation that mothers should start to feed their infants with appropriate complementary foods from about the age of 6 month onwards (WHA, 1999). This observed difference could be related to good knowledge and the perception the community on infant and young children feeding system that found in the study.

According to the present study poor practices such as mothers gave cow's milk as the first complementary food to their infants were common in this study, as was the case in previous studies undertaken in Jimma by Tsedeke (2015) the most frequently given complementary diet to infants is cow milk which has low nutritional value for the children. Findings from this study also confirm past research done by Desalegn (2013),about 42.9% of mothers in Jimma early introduced complementary food before 6 months. In his study Desalegn reported that a large number of mothers, 46.29% and 53% provided cow's milk and yogurt before six months respectively. However according to Okolo (1999) in other parts of the world gruel is given regularly as the first complementary foods to infants.

In the present study the frequency of providing children with complementary foods, over half (57.5%) of the respondents provide foods two to three times a day. This finding is in contrast to the WHO (2000) recommendation in which when the infant becomes six to eight months of age and they should get food three to four times per day.

5. 2 Socio-Economic, Psychological and Behavioral Implications of Child Feeding

The present study shows that most mothers in Tara Gedam kebele do not feed their children properly in their early formative years and the poor practice on child feeding has an impact on socio-economic and psychological development in later adult life. This finding confirm with UNECA (2014) report in that maltreated children faces a challenge of school competition and low labor productivity in later years.

In the present finding most mothers' in Tara Gedam kebele were in low socio-economic status and it has a strong impact on their infants' nutritional status. Similarly Smith et al. (2003) found that improving the status of women had a direct impact on children's nutritional status in Sub-Saharan Africa and other regions of the World.

In the present study though most mothers believe that appropriate complimentary feeding has an advantage on the physical and mental development of their children, in reality their practice were found poor. However studies show that providing appropriate complimentary foods to young infants has long term benefits for the development of mental, psychomotor, cognitive, and behavioral functioning of the infant (WHO, 2000). WHO also demonstrates that appropriate child feeding in the first two years are critical time in acquisition of skills and capacities, ways of relating, communicating, learning and problem solving.

In conclusion, the barriers to optimal child feeding practices in Tara Gedam villages are poverty, mothers' sometimes poor knowledge of appropriate complementary foods, maternal time constraints or work over load, custom of family meals, access to some nutritious foods and finally access to healthcare and child feeding counseling. Some of these barriers could be altered through education, but others would need substantial changes in the underlying determinants of poverty.

Furthermore, this study has also revealed many possible enablers such as mothers' relatively good knowledge of some child feeding recommendations, availability of local nutritious foods, lack of food taboos in the villages and mothers' decision-making power in the household. . Interestingly, most mothers have agreed that they can prepare complimentary foods to their children from variety of cereals and legumes that they have at home. Surprisingly, mothers in the group discussion claimed that gender does not affect their feeding practices at all and all in all they have good perception on child nutrition and complimentary feeding. These enablers should be reinforced in addition to tackling the causes of poor child nutrition and complimentary feeding practices.

Chapter Six

Conclusion, Implications, Recommendations, Strength and limitations

6.1. Conclusion

This study revealed the mothers knowledge, perception and practice on child nutrition and complementary feeding were relatively good in the study area. However the practice is poor, and much has needed to be done to improve their knowledge, perception and practice on additional complimentary feeding. Though majority of mothers in Tara Gedam Kebele provide complimentary foods, the age they start complimentary foods and frequency of complimentary feeding considerably varies among mothers.

Based on the analysis of the data, the knowledge and practices of child feeding is affected by certain demographic and socio-cultural factors such as education, time and family income. Maternal education was significantly associated with their knowledge and practices of child nutrition. As the educational level of mothers/caretakers increase the knowledge/practice of child nutrition particularly frequency of complimentary feeding and age at which complementary food introduced also improved.

Besides, the study has revealed that perception of mother's towards complimentary feeding from six months of birth was relatively good (76.2%) among Tara Gedam kebele women who participated in the study which indicates that knowledge is an important factor that influences perception and practices in complimentary feeding. On the other hands, about 7.5% mothers has initiated complementary feeding before six months of infants life, while 11% introduced complementary feeding after12 months of the infants life.

The study also revealed the most commonly perception of mothers towards complimentary feeding practices among mothers. Accordingly, about 17.1% of mothers wrongly perceived that they provide complementary foods because it makes their child fat. About 41.2 % like to introduce complementary foods to their child because their breast milk is not sufficient. Besides, 48.7% like in providing complementary foods to their children since others can help them.

The majority of Tara Gedam mothers started the complementary diet at appropriate age to their children. However the most frequently used diet for complementing was cow's milk followed by '*shirofitfit*' which have low nutritional value to the baby and only 46.5% of children fed more than four times per 24 hrs.

Interestingly, in the current study, poor feeding practices were recognized by the HEWs, as being what put children at risk of malnutrition. Ignorance or lack of awareness and availability of prepared complimentary foods in cheap price could explain the reason for inappropriate feeding practices in this community. Complementary feeding interventions cannot, however, tackle the underlying causes of malnutrition, such as poverty and poor sanitation. Based on the findings the following conclusions were drawn:

Most mothers showed favorable knowledge about complementary child feeding except in few areas like male children should start complementary foods earlier than females due to the reason that males should grow very fast and enhance strength. Moreover, mothers had also positive perception about complementary child feeding but in few areas like early introduction of complementary foods because it makes the child healthy and strong.

According to these finding it is possible to conclude that mothers prefer complimentary child feeding because others in the family can help them in the process of child feeding. Finally mothers practice was found to be relatively good in complementary child feeding but in few areas like frequency of providing children with complementary foods was practiced two to three times a day. Children were not getting sufficient complementary foods due to mothers over work load.

6.2.Implications for social work practice

In the field of social work, there are various models that can be used to address social and individual problems: for example problem solving through need based or asset based approach, person-in-situation perspective, and system perspective. As the study pointed out, the children are not getting appropriate diet from lack of food, inappropriate knowledge and practices. To minimize those challenges, social workers can be involved in assessing and identifying the problem at individual, family, community and institutional levels, and involve in providing awareness education and ongoing counseling to mothers.

Provision of dietary counseling to mothers by social workers through mass media like radio advertisements or posters in the hope that, if mothers are provided with sufficient knowledge and practice to understand the dangers of their existing poor feeding practices, they will change their beliefs and attitudes and adopt new patterns of behavior.

Challenges related to insufficient income of the caregivers also implied for social work practice. In this regard social workers can be involved in addressing the problem through assessing the extent of economic problems of the children's families, facilitating employment

opportunities and income generating activities through the commitment of different supporting organizations.

6.3 Implication to policy

The study implied the necessity of taking appropriate legal measures and design effective policy to improve the living situation of caregivers. Implied the need for establishment efficient follow up and monitoring and evaluation mechanism to promote the implementation of policies. The research has also an implication for the necessity of government assistance in building the capacity of appropriate childcare to enable children enjoyed their rights.

Community-based health education and promotion that integrates continuous child nutrition and complimentary feeding focused training for mothers should be given in the area. Intervention like practical learning on how to prepare ready to use complimentary foods with in locally available ingredients should be implemented. Moreover, mothers' should be educated that both sexes are equal and need equal feeding duration for the healthy development. Mothers should know that children of both sexes should be introduced complementary foods as their age allows means that they should be given complementary foods after six months of age.

Furthermore, all members of the society, policy makers, NGOs, local government should work in collaboration with Woreda health office to minimize and remove downsides of mothers' practices about complementary child feeding. All in all, the above concerned bodies should help the community increased access to essential public services such as education, health, water supply and sanitation (safe sewage disposal).

6.4 Implication for future research

The study has an implication for other researchers to focus on the living situation of mothers and their care to children in Ethiopian context. Social work research should give emphasis in the area of child nutrition in general and complimentary feeding in particular.

6.5 Recommendations

Thus, proper health education should be given to dietary quality and quantity for complementary feeding in the study area. Long term investments are also needed in improving the education, empowerment and economic status of women. Social workers and counselors should involve and advocate that optimal complimentary feeding is essential for the health and wellbeing of the mother as well as for the growth and development of the child.

6.6Strengths and Limitations of the Study

Tara Gedam kebele were purposively selected. Although it might not be possible to generalize these findings to the entire Libo Kemkem Woreda, nevertheless, the finding yields important information required for the planning and implementation of community based interventions for the prevention of child malnutrition in children under the age of two in Ethiopia. However, applying mixed methods of study in which the inclusion of health extension workers and FGD with mothers in the study strengthens the finding.

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Appendix I: Informed Consent

English version

Addis Ababa University School of Social Work Questionnaire on the knowledge, perception and practice of mothers on child nutrition and feeding their under two children in a rural community Tara Gedam Kebele, of Libokemkem Woreda, South Gondar, Amhara Region, Conform that certify the respondent agreement before the interview

Introduction

Good morning, good afternoon (according its conveniences). My name is _____. I am working as data collector in study conducted by the collaboration of Addis Ababa University, School of Social Work, to assess Knowledge, Perception and Practice of mothers' towards child nutrition and complimentary feeding.

Your name will not be written on this form and will never be used with any information you may tell me. You do not have to answer any questions that you do not want to answer and you may end this interview or questions and or discussions at any time you want. However, your honest answer to question, interview or discussion is very important for the purpose of the study. You would very much appreciate your participation in this study by genuinely responding to the interviews or questions.

Would you willing to participate? Yes No

Signature of the interviewer certifying that informed consent has been given verbally by respondent_____.

1. Identification number /_____/code_____name_____

   Date _____ Checked by supervisor; name _____,

   signature_____

Appendix II: Interview Guidelines for Health Extension Workers

Name of moderator/facilitator_____ Kebele Data_____Time

Dear Health extension workers, we are here to learn/understand the important experience from you. The discussion concentrates on the trend of complementary infant feeding. The following guideline principles govern our discussion. Interview guiding principles

1. All the issues raised here will be kept secret
2. Your name will remain anonymous and
3. Voluntary withdrawal is allowed

1. What is complimentary feeding to you? Discuss
2. Are there any harmful traditional practices and if mothers give traditional medicine to their children while they are sick? If yes what are they?
3. Is there any sickness or health complication in relation with complementary child feeding caused by HTPs?
4. How do you see complementary infant feeding knowledge, perception and practices in this area?
5. Do you think that children below two years of age get enough complementary foods in this area?
6. How do you describe the sanitation and hygienic practices in preparation of complementary child foods in this area?
7. What are common problems that mothers encounter during feeding their infants?

Appendix III: Questionnaire form

Instruction: circle the responses provided by the interviewer or write the appropriate the answer on the space provided.

Part I. Questions on the assessment of Socio-demographic and economic characteristic of Mothers.

Part one: General background information of the respondents

1. Age of the mother: 1. 18-24 2. 25-45 3. 46-60

2. Religion 1. Orthodox 2.Protestant 3. Muslim

3. Occupation: 1. House wife 2. Petty trade 3. Government employee

4. Estimated average monthly income (adding that of husband)

   1. Below birr 200 2. Birr 200-500 3. Above Birr 500

5. Educational level of the mother: 1. Could not read and write 2. Elementary school 3. Secondary school

   4. Certificate 5. diploma and above

6. Age of your children 1. 6-12 months 2. 1-2 year 3.2-3 years 4. 3-4 years

Part two: Concerning Knowledge about Complementary Feeding

7. Who informs you about, how, when and why to give complementary foods to your infant?

   1. Husband 2. Elder mothers 3. Radio /television 4. Cultural experience

   5. Health extension workers 6. Nobody

8. Do you know about complimentary feeding ? 1. Yes 2. No

9. What type of food are complimentary food for you?

   1. Porridge and other foods 2. Breast milk 3. Others

10. At what age should babies start Complimentary food?

1. Before 6 months of age 2. After 6 months of age 3. After 1 year

4. I don't know

11. Do you Know Advantage of preparing food from different crops?

1.Yes 2.No

12. When do they feed your children?

1. When child cries 2. At time we eat 3. When child gets hungry 4. At any time we eat

13. Which of your children should start complementary foods earlier? 1. Males 2. Females

3. Others, specify____

Part Three: Items Measuring Maternal perception on Complementary Feeding

Read the following statements very carefully and write your choice from the given for alternatives which are **"Strongly Agree‖ —Agree" "Don't know" —Disagree—Strongly Disagree‖** by putting a thick mark "□" on the space provided corresponding to each statement.

Ser.No	Statement	SA	A	D	SD	DK
1	I provide complementary foods because it makes my child fat					
2	I have enough money to buy complementary food items instead of suffering myself by breast feeding					
3	My breast milk is not sufficient to my infant so just after birth I like to introduce complementary foods to my infant					
4	Since others can help me by providing complementary foods I like it					
5	I give priority for the children to eat their food					
6	Providing my infant with complementary foods make him/her healthy and strong					
7	After six months in addition of breast feeding complementary foods are preferable.					

Key: SA stands for Strongly Agree **A**: for Agree, **D** for Disagree, **SD** for Strongly Disagree,and **DK** for Don't Know.

Part Four: Concerning the Issues of Complementary Feeding Practices

1.When do you start providing complimentary food to your infants?

1. Before 2 months of age 2. From 4 months of age 3. From 6 months

2. What was the first complementary food that you gave to your infant?

1. Cow milk 2.Gruels 3. Porridges 4. Others

3. How often did you provide the infant with complementary foods?

1. 2-3 times a day 2. 3-4 times a day 3.4-5 times a day 4. Once in a day

4. When do you wash your hands?

1. Before eating 2. Before & after feeding children

3.After working from outside the house 4. Before food preparation

5. Where do you take your children for treatment when they get sick?

1. To the health center 2. Treating them at home 3. To traditional healers

6. Have you ever treated the water you drink?

1. Yes 2. No

Appendix IV: Focus Group Discussion Guidelines for Mothers

1. Mothers were asked if they know the Amount, Frequency and Variety of Complementary foods given to children below two years? Discuss
2. Mothers were asked how they know when to give their children the first complementary foods? Discuss possible reasons
3. What should be the feeding situation of the child after six months and its impact on the wellbeing of the child?
4. What kind of foods are good and suitable complementary foods