

**AN EDUCATIONAL PROGRAMME TO EMPOWER MOTHERS AND  
CAREGIVERS ON FEEDING PRACTICES OF CHILDREN UNDER THE AGE  
OF 5 YEARS IN OSHIKOTO REGION, NAMIBIA**

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## **ABSTRACT**

Health facilities do provide mothers with information regarding feeding practice of children under the age of five years. It seems however that the impact of such information is extremely minimal because poor feeding practices remain a problem in Namibia. Such practices contribute to undernutrition in children under the age of five years. The Oshikoto region is among the top five regions with children affected by undernutrition. The purpose of this study was to develop an educational programme to empower mothers, and caregivers, on feeding practices of children under the age of five years in the Oshikoto region. The objectives of the study were: to explore and describe the experiences of mothers, and caregivers, on feeding practices of children under the age of five years; to develop a conceptual framework which formed the basis of an educational programme; to develop an educational programme to empower mothers and caregivers on feeding practices of children under the age of five years; and to implement and evaluate an educational programme.

The study was conducted in four phases. A qualitative, exploratory, descriptive and contextual design was utilised in the first phases of this study. The first phase was a situational analysis which explored and described the experiences of mothers and caregivers on feeding practices of children under the age of five years. An unstructured individual in-depth interview was conducted during this phase: fifteen respondents were purposively selected and interviewed. Data were analysed using Tesch's method of qualitative analysis. Four themes, and fourteen sub-themes, were identified.

The study revealed that mothers and caregivers utilise suboptimal feeding practices; they experience factors which influenced feeding practices; they lack nutritional and feeding practices information; they encountered limited resources which influenced feeding practices.

The second phase addressed a conceptual framework which guided the development of an educational programme, to empower mothers and caregivers on feeding practices of children under the age of five years, and was based on Dickoff, James and Wiedenbach`s survey list.

The third phase concentrated on the development of an educational programme to empower mothers and caregivers. This was done based on the findings from the study and guided by Nicholls` cyclic curriculum development model. The fourth phase covered the programme implementation and evaluation and a two day workshop conducted at the Onandjokwe Intermediate Hospital in the Oshikoto region. This phase was guided by Kolb`s theory of experiential learning and Knowles` model of andragogy. The workshop was attended by mothers and caregivers of children under the age of five years. The programme was evaluated during and after its implementation; the workshop participants indicated that it was useful and supportive. It is recommended that such programme need to be given to pregnant women and postpartum mothers as this will help them to feed their babies propely and prevent undernutrition.

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## **LIST OF ABBREVIATIONS**

**CARMA:** Campaign on Accelerated Reduction of Child Mortality in Africa

**FAO:** Food and Agriculture Organisation

**HIV:** Human immunodeficiency virus

**IYCF:** Infant and young child feeding

**MAM:** Moderate Acute Malnutrition

**MGD:** Millennium Development Goal

**MSG:** Management study guide

**MOHFW:** Ministry of Health and Family Welfare

**MOHSS:** Ministry of Health and Social Services

**NACS:** Nutritional Assessment Counseling and Support

**NAFIN:** Namibian Alliance for Improved Nutrition

**NDHS:** Namibia Demographic Health Survey

**NSA:** Namibia Statistic Agency

**SAM:** Severe Acute Malnutrition

**SDG:** Sustainable Development Goal

**UNESCCA:** United Nations Economic and Social Council Commission for Africa

**UNICEF:** United Nations Children Emergency Fund

**USAID:** United States Agency for International Development

**WHO:** World Health Organisation

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## **DEDICATION**

This study is dedicated to all mothers and caregivers of children under the age of five years, and to my daughters Tuwilika, Justine and my son Eben-Ezer, let this work be the source of inspiration.

## **DECLARATION**

I, Ester Mulenga, hereby declare that this study titled: An educational programme to empower mother and caregivers on feeding practices of children under the age of 5 years in Oshikoto Region, Namibia is the true reflection of my own research work. This work has not been submitted for a degree in any other institution of higher learning. No part of this dissertation may be reproduced, stored in any retrieval system, or transmitted in any form, or by means of mechanical, electronic, photocopying, recording or otherwise without the prior permission of the author, or the University of Namibia on her behalf.

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**Ester Mulenga**

**Date: April 2018**

# **CHAPTER ONE**

## **INTRODUCTION AND BACKGROUND OF THE STUDY**

### **1.1 INTRODUCTION**

This study focuses on empowering mothers and caregivers with knowledge on feeding practices of children under the age of five years. Feeding practices of children under the age of five years is presented in the literature as a challenge resulting in undernutrition in many children, especially in the developing countries (World Health Organization (WHO, 2009). Poor feeding practices result in inadequate nutrition which in turn increases the risk of morbidity and mortality. The WHO (2009) stated that in 2006 poor nutrition was directly, or indirectly, responsible for an estimated 9.5 million global deaths in children under the age of five. Georiadis (2014) reported that in 2011, there were 165 million stunted children globally. According to Georiadis (2014), undernutrition in children is more dominant in low and middle income countries. In developing countries, poor feeding practices have contributed to poor nutrition, an estimated 35% of deaths, and 50 – 70% of diarrhea diseases, measles, malaria and lower respiratory infections among children under the age of five years (Gyampoh, Otoo & Aryeetey, 2014),

Early nutritional insufficiency results in stunted, underweight, and wasted of children under the age of 5 years. Turyshamererwa, Kikafunda and Agaba (2009) reported that poor child feeding practices have contributed to stunting of children under the age of 5 years in Uganda, Kabarole district.

Undernutrition has severe lifelong implications on a child's survival and skills development (United Nations Economic and Social Council Commission for Africa (UNESCCA), 2012). According to the Campaign on Accelerated Reduction of Maternal and Child Mortality (CARMMA) (2014), children with stunted growth are likely to repeat school grades, especially at primary level. Children affected by undernutrition also face a risk of adulthood diseases, their capacity to earn a decent living is diminished, and they are less likely to care for their children and pay their school fees, which in turn results in a vicious cycle of undernutrition and poverty (CARMMA, 2014).

According to the WHO (2009) optimal feeding practices play an important role in the growth, development, and prevention of undernutrition among children under five years old. Perera, Fernando, Warnakulasuria and Ranathunga (2011) stated that optimal feeding practices include exclusive breastfeeding for six months, followed by the addition of complementary feeds with continuation of breastfeeding up to or beyond two years. The WHO (2009) defined exclusive breastfeeding as giving an infant breast milk only, excluding solids or any other fluids, except medicines, vitamins and minerals. Early introduction of complementary feeding has a negative impact on a child's health (WHO, 2009). Complementary feeding is a process of introducing other food when breast milk is no longer sufficient to meet the nutritional requirements of an infant thus other foods and liquids are required together with breast milk (WHO, 2009). This includes the use of infant formula, adding sugar to a child's food, and giving solid or any other fluids. There are guiding principles that need to be followed when introducing appropriate complementary feeding.

These principles include continuation of frequent breast feeding on demand up to two years or beyond, and practicing responsive feeding such as feeding infants directly, and assisting older children to eat (WHO, 2014). With responsive feeding, infants need to be fed slowly by their mothers and caregivers; older children need to be encouraged to eat, and not forced to do so (WHO, 2014). Mothers and caregivers need to handle food hygienically, by washing their hands before preparing food for children (WHO, 2014).

When complementary feeding is introduced, mothers and caregivers need to start with a small amount of food at six months and then gradually increase food consistency and variety as a child gets older (WHO, 2014). The amount of food needs to increase according to the age of a child. Fortified complementary food, or vitamin-mineral supplements, need to be used by young children if they are sick; fluid intake, which includes breast milk, needs to be increased, and the child's soft favourite food should be provided (WHO, 2014).

According to the Namibian Alliance for Improved Nutrition (NAFIN) (2010) some causes of undernutrition, in children under five years old are lack of exclusive breastfeeding, and abrupt weaning with inappropriate introduction of solid food. The WHO and UNICEF have developed a global strategy for infant and young child feeding to make the world aware about the impact of feeding practices on the nutritional status, growth, development and survival of infant and young children (WHO, 2009). This includes exclusive breastfeeding for six months, and nutritionally adequate and safe complementary feeding from the age of six months while continuing to breastfed up to 24 months or beyond (WHO, 2009).

In this chapter the background information of the study, the problem statement, purpose and objectives, significance of the study, as well as a paradigmatic perspective, are presented. The aim of this study was to develop an educational programme to empower mothers and caregivers on feeding practices of children under the age of five years in the Oshikoto region.

## **1.2 BACKGROUND OF THE STUDY**

Mothers and caregivers of children under the age of five years need to be empowered in order to improve feeding practices of their children. A study conducted in China, Hebei Province revealed that poor infant and young children feeding practices, as well as the source of caregivers' knowledge, are some contributing factors to undernutrition (Wu et al, 2014). It is estimated that 34.8% of infants globally are exclusively breastfed for the first six months (WHO, 2009; Dabar, Verma, Mangal, Singh & Yadav, 2014). The majority of infants are given inadequate and unsafe nutritious foods or fluids too early or too late. Wu et al. (2014) reported that in this Chinese province, exclusive breastfeeding for six months was less than 10%, and only 32.5% of children were given iron-rich food.

According to Bhanderi and Choudhary (2011) delayed introduction of semisolid food is one of the major causes of undernutrition in five year old or younger children. A study conducted in southern Asia found that most children did not receive semisolid food until or after nine months up to their second year of life (Bhanderi & Choudhary, 2011). The study found that incorrect dilution and unhygienic handling of food contributed to infections in children less than five years old.

WHO (2009) reported that inappropriate infant and child feeding is responsible for one third cases of undernutrition in China. In another study, conducted in China, on the relationship between child feeding practices and malnutrition, it was found that there was a low prevalence of exclusive breastfeeding for a short duration; for example, 17,5% of children were breastfed up to one year. This resulted in the following prevalence: stunting (19.3%), underweight (13.1%), and wasting (5.5%) (Zhou, Wang, Ye, Zeng & Wang, 2012).

Poor feeding practice is one of the major concerns in Africa. A study, conducted in Wail East and North counties, South Sudan, revealed that the introduction of complementary food was poor (Cyprian, 2011). According Cyprian (2011) the majority of caregivers feed their children less than twice a day, and some children receive complementary food either too early or too late. The Millennium Development Goal (MDG 1) underscores the need for eradication of extreme poverty and hunger among countries by 2015, but many African countries have not met this goal due to many factors (UNESCCA, 2012). As a result the MDGs were replaced by sustainable development goals (SDGs). Poor feeding practices are one of the factors that contribute to countries not being able to eradicate hunger among children under the age of five years.

Noor (2015) reported that women in developing countries feed their children aged six to twenty four months with available food. These children appear to be well nourished, but they suffer chronic deficiencies due to inadequate micronutrients, referred to as hidden hunger. Although hidden hunger is not visible, it is harmful in terms of stunting and poor cognitive development; it results in morbidity and mortality of children under the age of five years (Noor, 2015).

Namibia, as a developing country, is not exempt from the problem of poor feeding practices of infant and young children. The Ministry of Health and Social Services (MOHSS) (2014) reported that 49% of Namibian infants, under the age of six months, were exclusively breastfed, and 28% of children were breastfed up to the age of two years. Although many mothers and caregivers introduced complementary feeding at the age of six to eight months, only 32% of infants received a variety of foods, and 16% of children were given an acceptable diet, which includes breastfeeding and different types of food (WHO, 2010).

In Namibia, poor feeding practices have contributed to undernutrition of children under the age of five years: 24% are stunted, and 8% are severely stunted (WHO, 2010). Roy, Dasgupta and Pal (2009) were of the opinion that feeding practices in the communities are influenced by what caregivers know, think and believe, and are strongly affected by social and economic factors as well as other circumstances beyond their situation: food availability, for example.

According to NAFIN (2010), Namibia is categorised as an upper middle income country due to its sustained economic growth, but such growth has not benefited all people hence some inhabitants are very poor. This situation has also contributed to some children, especially those under the age of five years, being affected by undernutrition, because many caregivers cannot afford to get a variety of food (NAFIN, 2010). NAFIN furthermore (2010) reported that one out of three Namibian children under the age of five years is short for his/her age; one out of five is too thin for his/her age; poor feeding practices is one of the contributing factor to such conditions.

Table 1.1 indicates the undernutrition trends of children under the age of five years in Namibia from 1992 to 2013.

**Table 1.1:** Undernutrition trends of children under five years of age (MOHSS, 2014)

Year	Stunting %	Underweight %	Wasting %
1992	29	27	9
2000	24	24	9
2006	29	17	8
2013	26	13	6

There was a slight improvement between 1992 and 2000; stunting and underweight decreased by 5% and 3%, respectively. There was however no change in the percentage of children with wasting. In 2006 stunting increased by 5%, whereas there was a 7% decrease in underweight children, and 1% in those with wasting. In 2013 the respective decreases were: stunting (3%), underweight (4%), and wasting (2%). Although there was some reduction in stunting and wasting, it was not significant.

During the 1992 Namibia Demographic Health Survey (NDHS) it was reported that the introduction of liquids (e.g. water, sugared water, teas, commercial formulae) and solid food took place too early in an infant's life (Food Security and Nutrition Monitoring Project, 1993). It was also reported that liquids and solid foods, given to the children, do not contain adequate nutrients. The intake of the above mentioned food lowers the consumption of breast milk which results in a decrease production of milk, because of infrequent sucking by a baby.

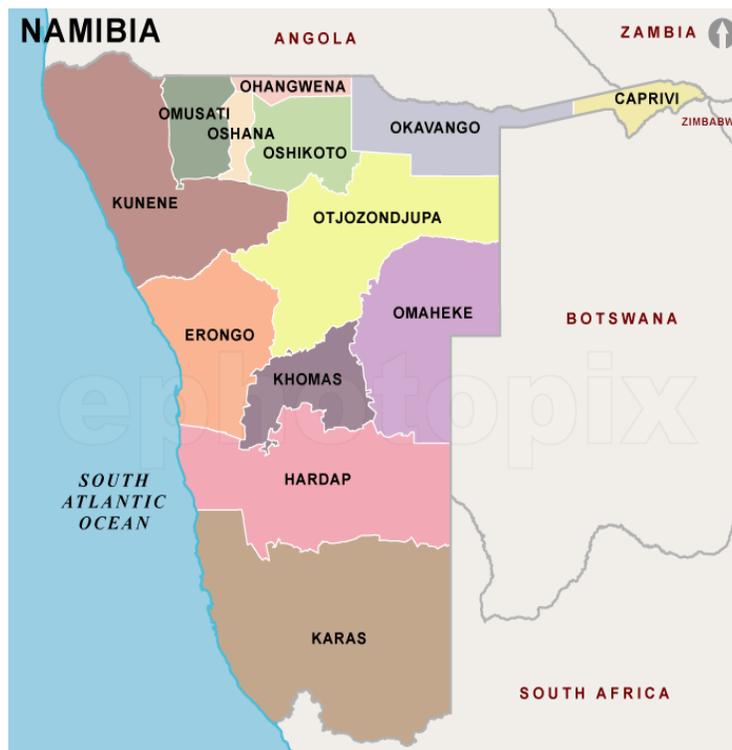
This practice of giving liquid and solid foods too early, and lowering the intake of breast milk, has a deleterious effect on the nutritional status of an infant (Food Security and Nutrition Monitoring Project, 1993). It was reported during the 1992 NDHS that only 22% of infants under the age of four months were exclusively breastfed, 42% were given breast milk and water, 29% were given breast milk and other liquids, 5% were given breast milk and solid food, and 3% were fully weaned (Food Security and Nutrition Monitoring Project, 1993).

MOHSS (2003) stated that exclusive breastfeeding was still low during the 2000 NDHS; only 25% of infants were breastfed exclusively up to three months, and 38% were bottle-fed. According to the 2013 NDHS, 49% of infants were exclusively breastfed up to five months, while 14% were given pre-lacteal feeds in one to three days of birth. Bottle feeding was started as early as two to three months, and 26% of newborns were bottle-fed (MOHSS, 2014). This is an indication that mothers or caregivers in Namibia are not using appropriate feeding practices. This has contributed to children under the age of five years developing undernutrition.

Undernutrition has a negative impact on the future of the children. Some micro-nutrients deficiencies, for example, vitamin A and iodine may cause a reduced capacity of children to learn (NAFIN, 2010). More than 23% of pre-school Namibian children have a vitamin A deficiency and are more likely to die from common childhood diseases. One out of four children has a reduced capacity to learn due to an iodine deficiency (NAFIN, 2010).

### 1.2.1 Undernutrition profile of children under the age of five years by regions

Namibia is divided into 14 regions which include: Erongo, Hardap, //Karas, Kavango East, Kavango West, Khomas, Kunene, Ohangwena, Omaheke, Omusati, Oshana, Oshikoto, Otjozondjupa and Zambezi (Caprivi). These Namibian regions are depicted in Figure 1.1.



**Figure 1.1:** Regions in Namibia.

The malnutrition status of children under the age of five years was evaluated per region according to the health indicators of stunting, underweight and wasting. These variables usually indicate inadequate food intake and poor feeding practices such as lack of exclusive breastfeeding and inadequate or unsafe complementary feedings.

Table 1.2 indicates the undernutrition status of children under the age of five years in Namibia according to regions, as well as the mortality rate due to undernutrition.

**Table 1.2:** Malnutrition status of children under five years per region (MOHSS, 2014)

<b>Region</b>	<b>Stunting %</b>	<b>Wasting %</b>	<b>Underweight %</b>
<b>Erongo</b>	15.2	8.1	9.9
<b>Hardap</b>	29.1	8.1	17.8
<b>Karas</b>	27	5.6	12.1
<b>Kavango</b>	23.9	8.5	15.0
<b>Khomas</b>	12.8	3.5	9.1
<b>Kunene</b>	19.4	6.1	11.9
<b>Ohangwena</b>	36.5	5.4	16.3
<b>Omaheke</b>	26.9	10.4	18.1
<b>Omusati</b>	24.2	6.0	14.6
<b>Oshana</b>	19.8	4.5	8.2
<b>Oshikoto</b>	26.3	8.5	20.7
<b>Otjozondjupa</b>	20.1	4.3	6.5
<b>Zambezi</b>	18.6	5.7	10.5

### **1.2.2 Context of the study**

The context of this study is Oshikoto region, because it is one of the top five regions with a high prevalence of undernutrition (stunted, wasted and underweight) in children under the age of five years, as well as a high mortality rate due to undernutrition. It has a population of 181 973, and 14% are children under the age of five years (Namibia Statistic Agency (NSA), 2011). The largest percentage (87%) of the population live in rural areas and 13% reside in urban areas. The rural communities rely mainly on agriculture, which consists of livestock farming, cultivation of pearl millets, beans and other products such as pumpkins and nuts. This implies that most of the people in the Oshikoto region produce their own food when there is good rainfall.

Children with undernutrition are attended to in health facilities in the Oshikoto Health Region. The latter has one intermediate hospital and two districts hospitals: Onandjokwe, Tsumeb, and Omuthiya, respectively. The Tsumeb district hospital is located in an urban area. The Onandjokwe Intermediate Hospital and the Omuthiya district hospital are mostly accessed by the rural communities. Each health facility provides inpatient and outpatient services. The latter provides primary healthcare services. Severe acute malnutrition (SAM) cases are admitted as inpatients, and moderate acute malnutrition (MAM) cases are registered with the Nutritional Assessment Counseling and Support Programme (NACS), which falls under the primary health care division in these health facilities.

## **1.2 STATEMENT OF THE PROBLEM**

Though mothers and caregivers are given health education regarding feeding practices of children under the age of five years, it seems the impact of such information is minimal. This is because poor feeding practices among Namibian children under the age of five years have been reported as one of the problems contributing to undernutrition (WHO, 2010).

Although the Ministry of Health and Social Services (MOHSS) has developed a policy on infant and young child feeding, it did not alleviate the problem of poor feeding practices. According to MOHSS (2014) only 49% of infants less than six months were exclusively breastfed, and 28% of children were breastfed until the age of two years. Bottle feeding commenced as early as two to three months, and 26% of neonates were bottle-fed. The prevalence of bottle feeding increased with age since 49-50% of children aged 18 to 23 months received bottle feeding. Complementary feeding is also introduced early, and some of the food is not safe and does not have adequate nutrients. MOHSS (2014) furthermore indicated that 16% of infants younger than 6 months of age consumed water, 4% were given non-milk liquid, 13% consumed other complementary food, and 70% of children aged 18 to 23 months stopped breastfeeding (MOHSS, 2014). Poor feeding practices contribute to the development of undernutrition among Namibian children under five years as 24% are stunted and 8% are severely stunted, 6% are wasted and 13% underweight (MOHSS, 2014). Oshikoto region is ranked as one of the five regions with most children affected by undernutrition (MOHSS, 2014; NAFIN, 2010).

According to MOHSS (2014), in this region 26.3% of children suffer from stunting, 8.5% from wasted, and 20.7% are underweight. It is not known what the mothers and caregivers have experienced regarding feeding practices of children under the age of five years in the Oshikoto region because there is no published literature on this topic. This dearth in the literature led to the researcher to deem it necessary to find answers to the following question. “What are the experiences of mothers and caregivers with regards to feeding practices of children under the age of five years?”

A researcher can use research question to find the answer to facilitate the achievement of a study’s objectives (Cohen, Manion & Morrison, 2007). According to United States Agency for International Development (USAID) (2011), lack of adequate knowledge among mothers and caregivers is one of the causes of poor feeding practices. Kulwa et al. (2014) indicated that in some instances, mothers and caregivers have inadequate knowledge regarding duration of breastfeeding, time to start complementary feeding and the types of food suitable for children. Therefore, the researcher deemed it necessary to develop an educational programme, to empower mothers and caregivers on feeding practices of children under the age of five years, who are diagnosed with undernutrition in the Oshikoto region.

#### **1.4 PURPOSE OF THE STUDY**

The purpose of this study was to develop an educational programme to empower mothers and caregivers on feeding practices of children under the age of five years.

## **1.5 OBJECTIVES OF THE STUDY**

The objectives of this study were to:

- Explore and describe experiences of mothers and caregivers on feeding practices of children under the age of five years who are diagnosed with undernutrition.
- Develop a conceptual framework as a basis of the programme to empower mothers and caregivers on feeding practices of children under the age of five years.
- Develop an educational programme to empower mothers and caregivers with knowledge related to feeding practices of children under the age of five years.
- Implement and evaluate an educational programme on feeding practices of children under the age of five years.

## **1.6 SIGNIFICANCE OF THE STUDY**

The developed programme should empower mothers and caregivers with knowledge on the utilisation of optimal feeding practices of children under the age of five years and provide them with a platform in which they can discuss and address factors influencing feeding of such children. It should also empower mothers and caregivers to be able to source resources necessary to facilitate feeding practices of children under the age of five years. The information obtained from this study may facilitate further development of a programme and refinement of existing services.

## **1.7 PARADIGMATIC PERSPECTIVE**

According to MacNaughton, Rolfe and Siraj-Blatchford (2001), as cited by Mackenzie and Knipe (2006),

a paradigm includes three elements: a belief about the nature of knowledge, a methodology, and criteria for validity. A paradigm is defined as a world interpretation, a common viewpoint on complexities of the world (Polit & Beck, 2012). Paradigms inform a researcher what is significant, authentic and rational (Tappen, 2011). Paradigms, for social review, are characterised by the way in which they respond to simple logical questions (Polit & Beck, 2012).

Qualitative researchers approach studies with certain paradigms or assumptions. In this study the paradigm consisted of assumptions on which the research was founded and the theoretical basis for the study. The study adopted a constructivist paradigm. Constructivists, or naturalists, believe that there are numerous clarifications of reality; the goal of a researcher is to comprehend how individuals build reality within their context (Polit & Beck, 2012). According to constructivism, people construct their knowledge and understanding of the world through experiencing things and reflecting on their experiences (Educational Broadcasting Cooperation, 2004). Reality awareness is more than the act of observation, and what is observed is not the only reality, therefore reality should be explored as it is perceived instead of as observed (Educational Broadcasting Cooperation, 2004; Speziale & Carpenter, 2007).

In this study, the researcher explored the experiences of mothers and caregivers on feeding practices in order to understand the reality of what they encountered. Five types of assumptions were applied: ontological or nature of reality, epistemological or relationship of researcher and participants, axiological or role of values in the study, methodological or process of research study and rhetoric or language and voice of reporting.

These assumptions are explained below.

### **1.7.1 Assumptions on which the research is founded**

Rohan (n.d) defined the five assumptions as follows. Ontological assumption refers to a question of what is reality and how can one understand the existence of reality. Epistemological on the other hand associates itself with what constitutes valid knowledge and how one can obtain it. Axiological assumption refers to what is worth knowing and why, while methodological assumption implies the techniques which would lead to abundant explorations. Rhetoric assumption refers to how best a researcher can share a research study with others (Rohan, n.d).

#### **1.7.1.1 Ontological assumptions**

Ontology refers to the fact that realism happens, there is a real world determined by real natural causes and resultant effects; reality is not a static entity, but is a creation of an individual participating in research (Polit & Beck, 2012). Such realisms are absolute and no reality is considered to be truer than others. Reality may be more or less well informed within the context of participants` lives (Rohan, n.d). Reality in this study is in the question: What is the real experience of mothers and caregivers with regard to feeding practices of children under the age of five years?

The assumption is that each mother and caregiver has a different experience pertaining to feeding of children under the age of five years. Mothers and caregivers thus construct their own reality based on their unique perceptions and experiences on how they feed their children.

The researcher used verbatim comments obtained in the study; the data obtained from interactions and observations were broken down into themes and sub-themes to provide a clear meaning which reflected the experiences of mothers and caregivers on feeding practices of children under the age of five years (Hays & Singh, 2011).

### **1.7.1.2 Epistemological assumptions**

In epistemological assumption, a researcher interacts with participants, and findings are the creation of interactive process (Polit & Beck, 2012). The goal of inquiry is to produce knowledge as close as possible to the truth despite challenges. Epistemology deals with how a researcher acquired the information. In this study the researcher used an unstructured in-depth individual interview to collect the data. It was assumed that the information gathered from mothers and caregivers during the interviews would enable the researcher to gain evidence on what they experienced, including their challenges pertaining to feeding practices. Face-to-face interviews were used so that the researcher could interact with respondents to obtain answers to the research questions.

### **1.7.1.3 Axiological assumptions**

In an axiological assumption, the voices and interpretations of study participants are crucial to understand the phenomenon of interest; subjective interactions are the primary way to access those (Polit & Beck, 2012). Face-to-face interviewing allows for subjective interaction with respondents to obtain data. Subjectivity and values are foreseeable and necessary in a study (Polit & Beck, 2012). Axiology addresses also the ethical and moral values of a researcher and their impact on a research question and methodology (Hay & Singh, 2011).

According to Nassar-Mcmillan and Niles (2011), a researcher needs to be aware of personal values and how they influence a study. In this study, personal values were identified and use was made of those that would have positive impact on the study such as trust to build rapport with the respondents. The researcher bracketed values which could have impacted the study negatively. The researcher also tried by all means to eliminate and control bias by capturing and presenting actual data.

#### **1.7.1.4 Methodological assumptions**

The meaning of social actors can be revealed through close contact between a researcher and participants (Rohan, n. d). Methodological assumptions refer to description of methods and techniques utilised to conduct a study (Babbie & Mouton, 2009). This study comprised four phases. A qualitative approach was utilized whereby an exploratory, descriptive and contextual design was used in the first phase. Such phase was a situational analysis, in which the experiences of mothers and caregivers, of children under the age of five years, with regard to their feeding practices were explored and described. Based on this phase's data, a conceptual framework was developed in the second phase of the study. Phases three and four covered the development, implementation and evaluation of an educational programme to empower mothers and caregivers of children under the age of five years in terms of feeding practices.

#### **1.7.1.5 Rhetoric assumption**

In rhetoric assumptions, the most appropriate language, and voice to be used in reporting the results of an inquiry, is considered.

Some researchers are of the opinion that a research report should be written in the first person indicating the participation of a passionate agent (Rohan, n. d). In this study the reporting becomes personal based on the definitions that evolved from the study rather than being defined by the researcher (Creswell, 2007). Data was reported using verbatim comments of the respondents.

## **1.7.2 THEORETICAL BASIS OF THE STUDY**

Theoretical assumptions in a study are important as they guide the process of argumentation, evidence generation, and conclusions (Nkwake, 2013). Theoretical assumptions include models and theories that clarify, forecast and enable a researcher to understand a phenomenon or a challenge (Swanson, 2013). According to Torroco, as cited by Swanson, and Holton (1997), a theoretical outline provides the association of the study and guides a researcher in the interpretation of the results. The following theories were used in this study.

- Dickoff, James and Wiedenbach `s practice orientated theory (1968)
- Cyclic curriculum development model of Nicholls (1972)
- Kolb`s experiential learning cycle
- Knowles` model on andragogy

### **1.7.2.1 Dickoff, James and Wiedenbach`s (1968) practice oriented theory**

The practice oriented theory was used to conceptualise the findings of the study. This theory prescribes the activities required to reach pre-determined goals and to envisage the consequences of interventions.

According to Dickoff, James and Wiedenbach (1968) a survey list includes six questions which explain concepts and analyse the activities which aim at realising goals of a study. The questions include: who or what performs an activity, who receives an activity, in what context is an activity performed, what procedures or actions guide an activity, what are the energy source of such an activity and what is the terminus.

In this study, the agent is the researcher who performed the activity, and the recipients were the mothers and caregivers who received the activity. The energy source was derived from the situational analysis; the procedure was an educational programme to empower mothers and caregivers on feeding practices, so that the terminus or end product could be achieved. The conceptual framework is described in detail in chapter four of this study.

#### **1.7.2.2 Cyclic curriculum development model of Nicholls (1972)**

Nicholls' cyclic curriculum development model guided the development of educational programme. According to Nicholls and Nicholls (1978), the cyclic curriculum development model comprises of five components: situational analysis, selection of objectives, selection and organisation of content, organisation of methods, and evaluation of learning. Before developing an educational programme, the researcher conducted a situational analysis to determine what to include in it. The researcher then compiled the objectives to be achieved, and the content was organised. The researcher selected various teaching strategies that were utilised as well as the evaluation of learning. Cyclic curriculum development theory is presented in chapter five.

### **1.7.2.3 Kolb`s experiential learning cycle**

This theory guided the researcher in the implementation of the programme. Kolb`s experiential learning cycle includes four stages: concrete experience in which one can interpret an experience, reflective observation whereby a person reflects on an experience, abstract conceptualisation that implies learning from an experience, and active experimentation which includes trying out what one has learned (Kolb & Boytzis, 1999).

Mothers and caregivers should learn from discussions and feedback from others, and they should adopt a new experience by reflecting from their old or previous experiences. Mothers and caregivers should try to have a deeper understanding of the new experience and then to try and implement it (Kolb & Boytzis, 1999). This experiential learning cycle is discussed in chapter five.

### **1.7.2.4 Knowles` model of andragogy**

This model also guided the researcher in the programme implementation. Knowles identified five assumptions which differentiate adult learning from child learning (Knowles, 1984). These assumptions include: recognising the learning needed since adults want to know why they have to learn something before they undertake learning. They are also responsible for their own decisions and are self-directed; they have experiences which also include bias and presuppositions.

Adult learners are ready to learn things which should assist them to cope effectively in life situations; they are motivated to learn what they perceive will help them to perform tasks in their life situations.

Based on the above assumptions the researcher used different teaching methods, such as lectures, group discussions, roleplaying, feedback, and debates during implementation of the programme. Knowles` model of andragogy is described in chapter five.

## **1.8 DEFINITIONS OF CONCEPTS**

The concepts that are defined were derived for an educational programme to empower mothers and caregivers on feeding practices of children under the age of five years in the Oshikoto region.

### **1.8.1 Educational programme**

Programme refers to an organisation of something to transpire at a specific time (Longman Active Study Dictionary, 2010). An educational programme, according to this study, refers to a series of planned actions intended to empower mothers and caregivers with knowledge on feeding practices of children under the age of five years. This programme is intended for mothers and caregivers of children diagnosed with undernutrition.

### **1.8 2 Empower**

Empower means to give somebody control over their own life (Hornby, 2015). For the purpose of this study “knowledge is power”, therefore empower refers to giving the mothers and caregivers knowledge related to nutrition and feeding practices, so that they can utilise optimal feeding practices which can assist in the prevention of undernutrition.

### **1.8.3 Mother**

Mother refers to a female parent of a child (Hornby, 2015). In this study, mother refers to a female parent of a child under the age of five years.

### **1.8.4 Caregiver**

Caregiver is someone who takes care of a person who is young, old or ill (Cambridge Advanced Learner`s Dictionary, 2008). In this study a caregiver refers to a person who looks after children under five years, and includes father, grandfather, grandmother, aunt, uncle or any other guardian.

### **1.8.5 Feeding practices**

The word feed refers to offering food or providing suitable supply of food (Concise Oxford English Dictionary, 2011). Feeding practices refer to ways of giving an infant or child food to allow for growth and development. In this study, feeding practices include exclusive breastfeeding for six months, safe complementary feeding at six months while continuing breastfeeding for another 18 months, responsive feeding, as well as giving a variety of food to a child (WHO, 2014).

### **1.8.6 Children under five years**

Children under the age of five years refer to those from 0 to 59 months. This is a vulnerable group which requires utmost care (WHO, 2005). This group needs to be fed with adequate and safe nutrition in order to grow, develop and survive.

### **1.8.7 Undernutrition**

Undernutrition is a condition caused by an improper balance between what an individual eats and what is required to maintain health, resulting in too little food (sub-nutrition or starvation) (Martin, 2008). According King, Burgess, Quinn and Osei (2015) undernutrition is a condition in which the body does not get adequate nutrients to produce energy, grow and repair tissues and carry out normal functions, resulting in symptoms such as fatigue, lower body temperatures and diarrhea. Undernutrition, in this study includes health indicators such as underweight, stunting, wasting, kwashiorkor, marasmus and micro-nutrient deficiencies.

## **1.8 ARRANGEMENT OF CHAPTERS**

Chapter one presented the introduction to the study, background, problem statement, purpose and objectives, and paradigm perspective.

Chapter two covers research design and methodology, reasoning strategies, measures to ensure trustworthiness as well as ethical considerations.

Chapter three presents data analysis and literature control that explain the findings of the study.

Chapter four provides the conceptual framework, its development and the researcher's reasoning map.

Chapter five presents the development of the educational programme to empower mothers and caregivers on feeding practices.

Chapter six covers the implementation and evaluation of the educational programme.

Chapter seven presents the conclusions, limitations and recommendations derived from the study.

## **1.9 SUMMARY**

In this chapter the introduction of the study was discussed. The background to the problem, statement of the problem, purpose and objectives, as well as the significance of the study, were presented and discussed. The paradigmatic perspectives, and theoretical assumptions applicable to the study, were also outlined. The next chapter covers a comprehensive discussion of the research design and methodology of the study.

## **CHAPTER TWO**

### **RESEARCH DESIGN AND METHODS**

#### **2.1 INTRODUCTION**

This chapter describes the research design and methods used in exploring the experiences of mothers and caregivers on feeding practices of children under the age of five years; and in development of an educational programme, to empower mothers and caregivers on feeding of children under the age of five years. The reasoning strategies, measures to ensure trustworthiness as well as ethical consideration are explained.

#### **2.2 RESEARCH DESIGN**

Research design is a strategy, or an outline, which provides specific directions in the procedure of research. The aim of research design is to enable a researcher to acquire necessary evidence to address research questions, to reduce errors, and maximise reliability of the results (Babbie & Mouton, 2009; Polit & Beck, 2012; Creswell, 2014). The study was conducted in four phases as indicated in Figure 2.1

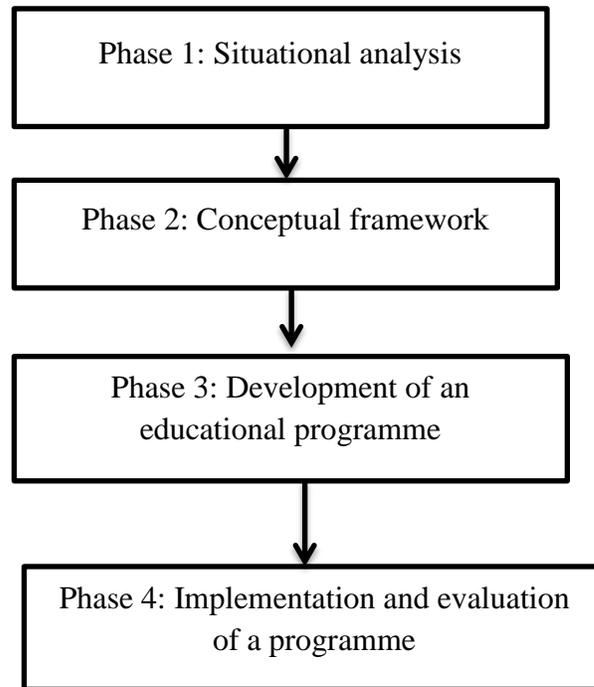


Figure 2.1: **Phases of the study.**

The study utilised a qualitative, exploratory, descriptive and contextual design in phase 1. The researcher sought to understand what mothers and caregivers of children under the age of five years experienced with regards to feeding practices. The researcher approached the process of data collection without any preconceived idea and important issues emerged from the respondents as they related their stories (Mills, Bonner & Francis, 2006).

### **2.3 REASONING STRATEGIES**

Reasoning strategies are process of consolidating ideas, which assist a researcher to reach conclusions. It is through reasoning that people can create logic of their views (Grove, Burns & Gray, 2013). The reasoning strategies used in this study were: inductive and deductive reasoning, inferences, bracketing and synthesis.

These strategies enabled the researcher to explore and describe the experience of mothers and caregivers on feeding practices, and to analyse and organise the data during the analysis of the theoretical and empirical concepts. They also helped the researcher to describe the conclusions and recommendations which arise from the data analysis, and to conceptualise the findings. Reasoning strategies are discussed below.

### **2.3.1 Inductive reasoning**

According to Wood and Harber (2010) inductive reasoning is rational thought in which generalities are established from precise observation. In inductive reasoning a researcher argues from specific to general conclusions (Polit & Beck, 2012). This reasoning strategy was adopted in the first phase of the study in which the researcher described the experiences of mothers and caregivers regarding feeding practices of children under the age of five years. It was also adopted during the development of themes and sub-themes. Inductive data analysis was used in phase 1 when the researcher worked back and forth between the themes and the data in order to establish a set of complete themes (Creswell, 2007).

### **2.3.2 Deductive reasoning**

Deductive reasoning moves from broad to specific (Wood & Harber, 2010; Polit & Beck, 2012; Grove, Burns & Gray, 2013). In this reasoning, a researcher uses theory which assists in identifying constructs and concepts from which to depart. In this study the researcher used deductive reasoning in the development of a conceptual framework, and also to develop and evaluate the educational programme.

For example, Dickoff, James and Wiedenbach`s practice orientated was deductively used in terms of the agent, context, recipient, terminus, procedure and dynamics. This survey list was used to conceptualise the central concepts and establish the relationship among the concepts. Nicholls` cyclic curriculum development models, and Knowles` model on andragogy, were used in the development and implementation of the educational programme.

### **2.3.3 Inferences**

Polit and Beck (2012) defined inference as a process in research whereby a conclusion is drawn from the study evidence, taking into account the methods used to generate that evidence. In the first phase of this study, the evidence was generated by making use of a qualitative approach. During the conceptualisation and development of educational programme, inferences were used to read the literature, and to clarify the experiences of mothers and caregivers on feeding practices of children under the age of five years.

### **2.3.4 Bracketing**

Bracketing refers to the process of recognising and holding personal prejudices, predetermined views, and opinions, regarding a phenomenon of interest. Bracketing assists a researcher to clarify how personal experience and beliefs can cover what is heard and reported (Polit & Beck, 2012; Wood & Harber, 2010). A bracketing technique enables a researcher to set apart personal prejudices when engaging with participants; this helps a researcher to pursue important issues introduced by participants (Wood & Harber, 2010). In this study the researcher suspended her own beliefs during data collection, data analysis and the conceptualisation phases.

### 2.3.5 Synthesis

Synthesis allows a researcher to bring together pieces of knowledge in a more valuable and rational form (Wood & Harber, 2010). In this study synthesis was used during data analysis, in the development of themes and sub-themes, and also during the programme development.

**Table 2.1:** The relationship between study phases and reasoning strategies

Research phase	Research steps	Reasoning strategy
<b>Phase1:Situational analysis</b>	<p><b>Design:</b> Qualitative,exploratory, descriptive, contextual</p> <p><b>Data collection</b></p> <p><i>Population:</i> Mothers and caregivers of children under the age of five years in the Oshikoto region</p> <p><i>Sampling technique:</i> Purposive sampling</p> <p><i>Sample:</i> Fifteen mothers and caregivers were interveiwed</p> <p><i>Data collection:</i> Unstructured individual in-depth interview</p>	<p>Inductive</p> <p>Bracketing</p> <p>Inference</p> <p>Synthesis</p>

	<p><i>Data analysis:</i> Qualitative data analysis according to Tesch's steps,</p> <p>themes and sub-themes identified</p>	
<p><b>Phase 2: Conceptual framework</b></p>	<p>Identification and classification of central concepts according to Dickoff et al's survey list</p> <p>Construction of theoretical relationship from Nicholls' cyclic curriculum model, Kolb's experiential learning cycle, and Knowles' andragogy model</p>	<p>Synthesis</p>
<p><b>Phase 3: Programme development</b></p>	<p>Identification of programme objective</p> <p>Description of programme content</p>	<p>Deductive</p> <p>Synthesis</p> <p>Inference</p>
<p><b>Phase 4: Programme implementation and evaluation</b></p>	<p><i>Population:</i> Mothers and caregivers of children under 5 years in Oshikoto Region</p> <p><i>Sampling technique:</i> Purposive sampling</p> <p>Facilitation of programme</p> <p>Programme evaluation</p>	<p>Synthesis</p>

## **2.4 SITUATIONAL ANALYSIS (Phase 1)**

The first phase of this study focused on situational analysis, in which the experiences of mothers and caregivers on feeding practices of children under the age of five years, were explored and described. A qualitative exploratory descriptive contextual design was utilised during this phase.

### **2.4.1 Qualitative approach**

Qualitative enquiry is a way of exploring and understanding the meaning of individuals or group in which the researcher studies a certain phenomenon in a natural setting and try to make sense out of such phenomenon (Creswell, 2007; Wood & Haber, 2010; Creswell, 2014). A qualitative approach was adopted to assist the researcher to explore and describe the experiences of mothers and caregivers on feeding practices of children under the age of 5 years.

This approach was chosen specifically because it is regarded as a systematic approach which would enable the researcher to gain an in-depth understanding of mothers and caregivers` experiences on feeding practices of children under the age of 5 years in Oshikoto region. Mothers and caregivers `s experiences could only be understood and established by talking directly to them and allowing them to tell their stories and this is possible through qualitative approach (Creswell, 2007; Brink, 2009).

### **2.4.2 Exploratory design**

Exploratory design was chosen to assist the researcher to gain more insight and understanding of the experiences of mothers and caregivers on feeding practices of children under the age of five years, diagnosed with undernutrition in the Oshikoto region. Polit and Beck (2012) indicated that exploratory design enables a researcher to collect comprehensive data in detail. Such data assisted the researcher to develop an educational programme to empower mothers and caregivers on feeding practices of children under the age of five years. Exploratory design also assisted the researcher to view all the findings, classify the data in totality, and identify what was needed to be included in the educational programme.

The study facilitated the collection of new ideas, which assisted the researcher to obtain an overview of what was happening in the life of mothers and caregivers of children under the age of five years in terms of feeding practices. The researcher explored the experiences of mothers and caregivers of children under the age of five years on feeding practices. The study was conducted in three hospitals in the Oshikoto region. Relevant literature was reviewed, and concepts, themes and sub-themes were identified.

### **2.4.3 Descriptive design**

Descriptions were used to gain accurate and complete information as well as a comprehensive understanding of the respondents' experiences on feeding practices of children under the age of five years.

The researcher collected subjective data from mothers and caregivers, and this assisted in the description of their experiences regarding feeding practices of children under the age of five years. A conceptual framework was described that led to the development of an educational programme to empower mothers and caregivers of children under the age of five years with regards to feeding practices (Brink, 2009; Grove, Burns & Gray, 2013). As a result of the descriptive design, the identified attributes, and their meanings, were described in-depth, as well as the conceptual framework which included the agent, context, recipient, procedure and dynamic.

#### **2.4.4 Contextual design**

According to Holtzblatt and Beyer (2015), the fundamental aspect of contextual design is to understand participants in their own setting and make use of such understanding to develop insight into their lives. Contextual design was used in this study to understand the experiences of mothers and caregivers in a natural setting or context to ensure true, valid and accurate information without the influences of external factors.

The researcher avoided the use of fixed and predetermined questions, because those types of questions usually take the participants out of context (Holtzblatt & Beyer, 2015). According to Babbie and Mouton (2009) contextual design helps a researcher to understand events against the background, and how the context confers meaning to the experiences of mothers and caregivers on feeding practices. Contextual design assists in revealing important issues like drive, beliefs, emotions, and constraints imposed by a real life world (Holtzblatt & Beyer, 2015).

## **2.4.5 Population**

Wood and Haber (2010), and Polit and Beck (2012) described population as a defined set with certain properties or common characteristics. The criteria of a population establish a target population. Population therefore consists of aggregate features which are of interest to a researcher (Polit & Beck, 2012). The population for this study consisted of mothers and caregivers of children under the age of five years diagnosed with undernutrition, and admitted to the Onandjokwe Intermediate, Omuthiya and Tsumeb districts hospitals. The population also comprised mothers and caregivers of children registered with the Nutritional Assessment Counseling and Support (NACS) programme in the abovementioned hospitals during the time of the study. Children who were admitted had severe acute malnutrition (SAM), while those registered with NACS were moderate cases (MAM).

### **2.4.5.1 Sample and sampling**

The process of selecting cases to represent an entire population is referred to as sampling. A sample is defined as a subsection of a population's components from which the data are collected (Polit & Beck, 2012). Non-probability sampling which is purposive sampling was used for this study. Mothers and caregivers, of children under the age of five years diagnosed with undernutrition and admitted to the Onandjokwe Intermediate, Omuthiya and Tsumeb district hospitals, or registered with NACS, were purposefully drawn.

Purposive sampling was chosen because it is the most appropriate and useful methods for an exploratory study as participants chosen have experienced the phenomenon under study. The nature of purposive sampling requires eligibility or inclusion criteria.

These criteria enable a researcher to consider whether an individual would or would not be categorised as a member of the population. The inclusion criteria for this study are presented below.

- Mothers or caregivers had to be for children from 0–59 months.
- A child had to have been diagnosed with undernutrition, and admitted as an in-patient at the Onandjokwe, Omuthiya, or Tsumeb hospitals; or registered with the NACS programme.
- Mothers or caregivers had to reside in the Oshikoto region.
- Mothers or caregivers had to be 18 years or older to make decisions (non-autonomous and mentally impaired people were excluded).
- Mothers or caregivers had to be able to speak and understand Oshiwambo (common language spoken in Oshikoto) or English.

The researcher visited the units where children with undernutrition are admitted or seen as out-patients in Onandjokwe Intermediate hospital, Omuthiya and Tsumeb district hospitals. Mothers and caregivers who met the abovementioned criteria were then identified by the researcher in collaboration with the unit supervisors. This was done by checking the age of the child in the health passport and asking the mother or caregiver her age and region where she/he resides. The researcher then made an appointment for the interview according to the mother or caregiver`s convenient schedule.

In qualitative research, the sample size is not statistically significant; as this type of study is not intended for generalisation to the whole population. Therefore, sample size was determined by data saturation. According to Creswell (2007) and Grove, Burns and Gray, (2013) data saturation is a stage where no more new information is obtained from respondents when interviewed. This implies that the information shared with a researcher becomes repetitive and no more new ideas are presented by respondents (Wood & Harber, 2010).

Fifteen mothers and caregivers were interviewed and data saturation was reached. Ten were of in-patient children, and five were of children registered with the Nutritional Assessment Counseling Support programme (NACS). Thirteen respondents opted to be interviewed in Oshiwambo, and two preferred English.

#### **2.4.5.2 Pilot testing**

A pilot study was conducted to identify unforeseen problems, and also to assess whether the study would be feasible. Polit and Beck (2012), and Wood and Harber (2010) defined a pilot study as a small scale, simple study which is done before the implementation of a major study. It is part of preparation; it is also called a feasibility study. Pilot testing was done with four caregivers of children with undernutrition. Three caregivers were of children admitted to the pediatric ward in the Onandjokwe Intermediate Hospital; one was of an out-patient child, who came for nutrition counseling and support. The files and health passports of the children, whose mothers and caregivers participated in the pilot study, were identified to ensure they were excluded from the main study.

The data were audio-recorded after receiving permission from the respondents. The researcher used probing questions to solicit more information from them. The data were transcribed verbatim. The interviews that were conducted in Oshiwambo language were translated into English by the researcher.

Pilot testing assisted the researcher to become familiar with the questions to be asked during the interviews, the technical aspect of the recorder, and the procedure of interviewing. The pilot study exercise identified whether the questions asked were understandable or not. It also indicated areas where probing was necessary, and the time to be allocated for each interview. The question posed during pilot testing was “Tell me your experiences regarding feeding practices of your child who is diagnosed with undernutrition.”

During pilot testing the following questions were kept in mind.

Were the experiences adequately explored; was the time too long for the respondents; would essential information and meaning attached to experiences of mothers and caregivers on feeding practices be summarised to come up with themes?

During the pilot testing, the researcher identified the need to review communication techniques to be utilised during interviews to ensure she would talk less and listen more; the shortcoming identified in questioning and probing was modified to ensure trustworthiness of the information gathered from the respondents during the main study (De Vos, Strydom, Fouche & Delpont, 2007).

The quality of the recording was also rectified because the tape-recorder used during the pilot study produced recordings of poor quality with some noise. To ensure better recording quality, the researcher purchased and used a voice-recorder during the main study which was only meant for study purposes.

#### **2.4.6 Preparation of research field**

According to Polit and Beck (2012) fieldwork involves activities a qualitative researcher undertakes to collect data in the field which is a natural setting. This implies that the field is where a researcher comes into contact with respondents in order to collect and analyse the data. It is very important to prepare a field before conducting a study. In this study the field was all the health facilities where the interviews were conducted. The researcher familiarised herself with the health facilities where the study was to be undertaken. The supervisors of units, where children with undernutrition are admitted, were met, as well as the supervisors of the Nutritional Assessment and Counseling programme.

The researcher started with the preparation of the field before collecting data. The preparation was done by means of meetings with the principal medical officers, nursing management of the hospitals, and supervisors of primary health care. All were informed of study and asked for permission to conduct the study. The environment in which the data was collected was prepared before commencement of data collection. Suitable rooms were identified to meet the needs of the interviews. Environmental factors such as light, air, noise and atmosphere were controlled to make potential respondents as comfortable as possible.

The rooms were cleaned and chairs were arranged in a non-confronting way. The preparation of potential interviewees (respondents) was done by both the researcher and the supervisors.

#### **2.4.7 Data collection method**

Data collection refers to a systematic gathering of information to address a research question or problem. Qualitative research requires data to be collected in words (Polit & Beck, 2012; Wood & Harber, 2010). In this study data were collected using individual interviews. Nine mothers and six caregivers aged 18 – 67 years, who took care of children aged four to twenty-three months, were interviewed.

##### **2.4.7.1 Individual interview**

An interview is a method of data collection in which a researcher meets in person with the respondents and asks questions on a face-to-face encounter in which data are produced as words (Polit & Beck, 2012; Grove, Burns & Gray, 2013). Such an interview is one of the best methods of data collection; it enables a researcher to obtain quality data.

In this study individual interviews were used to enable the respondents to talk freely about their experiences; often some respondents do not express themselves well if they are in a group setting. The researcher selected an in-depth interview because it is suitable for an exploratory, descriptive study, and it assisted the researcher to obtain quality information from the respondents. It enabled her to understand their experiences on feeding practices of children under the age of five years. The researcher conducted interviews with the respondents in a private room to encourage them to talk without interruptions.

The unstructured indepth individual interview allowed the researcher to explore a greater depth of information provided by the repondents. The main question during each interview was: “Tell me your experience on feeding practices of your child who is diagnosed with undernutrition”. Probing questions followed, depending on the respondents’ responses. Probing refers to drawing or obtaining more useful information from respondents during an interview (Polit & Beck, 2012). The interview was audio-recorded to ensure accurate transcriptions. The date, venue and time of the interview were arranged according to the respondents’ convenience.

#### **2.4.7.2 Conducting an interview**

Prior to the commencement of each interview, the researcher welcomed each respondent in the interview room, offered her a chair, and made her feel comfortable. The researcher read the consent letter to participate in the study. Each respondent gave their written informed consent. The researcher re-emphasised the purpose and objectives of the study.

The interviewees were informed to be open, to answer the questions the way they felt was correct, and also to ask questions if clarification was needed. They were informed about the use of the audio-recorder and to indicate if they do not want their responses and comments to be audio-recorded. The use of audio-recording was important because information obtained from interviews provides a good record with referential adequacy, and ensures credibility (Babbie & Mouton, 2009). The researcher replayed the interview captured by the recorder so that the respondents (interviewees) could listen to the information they had provided. This was a method of ensuring credibility of data. At the end of the interviews, the researcher thanked each respondent for taking part, and for providing information.

### **2.4.7.3 Tools used for data collection**

The researcher used an interview guide, a voice recorder, and a notebook, as tools for data collection. The interview guide allowed the the researcher to focus on asking questions; the notebook was used to enter important information, and served as field-notes. A voice recorder was used to record the interviews. This made it easier for the researcher to concentrate, probe further and observe the respondents' nonverbal communication. Interviewees (respondents) were informed in advance of the use this tool, and their acceptance of its use was obtained. They were assured on anonymity as their names were not used during the interviews.

The voice-recorder backed up the data and assisted the researcher during transcribing of individual interviews. It allowed for several replays to capture the data, particularly as some respondents spoke fast and this meant it was difficult for the researcher to write down all information; the recorder assisted in capturing what was said.

### **2.4.7.4 Communication techniques used during data collection**

A researcher needs to have good interpersonal and interviewing skills. These include attitudes which contribute to a researcher's ability to create a rapport with interviewees. Rapport leads to them providing an honest free flow of information. Facilitative techniques involve being attentive to the phenomenon under examination (Streubert, Speziale & Carpenter, 2007), becoming aware of each participant as a total being and listening carefully, as well as allowing for an open and free communication of thoughts and feelings during interviews. In addition to these, the following techniques were also used in this study.

**Congruence:** The researcher remained consistent throughout each interview while interacting with the respondents. Each interviewee was respectfully asked one central question during individual face-to-face interviews.

**Language use:** The researcher used simple language and terminologies that could be understood by the respondents. This was done to minimise misunderstanding.

Each interview was conducted in the language preferred by the respective respondents. Oshiwambo and English were used as both were understood by both the researcher and the respondents.

**Minimal verbal responses:** Minimal responses include responses such as “ok” or “I see” and “I understand” which indicate that a researcher is following what is being said. During this study minimal responses were applied to encourage discussions between the researcher and the respondents; the researcher adopted a less active role and allowed them to talk more (De Vos et al, 2007).

**Tracking:** Tracking involves redirecting a person back to the topic of discussion (Hornby, 2015). This was done throughout the interviews to ensure that the respondents returned to the topic instead of discussing other issues (Blessing & Forister, 2012). Phrases like “let us come back to our topic or we will talk about that later” were used to redirect the discussion.

**Probing:** In order to obtain more information, probing was done. Probing uses clues for respondents to address what is expected from them while encouraging them to talk (Brink, 2007). In this study probing techniques such as “tell me more about”, can you give me an example or what do you mean by” were used during each individual interview.

**Reflection:** Reflection involves restating a respondent's comment either in the exact same terminology or by repeating part of the comments (Hornby, 2015).

In this study the researcher restated what a respondent had explained, when, necessary, to understand the essential message.

**Clarifying:** Clarifying involves stating or voicing what a respondent seems to imply rather than what was said (Hornby, 2015). This is done to verify impressions which help them to become more aware of their feelings. In this study questions were asked to clarify unclear statements.

#### **2.4.7.5 Field notes**

The notes taken by the researcher, to record unstructured observation made in the field, and interpretation of these observations, are known as field notes (Polit & Beck, 2012). Field notes are important for data analysis therefore key information needs to be captured. Field notes were taken for observations and non-verbal communication, which are important but cannot be audio-recorded (Streubert, Speziale & Carpenter, 2007). They are incorporated in collected data as they contain both descriptive and reflective aspects of the fieldwork. They help a researcher to remember, retrieve and analyse reflections, observations and experiences, during the data collection process: gestures, lack of interest, enthusiasm and uncertainty. Field notes used in this study are reflected in chapter three.

#### **2.4.8 Management of the data**

Qualitative data need to be managed properly to maintain integrity and to avoid confusion. The researcher followed the steps of managing qualitative data as outlined by Bezeley (2013) as illustrate in table 2.2

Table 2.2: **Steps for managing qualitative data and application**

<b>Steps in managing qualitative data</b>	<b>Application</b>
Keeping copies of important information	The researcher backed up data collected with a voice-recorder, computer and external hard drive, which were also updated as the analysis progressed.
Organising field notes in chronological manner	The researcher arranged the field notes and her comments in chronological order which can give her a picture that these field notes were part of this individual interview.
Generate a method of labeling and storing interview	The researcher used unique file names to identify each file which included date and place of data collection. This assisted the researcher to retrieve data easily.
Create safe storage of materials	The researcher stored the data in a personal computer which has a password. Printed materials, notebook with field notes and the voice-recorder were stored in lockable cupboard.
Checking for missing data	Since missing data usually result from participants who refuse to participate or from non-coverage of selected participants, the researcher tried to check constantly for

	any missing data. The researcher also managed to collect data from all selected respondents and none of them refused to participate in the interviews. The researcher established a rapport before the interview and this motivated all potential respondents to be interviewed.
Develop the procedure of reading, reviewing and interpreting	The researcher read the notes; tried to understand their meaning. This assisted her to come up with themes and sub-themes.

#### **2.4.9 Data analysis**

In qualitative research, data analysis is done at the same time with data collection. Data analysis is described by Polit and Beck (2012) as a logical organisation and synthesis of research data. According to Grove, Burns and Gray (2013) qualitative data analysis involves examining and interpreting data in order to produce meaning and gain understanding from the empirical data. In this study, the researcher used a qualitative analysis technique in which words, rather than numbers, were analysed.

According to De Vos et al (2007), a qualitative analysis processes involves searching for meanings and relationships among categories and generating themes. The data are broken down, conceptualised and put back together in a different way. Data in this study were analysed through coding and thematising, using data driven or open coding.

In data driven or open coding, a researcher approaches data without preconceived ideas about how to code them (Tappen, 2011). Grove, Burns and Gray (2013) refer to coding as a mean of designating or classifying words or phrases. Tesch`s method of open coding was adopted during analysis of data in this study. Table 2.3 indicates Tesch`s steps of data analysis, and application used in this study as indicated by Creswell (2014).

**Table 2.3:** Tesch`s steps of data analysis and its application

Tesch`s steps of data analysis	Application to the study
Read all the transcripts to get sense of the whole and write down some thoughts as they come to mind	The researcher read carefully and repeatedly the transcripts in detail and got a sense of each transcripts by breaking it into parts.
Pick one document, go through it, get the meaning	The researcher read each transcription one at a time with the purpose of searching relevant data parts which could be classified together
Organise those topics into column of major topics and distinctive topics	The researcher made notes on the edge of transcripts and similar topics were clustered together in column as themes and sub-themes
Allocate each topic a code and write it next to the appropriate section of the text, check if a new group and code will arise	After topics were arranged in columns, the researcher revisited the data, gave code to the topic, and recorded each code in the appropriate section in the text.

	Credibility was considered during coding and similar pieces of information were given the same code.
Find the most descriptive wordings of the topic and turn them into themes	The researcher tried to reduce the list of categories by grouping together topics that related to one another; a number of themes were generated.
Do final decision/choice on each category/theme	The researcher went through the material (transcripts and field notes) and then created a final column of categories and subcategories
Categorise the data which belong to one group in one place	The researcher reduced the data through coding data with similar description and this assisted her to sort and organise the data so that final conclusions could be drawn.
Re-code data when necessary	The researcher re-coded the data after initial coding

In this study the interviews were transcribed verbatim. The researcher listened to the recordings and wrote down all the words one by one. Since most of the respondents opted to respond in their vernacular language (Oshiwambo), all Oshiwambo transcriptions were translated into English.

The researcher then read through each transcription carefully and wrote down some ideas as they came to her mind. The researcher made a list of topics, clustered similar topics together, and tried to find the most suitable descriptive wording of each topic. Four themes, and fourteen sub-themes, were then identified and are described in chapter three.

#### **2.4.10 Measures to ensure trustworthiness**

The researcher adopted strategies, suggested by Lincoln and Guba, as cited by Tappen (2011), and Polit and Beck (2012), to establish trustworthiness of the data. These strategies are credibility, dependability, confirmability, transferability and authenticity.

##### **2.4.10.1 Credibility**

According to Polit and Beck (2012) credibility refers to assurance in the truth of the data and their interpretation. Credibility ensures the correctness and reliability of the data. In this study, credibility was maintained through prolonged engagement, triangulation, referential adequacy, peer debriefing, and member checks.

**Prolonged engagement:** The researcher met the respondents (interviewees) before data collection to brief them about the study and its purpose; extra time was also invested in data collection until data saturation was reached.

**Triangulation:** Data were collected at three different hospitals (urban, rural and peri-urban) to provide views from different areas. Individual interviews were combined with field notes as a means of data collection.

**Referential adequacy:** The researcher ensured referential adequacy by using an audio-recorder to record individual interviews. Its use was explained to each respondent before starting with recording. Their permission was obtained to use this research tool.

**Peer debriefing:** Peer debriefing was ensured by presenting the research proposal and findings to the faculty seminar where colleagues, outside the context of the study reviewed the experiences, and provided insight on the analyses. This debriefing assisted in decisions regarding the next step to be taken, through questioning.

**Member checks:** Debriefing of respondents was done at the end of each interview as part of member checks. The audio-recording was played back to them so that they could correct obvious errors or provide additional information.

#### **2.4.10.2 Transferability**

According to Babbie and Mouton (2009), transferability is the point to which the findings can be applied in other settings with other respondents. In this study transferability was ensured through purposive sampling, generalisation from the sample to the population, and thick description.

**Purposive sampling:** The respondents were purposively selected as they possessed information about the phenomenon being studied. Inclusive criteria in the sample were also identified.

**Generalisation from sample to population:** Data were collected until saturation was reached for the purpose of generalisation.

**Thick description:** The researcher collected and reported detailed descriptions of data and the context of the study to allow judgment for transferability by others.

#### **2.4.10.3 Dependability**

Dependability means that a study can be replicated within a similar context and similar participants (Babbie & Mouton, 2009; Polit & Beck, 2012). In this study, dependability was maintained through an inquiry audit, dense description of the research, and using code recoders (Babbie & Mouton, 2001). The researcher sent the notes, which emerged from the interviews and the interpretations of these notes, together with the interview recordings, to experts in qualitative research to check whether the researcher had adhered to acceptable standards in respect of the research process.

**Inquiry audit:** The researcher received intense guidance from academic supervisors. Data and relevant documents were sent to her supervisor and co-supervisor for scrutiny.

**Dense description of the research methods:** Research methods such as the selection of participant population, sample and sampling, data collection and analysis, are described in detail

**Code-recode procedure:** The researcher coded the data, waited for two weeks and returned to recode the same data and evaluate the results.

#### **2.4.10.4 Confirmability**

Confirmability means that the findings must reflect participants' voice and condition of enquiry, but not a researcher's bias and perspective (Babbie & Mouton, 2009; Polit and Beck, 2012).

This can be confirmed through reviewing recorded tapes and written field notes. During this study the researcher sent notes, from the interviews, to her supervisor to determine whether conclusions, interpretations and recommendations could be traced to their source and if they were supported by inquiry. Literature control was also used to confirm the researcher`s interpretations.

#### **2.4.10.5 Authenticity**

Authenticity refers to the extent to which a researcher shows reality, honest and faithful. In this study the researcher wrote the research report in such a way that it conveys the respondents` experiences as described by them. The researcher indicated quotes as exactly stated the participants (Polit & Beck, 2012).

### **2.5 PHASE 2: DEVELOPMENT OF A CONCEPTUAL FRAMEWORK**

The first phase`s focus was on situational analysis. The second phase concentrated on the development of a conceptual framework. The latter guided the researcher to develop an educational programme to empower mothers and caregivers of children under the age of five years on feeding practices. The framework was derived from Dickoff, James and Wiedenbach`s survey list which includes agent, recipient, context, procedure, dynamics, and terminus (Dickoff, James& Wiedebach, 1968) as illustrated in Table 2.4. The conceptual framework is described in chapter four.

**Table 2.4:** Conceptual framework development

<b>Activities</b>	<b>Researcher's reasoning map</b>
<p>Conceptual framework was developed based on the results of phase one and the survey list of Dickoff, James and Wiedenbach of 1968 which includes the agent, recipient, context, dynamics, procedure, and terminus.</p>	<p><i>Agent</i> – Researcher, a nurse educator and a facilitator of the programme</p> <p><i>Recipient</i> – Mothers and caregivers of children under the age of five years</p> <p><i>Context</i> – Health facilities providing care to children under the age of five years in the Oshikoto region, Namibia</p> <p><i>Dynamics</i>– Challenges experienced by mothers and caregivers as described in Table 3.1</p> <p><i>Procedure</i>- Intended educational programme to empower mothers and caregivers to address challenges identified during situational analysis</p> <p><i>Terminus</i>- Knowledgeable and empowered mothers and caregivers on feeding practices of children under the age of five years.</p>

## 2.6 PHASE 3: DEVELOPMENT OF AN EDUCATIONAL PROGRAMME

The third phase entailed development of a programme to empower mothers and caregivers on feeding practices of children under the age of five years.

It was developed based on the challenges identified in the situational analysis and concepts derived from the conceptual framework guided by Dickoff, James and Wiedenbach's survey list. Themes from transcriptions of the in-depth interviews, and information derived from the literature, assisted in the development of the programme. Its emphasis is empowering mothers and caregivers on feeding practices of children under the age of five years in order to prevent undernutrition in these children.

The cyclic curriculum development model of Nicholls and Nicholls was adopted in the development of an educational programme. This model includes five activities: conducting situational analysis, selecting objectives, selecting and organising content, selecting and organising teaching methods, and evaluation of learning (Nicholls & Nicholls, 1978). The programme includes a purpose, objectives, and structure such as content, approaches or teaching strategies. After setting objectives, the content was selected and organised. The researcher decided on teaching methods/strategies to be used depending on the objectives and content. The programme development phase is described in chapter five.

## **2.7 PHASE 4: IMPLEMENTATION AND EVALUATION OF THE PROGRAMME**

Phase three focused on programme development. The fourth phase covered programme implementation and evaluation. Kolb's experiential learning cycle, and Knowles' model on andragogy, was adopted in the implementation of an educational programme. Kolb's experiential learning cycle includes four stages: exploring activity, assimilation of new experience, in-depth understanding of experience, and application of what was learned (Kolb & Boyatzis, 1999). A researcher, as a programme facilitator, needs to give time to participants to explore and assimilate a new experience,

so that they are able to have an in-depth understanding to be able to apply what they have learned. On the other hand, Knowles` model includes a conducive learning environment, learning needs, previous experience, clear objectives, and evaluation (Knowles, 1980). The researcher created a conducive learning environment for the participants in the programme by organising a venue. Participants` learning needs, as well as previous knowledge and experience, were considered. The researcher also set clear objectives to be achieved and evaluated in terms of whether they were achieved.

The programme was implemented by conducting a two-day workshop for mothers and caregivers of children under the age of five years, diagnosed with undernutrition and receiving health services at the Onandjokwe Intermediate Hospital in Oshikoto region. This hospital was chosen because it is a referral hospital for the whole region. The population was selected because mothers and caregivers need to be empowered with knowledge on feeding practices to prevent undernutrition.

In order to evaluate the usefulness and the impact of the programme the researcher used both positivist and interpretive approach whereby a pre- and post-tests were administered to the workshop participants. Questions for the test were set depending on the objectives that had to be achieved. The participants were also given a chance to evaluate the programme implementation. This phase of programme implementation and evaluation is discussed in chapter six.

## **2.8 ETHICAL CONSIDERATIONS**

This study involved respondents, and workshop participants. Informed written consent was obtained from all in the study.

Their participation was voluntarily; nobody was forced to participate in the study. Their anonymity was ensured; their identities were not revealed and information cannot be linked to them. Other ethical principles considered throughout the study were based on the Helsinki Declaration (Brink, van der Walt & van Rensburg, 2012). These principles are discussed below.

### **2.8.1 Principles of beneficence and non-maleficence**

These principles involve doing well and doing no harm. Harm can be physical, emotional, spiritual, economic, social or legal (Brink, van der Walt & van Rensburg, 2012). A researcher has a responsibility to protect respondents and participants against harm and discomfort. Interviews in this study were conducted in a non-threatening environment. The benefits of the study were made clear to the respondents in the first phase and the fourth phase workshop participants by explaining the advantages of the study. Although not all would benefit directly, those who were willing to participate in the educational programme were invited to attend. Potential harm and discomfort were avoided or minimised by using a private room while conducting the interviews. The respondents were also informed of their right not to answer questions which they did not feel comfortable with.

### **2.8.2 Principle of justice**

This principle includes participants` right to fair selection (Brink, van der Walt & van Rensburg, 2012). In this study participants were treated equally and fairly selected based on the problem under study and the inclusion criteria. They were not selected because they were easily available or could be manipulated.

They were assured that all information would be treated with strict confidentiality. Data were personally captured by the researcher on a password protected personal computer. The captured information could not be accessed by others.

### **2.8.3 Principle of autonomy and respect for human dignity**

The researcher took into account the rights of participants and protected such rights at all times. These include right to self-determination, right to privacy, and right to confidentiality (Brink, van der Walt & van Rensburg, 2012). Participants are autonomous, meaning they have a right to self-determination which needs to be respected. This right includes a right to decide whether to take part or not to take part in a study without the risk of penalty or prejudicial treatment (Brink, van der Walt & van Rensburg, 2012). These rights were explained to the respondents and the workshop participants. It was left to them to decide whether they would participate in the study.

They were assured of their right to withdraw at any time from the study without any penalty. The purpose, objectives and process of the study were fully explained to them so that they could make an informed decision and to provide written consent. The researcher provided the information in the language that they understood. They were given a chance to ask questions before signing the consent form.

## **2.9 SUMMARY**

This chapter described the research design and methods. The method for this study comprised of four phases: situational analysis, development of conceptual framework, development of an educational programme, programme implementation and evaluation. Measures to ensure trustworthiness, as well as ethical considerations, were also explained. The next chapter deals with description of results, identification of themes, as well as literature control.

## **CHAPTER THREE**

### **DATA ANALYSIS AND LITERATURE CONTROL**

#### **3.1 INTRODUCTION**

In the previous chapter, the research design and methods used in conducting this study were discussed. In this chapter the results of the first phase (situational analysis) are discussed. The first phase explored and described the experience of mothers and caregivers on feeding practices of children under the age of five years in the Oshikoto region.

#### **3.2 BACKGROUND INFORMATION OF DATA COLLECTION AND ANALYSIS**

Data were collected in three different health facilities in the Oshikoto region. The study sites were the Onandjokwe Intermediate hospital, Omuthiya and Tsumeb district hospitals. The Onandjokwe Intermediate Hospital is a referral health facility for the whole of the Oshikoto region. Nine mothers and six caregivers (n=15) were interviewed. Their ages ranged from 18 to 67 years. They all were taking care of children aged four to twenty-three months. Ten children were diagnosed with SAM, so they were admitted in the pediatric department, and five were having MAM, registered with Nutritional Assessment Counseling and Support programme (NACS). Seven respondents were interviewed in Onandjokwe Intermediate Hospital, four were interviewed in the Omuthiya district hospital, and four were interviewed in the Tsumeb district hospital. Data were collected until saturation was reached.

Data were analysed using Tesch's method of data analysis. The data analysis process involved breaking down the data into categories/themes and subcategories/sub-themes according to the content they represented (Polit & Beck, 2012). Four themes, and fourteen sub-themes, were identified regarding the respondents (interviewees) respective experiences on feeding practice of children under the age of five years. As suggested by De Vos et al (2011), literature control was used to relate the findings to the existing body of knowledge. According to Streutbert, Speziale and Carpenter (2007), in qualitative research, a literature review should be done after data analysis in order to avoid bias based on predetermined ideas and knowledge. Table 3.1 depicts the themes and sub-themes identified in this study.

**Table 3.1:** Themes and sub-themes

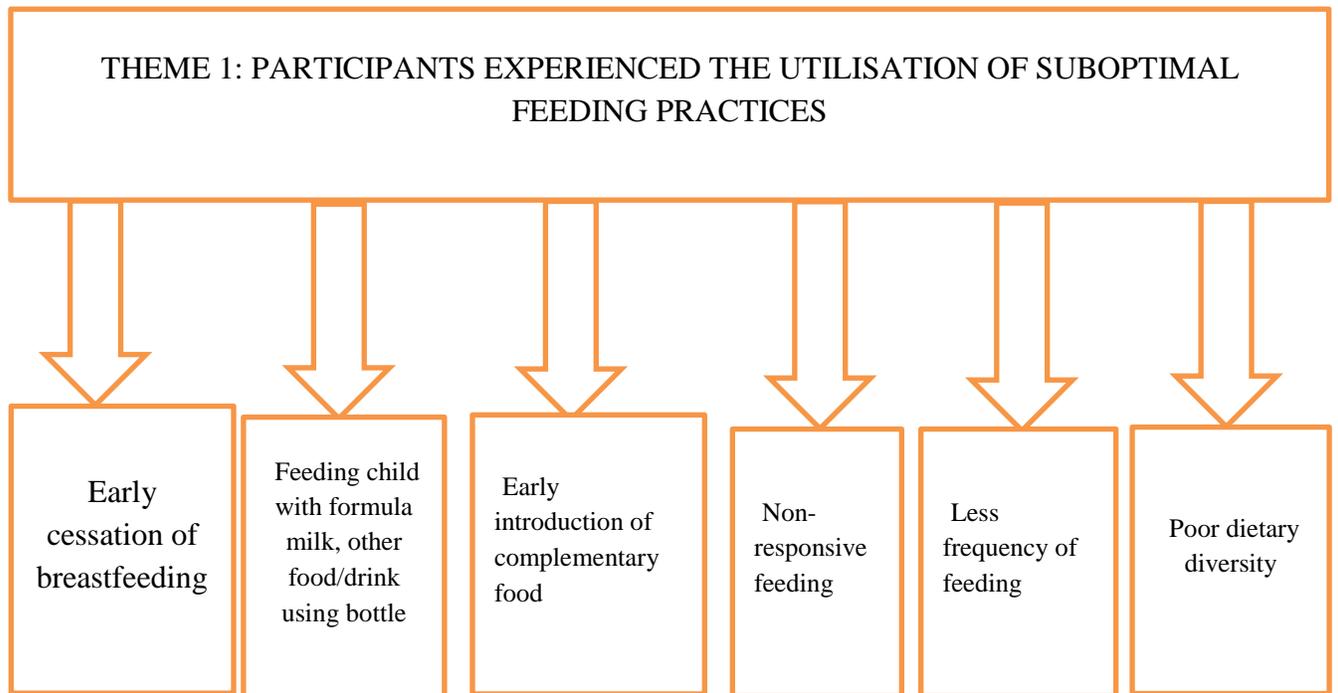
<b>Themes</b>	<b>Sub-themes</b>
3.2.1 Participants (respondents) utilised <b>sub-optimal feeding practices.</b>	3.2.1.1 Early cessation of breastfeeding 3.2.1.2 Feeding children with formula milk, other food/drink using bottle 3.2.1.3 Early introduction of complementary food 3.2.1.4 Non-responsive feeding 3.2.1.5 Less feeding frequency 3.2.1.6 Poor dietary diversity
3.2.2 Participants (respondents) experienced <b>different factors which influenced feeding practices negatively.</b>	3.2.2.1 Food refusal and picky eating behaviour 3.2.2.2 Mothers abandoning and neglecting children 3.2.2.3 Mothers and caregivers abusing alcohol 3.2.2.4 Unhygienic food practices

3.2.3 Participants (respondents) experienced <b>shortage of nutritional and feeding practices information</b>	3.2.3.1 Lack of information related to types food suitable for children 3.2.3.1 Lack of information related to feeding practices
3.2.4 Participants (respondents) experienced <b>limited resources needed to facilitate feeding practices</b>	3.2.4.1 Household food insecurity 3.2.4.2 Financial difficulties

### 3.2.1 Theme 1: Respondents utilised sub-optimal feeding practices

Optimal feeding practices are important for nourishment, growth, development and existence of infants and young children (Sultana, Hoque & Saleh, 2014). Optimal feeding practices assist a child to grow healthy and well-nourished (Sultana, Hoque & Saleh, 2014). According to Perera et al. (2011) optimal feeding practices include exclusive breastfeeding for six months, followed by the addition of complementary feeds with continuation of breastfeeding up to or beyond two years. Optimal feeding practices also include practicing responsive feeding, handling food hygienically by washing hands, and also introducing sufficient nutritious safe complementary food (WHO, 2014). In this study, the respondents utilised suboptimal feeding practices as illustrated in Figure 3.1. Suboptimal feeding practices include early introduction of complementary food, limited dietary diversity, and an inadequate quantity and quality of food.

Inappropriate feeding practices contribute to undernutrition, in children under the age of five years, which results in growth problems (Nguyen, Menon, Ruel & Hajeabhoy, 2011; USAID, 2011; MOHSS, 2014). Mothers and caregivers, who took part in this study, expressed their views regarding feeding practices they use. It was evident from their responses that they do not use optimal feeding practices. Findings from this study correlate with the WHO (2016) report that states that many infants and children do not receive optimal feeding; between 2007 to 2014 only 36% of infants aged 0 – 6 months globally were exclusively breastfed. The following subthemes in Figure 3.1 were identified under sub-optimal feeding practices.



**Figure 3.1:** Suboptimal feeding practices utilised by mothers and caregivers.

### 3.2.1.1 Early cessation of breastfeeding

Breastfeeding is the best method of feeding an infant, as breast milk contains all the nutrients needed, as well as immuno-protective factors that boost the undeveloped immune system of an infant (Dashti, Scott, Edwards & Al-Sughayer, 2014). The WHO, and the United Nation Children`s Fund (UNICEF) recommend that infants should be breastfeed exclusively for the first six months; breastfeeding needs to be continued up to that age of two years or beyond (Kuzma, 2013; Dashti et al, 2014; Tarrant et al, 2010; Kimani-Murage et al, 2011). The respondents in this study ceased to breastfeed their children early. According to Oakely, Henderson, Reshaw and Quigley (2014) cessation of breastfeeding is defined as the time when a baby no longer receives any breast milk. Mothers and caregivers communicated the following regarding the duration of breastfeeding in this study. Their verbatim comments are in italics.

*“I have been breastfeeding my baby till he turned 6 months, then from 6 months I stopped breastfeeding” (P#1).*

*“I was breastfeeding him till six months, then I stopped, I started giving him mahangu soft porridge and other milk called Oshitaka” (P#4).*

*Mmmh “I use to feed the child with” mahangu” soft porridge when her mother left her with me and went to work and the child was only six months” (P# 2).*

*(Looking uneasy) “I breastfed my child till nine months, then I stopped and I took my child to my mother” (P#3).*

*“The child stopped breastfeeding when she was three months” (P# 6).*

*“After nine months I stopped breastfeeding, then I started giving him “mahangu” soft porridge” (P#12).*

*“I stopped breastfeeding when the child started walking” (she cannot remember the age at which she stopped breastfeeding as she is illiterate) (P#13).*

*“She said she was told by nurses to breastfeed till six months, so she breastfed the child for six months then she stopped” (mother is HIV positive) (P#15).*

These verbatim comments are a clear indication that mothers did not continue to breastfeed their babies for two years and beyond. This finding is in accord with that of Oakely et al (2014). They found that mothers tend to stop breastfeeding before six months’ post-partum, and some cease to breastfeed in the early weeks.

In a study, conducted in North West Ethiopia, by Yenebat, Belachew and Haile (2014), 70% of mothers stopped breastfeeding before six months, 37% stopped at six months, and 6% stopped breastfeeding after six months. Kuzma (2013) found that 58% of mothers in Pupua, New Guinea stopped breastfeeding within 12 months. The findings of the study also correlate with a study conducted by Dohety et al. (2012). They found that early cessation of breastfeeding was common among mothers, whether HIV negative or positive. Kuzma (2013); Dashti et al (2014) and Kimani-Murage et al (2014) indicated that mothers cease to breastfeed because they are concerned that breast milk is not adequate in terms of quality and quantity; some mothers have to go back to work or to school.

In a study, conducted in Hong Kong, by Tarrant et al. (2010), it was found that the total duration of breastfeeding of children was below the WHO recommendations. Furthermore, they stated that certain factors, such as socio-cultural influenced the duration of breastfeeding. Socio-cultural factors include lack of family and community support, especially when a mother has to start working.

Zhang et al. (2015) reported that in China, young mothers returning to work, and early introduction of complementary feeding, are common factors associated with early cessation of breastfeeding. According to Matsuyama, Karama, Tanaka and Kaneko (2013), and Zhang et al. (2015) continued breastfeeding till 12 months reduces child mortality caused by diarrhea, pneumonia and neonatal sepsis. Fawzy et al. (2011) concluded that continued breastfeeding improves children growth in their second year of life. Mothers thus need to continue breastfeeding, even after the introduction of other food, to prevent undernutrition in children under the age of five years.

### **3.2.1.2 Feeding children with formula milk and other food/drink using bottle**

Mothers and caregivers opt to feed children with formula milk, and in most cases they use unsterile bottles (WHO & UNICEF, 2013). According to King, Burgess, Quinn and Osei (2015) formula milk usually interferes with bonding and feeds may contain germs if prepared with unsafe water or in unsterilised container. Respondents in this study indicated that they feed their children with formula milk, traditional fermented drink “ontaku”, and soft porridge, using bottles. This was evident as per following comments.

(Ooh, clearing her throat) *“Regarding soft porridge I do prepare two bottles in the morning”* (P#1).

*“I use to buy.... (silence) milk which are in the box and I give her with the bottle” (P# 6).*

*“Then I put in the bottle, then I give to the child to drink at least each hour” (P# 2).*

*“Yes, even during the night we use to feed her with the bottle” (P#3).*

*“We use bottle; he drinks from bottle” (P#12).*

*“I use the bottle to feed him, I use to put soft porridge in the bottle and add milk called “omayele” (P#4).*

*“I was using the bottle; yes the bottle, but not giving him lactogen the whole day” (P#8).*

(looking nervous a bit) *“He has been using the bottle all along, until he was admitted to the hospital, it was stopped when he was admitted in the hospital” (P#12)/*

(in low tone of voice) *“I use to put “oshikundu” in the bottle” (P#13).*

*“She use bottle to feed the child” (P#15).*

*“I prepare soft porridge and put it in the bottle and feed her” (P#11).*

The above findings correlate with a study, conducted in Western Uganda, by Wamani, Astrom, Petersen, Tylleskar and Tumwine (2005) in which 10% of infants were bottle fed. According to Nguyen et al (2011), there was an increase in bottle feeding of Vietnamese children under the age of five years: from 3% in 2000 to 26% in 2005. Das, Chattopadhyaya, Chakraborty and Dagupta (2013) found that 28.1% of infants in India were fed with bottles, but due to poor sanitation and low education, poor hygiene was a problem, and food given to children in bottles did not have adequate nutrition.

A study conducted by Zhang et al. (2015) revealed that infants were fed with formula milk using bottles which resulted in breastfeeding to be low because mothers perceived breastmilk to be insufficient for their babies. These authors reported that some mothers perceive formula milk to be more nutritious than breast milk. According to Kuzma (2013), 20% of mothers in Papua New Guinea regularly use infant formula to feed their babies.

Lazarus, Struthers and Violari (2013) indicated that mothers, grannies, and caregivers of infants of teenagers opt to feed such infants with formula milk using bottles, although they had not received support to formula-feed appropriately and safely. According to Semahegn, Tesfaye and Bogale (2014), mothers with tertiary education practiced formula feeding more than mothers with a low education in Eastern Ethiopia. In developing countries, formula milk is prepared un-hygienically leading to children developing diarrhea and other diseases (Shetty, 2014). According to Lutz and Prytulski (2011) formula feeding can be hazardous when prepared in a wrong strength; prepared with contaminated water, utensils or hands, or kept at a feeding temperature for too long. Shetty (2014) stated that lack of knowledge, and sociocultural, economic, and personal reasons, contribute to women choosing to bottle-feed.

The WHO (2002), and the WHO and UNICEF (2013) stated that babies who drink formula from unsterilised bottle or teats are at risk of becoming sick due to diarrhea; they are also likely to develop protein energy malnutrition (PEM) due to inadequate food given with a bottle. Mbagaya (2009) revealed that food given by bottles has more adverse impacts than food given by other means. The WHO (2002) recommended that when giving complementary food, mothers and caregivers need to use cups or spoon to feed children, and not bottles.

It is important for mothers and caregivers to utilise other utensils to feed their children in order to avoid the use of unsterilised bottles which can lead to diarrheal diseases.

### **3.2.1.3 Early introduction of complementary food**

Complementary feeding refers to giving the child breast milk and other solid or semi-solid food (Young et al, 2010; Sultana, Hoque & Saleh, 2014; Semahen, Tesfaye & Bogale, 2014). Early introduction of complementary food reduces the chance of a child being exclusively breastfed. The WHO, and American Academy of Pediatrics, recommend exclusive breastfeeding with no other fluids or solid, not even water for six months, followed by the introduction of complementary food at the age of six months (Tarrant et al, 2010; Kimani-Murage et al, 2011; Haddinott, Craig, Britten & McInnes, 2012; Castro, Layte & Kearney, 2014). The respondents in this study communicated the following with regards to the introduction of complementary foods.

(Mmmh) *“I started feeding her formula milk when she was 3 months I added formula milk, because I was not having enough breast milk, I was only breastfeeding on one breast”* (P#3).

(looking up) *“I think we started giving him water at 2 months; yes, we started at 2 months”* (P# 8).

*“I started giving him water at the age of 3 months”* (P#5).

*I gave him some food at 3 months then I was told to stop”* (P#8).

*“He started drinking water since birth, so I started giving him water just after few days after operation, water and formula milk then he continues breastfeeding” (P# 12).*

*“When he was 2 weeks we gave him porridge, he was 2 weeks, so that he can get used to it” (P#7).*

*“When she turned one month I started giving her other food, even if we are eating I can also give her some food” (P#11).*

*“I thought breastmilk was not enough I started feeding him with Lactogen, the formula milk ... (silence) when he was two weeks” (P#8).*

(look confident) *“I started adding little food when he was just a little baby, because I use to give him some soup, because my grandmother said that we have to give him like porridge just to give him a little” (P#12).*

It is clear from the above verbatim comments that mothers and caregivers in this study introduce complementary foods early. These findings correlate with the study conducted by Dashti et al (2014). They reported that children in the Middle Eastern region were given complementary food early, resulting in very few children being exclusively breastfed. The findings in this study, in terms of early introduction of complementary food, are also in accord with a study conducted in western Kenya (Mbagaya, 2009), and eastern Ethiopia (Semahegn, Tesfaye & Bogale, 2014). In the Kenyan study complementary food was introduced at 2.7 months, and in Ethiopia at 3- 4 months. The reasons indicated by the respondents in this study for introducing complementary food early included lack of knowledge, another pregnancy, insufficient breast milk, or child has grown up.

Some mothers also considered breast milk as being not enough hence their decision for early introduction of complementary feeding. According to Nguyen et al (2011) complementary food, introduced to children under the age of five years, was poor in nutrients (e.g. protein and micronutrients) and low in energy density.

As evident in the literature and the findings of this study, one of the reasons why mothers introduce complementary feeding early is because they lack knowledge as to when to commence such feeding. They therefore need to be empowered by being provided with relevant information.

Studies, conducted in Bangladesh, found that some infants aged less than six months were given water, other milk, cereals and other liquids in addition to breast milk (Sultana, Hoque & Saleh, 2014; Semahegn, Tesfaye & Bogale, 2014). According to Kimani-Mirage et al. (2011) developing countries are associated with poor complementary feeding practices; only 25% of infants are exclusively breastfed in Africa. Zhang et al. (2015) reported that in China about half of infants in Zhejiang province consumed some infant formula by one month after birth.

Lack of exclusive breastfeeding, and poor complementary feeding practices, imply that many children continue to be impacted by irreversible outcomes of stunting, poor cognitive development, and risk of infectious conditions such as diarrhea and acute respiratory infections (Shumey, Demmissie & Berhane, 2013; Bahartha & AlEzzi, 2015). The findings of this study are in accord with that of Matsuyama et al (2013): mothers and caregivers tend to believe that adding some foods and drink together with breast milk will help their children to grow bigger and healthy.

Literature underscores that various factors are associated with sub-optimal complimentary feeding: maternal age, marital status, occupation and education level, for example (Kimani-Murage et al, 2011; Shumey, Demissie & Berhane, 2013; Ogbo, Page, Idoko, Claudio & Agho, 2015). Early introduction of complementary foods may have short to long term adverse health effects in the life of a child (Castro, Layte & Kearney, 2014).

According to Yeneabat, Belachew and Haile (2014) early introduction of complimentary foods in the first six months can have a negative impact on infants' growth and development, and it can also expose them to infectious diseases. Prevention of morbidity and mortality, among children under the age of five years, is possible by exclusive breastfeeding; timely introduction of complementary feeding; and continued breastfeeding for 12 months of life (Shumey, Demisse & Berhane, 2013). Complementary feeding therefore needs to commence at the age of six months to avoid adverse health effects on a child.

#### **3.2.1.4 Non-responsive feeding**

Responsive feeding is defined as not forcing a child to eat, but instead feeding a child slowly, patiently, and encouraging him/her to eat (Sultana, Hoque & Saleh, 2014; WHO, 2014). Sultana, Hoque and Saleh (2014) are of the opinion that, with responsive feeding, children are loved; talked to and eye to eye contact is maintained. Responsive feeding is a mutual relationship between mother/caregiver and a child (Vazir et al, 2013). Several steps are involved and include: a child's verbal or non-verbal request, and an emotional and supportive response by a mother or caregiver.

Vazir et al. (2013) explained that responsive feeding includes responding actively to a child with a smile; waiting patiently until the child stops eating; continue feeding or provide the child with finger food; remain with the child until meal time is over. Below are comments from the respondents in this study with regards to feeding their children.

*“I was trying to force him to eat” (P#5).*

(Uh) *“we have to force him to eat, that is him, basically that is him you have to force him to eat” (P#8).*

(Looking unhappy) *“Since I was forcing him to eat that is what causes him to have sores on the lips” (P#5).*

*“because even if we tried to force him to eat, he just wants to vomit... (silence) even when the nurses say I must force him to eat, just force the child to eat” (P#9).*

*“I have to try and force him by trying to open his mouth and pour in some milk” (P#5).*

It is evident from these comments that respondents do not practice responsive feeding because they try to force their children to eat. There are risks involved in non-responsive feeding: choking and developing sores in the lips when a spoon is forced into the mouth of child (King, Burgess, Quinn & Osei (2015). A study conducted by Wondafrash, Amaslu and Woldie (2012) revealed that some caregivers use a controlled style of feeding whereby they force-feed a child who refuses to eat. On the other hand an opposite approach is adopted by some caregivers. They have a laissez-fair approach to feeding; little effort is made to encourage children to eat even with those who appear to be less nourished.

In Ghana force-feeding a child to eat is common among caregivers, especially those with negative deviance resulting in a child's nutrient intake being negatively affected (Wondafrash, Amaslu & Woldie, 2012). In Vietnam, non-responsive feeding was associated with a child's rejection of food (Wondafrash, Amaslu & Woldie, 2012). A study conducted by Power et al, (2015) found that mothers and caregivers spend time encouraging children to eat even though they do not want to eat anymore.

Wondafrash, Amaslu and Woldie (2012) concluded that caregivers' interactions with children have a greater influence on their dietary intake. In a nutshell children need to be fed in a responsive manner; they should not be forced to eat.

### **3.2.1.5 Less frequency of feeding**

According to WHO, one of the optimal infant feeding practices indicators is minimum meal frequency (Khanal, Sauer & Zhao, 2013). The frequency of eating plays an important role in a child's growth and development. The WHO (2002) indicated that eating less can lead to a decreased resistance to infections which results in a child developing conditions like diarrhea. A child of six to eight months needs to be fed two to three meals per day in addition to breast milk; a child of nine to twenty-three months needs to be fed three to four meals per day plus breast milk and one to two additional snacks. This implies that when a child stops breastfeeding, the frequency of feeding also needs to increase.

According to WHO (2002), a child who is not breastfeeding needs to be given five meals or more per day. The food needs to be made dense and thick by adding oil, butter, margarine, milk or ground nuts.

Below is what the respondents said about frequency of feeding.

Oh *“It is possible that sometimes I use to feed him three times per day”* (child has stopped breastfeeding) (P#1).

*“it was possible that sometimes I give him three bottles, but after losing appetite, he can only take two bottles per day”* (P# 4).

*“In a day, in a day I give him.... (Silence) I give him when we are having our lunch or dinner.”* (Child has stopped breastfeeding already at 9 months) (P#5).

*“I only feed her with milk and that is all”* (child is 1-year-old) (P#6).

*“I was feeding the child when I am eating or when we are having our meal”* (P# 8).

(Looking disappointed) *“When I start to eat my lunch and you give him food he eats eagerly showing that he did not eat for a long time”* (child stopped breastfeeding at 9 months) (P# 9).

*“I use to feed her one bottle in the morning, another during the day and during the night”* (P#11).

*“I give her during lunch, during dinner and in the morning”* (P#13).

From what the respondents said, it is evident they feed their children less in frequency. Most children of the mothers and caregivers in this study, had already stopped breastfeeding, and are being fed on average three times a day.

The findings in this study concur with the WHO (2016) that globally, less than a quarter of children aged six to twenty-three months were fed appropriately in frequency at their age. A study conducted in Nepal by Khanal, Sauer and Zhao (2013) found that 82% of children aged six to twenty-three months met minimum meal frequency. The percentage is fairly high, yet some children did not receive minimum meal frequency. A study conducted by Benjaswantep, Chaithirayanon and Eiamudomkan (2013) reported that 17.5% of women feed their children less than three times per day. These authors stated that children with feeding problems are likely to be fed less in frequency than children without feeding problems. Nguyen et al (2011) also found that frequency of feeding in Vietnam was low; children were fed according to family schedule meals which do not meet infant and young children`s needs.

A study conducted by Tessema, Belachew and Ersino (2013) concluded that mothers, who do not attend antenatal care, are not given health information and are therefore more likely to feed their children less meal frequently than those who attend antenatal care. However frequency of eating needs to increase as a child grows.

### **3.2.1.6 Poor dietary diversity**

Minimum dietary diversity is one of the core indicators of optimal infant and young children feeding practices (Khanal, Sauer & Zhao, 2013). According to Amugsi, Mittlemark and Oduro (2015), dietary diversity can be defined as the sum of food groups consumed in a day. The WHO (2002), and Amugsi, Mittlemark and Oduro (2015) indicated that everybody needs the right amount of food with adequate nutrients in order to grow and develop normally.

Different nutrients are found in various food groups, which include energy food such as milk and milk products; body and tissue building food, which includes animal products and legumes; protective foods such as fruit and vegetables; and grain groups (Vasuthevan & Mthembu, 2013). These food groups provide nutrients such as proteins, fats, vitamins and minerals and carbohydrates (Vasuthevan & Mthembu, 2013). The WHO (2016) recommends the introduction of nutritionally adequate and safe complementary food, starting from the age of six months. The respondents in this study communicated the following with regards to the type of food they give to their children.

*“I started giving him “mahangu” soft porridge till he turns 7 months and I also feed him with pap made with mahangu flour and give him “Oshikundu”(traditional drink made from mahangu) to drink” (P#1).*

Mmh *“I started giving him mahangu soft porridge and I sometimes give him “ontaku” (P#4).*

*“then I use to feed her with “mahangu” soft porridge, we stopped the soft porridge and then we started giving her “ontaku” made from mahangu only (P#2).*

(Looking down) oh *“it is only “ontaku and soft porridge I am able to give him” (P#14).*

*“She was fed with porridge and “ontaku only” (P#3).*

*“She said she was feeding her with “mahangu” soft porridge and “ontaku” (P# 6).*

*“I use to give her mahangu porridge and soft porridge only” (P#11).*

*“I usually feed him with porridge and “ontaku”, so soft porridge was little” (P#5).*

*“she told me that the child was fed with mahangu soft porridge only” (P#15).*

(Hesitating) mmh *“we need to give sugar and if she is grown up she can eat porridge”*  
(P#6).

*“I use to give the child sour milk” (P#13).*

It is evident from the above statements that mothers and caregivers in this study feed their children with food mostly derived from one food group, that is “mahangu” (pearl millet) which is from the grain group. Porridge, soft porridge and “oshikundu” or “ontaku” which they give to their children are prepared with mahangu flour. This means their children do not get all necessary nutrients, and are then likely to be prone to some nutritional deficiencies. The findings from this study correlate with WHO (2016) where only a few children receive adequate and safe complementary food in many countries.

This study is in accord with a study conducted by Khanal, Sauer and Zhao (2013). They found only one out of three children in Nepal was given dietary diversity as recommended by the WHO. Tessema, Belachew and Ersino (2013) indicated that in many poor countries the complementary food that was introduced was nutritionally inadequate and unsafe resulting in early nutritional deficiencies, which are linked to intellectual performance impairment. They found that in South Ethiopia, some children less than two years received dietary diversity that was below the WHO recommendation; the majority of these children were given food made from grain, roots and tubers. They added that children, who were given poor dietary diversity, were not given fruit and vegetables; only few young children consumed meat, fish and poultry.

Mbagaya (2009) stated that complementary foods given to children in Sub-Saharan Africa are tedious and bulky. These foods do not provide energy and nutrients needed to promote growth and development. Feeding practices that do not provide adequate amount of macro and micronutrients result in stunted growth and this affects the cognitive ability of a child (Lohia & Udipi, 2014). Amugsi, Mittlemark and Oduro, (2015) revealed that cultural determinants of children`s diet usually exclude food consumed by other family members because such food is considered to be inappropriate for a child. As a result, in these households, children will be deprived some important nutrients. In Oshikoto region, where the study was conducted, many people grow other food such as beans, pumpkins, ground nuts just to mention some, but these types of food were not mentioned by mothers or caregivers as being given to young children. They indicated that they only give food or drink from one food group mainly grain.

Furthermore Amugsi, Mittlemark and Oduro (2015) indicated that some mothers and caregivers believe that vegetables are difficult to digest and can therefore cause children to have stomach upsets. This is similar to a belief in the Oshiwambo culture of a Namibian tribe. The latter believe that beans are not good for small children as they may cause the stomach not to work properly. Unfortunately they do not know that beans are a good source of protein.

On the other hand Khanal, Sauer and Zhao (2013) indicated factors that influence the provision of dietary diversity include the age of a mother and her education. Educated mothers understand the importance of a balanced diet. According to the WHO (2002), feeding children with unsafe and inadequate complementary food leads to them developing diarrhea and other infections.

WHO underscores that a children`s diet should contain three to four different kinds of food to ensure that they are fed with nutrients needed. A child needs to be given a variety of food as much as possible, mothers and caregivers should avoid giving only what a child prefers, because giving such food even in a large amount may cause a deficiency of other nutrients (WHO, 2002). Khanal, Sauer and Zhao (2013) concluded that a child needs to be fed appropriately, safely and adequately, especially during transition from exclusive breastfeeding to complementary feeding.

To sum up, the WHO recommends that children need to be breastfed exclusively for six months, and breastfeeding needs to continue for two years. However, the respondents in this study stopped breastfeed early; the average age was six months. The study also revealed that children were not exclusively breastfed, as many mothers and caregivers commenced giving complementary food from one to two months. This has a negative effect on the growth and development of children.

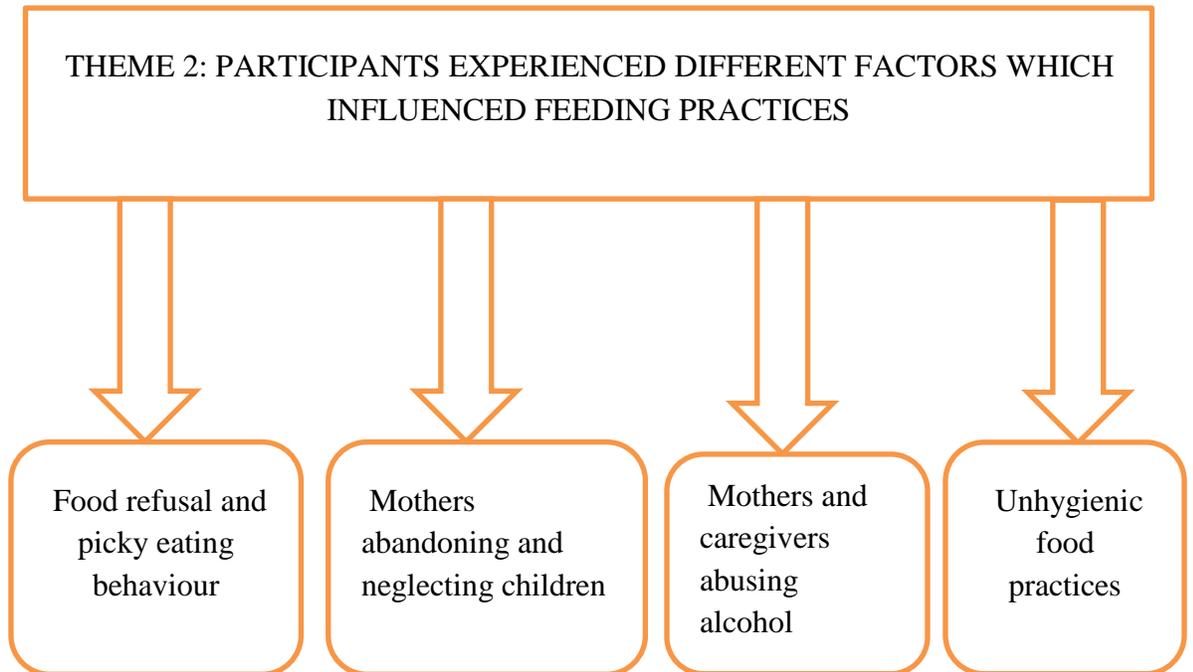
The study also revealed that mothers and caregivers use bottles to feed their children to give them soft porridge, a traditional drink called “ontaku”, and formula milk. Bottle feeding is not a safe method, because many caregivers do not know how to clean and sterilise bottles. This places children at risk of developing diarrhea. The mothers and caregivers do not practice responsive feeding as they force their children to eat. Mothers and caregivers in this study feed their children less in frequency as some children were given food three to four times in a day, despite the fact that these children had stopped breastfeeding. Feeding children less in frequency contributes to undernutrition.

The mothers and caregivers do not use variety of food to feed their children; they mostly use porridge, soft porridge and traditional drink made from pearl millet. As a result, their children did not get enough nutrients needed by the body hence the development of undernutrition. In view of these findings, the researcher deemed it necessary to develop an educational programme to empower mothers and caregivers to utilise optimal feeding practices.

### **3.2.2 Theme 2: Respondents experienced different factors which influenced feeding practices**

Feeding practices of infants and young children can be influenced by different factors. According to Nankumbi and Muliira (2015), some factors, that can influence feeding practices of children under the age of five years, include culture, social status of the mother/caregiver, education and literacy level, as well as influences of other relatives. Kimani-Murage et al. (2014) also identified several factors which have an impact on feeding practices of children under the age of five years, especially breastfeeding. These factors include poverty, living arrangement, early or single motherhood, as well as poor social and professional support.

In this study the respondents experienced different factors which influenced feeding practices of their children under the age of five years. These factors include children refusing to eat, mothers or caregivers consuming alcohol, children abandonment and neglect, and unhygienic food practices in the household as illustrated in Figure 3.2.



**Figure 3.2:** Different factors influencing feeding practices.

### **3.2.2.1 Food refusal and picky eating behaviour**

Food refusal and picky eating behavior are some of the factors that influenced feeding practice in this study. According to Goh and Jacob (2012), some children refuse to eat certain types of food while accepting other food, and some children are not willing to try to eat new food resulting in a limited intake of some nutrients; this behavior is referred to as picky eating. Ong, Phuah and Salazar (2014) indicated that food refusal, in the presence of adequate food, and competent caregiver, is considered to be picky eating.

They stated that the common characteristics of picky eaters include eating a limited amount of food, refusing food, especially fruits and vegetables, accepting only some food, and preferring drinks over food.

Respondents in this study communicated their experiences in terms of food intake of their children as follows:

Oh *“but sometimes when I am giving her food she does not want”* (P#11).

(Looking disappointed) *“he will not eat some food if you put the food in his mouth he will not swallow he will spit it out, maybe he does not like it”* (P#14).

*“They said the child started refusing to eat, even if they give her food she will not eat some of the food”* (P#3).

Mmh *“... he does not like eating some of the food”* (P#8).

*“but what he likes to eat is porridge and “ontaku, but he does not like milk”* (P#10).

It is evident from these statements that some children refuse food, and some are picky eaters; they prefer to eat some foods resulting in lack of some nutrients. According to Benjasuwantep, Chaithirayanon and Eiamudomkan (2013), the onset of food refusal starts with the transition from breastfeeding to spoon or self-feeding. They furthermore stated that some children experience fear of feeding. An example being when a child has experienced choking and then refuses to open his/her mouth to be fed.

A study conducted by Wondafrash, Amsalu, and Woldie (2012) revealed that some children refuse to eat if they are not hungry or sick. Leung, Marchand and Sauve (2012) cautioned that feeding techniques, which include inappropriate threats or punishment, exacerbate a child's refusal to eat; children thus should not be scolded, punished or bribed during meal times. They added that during toddlerhood, children prefer to feed themselves and if they are forced to eat they may resist.

According to Leung, Marchand and Sauve (2012), children may imitate other people. For example, if a family member or another child refuses to eat specific food, a child may imitate such behaviour. On the other hand Ong, Phuah and Salazar (2014) argued that food refusal is sometimes a way of seeking attention from parents. The relationship between parents and child, family dynamics, and a child's personality, usually influence the eating behavior of a child. Food refusal and picky eating behaviour result in poor weight gain and stunted growth, which may affect a child's physical and mental development (Goh & Jacob, 2012).

WHO (2002) recommended that if a child refuses to eat a new food, mothers and caregivers need to continue with the new food since children usually learn, over time, to accept and enjoy eating such food. According to Lutz and Przytulski (2011) new food needs to be introduced one at a time; new food needs to be tried at least three to five days before it is considered as being refused by a child.

Guidance of mothers and caregivers on good feeding practices and a healthy diet is one useful strategy to help them feed their children in order to avoid meal times being transformed into a battlefield (Ong, Phuah & Salazar, 2014). These authors added that caregivers should be advised to prepare the right amount and mix of food, and create a pleasant and distraction-free environment for meals. They went on to say that mothers and caregivers need to introduce food systematically in small amounts, and should maintain a neutral attitude during meal times to avoid becoming angry or overly excited. They emphasised that independent feeding needs to be encouraged by letting a child eat on his/her own.

It is therefore necessary to guide mothers and caregivers on how to handle children who refuse to eat to prevent undernutrition in children.

### **3.2.2.2 Mothers abandoning and neglecting children**

According to Van Wyden (2015) child abandonment is when a mother leaves her child's physical and psychological environment. This has a negative effect on a child who then develops a low self-esteem. Child neglect refers to failure to provide or to meet a child's basic needs; a child may be left dirty or hungry (Dubowitz, 2013). Although the responsibility of child care is considered a mother's role, some mothers are employed hence entrust the care of their children to grandmothers and other female caregivers (Nankumbi & Muliira, 2015). Some parents abandon and neglect their children, leaving the total responsibility of their children to grandparents and other caregivers. According to Dubowitz (2013), neglected children usually fail to gain weight and height as expected, which is usually a sign of a child, is not receiving good care. DePanafilis (2006) identified different types of neglect including nutritional neglect. This type of neglect refers to a situation in which a child is undernourished or stays hungry for long periods of time. Such a scenario is usually evident by poor growth.

Nutritional neglect is one of the biggest health problems in most developing countries; about 29% of children under the age of five years have stunted growth, but local nutritional programmes do not succeed in addressing poverty which is the underlying cause of this health problem (Mehnaz et al, 2010). These authors underscored that nutritional neglect usually results in undernutrition, which is one of the leading causes of morbidity and mortality among children under the age of five years.

This study found that some mothers drop their children off to grandparents and other caregivers and some abandon and neglect their children. This is highlighted by the following statements.

*“This child is not mine she is staying with my mother, his mother abandoned her” (P#6).*

*(Look sad) “The mother is walking around, even the neighbours told me to go with the child, they said if you leave the child he will die” (P#10).*

*(Looking disappointed) “I do not know where her mother went, she just went away and none of us know where she is, she abandoned the child” (P#6).*

*When the child stopped breastfeeding her mother went to start working, then she gave the child to someone else to take care of him I did not know where the child was dropped first”(P#15).*

*“She just put the child down I thought she just went outside the house, but she already run back to where she was staying” (P#6).*

*“One of them where the child was dropped is not a relative, not at all I think it is just a person who use to laugh with her, the second person is the child `s grandmother, the mother to the child `s father” (P#15).*

It is evident from these statements that grandparents and other caregivers take care of children because of the employment responsibilities of their mothers. It is also evident that some children were abandoned and neglected by their mothers.

Many parents do not neglect their children intentionally, but some problems lead them to neglect their children (Mehnaz et al, 2010; Dubowitz, 2013). The findings from this study concur with Higgins and Murray (2010) who stated that the number of old adult relative raising children in United States of America was increasing. They added that eating a balance diet is a challenge in old people's households. They have limited resources hence most experience household food insecurity. In such households of grandparents, children were at a risk of developing undernutrition. Many grandparents also do not have sufficient financial resources to enable them to raise their grandchildren as a result they decrease the food portion sizes (Higgins & Murray, 2010).

DePanafilis (2006) emphasised that nutritional neglect has a negative effect on a child's health, physical, cognitive and intellectual development. A child who is neglected nutritionally may fail to thrive and may develop undernutrition which leads to stunted brain growth, and cause cognitive, social and behavioural deficits (DePanafilis, 2006). According to Mehnaz et al. (2010), failure to thrive is one of the common symptoms of child neglect.

DePanafilis (2006) stated certain factors, for example, poverty, community and society characteristics, family factors, substances and alcohol abuse, contribute to child neglect. According to Stavrianos, Stavrianou, Stavrianou and Kafas (2008), ignorance of a child's needs is the root cause of child neglect, but in most cases this was not purposefully done by caretakers because they are unaware of the damage they are causing. These authors stated that one example of child neglect is undernutrition, as the nutritional needs of such a child are neglected.

Many mothers and caregivers, whose children develop undernutrition, believe that they have taken good care of them and usually are surprised when told that their children are diagnosed with undernutrition (Stavrianos et al, 2008). Nutritionally inadequate low quality food is often given to these children and they then develop undernutrition, but the mothers think that they are feeding their children very well. Child neglect can be prevented through intervention programmes; the care of neglected children needs to include action to promote child growth and survival (DePanafilis, 2006; Stavrianos et al, 2008). Positive parenting attitudes and strong social support need to be created to prevent child abandonment and neglect.

### **3.2.2.3 Mothers and caregivers abuse alcohol**

Alcohol consumption and misuse increase the risk of child neglect whereby a child does not receive care and provision of adequate food by parents or primary caregivers (Fenton et al, 2013; Ashenberg & Huff; Widom & Sturmhofel, 2001). According to Rehm et al. (2009), as cited by Fenton et al. (2013), alcohol misuse is a significant public health burden which reduces a person's sense of responsibility to take care of a child.

The following was said by the respondents in this study regarding alcohol abuse.

*(Looking disappointed) "I took this child from Windhoek from his mother, because his mother is just a drunkard person, so I saw that if I leave this child to stay with his mother the child will die from hunger" (P#10).*

*I think that one of the old lady who was taking care of the child she just put the child on her back and then she goes to cucashops, because she is one of those people who drink much alcohol" (P#15).*

*“It is drinking; his mother is drinking a lot” (P#10).*

These verbatim comments illustrate that some mothers and primary caregivers abuse alcohol and this results in nutritional neglect of their children. A study conducted by Widom and Sturmhofel (2001) found that one million children experienced some form of child neglect due to alcohol abuse. Another study conducted by Barlow (2011) indicated that about 1.3 million children were affected by parental alcohol problems in which some of them were neglected. Yuan et al. (2010) found alcohol misuse to be a problem among American Indian women who are supposed to take care of children.

Respondents in this study indicated that some mothers and primary caregivers misuse alcohol and neglect their children who then are not provided with food for a whole day. The WHO (n.d) stated that there is a strong link between child neglect and the use of alcohol. The WHO explained that the use of alcohol by parents and caregivers reduces the amount of time and money needed to take care of their children leading to basic needs, including food, being neglected.

A study conducted by Pepino and Manella (2007) found that some mothers consume alcohol because they believe it enhances lactation. According to Barlow (2011), alcohol misuse has a negative impact on a child's future. Apart from being neglected and developing undernutrition, children do not achieve their full potential if they grow up in a household where parents misuse alcohol (Barlow, 2011). Furthermore, Barlow (2011) pointed out that such children develop a low self-esteem and perform poorly in school. Alcohol misuse leads to other problems; poor mental health and anti-social behaviour which further worsen child neglect (WHO, n.d).

Prevention of child neglect due to misuse of alcohol can be curbed through community based educational programmes. Other measures also need to be put in place such as reducing availability of alcohol, and increasing alcohol prices when possible.

#### **3.2.2.4 Unhygienic food practices**

Poor hygienic food practices include using dirty cooking utensils and poor hand washing before preparation of food (Agustina et al, 2013). Food hygiene practices play a role in the growth and development of a child. These practices include washing hands and utensils, cleaning cooking places, and separating raw food from cooked food (Takanashi et al, 2009). According to the WHO (2016), good hygiene, and proper handling of food, need to be practiced before and during preparation of children`s meal. The food needs to be prepared a few minutes before eating to prevent contamination and spoilage. Food containers and all utensils as well as kitchen surface need to be kept clean and food need to be protected from insects, rodents and flies (WHO, 2002). Verbatim statements of the respondents in this study are presented below with regards to handling of children`s food.

(in low tone of voice) *“Oh, sometimes you will find the bottle and cup just lying on the floor and the people will just pick it from the floor and put in ontaku for the child without cleaning it”* (P#3).

(Look disappointed) *“sometimes you find the child`s food, you can see this is a child`s food, but you will find it in a dirty container”* (P#9).

*Oh... “the food for the child is cooked in a dirty pot”* (P#6).

It is evident from these statements that there are unhygienic food practices. Takanashi et al. (2009) stated that poor food hygiene practice is a major contributing factor to infections because unclean utensils are considered to be a source of contamination. According to the WHO and UNICEF (2013), children who eat contaminated food are more likely to develop diarrheal diseases. Respondents in this study indicated some utensils are placed on the floor and are not washed before putting food into them to feed their children. According to Takanashi et al. (2009), children who eat food that has been placed on the floor are more likely to develop persistent diarrhea.

Nizame et al. (2013), and Rah et al. (2015), pointed out that unhygienic food practices have an impact on early childhood growth which results in stunting. Interventions that promote food hygiene practices reduce childhood diseases. Nizame et al. (2013) emphasised that to improve child growth, caregivers need to be encouraged to wash their hands before preparing food and before feeding children. Unhygienic food practices need to be prevented by preparing a child's food a few minutes before eating; keeping the kitchen area clean and protecting it from insects and rodents, and not placing children utensils on the floor (King, Burgess, Quinn & Osei 2015; WHO, 2016).

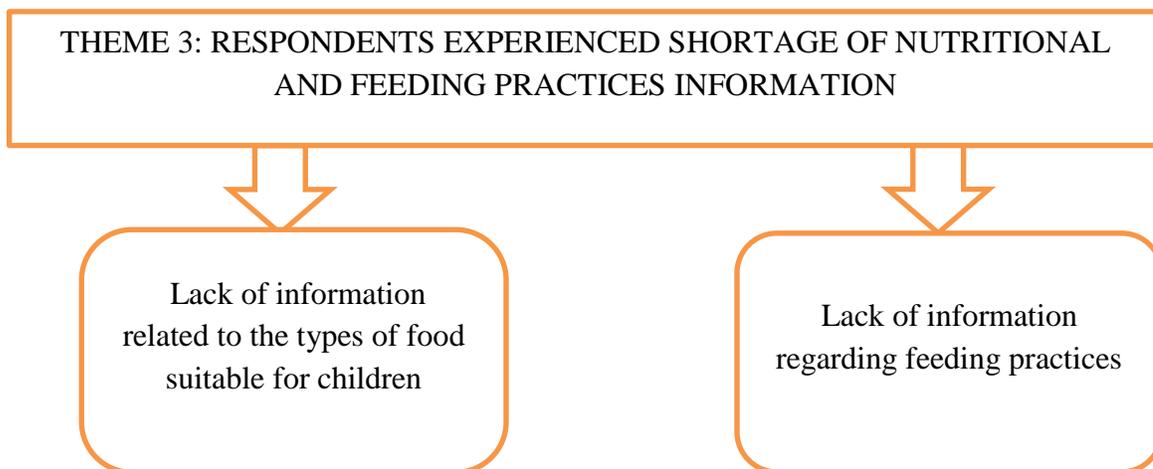
To sum up, this study revealed that feeding practices of children under the age of five years are influenced by different factors. One of these factors is food refusal and picky eating behaviour whereby children refuse to eat or prefer some food. Such behaviour has an effect on the nutritional status of children since it results in the development of undernutrition. It was also found in this study that some mothers abandon and neglect their children, leaving them under the care of grandparents.

Some grandparents are old and not able to take proper care of the children; as a result children develop undernutrition. The study also established that some mothers and caregivers misuse alcohol and by doing so increased the risk of child neglect and poor feeding practices. Instead of being with their children, they spend time at bars and cucashop. Unhygienic food practices were also a factor influencing feeding practices. Mothers and caregivers indicated they did not clean and correctly store utensils used by children. Utensils are often left on the floor; some food is prepared in dirty pots, and children eat from dirty plates. Such unhygienic food practices create a risk of children developing diarrheal diseases.

The presentation and discussion of the above factors resulted in the researcher realising there was a need to develop an educational programme to empower mothers and caregivers to address those factors influencing feeding practices of children under the age of five years in order to prevent undernutrition of such children.

### **3.2.3 Theme 3: Respondents experienced lack of nutritional and feeding practices information**

Nutritional information is important to enable mothers and caregivers to feed their children optimally. Mothers and caregivers need to be educated regarding feeding practices and the different types of food a child needs to eat to promote growth and development. In some cases mothers and caregivers have inadequate information related to nutrition and feeding practices. Zhang et al (2015) reported that mothers do not follow the advice they get from health workers, but they get information on nutrition from their peers. Respondents in this study experienced inadequate or lack of nutritional and feeding practices information as illustrated in Figure 3.3.



**Figure 3.3:** Shortage of nutritional experienced by mothers and caregivers.

### 3.2.3.1 Lack of information related to types of suitable food for children

Children under the age of five years need to eat different types of food so that they can grow and develop normally. Different nutrients are found in different food groups (Vasuthevan & Mthembu, 2013). According to Anuradha et al (2014), food given in the first five years determines a child`s entire life. Childhood is characterised by rapid growth and development, nutrition thus plays an important role during such a period.

According to Shetty (2014), poor understanding of nutrition contributes to children not be fed with different types of food. Kulwa et al. (2014) found that a contributing factor to child stunting in Tanzania was inadequate nutritional knowledge of the mothers and caregivers. The respondents in this study expressed the following regarding nutritional information.

*“I was not told the type of food I have to give to the child” (P#2).*

(speaking with high tone of voice) *“At least nurses should tell us the type of food we need to give to our children”* (P#8).

*“No I only looked at the health passport on which foods have to be eaten by the child”* (P#5).

*“No I was not told anything they just gave me that paper (pointing at the health passport) and they told me I should force him to eat”* (P#8).

(Talking loud) *“I will strongly advise the health workers to give us some information, like you should try giving this and this, because this will also help us, instead of health workers scolding us, give us some information”* (P#8).

It is evident from the above quotes that the respondents were not given some information related to the types of food a child needs to eat. These findings are in accord with a study conducted by Yue et al. (2016). They reported that there was a lack of proper knowledge on infant and child nutrition among rural caregivers in China. This meant there was a failure to include micronutrient rich food in children`s diets.

Sunguya et al. (2013) found that caregivers of children, under the age of five years, lack knowledge on nutrition including food diversity in the environment. In addition, Mbagaya (2009) also narrated that mothers and caregivers lack information on the timing, and the type of food to be given to infants and young children aged 0 to 24 months. Nyavani, Gertrude and Flumudzi (2016) stated that mothers and caregivers reported they were not taught by health workers as to the types of food they can feed children aged two to five years.

As a result many caregivers believe that whatever a child eats provides adequate nutrients. In terms of vitamins and micronutrients, Yue et al (2016) found that caregivers' knowledge was limited, and children are just fed with available food. They reported that caregivers believe that if the child eats fewer amounts of food it may result in undernutrition, so it is the quantity of food and not the quality that cause a child to develop malnutrition. The WHO (2002) underscore that health workers are in better position to give nutritional information to mothers and caregivers so that they can choose better food options for their children and adopt best nutritional practices. Health workers need to review and counsel mothers and caregivers of malnourished children on what and how to feed their children by considering local available food (Ministry of Health and Family Welfare (MOFW), 2013).

Lack of knowledge on the types of food needed by the child cause the mothers to select inappropriate complementary food for their young children (Nguyen et al, 2013). According to Shetty (2014), some health workers are not equipped with enough information related to nutrition, thus they lack relevant information to advice mothers and caregivers. Lohia and Udipi (2014) indicated that there is a need for intensive nutritional education because of lack of nutritional information. Mothers and caregivers need to be educated on dietary practices, which include feeding children with locally available healthy low cost food. The success of child growth depends on health information provided by the health workers (Anuradha et al, 2014; Nyavani, Gertrude & Flumudzani, 2016).

### 3.2.3.2 Lack of information regarding feeding practices

Correct feeding practices play an important role in the healthy development of infants and young children. Lack of adequate knowledge and information related to feeding practices is one barrier which prevents mothers and caregivers feeding children optimally thus contributing to infants and young children developing undernutrition (USAID, 2011; Das et al, 2013; Nankumbi & Muliira, 2015). Respondents in this study communicated the following with regards to feeding practices information.

*“I delivered here in this hospital, but after that he did not tell us anything about feeding”* (P#8).

Mmh... *“we are not given any other information on feeding practices”* (P#11).

(Looking down) *“I was not told anything I decided I will breastfeed till the child is grown up”* (P#7).

*“I just get the information regarding feeding practices on my own; I just gather it from those who already have children that is where I use to ask”* (P#8).

*“We were not told anything, because once you deliver today’ tomorrow you are already discharged, nobody told us about feeding of the baby, no information was given to us”* (P#14).

(Raising her voice) *“At least they must try giving us advice on how to feed the kids, because some of us do not know”*(P#8).

*“Mostly those who are told about feeding are like those infected by HIV, those are the people who are told especially if they are taking ARV” (P#14).*

*“Another thing we need to be given some health information” (P#15).*

It is evident from these verbatim statements that the respondents were not provided with information related to optimal feeding practices. Similar findings were reported by Nyavani, Gertrude and Flumudzani (2016). They found that only 23.3% of mothers in South Africa were taught by the health workers that they should breastfed exclusively until six months; 18 % were told to give other food to their children after six months.

Findings from this study also correspond with those in the literature (Kuzma, 2013; Zhang et al.2015). These authors reported that mothers lack knowledge and understanding on the benefits of breastfeeding and this contributed to them not breastfeeding their infants exclusively. According to Nankumbi and Muliira (2015), mothers have a low level of knowledge on breastfeeding, including frequency of breastfeeding and the time to stop breastfeeding. They narrated that mothers and primary caregivers also lack knowledge on when to start complementary feeding and that is why they introduce complementary feeding as early as possible. Mbagaya (2009) found that mothers need to be equipped with knowledge and information regarding correct breastfeeding and complementary feeding practices. Nguyen et al (2011) stated that lack of proper information on breastfeeding is one barrier which prevented Vietnamese mothers adopting optimal infant and young children feeding practices. According to MOHFW (2013), women and community members need to be provided with accurate information related to infant and young children feeding practices.

MOHFW (2013) stated that nurses and medical officers have a key responsibility of communicating and counseling mothers and caregivers on infant and young child feeding practices. Nutritional counselling also needs to be provided to mothers and caregivers of children who are underweight or have stunted growth (MOHFW, 2013).

Furthermore MOHFW (2013) recommended that information regarding feeding practices needs to be made available to mothers and caregivers of children under the age of five years by displaying posters at strategic locations; outside labour rooms and pediatric consultation rooms. Health workers need to conduct one-on-one, as well as group counseling to mothers after delivery; this is a period when mothers are more likely to be receptive to messages regarding child feeding and care; and health workers need to review and counsel mothers and caregivers of malnourished children regarding appropriate feeding practices (MOHFW, 2013). In this study, the respondents confirmed they were not given information on feeding practices even when their children were diagnosed with undernutrition.

According to Sunguya et al. (2013) doctors, nurses and midwives in most cases are not trained to counsel mothers and caregivers on feeding practices, and they do not possess adequate skills to assist communities. Nankumbi and Muliira (2015) stated that intervention, which includes nutrition navigation and peer support, can enhance mothers' knowledge about feeding practices. USAID (2011), and Das et al (2013) underscored that prevention of poor infant and young child feeding practices can be done by placing emphasis on nutrition education.

To summarise, nutritional information plays an important role in the prevention of undernutrition. Based on the findings in this study, the respondents lack nutritional and

feeding practices information. Mothers and caregivers indicated that they were not given any information related to the types of food suitable for children under the age of five years. As a result they just fed their children with what was available or what they thought would be suitable.

This resulted in most of their children being fed food from one group which led to lack of nutrients from other food groups. Furthermore, the study also revealed that mothers were not well informed on feeding practices of children under the age of five years. Some mothers tried to get information from peers and relatives. This resulted in some mothers stopping breastfeeding early; commencing complementary feeding early and feeding children less in frequency, leading to their children developing undernutrition. This triggered the researcher to develop an educational programme to empower mothers and caregivers with nutritional and feeding practices information which would assist them to prevent undernutrition in children under the age of five years.

### **3.2.3 Theme 4: Respondents experienced limited resources needed to facilitate feeding practices**

Availability of resources can influence feeding practices of children under the age of five years (Nankumbi & Muliira, 2015). According to Contreras, Blandon, Persson, Hjern and Ekstrom (2015), some socio-economic resources, which include food security, have an impact on feeding practices. Sunguya et al. (2013) indicated that poverty is one of the underlying causes of poor nutrition and food insecurity; poverty results in low dietary diversity, low feeding frequency, and low food and energy intake.

As illustrated in Figure 3.4 the respondents in this study experienced limited resources, which hindered feeding practices of children under the age of five years.



**Figure 3.4:** Limited resources experienced by mothers and caregivers.

#### **3.2.4.1 Household food insecurity**

Household food insecurity has an impact on feeding practices of children. If food is not available, a child could then be affected by undernutrition. Food security, according to the Food and Agriculture Organisation (FAO), is defined as physical, social and economic access to sufficient, safe and nutritious food which meets the dietary needs and preference of all people (Zandile et al, 2011; Salmon, 2015). This includes food availability, accessibility, affordability, utilisation and stability.

According to Motbainor, Worku and Kumie (2015) food insecurity is a state in which people experience limited physical and economic access to safe, sufficient and nutritious food necessary to meet dietary needs and preferences. Salarkia, Neyestani, Omidvar and Zayeri (2015) stated that household food insecurity refers to a limited availability of food, including a limited ability to acquire socially and culturally acceptable food. Ruel (n.d) narrated that poverty is the underlying cause of undernutrition and insufficient access to affordable, nutritious food.

According to Goudet (2013), high level of household food insecurity can contribute to malnutrition in children. The respondents in this study communicated the following with regards to household food insecurity.

Mmh... *“the food we have is not enough especially now that the rain is not adequate”* (P#14).

(Lowered her voice) *“No food, even the maize mealie; there is just nothing at our house”* (P#7).

(Looking disappointed) *“We do not have enough food we are struggling to get food”* (P#13).

*“Even a month can go without food”* (P#7).

*“we do not have enough food; I have a challenges with getting food”* (P#14).

*“If the bag of maize mealie get finished we have to struggle, there will be no food even small children will not have anything to eat”* (P#7).

It is evident from the above quotations that the respondents experiences household food insecurity which resulted in their children developing undernutrition. Similar findings are reported in the literature. Household food insecurity results in poor nutrition which has negative effects on the growth and development of children under the age of five years (Huang, Oshima & Kim, 2010; Mutisya, Kandala, Ngware & Kabiru, 2015).

According to Salarkia et al (2015), household food insecurity leads to low nutrients intake and micronutrients deficiency. They highlighted that household food insecurity, in the first three years of life, has a negative impact on the biological, behavioural and intellectual development of a child. A study, conducted in Kenya by Shinsugi et al. (2015), found that because of severe household food insecurity, some caregivers feed their children with tea or milk only, instead of giving them a meal, and this contributed to stunting of children. Motbainor, Worku and Kumie (2015) also stated that household food insecurity contributes to stunting, underweight and wasting in children under the age of five years, therefore nutrition intervention strategies need to consider food security.

According to King, Burgess, Quinn and Osei (2015) food insecurity can be prevented by household food production, storage and preparation. They clarify that food production can be done through gardening and raising animals. Hence, families should be encouraged to produce their own food since it does not cost too much and they can have access to fresh and healthy food.

#### **3.2.4.3 Financial difficulties**

Families without an income, or with a low income, are usually food insecure as they cannot afford to buy nutritious food (Kennedy, 2014). According to Lindsay et al. (2012), a poor income leads to household food insecurity, and people from these households usually have an inadequate diet, which results in undernutrition. The financial situation of the respondents in this study is presented below.

(Looking upset) *“I am the only one taking care of the children and I do not have an income and it is difficult to buy food”* (P#14).

(Mmh)... *“I am not able to buy milk every time, I cannot afford it”* (P#6).

(Looking down) *“I only get few cents once I made a basket and sell, but if I did not sell then I will not have any cent to buy food”* (P#14).

Ah *“I do not have job, I don’t have an income where will I get food”* (P#7).

*“The father is also not working, but once he gets some cents he gives me to buy food”* (P#14).

*“One has to go to town to get milk and one has to use money for transport, but is not always available”* (P#6).

The above verbatim statements indicate that the respondents faced financial difficulties, which prevented them from feeding their children with nutritious food. The literature has similar findings. Lindsay et al. (2012) reported that financial problems limit people’s food choices; some people would like to buy fruit and vegetables, but the cost of such items prevent them from doing so. According to Dallas (2011), members of a low income family do not get proper nutrition in their diet as they usually lack vitamins, protein and minerals. According to Kennedy (2014) low income, or no income families cannot afford to buy enough food, which includes fruit and vegetables.

Families with limited incomes consider food that fill up stomachs; they do not consider nutrients, and in the long run this can contribute to undernutrition (Kennedy, 2014).

Darmon and Drewnowski (2008) also indicated that people from lower socioeconomic status have limited financial means; they are thus likely to consume an energy dense diet which is poor in nutrients.

Findings from this study correspond with those of Lindsay et al. (2012). They pointed out that when a wife or husband does not have a regular job, their family is not able to eat certain types of food; their children sometimes go to bed on an empty stomach for several days. Therefore, some programmes could help low income groups to acquire knowledge and skills related to nutrition, but food poverty requires more than one intervention beside nutrition education (Kennedy, 2014). Farmer et al (2014) indicated that community level education needs to be accompanied with appropriate resources in order to combat poverty and hunger.

To summarise, appropriate feeding practices require some resources. As evident from the findings, respondents in this study experienced limited resources and this hindered feeding practices of their children under the age of five years. Mothers and caregivers indicated that they experienced household food insecurity whereby food was limited or none was available in their homes. As a result they did not have meals to feed themselves and their children; this led to their children developing undernutrition. This study also revealed that mothers and caregivers experienced financial difficulties; this was a challenge as they could not afford to buy food for themselves and their children, which led to undernutrition in their children. An educational programme should empower mothers and caregivers with information to enable them to source resources needed to feed their children in order to prevent undernutrition.

### **3.3 SUMMARY**

In this chapter the findings of the first phase of the study, which explored the experiences of mother and caregivers on feeding practices of children under the age of five years, were presented and discussed. The discussion was based on four main themes: suboptimal feeding practices; factors that influenced feeding practices; dearth of information; and limited resources. Sub-themes were identified under each theme and discussed. The themes and sub-themes formed the basis of a conceptual framework to develop an educational programme, which is presented in the next chapter.

## **CHAPTER FOUR**

### **A CONCEPTUAL FRAMEWORK**

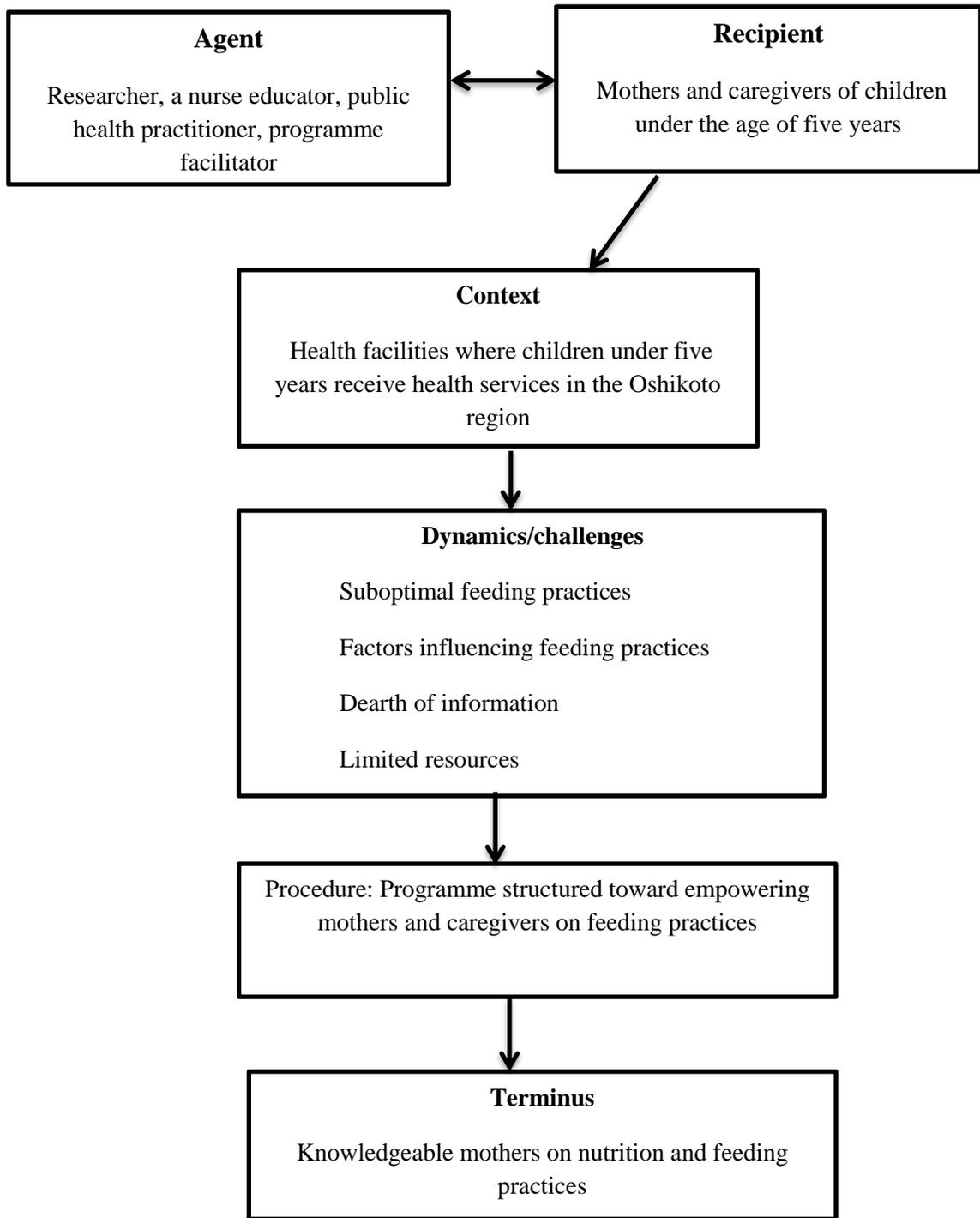
#### **4.1 INTRODUCTION**

In the previous chapter, the results of phase 1 were discussed, based on the experiences of mothers and caregivers on feeding practices of children under the age of five years. Themes and sub-themes were identified and discussed in relation to the literature. This chapter focuses on the conceptual framework which is the second phase of this study. The conceptual framework plays an important role in the development of an educational programme to empower mothers and caregivers on feeding practices of children under the age of five years. The findings from the first phase guided the development of the conceptual framework.

#### **4.2 DEVELOPMENT OF A CONCEPTUAL FRAMEWORK AND RESEARCHER REASONING MAP**

The conceptual framework of this study is based on Dickoff et al's survey list. Dickoff, James and Wiedenbach (1968) defined a conceptual framework as a structure which guides the development of a programme and enables a researcher to relate the results of a study to the existing body of knowledge. According to them, their survey list relates to six questions which need to be considered: who or what performs an activity (agent), who is to receive an activity (recipient), in what context is an activity performed (framework), what is the guiding technique (procedure), what is the energy source for the dynamics, and what is the end point of an activity (terminus).

These six elements were used to develop the conceptual framework in this study. The researcher created a reasoning map which denotes the structure of Dickoff, James and Wiedenbach's concepts of practice oriented theory. The map represents the interaction, between an agent and recipient, which is contextualised within a specific situation and action. In the researcher's reasoning map, the dynamics or energy source behind the interaction were also acknowledged because both the context and the dynamics determine the procedure to be followed to achieve the desired outcome, which is the terminus. The reasoning map is illustrated in Figure 4.1.



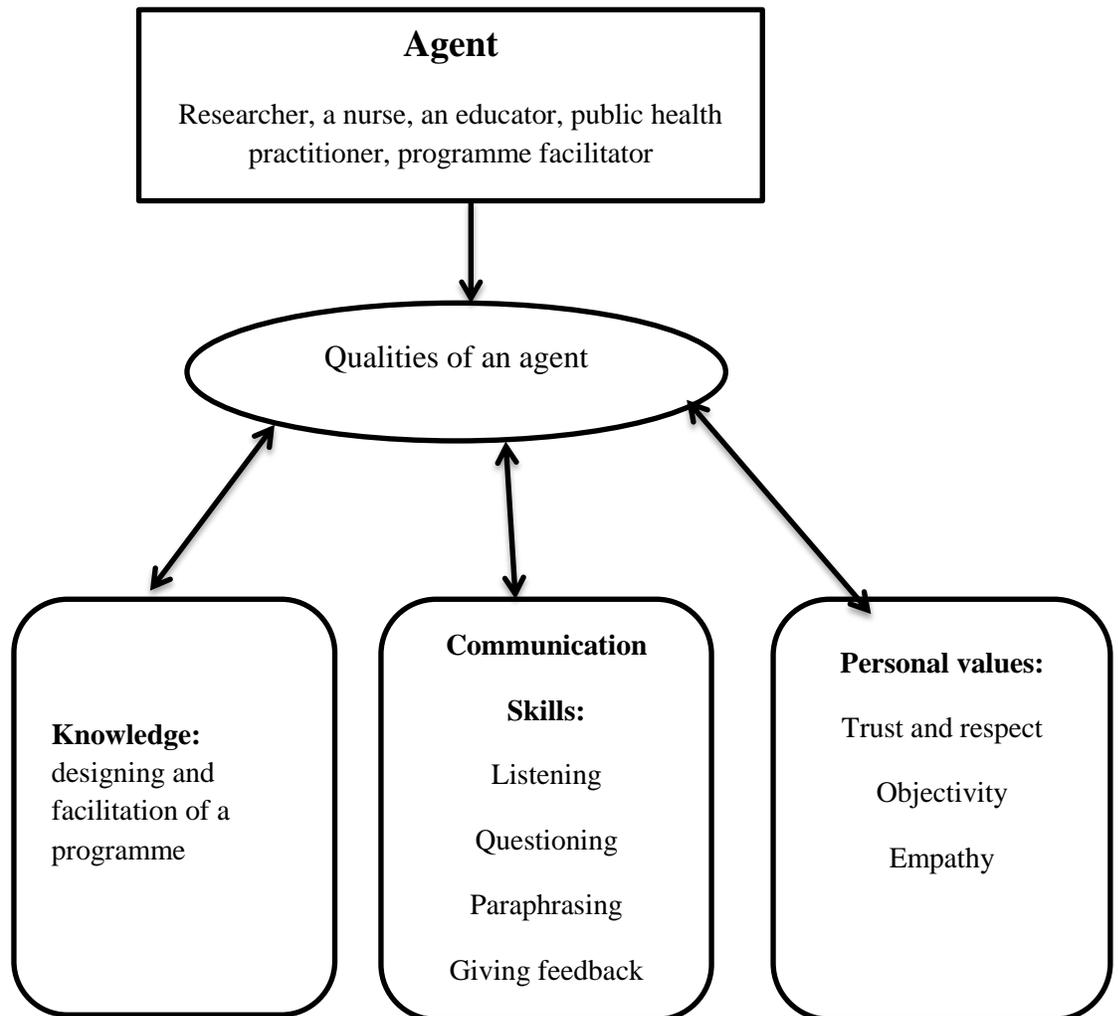
**Figure 4.1:** Reasoning map.

The elements of Dickoff et al's survey list that were adopted for the development of the researcher's reasoning map are discussed below.

#### **4.2.1 The agent: researcher**

According to Dickoff, James and Wiedenbach (1968), the term agent refers to a person who has to perform an activity in order to reach a goal or outcome. An agent needs to be knowledgeable to make a difference in a recipient's life. In this study the agent is a researcher, a nurse, a public health practitioner who has to carry out the activity: an educational programme for empowering mothers and caregivers on feeding practices of children under the age of five years. A public health practitioner and a nurse have a role to design a programme and educate a community on health related matters. Meleis (2011) indicated that a researcher needs to use professional knowledge and experience during the preparation of activities to be carried out which is an educational programme in this study.

The educational programme in this study aimed to address suboptimal feeding practices, factors influencing feeding practices, shortage of nutritional information, and limited resources needed to facilitate appropriate feeding practices. In addition to knowledge and experience, an agent also needs to possess some personal qualities to enable the establishment of a positive interpersonal relationship with a recipient. Such personal qualities include communication skills: listening, questioning, paraphrasing, feedback and summarising. An agent needs to possess personal values, which include morals and principles, as these should enable an agent to establish a trusting relationship with the recipients. The qualities of an agent are illustrated in Figure 4.2.



**Figure 4.2:** Qualities of an agent.

The qualities of an agent are described as follows.

#### **4.2.1.1 Knowledge on programme designing and facilitation**

An agent needs to possess knowledge of the subject matter or activities to be carried out, which in this study is development and implementation of an educational programme.

Knowledge refers to information, an understanding a person gains through education and experience (Turnbull, 2010). The agent (researcher) in this study is a nurse and a public health practitioner who has the required knowledge and experience to develop, facilitate programme and promote active learning. Knowledge goes hand in hand with competence. Competence refers to the state of being knowledgeable and skillful in a certain activity (Webster, n.d). The agent (researcher) gained in-depth knowledge from the research findings about the needs of the mothers and caregivers. Therefore, the content of an educational programme was prepared according to the research findings. The agent (programme facilitator) is knowledgeable and competent in the activities to be carried out during the implementation of the educational programme to empower mothers and caregivers on feeding practices of children under the age of five years.

During the programme implementation the participants (mothers and caregivers) were given handouts with information translated in the language that they understood, namely Oshiwambo. The handouts covered optimal feeding practices, types of food suitable for children under the age of five years, different nutritional deficiencies which results from inadequate nutrition, factors influencing feeding practices and how to prevent them, as well as ways of sourcing resources needed to facilitate feeding practices.

#### **4.2.1.2 Communication skills**

Communication is the ability to transfer or share ideas and feelings effectively (Hornby, 2015). Communication skills are the most important ability needed to transfer information to other people (Doyle, 2016).

Therefore, an agent needs to effectively communicate verbally and non-verbally in order to convey knowledge to recipients. Both forms of communication need to be congruent. An agent's body language, eye contact, hand gestures, and tone of voice, influence a message being conveyed. An agent should try to maintain eye contact and communicate in a friendly tone of voice, as this encourages the recipients to speak openly (Doyle, 2016). Effective communication requires certain skills; listening, questioning, paraphrasing, giving feedback, and summarising.

**Listening:** An agent needs to be an active listener. This implies paying close attention to what a recipient is saying, asks clarifying questions, and rephrases or paraphrases what another person said to ensure good understanding (Doyle, 2016). Besides being an active listener, an agent, as a facilitator, has to speak clearly, conveying a message using short and understandable sentences while providing adequate information to the recipients (Doyle, 2016).

**Questioning:** An agent needs to possess questioning skills in order to assist the recipients to think critically and learn more. During a facilitation process, an agent asks questions to check whether participants (recipients) understand as this helps to achieve the objectives of a programme.

**Feedback:** An agent should be able to give and receive feedback from recipients. According to Doyle (2016), being able to provide or receive feedback is one of the most important communication skills. During the implementation of the programme in this study, the agent gave feedback to the recipients; this included praising them when they did well in order to motivate them.

**Summarising:** An agent summarises main points at the end of each session to assist participants (recipients) to reflect on what was discussed and to link the previous discussion to the next session.

#### **4.2.1.3 Personal values**

According to Mulaudzi, Mokoena and Troskie, (2010), values refer to beliefs or principles which are based on a person`s life experiences; values guide a person`s behaviour. George (2008) indicated that values guide people in choosing what is right or wrong, good or bad. Personal values are a quality an agent needs to possess in order to establish a rapport with the recipients in order to transfer information to them. Personal values observed during this study include trust, respect, objectivity and empathy.

**Trust:** In simple terms, trust implies relying on someone to do the right thing (Manktelow et al, 2012). Trust is an important value in sharing knowledge. An agent tries to communicate openly with recipients in order to build trust and to enable them to talk to one another in an honest way. According to Chen (2012), if there is no trust it is difficult to get anything done; trust should make it easier to get valuable information and feedback from participants (recipients).

In this study the agent tried to build trust by being honest and sincere, respecting participants, asking open-ended questions, showing interest in their answers and paraphrasing what they said. The agent also took time to explain when they seemed to be confused; this helped them to understand and clear their confusion.

**Respect:** The recipients can communicate openly with an agent if they see that their ideas and views are respected. During the facilitation process in this study, the agent showed respect to the participants by addressing them by their names, maintaining eye contact, listening actively and respecting their point of view, so that they would feel appreciated (Doyle, 2016).

**Objectivity:** This refers to being impartial or not prejudicial. It implies neutrality or independence (Meyer, 2004). During the implementation of the programme, the agent remained neutral and did not take sides or be influenced by an individual or group.

**Empathy:** This involves a deep understanding of feeling and thoughts of another person without becoming emotionally involved. The agent in this study demonstrated empathy by trying to understand the participants' situation and putting them at ease without becoming emotionally involved (Doyle, 2016). Such a value enabled the agent to build a positive interpersonal relationship with the participants (recipients).

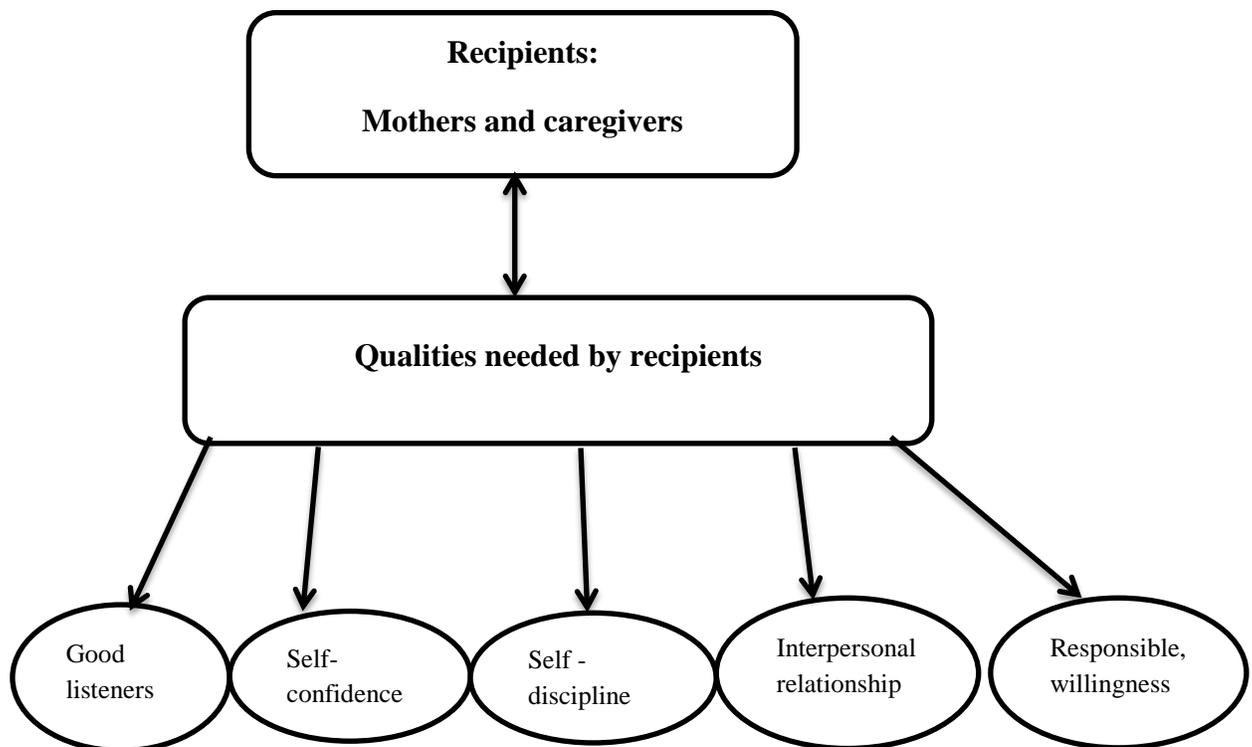
The agent in this study was the researcher, who developed and facilitated the educational programme to empower mothers and caregivers on feeding practices of children under the age of five years in the Oshikoto region, Namibia.

#### **4.2.2 Recipients: mothers and caregivers of children under the age of five years**

A recipient is a person who receives something (Turnbil, 2010). In this study the recipients were mothers and caregivers of children under the age of five years as they were the ones experiencing challenges; they were the beneficiaries of the activities designed by the agent (Dickoff, James & Wiedenbach, 1968).

The findings of the study indicated that mothers and caregivers of children under the age of five years used suboptimal feeding practices; experienced different factors which influenced feeding practices; lacked information related to feeding practices and types of food suitable for children under the age of five years; and they experienced limited resources needed to facilitate feeding practices.

A designed educational programme should help them to utilise the optimal feeding practices, prevent factors which influence feeding practices, provide them with knowledge on feeding practices and the types of food suitable for children under the age of five years, and equip them with information on how to source resources necessary to facilitate feeding practices. These mothers and caregivers needed to possess some characteristics/qualities in order to benefit from the programme as illustrated in Figure 4.4.



**Figure 4.3:** Qualities of recipients.

The qualities, listed in Figure 4.3, needed by recipients to benefit from the programme are discussed below.

#### **4.2.2.1 Good listener**

Recipients need to be good listeners in order to benefit from activities According to Lewis (2009), good listeners pay attention to what is being said to avoid conflict and misunderstanding. They ask questions to seek answers which help them to evaluate another person`s opinion.

Recipients in this study needed to pay careful attention to the words spoken by others, and avoid making quick judgments. They also needed to understand the meaning of information, and be willing to learn from each other. A good listener recognises that a person can learn from anyone. Recipients also need to pay attention when another person is speaking and show interest. They must not interrupt another person and they need to ask questions when something is not clear (Raychelle & Lohmann, 2010).

#### **4.2.2.2 Self-confidence**

Another quality recipients need to possess is self-confidence. Sneha (2015) indicated that confidence is the sum of characteristics brought together. Recipients of activities in this programme needed to be ready to take up the opportunity to learn; they had to be self-motivated. They needed to understand and accept themselves so as to avoid worrying about what other people said. As self-confident recipients, they needed to take up the challenges to learn, and to step out of their comfort zone (Sneha, 2015).

Since they participated in a group they needed to be comfortable with each other so that they could work as a team.

#### **4.2.2.3 Self-discipline**

Recipients need to possess self-discipline qualities. These include being well organised, having a plan, and being able to prioritise (Burroughs, 2012). Self-disciplined people are able to manage their time effectively and complete tasks given to them. Recipients need to stay focused on activities and be determined to complete organised activities.

#### **4.2.2.4 Good interpersonal relationship**

MSG Experts (2008) defined interpersonal relationship as a strong bond between two or more people. Interpersonal relationships need to develop among the recipients for teamwork activities, and to share common goals and objectives. Recipients with good interpersonal relationships need to respect the views and opinions of others, as well as trusting each other. They also need to communicate openly with each other, stay calm and not overreact to petty issues (MSG Experts, 2008).

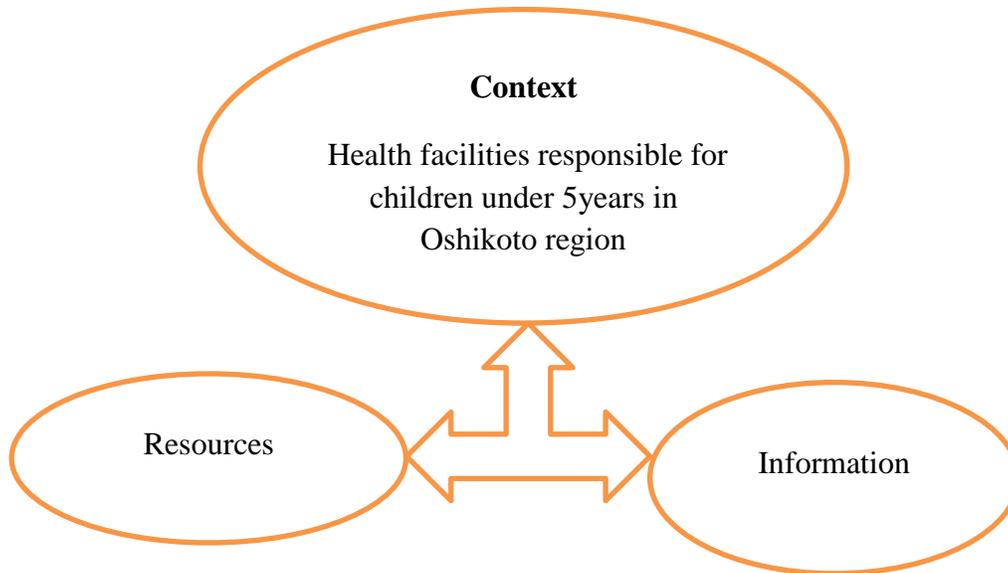
#### **4.2.2.5 Responsible and willingness**

The recipients also need to have a responsible character which includes the ability to differentiate what is right and wrong (Frankl, 2011). Responsible recipients care about how their actions affect other people. Frankl (2011) added that responsible recipients are willing to risk making mistakes during their learning process and understand that people learn through their mistakes.

Willingness is the quality of being prepared to take action, in other words it is referred to as readiness to do something. According to Moran (2012), willingness is a component of behaviour change; it involves committing oneself to important actions related to changing behaviour. Recipients should be able to commit themselves to being involved in activities designed for them and they must be willing to learn.

#### **4.2.3 Context: health facilities providing services for children under the age of five years in the Oshikoto region**

According to Dickoff, James and Wiedenbach (1968), a framework refers to the context in which an activity takes place. Hornby (2015) defined context as a situation in which something happens and helps one to understand it. In this study the context is where the activities took place: the health facilities providing services to children under the age of five years. The Onandjokwe Intermediate Hospital was chosen because it is a referral hospital for the Oshikoto region. The programme took place at this hospital. A context can influence the outcome of an activity. Factors which could influence a context need to be taken into consideration. Figure 4.4 depicts factors which could influence the context of the programme.



**Figure 4.4** Factors influencing context

#### **4.2.3.1 Resources**

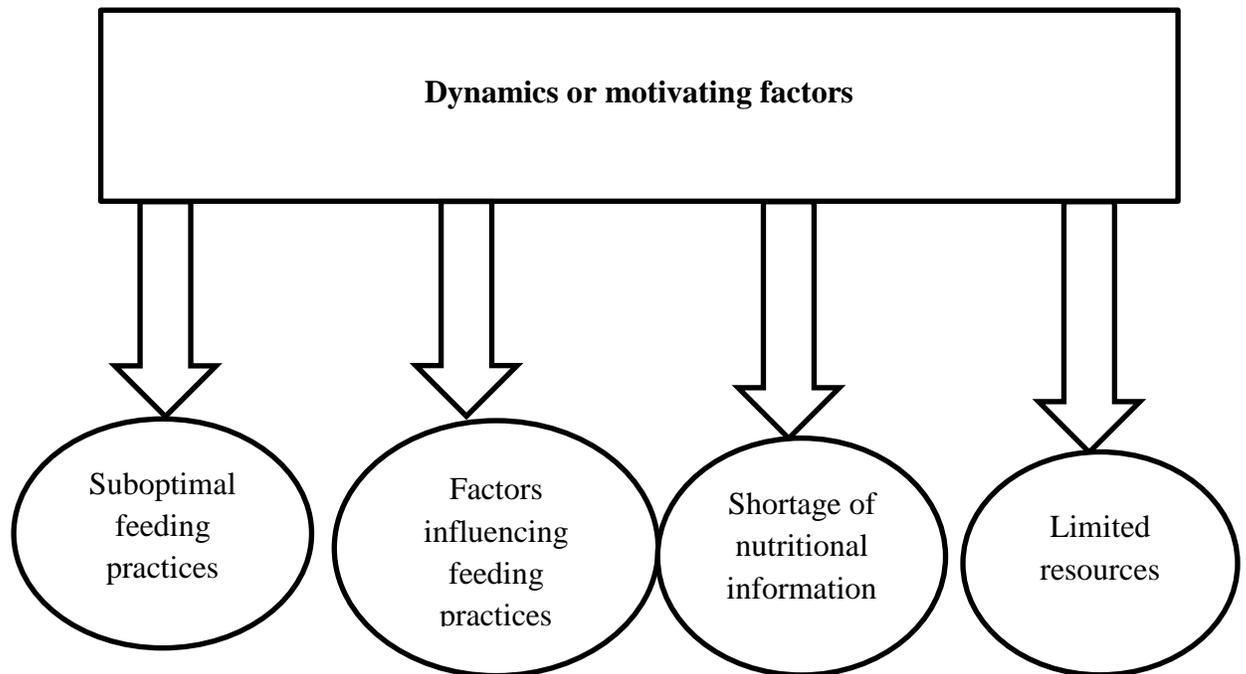
Resources available need to be organised as they impact on the activities to be carried out. The programme was implemented in the form of a workshop and was conducted in the training centre in the hall of the Onandjokwe Intermediate Hospital. The hall, which is located a distance from the hospital units, was selected as a suitable venue for the programme workshop. It has sufficient space and contains chairs and tables. It was considered as having a conducive environment because it is used for meetings and training of nurses, and its location meant there would be very little noise to distract the participants. The researcher prepared the training resources. These included handouts, pens, laptop, projector, marker pens, flip charts, glue sticks, and writing pads.

#### **4.2.3.2 Information**

Learning can only take place in a conducive environment where there is good interaction between an agent, recipients and context. This enables an agent and recipients to communicate in the language they understand (Cletus & Edinyang, 2014). In this study, information was provided to the recipients in the language that they understood. The agent prepared handouts in English for the workshop, and translated the information into Oshiwambo. Recipients were informed they could communicate in the language that they felt comfortable with; translation was done when necessary.

#### **4.2.4 Dynamics or motivating factors**

According to Dickoff, James and Wiedenbach (1968), dynamics refer to energy sources or motivating factors behind an activity. Dynamics in this study were derived from the themes that emerged. These are presented in Figure 4.5. These energy sources were used as content in the development of the programme.



**Figure 4.5:** Dynamics in this study.

**Suboptimal feeding practices:** Mothers and caregivers utilised suboptimal feeding practices: early stopping of breastfeeding, bottle feeding, early introduction of complementary feeding, non-responsive feeding, poor dietary diversity and less frequency of feeding. Mothers and caregivers thus needed information on appropriate feeding practices which they could gain from the educational programme.

**Factors influencing feeding practices:** Mothers and caregivers experienced different factors which influenced feeding practices: children refusing to eat or showing picky eating behaviour; some mothers and caregivers abandoned or neglected their children; some abused alcohol, and some used unhygienic food practices. All of these factors contributed to children under the age of five years developing undernutrition.

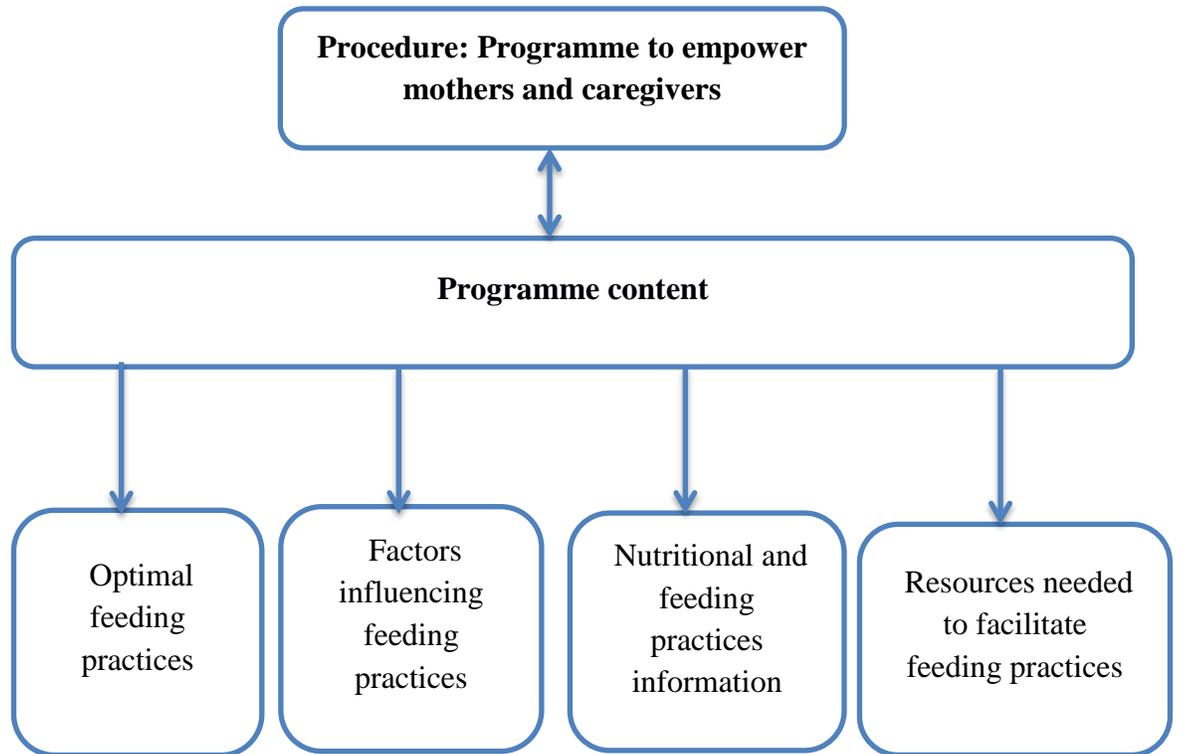
**Shortage of information:** Mothers and caregivers lacked information on the types of food suitable for children under the age of five years because they were not given such information by health workers.

**Limited resources:** Mothers and caregivers encountered challenges of limited resources which included inadequate food in their households, and financial difficulties and these challenges resulted in some children not being fed appropriately. Due to these dynamics, mothers and caregivers of children under the age of five years needed to be empowered with information on feeding practices of their children to prevent the problem of undernutrition.

#### **4.2.5 Procedure**

Procedure refers to a protocol or techniques which guide activities (Dickoff, James & Wiedenbach, 1968). The procedure in this study is an educational programme to empower mothers and caregivers on feeding practices of children under the age of five years. The programme was developed using Nicholls' cyclic curriculum development model. The procedure as illustrated in Figure 4.6 was carried out by implementing the developed educational programme.

The procedure need to address suboptimal feeding practices, factors influencing feeding practices, shortage of nutritional and feeding practices information, and limited resources which are necessary to facilitate feeding practices.



**Figure 4.6:** Procedure for the educational programme.

**Optimal feeding practices:** Mothers and caregivers need to be empowered to utilise optimal feeding practices which comprise exclusive breastfeeding for six months, complementary feeding from six months while continuing breastfeeding until two years or beyond, and using responsive feeding. Other optimal feeding practices include increase feeding frequency up to five times per day with snacks between meals in children who have stopped breastfeeding, giving children different types of food which contain various nutrients, and avoiding bottle feeding method since it is not safe for children. Utilisation of optimal feeding practices can assist in the prevention of undernutrition.

**Factors influence feeding practices:** Mothers and caregivers need to learn how to prevent factors influencing feeding practices of children under the age of five years which include picky eating and food refusal, child abandonment and neglect, alcohol abuse and unhygienic food practices.

**Nutritional and feeding practices information:** Mothers and caregivers need to be equipped with knowledge related to the types of food suitable for children under the age of five years, and the importance of feeding children with different types of food as this can assist them to prevent undernutrition in their children under the age of five years.

**Resources needed to facilitate feeding practices:** Mothers and caregivers need to be given information on how to source some resources for income generating projects; this would assist them to secure food and enable them to feed their children in order to prevent undernutrition. The procedure was carried out in a workshop form and consisted of the orientation, working and termination phases. The procedure enabled the mothers, caregivers and the agent to interact with each other.

#### **4.2.6 Terminus**

Dickoff, James and Wiedenbach (1968) described a terminus as the end point. The terminus is the goal an agent wants to achieve by carrying out an activity. Findings from this study indicated that mothers and caregivers utilised suboptimal feeding practices, they experienced factors influencing feeding practices, they lacked nutritional information, and they experienced limited resources needed to facilitate feeding practices.

The terminus in this study was the goal of an educational programme to produce knowledgeable mothers and caregivers on feeding practices of children under the age of five years. It was expected that after the programme, mothers and caregivers would be able to use optimal feeding practice, prepare children's food hygienically, feed children with different types of food, and be able to seek resources needed to facilitate feeding of children under the age of five years.

### **4.3 SUMMARY**

This chapter described the conceptual framework of the educational programme to empower mothers and caregivers on feeding practices of children under the age of five years. The conceptual framework was structured according to Dickoff, James and Wiedenbach's survey list. The survey list guided the researcher to develop a reasoning map that includes an agent, recipient, context, dynamics, procedure and terminus. In the next chapter the description of the programme, including its content, are discussed.

## **CHAPTER FIVE**

### **DEVELOPMENT OF AN EDUCATIONAL PROGRAMME TO EMPOWER MOTHERS AND CAREGIVERS ON FEEDING PRACTICES OF CHILDREN UNDER THE AGE OF FIVE YEARS**

#### **5.1 INTRODUCTION**

In the previous chapter, a conceptual framework, based on Dickoff, James and Wiedenbach`s survey list, was described. This chapter focuses on the development of an educational programme to empower mothers and caregivers on feeding practices of children under the age of five years in the Oshikoto region, Namibia. According to Hornby (2015), a programme is a plan of activities that will be done or included in the development of something. For this study an educational programme refers to planned activities designed for training of mothers and caregivers of children under the age of five years to improve their knowledge on feeding practices of these children. These activities were designed in terms of the challenges identified during the first phase of this study, namely situational analysis.

#### **5.2 DEVELOPMENT OF AN EDUCATIONAL PROGRAMME**

According to the situational analysis, mothers and caregivers used suboptimal feeding practices and they experienced some factors which influenced feeding practices of children under the age of five years. They also experienced a lack of information related to feeding practices and the types of food suitable for children under the age of five years.

Resources which facilitate feeding practices were also limited and had a negative impact on feeding practices of children under the age of five years. After data analysis and development of the conceptual framework, the researcher resolved to develop an educational programme to empower mothers and caregivers on feeding practices of children under the age of five years.

According to Watson (2011), a programme should have a specific focus and should be based on a need assessment results or findings. The situational analysis conducted in the first phase of this study formed the foundation of the educational programme. The structure of the programme consisted of a purpose, objectives, as well as its content. These are described below.

### **5.2.1 Title of the programme**

The programme is called an educational programme to empower mothers and caregivers on feeding practices of children under the age of five years in the Oshikoto region, Namibia.

### **5.2.2 The purpose of the educational programme**

The purpose of this educational programme was to empower mothers and caregivers on feeding practice of children under the age of five years in order to prevent undernutrition. After the situational analysis, the following areas of concern were identified.

- Mothers and caregivers used suboptimal feeding practices.
- Mothers and caregivers experienced different factors which had a negative influence on feeding practices.

- Mothers and caregiver lacked nutritional and feeding practices information.
- Mothers and caregivers experienced limited resources needed to facilitate feeding practices.

These areas of concern needed to be addressed by empowering mothers and caregivers with knowledge. The long term goal for this programme is to have knowledgeable and well informed mothers on feeding practices of children under the age of five years, so that undernutrition can be prevented among such an age group.

### **5.2.2 Objectives of the programme**

There were four objectives of the programme.

- **To empower mothers and caregivers with knowledge in order address suboptimal feeding practices utilised by mothers and caregivers.**

This objective addressed suboptimal feeding practices that were being used by mothers and caregivers, and included early cessation of breastfeeding, bottle feeding, early introduction of complementary feeding, non-responsive feeding, less feeding frequency, and poor dietary diversity. These suboptimal feeding practices contributed to children under the age of five years developing undernutrition.

- **To empower mothers and caregivers to address different factors which influence feeding practices of children under the age of five years.**

This objective addressed factors influencing feeding practices experienced by mothers and caregivers which include food refusal and picky eating behaviour, abandonment and neglect of children, alcohol abuse, and unhygienic food practices.

- **To empower mothers and caregivers with nutritional and feeding practices information in order to address lack of information experienced by mothers and caregivers.**

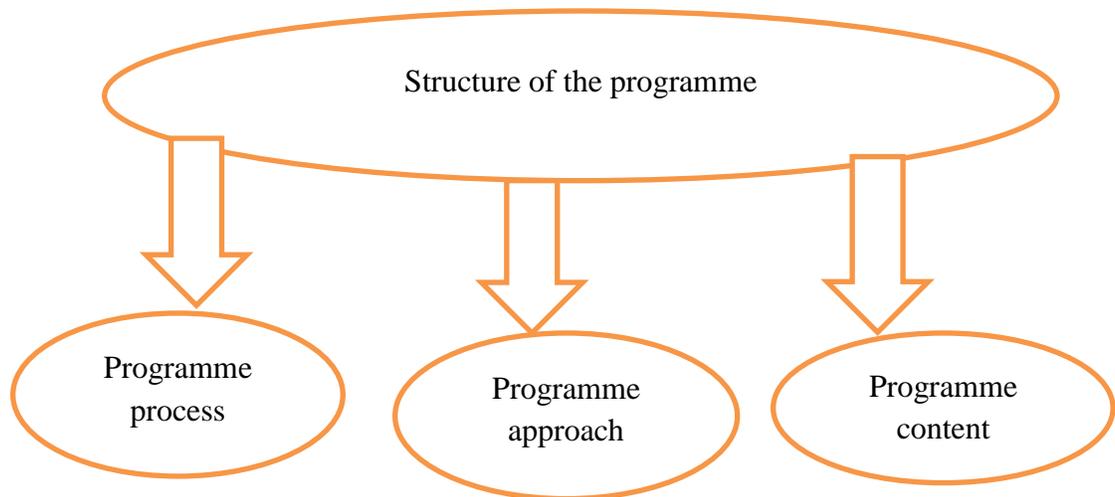
This objective addressed a shortage of information on the types of food suitable for children under the age of five years as well as lack of information on appropriate feeding practices. Shortage of such important information contributes to children under the age of five years developing undernutrition.

- **To empower mothers and caregivers with information regarding sourcing out resources needed to facilitate feeding practices of children under the age of five years.**

This objective intended to cater for limited resources experienced by mothers and caregivers, which include household food insecurity and financial difficulties as these can contribute to children under the age of five years to develop undernutrition.

### **5.2.3 Structure of the programme**

The programme was implemented in a form of a two-day training workshop. The workshop was conducted in Onandjokwe Intermediate Hospital. Figure 5.1 is a schematic depiction of the structure of the programme.



**Figure 5.1:** Structure of the programme.

### **5.2.3.1 Programme process**

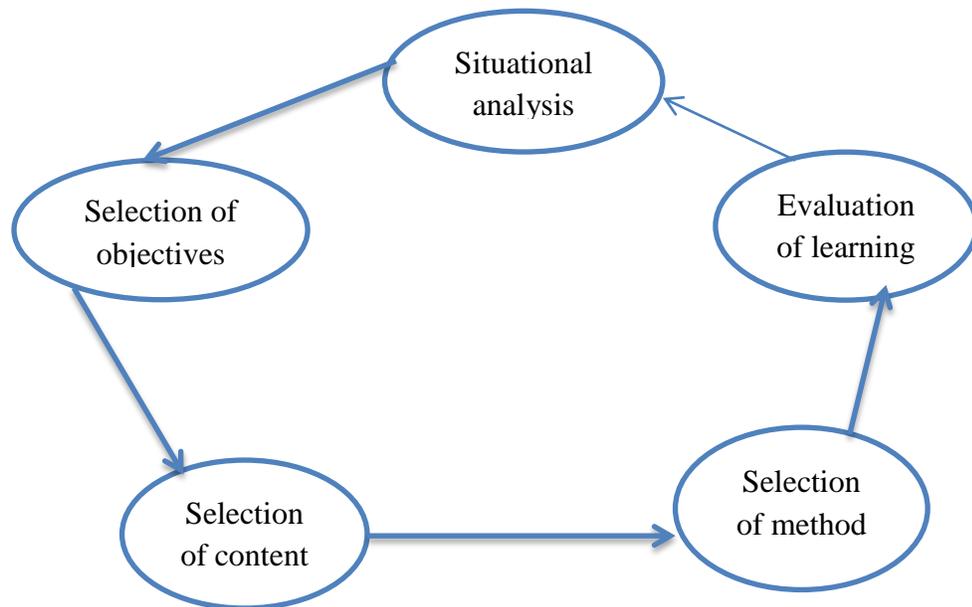
The educational programme comprised three phases: orientation phase, working phase, and termination phase. In the orientation phase, the purpose and objectives of the programme were introduced and all the logistics were discussed. These included the venue, date and time of the workshop. During the working phase the presentations of different session and group work of activities, designed to empower mothers and caregivers on feeding practices of children under the age of five years, took place. The termination phase included evaluation of the workshop activities.

### **5.2.3.2 Programme approach**

An educational approach was used in this programme. The programme was developed using Nicholls` cyclic curriculum development model, Kolb`s experiential learning theory, and Knowles` adult learning theory.

- **Nicholls` cyclic curriculum development model**

Nicholls and Nicholls (1978) identified five steps that need to be considered when developing a curriculum. Figure 5.2 shows the steps that were adopted in the development of an educational programme.



**Figure 5.2:** Steps adopted from Nicholls’ curriculum development model.

**Situational analysis:** This was conducted in the first phase of this study and areas of concern were identified. These included utilisation of suboptimal of feeding, factors that influenced feeding practices negatively, shortage of nutritional and feeding practices information, and limited resources that affect feeding practices negatively.

**Selecting objectives:** The objectives of the educational programme were selected as outlined in 5.2.2 and were based on the situational analysis findings.

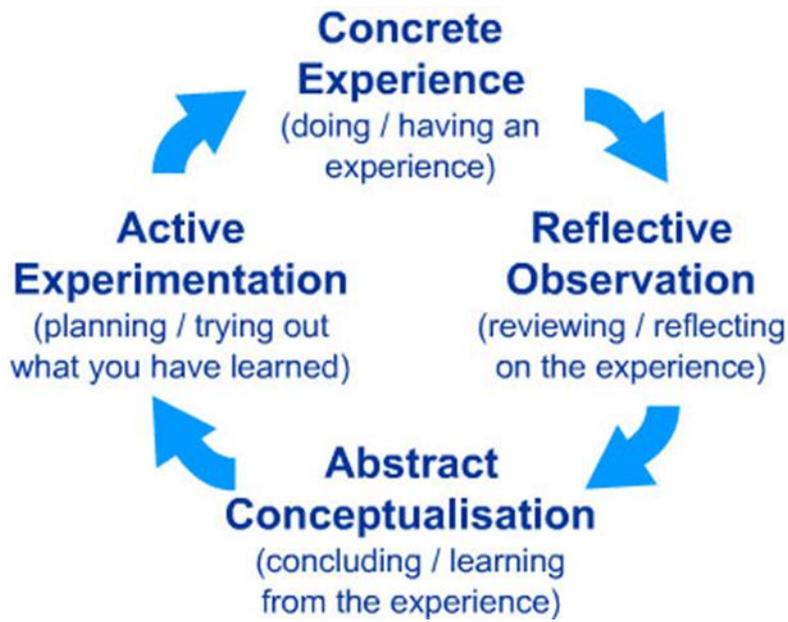
**Selection and organising the content:** The content for the educational programme was selected and organised in terms of the findings and objectives (the content is discussed later in this chapter).

**Selection of methods:** The methods or strategies to be used during the programme implementation were selected based on the content and objectives to be covered (methods used are discussed in chapter six).

**Evaluation of learning:** After the implementation of the activities, evaluation of learning had to be conducted to evaluate whether the objectives were achieved (evaluation is discussed in the next chapter).

- **Kolb`s experiential learning theory**

According to Kolb`s theory of experiential learning, people learn from direct experience and through active participation in activities (Mcleod, 2013). The educational programme development also considered Kolb`s experiential learning cycle as illustrated in Figure 5.3.



**Figure 5.3:** Kolb `s experiential learning cycle (Macleod, 2013).

**Concrete experience:** During this stage participants explore an activity by observing objectively or by doing (Kolb & Boyatzis, 1999). In this programme, the participants encountered new experiences on feeding practices or tried to reinterpret their existing experience. Participants could get new ideas from group discussions during the programme implementation.

**Reflective observation:** At this stage learners try to assimilate new experiences and draw new inferences (Kolb & Boyatzis, 1999). In this programme the participants reflected on their previous experiences and tried to understand the inconsistencies between previous and new experiences.

**Abstract conceptualisation:** In this stage, learners try to have in-depth understanding of a new experience. Participants in the programme reflected on the new ideas/experiences and this deepened their understanding of a need to modify their existing experiences.

**Active experimentation:** This stage involves taking action. In the programme the participants applied what they had learned. (Application of this model is described in chapter six).

- **Knowles` model of andragogy**

Knowles suggested some principles related to adult learning. These were applied in the development and implementation of this programme. According to Knowles, adult learners are mature and need to be involved in planning and evaluation of their learning activities. Adult learners have personal experiences and they learn through experience including through their mistakes. They use their experiences as a resource. Adult learners are self-directed; they tend to learn what they think will help them in their personal life. Therefore during this programme, there was a need to explain reasons for specific activities and different methods used during programme activities. The participants needed to evaluate their learning activities to determine whether the objectives were achieved.

#### **5.2.4 Content of the educational programme**

The programme content was compiled using the situational analysis information from the first phase, and information from a literature review. The content included activities to provide knowledge to mothers and caregivers on optimal feeding practices, and the types of food suitable for children under the age of five years. The content also consisted of activities to address factors influencing feeding practice and those that assisted mothers and caregivers to source resources needed to facilitate feeding practices of children under the age of five years.

All activities were designed to empower mothers and caregivers on feeding practices of children under the age of five years. In a nutshell, the structure of the programme is presented in Table 5.1.

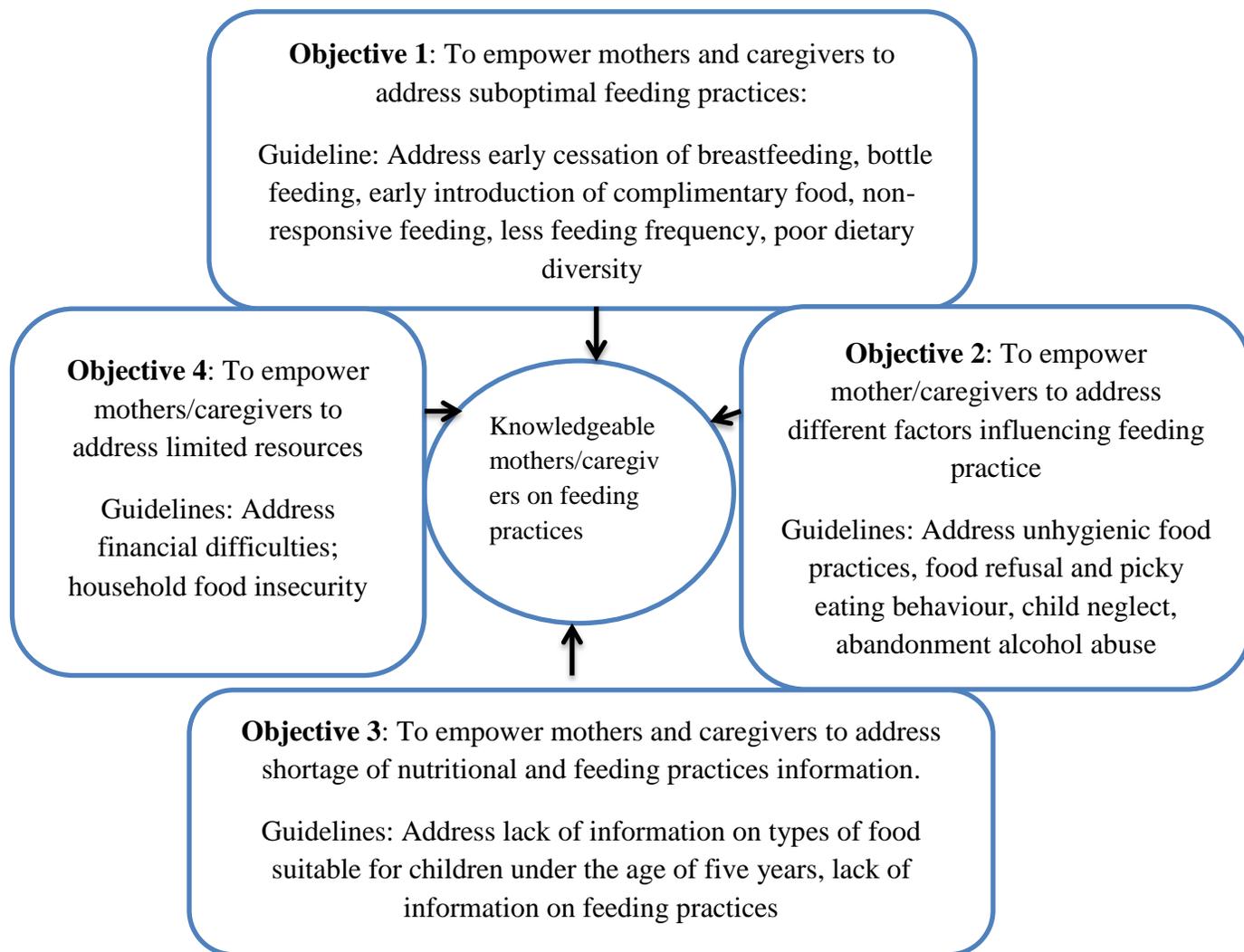
**Table 5.1:** Structure of an educational programme

<b>Title:</b> An educational programme to empower mothers and caregivers on feeding practices of children under the age of five years in the Oshikoto region, Namibia.	
<b>Aim:</b> To empower mothers and caregivers to become knowledgeable on feeding practices of children under the age of five years.	
<b>Objectives of the programme</b>	<p>To empower mothers and caregivers with knowledge in order address suboptimal feeding practices.</p> <p>To empower mothers and caregivers to address different factors which influence feeding practices of children under the age of five years.</p> <p>To empower mothers and caregivers with nutritional and feeding practices information in order to address shortage of information.</p> <p>To empower mothers and caregivers on how to source resources in order to address limited resources.</p>
<b>Teaching methods</b>	Lecturer presentation, small group discussions, role- play, brainstorming, debating
<b>Target population</b>	Mothers and caregivers of children under the age of

	five years
<b>Implementation phases of programme</b>	Orientation, Working Termination phase
<b>Evaluation</b>	Pre- and post-test and programme evaluation

### **5.2.7 Description of the content**

The content of the programme is based on the objectives to be achieved and guideline to be followed to address the problems identified. The objectives and their guidelines are presented in Figure 5.4.



**Figure 5.4:** Guidelines for the educational programme.

**Objective 1: To empower mothers and caregivers of children under the age of five years by addressing suboptimal feeding practices.**

In order to address to suboptimal feeding practices utilised by mothers and caregivers the following issues had to be covered.

**Early cessation of breastfeeding:** Mothers and caregivers need to know the benefits of breastfeeding to the baby and mothers and they also need to be made aware of the WHO and infant and young child feeding (IYCF) recommendations on breastfeeding.

**Feeding children with formula milk and other food using bottle feeding:** Mothers and caregivers need to understand the risks and disadvantages of formula milk and bottle feeding. Mothers and caregivers need to be made aware of the other utensils they can use instead of bottles.

**Early introduction of complementary food and less feeding frequency:** Mothers and caregivers need to understand the appropriate age of starting complementary food and the risk involved in early introduction of complementary food. They also need to be made aware of the WHO recommendations on safe complementary food and feeding frequency.

**Non-responsive feeding:** Mothers and caregivers need to understand what responsive feeding is and how to feed children in a responsive manner.

**Poor dietary diversity:** Mothers and caregivers need to be made aware of different food groups and the importance of eating food from different groups.

**Objective 2: To empower mothers and caregivers by addressing different factors influencing feeding practices.**

In addressing different factors which influence feeding practices of children under the age of five years the following issues were taken into consideration.

**Unhygienic food practices:** Mothers and caregivers need to know hygienic ways of food preparation and be made aware of the risk involved in unhygienic food practices.

**Food refusal and picky eating behaviour:** Mothers and caregivers need to be taught on how to handle picky eater and how to handle children who refuse to eat.

**Child abandonment, neglect and alcohol abuse:** Mothers and caregivers need to understand the impact of child abandonment and neglect as well as the negative effects of alcohol abuse.

**Objective 3: To empower mothers and caregivers by addressing shortage of nutritional and feeding practices information.**

The following issues need to be addressed to empower mother with nutritional and feeding practices information.

**Lack of information on types of food suitable for children under the age of five years:** Mothers and caregivers need to be provided with information on the types of food suitable for children, especially local available food. They also need to understand why a child needs to eat a variety of foods.

**Lack of feeding practices information:** Mothers and caregivers need to be provided with information on appropriate feeding practices of children under the age five years.

**Objective 4: To empower mothers and caregivers by addressing limited resources needed to facilitate feeding practices.**

**Financial difficulties and household food insecurity:** Mothers and caregivers need to be made aware of how to become self-reliant through self-help projects in order to overcome financial difficulties and household food insecurity. They also need to learn ways of increasing food at a household level.

### **5.3 SUMMARY**

This chapter described the process of programme development to empower mothers and caregivers on feeding practices of children under the age of five years. The programme was developed based on the findings from the situational analysis and literature review. The researcher was guided by Dickoff, James and Wiedenbach `s survey list. The programme was developed within the educational perspective which stipulates that a programme needs to have a purpose and objectives. The programme structure which includes process, approach, and content, were explained. Different models were also used in the development of this programme. In the next chapter, programme implementation and evaluation are discussed.

## **CHAPTER SIX**

### **IMPLEMENTATION AND EVALUATION OF THE PROGRAMME**

#### **6.1 INTRODUCTION**

The previous chapter concentrated on the programme development. This chapter focuses on the implementation and evaluation of an educational programme on feeding practices of children under the age of five years. The chapter comprises two parts: the first part deals with programme implementation and the second part covers programme evaluation to evaluate its effectiveness.

#### **6.2 PART 1: IMPLEMENTATION OF THE PROGRAMME**

This part explains the procedure used to carry out planned activities, the content of the programme, as well as the theories applied during the implementation of this educational programme. A two-day workshop was conducted for mothers and caregivers of children under the age of five years to empower them on feeding practices. It was conducted at the Onandjokwe Intermediate Hospital, in the Oshikoto region which was used for the context of the implementation of the programme.

##### **6.2.1 Population for implementation phase**

The population for this phase was mothers and caregivers of children under the age of five years who were diagnosed with undernutrition, and were either inpatients in the pediatric department or registered with the Nutritional Assessment, Counseling and Support programme (NACS) in the Onandjokwe Intermediate Hospital.

Fifteen (15) mothers and caregivers were invited to take part. A total number of ten (10) participants attended the workshop.

#### **6.2.1.1 Sampling method**

A non-probability purposive sampling was used for this phase. Mothers and caregivers of children under the age of five years diagnosed with undernutrition were selected to attend the workshop. Inclusive criteria were:

- Mothers or caregivers taking care of a child under age of five years who were diagnosed with undernutrition and receiving health services at Onandjokwe Intermediate Hospital.
- Mothers or caregivers should be for child either admitted as inpatients or registered with Nutritional Assessment, Counseling and Support Programme (NACS).
- Mothers or caregivers had to reside in the Oshikoto region.
- Mothers and caregivers had to be literate as the activities included handouts, and written comments during the workshop would be required.

#### **6.2.2 Arrangement for the educational programme**

Some arrangements needed to be made to ensure a successful implementation of the programme. The following arrangements were made.

### **6.2.2.1 The venue**

The venue for the workshop was the Onandjokwe Regional Health training centre hall. The facilitator booked the venue by writing a letter to the senior medical officer of the hospital, as well as the head of the training centre and permission was granted. The hall was suitable for a workshop because it has adequate space, with chairs and tables. Seats were arranged in a semi-circle to create platform for open communication and an atmosphere of mutual support. Extra chairs were also prepared for small-group work.

### **6.2.2.2 Programme schedule**

The programme was scheduled as follows.

- On day one, the training was from 8H30 to 15H00 with tea break of 15 minutes (10H15-10H30) and lunch break of one hour (13H00 - 14H00).
- On day two, the workshop was from 8H00 -13H00 with a tea break of 20 minutes (10H00 -10H20).

The programme was divided into three sessions which were covered in two days. These included orientation, working and termination sessions. The facilitator and participants adhered to the scheduled programme, however flexibility was also allowed. Flexibility was one of the group norms and this also allowed the facilitator to respond to participants` needs.

### **6.2.2.3 Resources**

The facilitator organised the content and training materials before the implementation of the programme. The training was conducted in Oshiwambo language since all participants could talk and understand Oshiwambo very well. Other materials included a laptop, projector, pens, flip charts and marker pens. The facilitator also prepared food for tea and lunch, and snacks as energy boosters for the participants so that they could concentrate during the activities.

### **6.2.2.4 Ground rules/group norms**

The ten participants and the facilitator agreed to set ground rules which had to be committed to and respected during the two-day workshop. Group norms are not meant to constrain participants, but to contribute to a quality learning environment. Some examples of group norms set by participants included the following.

- Cellphones on silent mode
- Respect each other's contributions, questions and opinions
- Punctuality
- Flexibility
- Participate actively in discussions
- No mini- meetings

The participants were also given chance to state their expectations from this training and the following was stated.

- Learn how to feed a child under the age of five years
- Get information on the types of food that can be given to the children under the age of five years
- Understand what causes children under the age of five years to develop diarrhea
- Get more information on how many times does one need to feed a child per day
- Understand what contributes to the health, growth and development of a child

The participants were also given name tags which facilitated good communication as they were called by their names. Privacy and confidentiality were safeguarded. The participants were assured that what was done in the workshop venue should not be disclosed to other people except the information related to feeding practices.

#### **6.2.2.5 Facilitation techniques**

Facilitation refers to the act of making something easier (Schwarz, n.d). The facilitator worked with a group of people to help them to converse and plan for the future. Facilitation techniques are designed to involve all members of a group to participate actively, maximise individual commitment and engagement, and build team spirit (Schwarz, n.d). In this study, facilitation techniques were used to guide participants and assist them to learn, discover their existing knowledge and make decisions.

The facilitator adopted a variety of teaching and learning strategies based on the assumption that participants were adult learners as stated by Knowles' model of andragogy. It was also assumed that they did have some experience in feeding practices of children under the age of five years.

The following facilitation framework, as presented in Table 6.1, was adopted as outlined by the Tinkering Studio (2015).

**Table 6.1:** Facilitation framework

<b>Facilitation goals</b>	<b>Action</b>	<b>Procedure</b>
Stimulate participants` initial interest	Welcome participants  Introduce the activity and establish mood for interaction	Smile and introduce yourself  Orientate participants to different materials  Share examples which stimulate variety of thinking
Sustain participation by following participants` ideas	Respect participants `idea even their mistakes and wrong direction  Support participants` process of learning	Observe the participants  Ask them questions  Listen to their ideas  Rephrase statements or questions  Give them suggestions instead of direction  Show enthusiasm about their ideas
Expand participants` understanding by making connections with real life experiences	Guide participants to learn further  Try to connect or link the activities to outside or real life experiences	Encourage participants to look around their environment  Let them explain their thought and define the next

		steps Encourage experimentation Discuss how the experience relate to outside experience Celebrate moments of surprise and joy
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The following facilitation techniques were used during the programme implementation.

#### **6.2.2.5.1 Lecture method**

A lecture refers to giving information about a specific topic to participants by preparing the information before delivering it to them (Farooq, 2012). A lecture method conveys a large amount of information and is a good way of introducing information which is not known to participants, but participants are not active; they just listen (Farooq, 2012). Due to the limitation of a lecture method, other methods were also utilised to promote active participation. Training manuals were given to participants so that they could follow the presentation.

#### **6.2.2.5.2 Group discussions**

Group discussions were used to promote active participation and explore different points of view on certain topics. Group discussions make participants to assume a sense of learning ownership and explore a topic deeper (Sravani, 2015). Small and large group brainstorming discussions were used during the workshop.

Participants in small-group discussions were required to give feedback in plenary discussions which were followed by questions and comments. Group discussions have shortcomings; more time is needed to make decisions; and not all participate equally. The facilitator tried to place participants in a group that they would feel comfortable in; this also assisted in creating mutual trust and support among themselves.

#### **6.2.2.5.3 Role-play**

Role-play is a good facilitation method as it provides a powerful learning opportunity since participants can immediately apply content to a real world context (Bacal, 2016). During preparation of the content of this training programme, the facilitator created relevant scenarios and these were presented to the participants during the workshop so that they could role-play them. The scenarios included the roles participants had to play and relevant information, then they were given time to do the task.

#### **6.2.2.5.4 Debating**

Participants were also given a chance to debate issues related to feeding practices of children under the age of five years. Debating allowed them to explore issues in a non-threatening atmosphere, to listen and to enjoy learning (Canadian Studies, n.d). The facilitator decided on the topic to be debated and compiled guideline such as, how many times each participant could talk. In debating the other participants have to listen to the arguments of others (Canadian Studies, n.d).

#### **6.2.2.5.5 Icebreakers**

Icebreakers were used during the facilitation of the workshop to help participants to integrate and connect with one another (Knox, n.d). Icebreakers also stimulated active participation and assisted the participants to get to know each other better, feel comfortable in a group, cooperate and work together (Knox, n.d). Examples of icebreakers used during this facilitation included:

- Fact or fiction which assisted participants to know one another. In this case each participant was given a piece of paper and asked to write three things about themselves, two had to be true and one not true. They were then asked to read them out loud and the group had to indicate which were true or not true.
- IF: the if questions were written on a piece of paper and placed in a box. Participants were asked to volunteer to select a piece of paper and read the question, and then give an answer, comment or explanation. This icebreaker assisted the participants to talk and listen to one another. Example of if questions:
  - If you have a three months old child, which food will you feed him/her?
  - If you have a two months old baby and you have to go to work, what can you do to ensure that your child is having food?
  - If you give food to a baby before she/he turns six months, what will happen?
  - If a child selects some food and refuses some, what can you do?

## 6.3 PROCESS OF PROGRAMME IMPLEMENTATION

The facilitator conducted a two-day workshop as part of the programme implementation to empower mothers and caregivers on feeding practices of children under the age of five years. Sessions were prepared based on specific objectives.

### 6.3.1 Description phases of the educational programme

The programme was implemented according to the following phases as illustrated in Table 6.2

**Table 6.2:** Phases of programme implementation and evaluation

<p><b>Orientation phase:</b></p> <p>Welcoming of participants</p> <p>Introduction and background of the workshop</p> <p>Purpose and objectives of the workshop</p> <p>Expectations and ground rules</p>
<p><b>Working phase:</b></p> <p>Pre- training assessment test</p> <p>Activities on general information related to feeding practices (lecture, group discussions)</p> <p>Activities addressing utilisation of suboptimal feeding practices (group discussions, debate and role-play)</p> <p>Activities addressing factors influencing feeding practices negatively (group discussions and role-play)</p> <p>Activities to address shortage of information related to feeding practices and suitable food for children under the age of five years ( lecture and group discussion)</p>

Activities addressing limited resources which influence feeding practices (group discussions, debate and role-play)

**Termination phase:**

Daily evaluation of activities

Discussions and evaluation of the workshop

Post training assessment test

Closure of the workshop

**6.3.1.1 Orientation phase**

During this phase, participants were orientated to the purpose of the workshop, objectives and logistic arrangements. The purpose and objectives were discussed in detail so that participants could understand why they were invited to the workshop. They were asked to give verbal consent to participate in the workshop. Expectations and group norms were also discussed with them. The orientation session was done in the morning of the first day of the workshop.

**6.3.1.2 Working phase**

In this phase participants and facilitator worked together to address the challenges identified during data collection and analysis. The working phase was based Kolb`s theory of experiential learning, and Knowles` model of andragogy. This phase was aligned towards empowering mothers and caregivers with knowledge related to feeding practices of children under the age of five years. The working phase was divided into four parts.

**Part 1: General information related to feeding practices of children under the age of five years**

This part aimed at assisting mothers to gain knowledge on feeding practices of children under the age of five years, as well as the conditions which affect children resulting from poor feeding practices. The following areas were covered in this part as presented in Table 6.3.

**Table 6.3: Approach used to cover general information on feeding practices**

<b>Content</b>	<b>Teaching/learning strategies</b>	<b>Theory applied</b>
<p><b>Feeding practices:</b></p> <p>Definition of feeding practices,</p> <p>Types of feeding practices and advantages, disadvantages</p> <p>Relationship between feeding practices and child health</p> <p>Conditions which occur due to poor feeding practices (causes/contributing factors, signs and symptoms of</p>	<p>Lecture (power point presentation)</p> <p>Group discussion (brainstorming)</p>	<p>Kolb`s experiential learning theory (concrete experience)</p> <p>Knowles` theory of andragogy</p>

overnutrition, micro nutrients deficiency		
Prevention of kwashiorkor, marasmus, micro nutrients deficiency	Group work on how to prevent those conditions and the types of local food to give to children as part of prevention	Kolb`s experiential learning theory (concrete experience, reflective observation) Knowles` theory

**Part 2: Addressing suboptimal feeding practices utilised by mothers and caregivers of children under the age of five years**

This part aimed at tackling suboptimal feeding practices used by mothers and caregivers to feed their children under the age of five years. The following areas were covered.

- Definition of suboptimal feeding practices
- Types of suboptimal feeding practices such as:
  - Early cessation of breastfeeding
  - Bottle feeding
  - Early introduction of complementary feeding
  - Non-responsive feeding
  - Less feeding frequencies
  - Poor dietary diversity

Table 6.4 indicates the approach used to cover part 2.

**Table 6.4:** Approach used to address suboptimal feeding practices

<b>Content</b>	<b>Teaching/learning strategies</b>	<b>Theory adopted</b>
Definition of suboptimal feeding practices Types of suboptimal feeding practices	Lecture (power point presentation), group discussion	Kolb`s experiential learning (concrete experience, reflective observation and abstract conceptualisation)
Risk of suboptimal feeding practices Correct methods of feeding: Breastfeeding Complementary feeding Dietary diversity Responsive feeding	Group work and feedback, role-play, debate	Kolb`s experiential learning (concrete experience, reflective observation and abstract conceptualisation) Knowles` model of andragogy

**Role-playing scenario 1**

A mother of one year old child used to feed her child with bottle. She did not clean the bottle well; sometimes she just picked it from the floor and put in “ontaku” or soft porridge. After a few days the child developed diarrhea. The mother took the child to the clinic. After treating the child, the nurse gave the mother health education on the risk of bottle feeding and demonstrated to her how to feed with a cup.

Two role-players needed: a nurse and the mother

A doll to be used as a child

Audience to observe and answer the following questions:

**What causes a child to develop diarrhea?**

**Mention good ways of feeding a child under the age of five years.**

**Scenario for debate:**

Children who start complementary food at the age of six months grow well and stay healthy compared to a child who starts complementary food before six months.

Requirements for the debate: two participants (pro this statement), two participants (anti this statement). Both side need to defend their statements; Each side get 2 chances to talk

Two participants and facilitator act as judges.

### **Part 3: Addressing factors which influence feeding practices negatively**

This part covers different factors which have negative impacts on feeding practices of children under the age of 5 years such as unhygienic food practices, food refusal and picky eating behaviours, child abandonment and neglect, alcohol abuse and general factors such as socio-economic, cultural, and physiological as well as food factors. The approach used to address factors influencing feeding practices is presented in Table 6.5.

**Table 6.5:** Approach used to address factors influencing feeding practices

<b>Content</b>	<b>Teaching/learning strategies</b>	<b>Theory adopted</b>
<p>Factors influencing feeding practices and their prevention:</p> <p>Unhygienic food practices</p> <p>Food refusal and picky eating behaviour, child abandonment and neglect</p> <p>Alcohol abuse</p> <p>Cultural, socio-economic, physiological and food choices and preference</p>	<p>Group discussion</p> <p>Role-play</p>	<p>Kolb`s experiential learning (concrete experience, reflective observation and abstract conceptualisation, active experimentation</p> <p>Knowles` model of andragogy</p>

**Role-playing scenario 2**

A mother of three children aged 1, 3 and 8 years old abuses alcohol. She goes to a cuca shop every day with her 1 year old child while leaving the 3 year old under the care of the 8 year old. The mother does not prepare food for the children and always comes back late. Later on the two children under the age of five years developed undernutrition.

Role-players: mother, two children and a doll, cuca shop owner

Audiences observe and listen and answer the following questions:

**What contributed to these children to develop undernutrition?**

**What can be done to prevent such situation?**

**Part 4: Addressing shortage of information related to feeding practices and suitable food for children under the age of five years**

This part covered content related to duration of breastfeeding, time to start complementary food, feeding frequency, how to feed a child in a responsive manner, types of food and nutritional values. Table 6.6 indicates the process followed to cover part 4.

**Table 6.6:** Approach used to address shortage of information

<b>Content</b>	<b>Teaching/learning strategy</b>	<b>Theory adopted</b>
Duration of breast feeding	Lecture method	Kolb`s theory of experiential learning (concrete experience, reflective observation, abstract conceptualisation)  Knowles` theory of andragogy
Time to start complementary food	Group discussion (brainstorming)	
Feeding frequency		
Feeding a child in responsive manner		
Types of food and their nutritional values		

## Part 5: Addressing limited resources which influence feeding practices negatively

This part covered the content related to household food insecurity and financial difficulties.

Table 6.7 presents the process that was followed to cover part 5.

**Table 6.7:** Approach used to address limited resources

<b>Content</b>	<b>Teaching/learning strategy</b>	<b>Theory adopted</b>
Household food insecurity: Definition Prevention How to overcome financial difficulties	Lecture (power point presentation) Group discussions and feedback Debate Role-play	Kolb`s theory of experiential learning (concrete experience, reflective observation, abstract conceptualisation, active experimentation) Knowles` theory of andragogy

### Debate scenario

**A mother who is not employed is able to overcome financial difficulties.**

Participants to be divided into two groups of four.

One group to argue that it is true that an unemployed mother is able to overcome financial difficulties.

The other group to counter argues this statement.

Each group to be allowed to talk three times.

Two participants and the facilitator to act as judges.

### **Scenario for role-play**

Ms. Anna is a single parent of five children, she is unemployed and there is no family member who can support her financially. She is faced with financial difficulties and has no money to support and feed her children. One day her friend told her a story on how she was also faced financial difficulties, and she tried to overcome these difficulties. She told her that she started making baskets which she sold. She used the sales money to buy cake flour, sugar and oil and she started making small cakes which she started selling at a nearby school and later on her business grew big.

Ms. Anna implemented her friend's idea and now she does not have financial difficulties anymore, she is able to support and feed her children, and she also supports her parents financially.

Audiences need to observe and answer the following.

**Identify different ways in your community which can assist people to make income and overcome financial difficulties.**

#### **6.3.1.2.1 Application of Kolb's theory of experiential learning**

Kolb's theory of experiential learning cycle consists of four stages which were applied in the programme implementation.

### **Concrete experience**

Kolb and Boyatzis (1999) indicated that in a concrete experience, participants discover activities by observing objectively or by doing. During the programme implementation, participants were able to discover new information through power point presentations and also by observing or taking part in role-playing. They also get new ideas from group discussions and feedback from other participants.

### **Reflective observation**

In this stage participants try to adapt new experience through reflecting on their previous experiences and they attempt to understand the discrepancies between the previous and new experience. During the workshop, the use of group discussions and role-playing allowed the participants to reflect on their old experience, identify inconsistencies between old and new experience and make a decision to adopt a new experience to assist them to optimally feed their children under the age of five years.

### **Abstract conceptualisation**

In this stage participants learn from experience by trying to have a deeper understanding of a new experience. In this programme, participants were exposed to role-play and debating sessions to assist them to deepen their understanding and start modifying their existing experiences.

## **Active experimentation**

This stage involves planning or trying out what one has learned. All participants in this study took part in the discussions and role-playing, either as players or audiences. This also gave them a chance to actively experience what they had learned which could also result in them implementing what they had learned from the programme.

### **6.2.3. 1.2 Application of Knowles` model of andragogy**

According to Knowles, adult learners have some principles which were taken into consideration during the implementation of this programme: they need to be treated as people with knowledge and experiences.

They need to be given a chance to relate their own experiences and situations. Adult learners also need to be given suggestions and decide what is useful to them. They like to contribute to their learning process by giving ideas and inputs. They also like to learn what will help them in their personal life.

All these principles were taken into consideration during the implementation of the programme. Different teaching/learning strategies were utilised which gave the participants opportunities to relate their experiences, give their ideas and inputs, and also receive suggestions from other participants and the facilitator. Participants were given chances to ask questions and receive feedback.

### **6.3.1.3 Termination phase**

In this phase, participants evaluated the activities of the day. Daily evaluation was conducted with the purpose of finding out if there was any session which participants did not catch up, and if so then further explanations could be offered, and also to rectify any problems identified. On the last day of the training, participants also evaluated the training itself. This allowed the facilitator to determine the usefulness and effectiveness of the training. Participants wrote a post-training assessment test on the last day of the workshop. The aim was to assess whether their knowledge on feeding practices had improved.

## **6.4 PART 2: PROGRAMME EVALUATION**

After the programme implementation, an evaluation was then conducted. Fertman and Allensworth (2010) defined an evaluation as a methodical collection of information on an event that had taken place with the aim of getting feedback whether the event was successful or not.

Potter (2006) stated that there are three main paradigms related to programme evaluation and this include positivist, interpretive and critical emancipatory approaches. Van (2008) argued that both positivist and interpretive approaches need to be used to complement each other in programme evaluation.

Hence, postivist and interpretive approaches were used during progamme evaluation in this study. Positivist approach is mainly quantitative evidence and it assisted the evaluator to understand if there was any improvement in the knowledge of mothers and caregivers related to feeding practices of children under the age of 5 years.

On the other hand interpretive approach assisted the implementer to develop a better understanding on the usefulness and effectiveness of the programme. Different evaluation tools were then designed and used to evaluate the programme such as

- Expert in the field (a pediatric doctor, trained in management of nutrition) evaluated the training manual and gave input which helped in the improvement of the manual and the programme implementation (comments attached as annexure).
- Daily evaluation tool to evaluate participants' views on programme implementation; this was conducted during the programme implementation.
- Programme evaluation was done after implementation to evaluate the impact and effectiveness of the programme
- Pre and post-training evaluations were conducted before and after implementation of the programme to evaluate whether there was an improvement in knowledge.

Evaluation tools were translated into Oshiwambo, since the participants were more comfortable with this language and this also made it easier to evaluate the programme. Participants' responses were then translated into English by the researcher.

#### **6.4.1 Participants' evaluation on programme implementation**

During this evaluation, data were collected through completion of a daily evaluation tool which comprised open-ended questions. Participants in the training were requested to complete the evaluation questionnaire after the end of each day. Open-ended questions were used to allow participants to express themselves freely. This was a qualitative evaluation. Table 6.8 is an example of a daily evaluation tool.

**Table 6.8:** Daily evaluation tool

<p><b>Dear Participant</b></p> <p><b>Please share your views regarding implementation of this programme by answering the following questions</b></p>
<p>What did you learn in today`s training?</p>
<p>Which session(s) was most useful to you?</p>
<p>What didn`t you understand in today`s sessions?</p>
<p>What other comment do you have regarding today`s sessions?</p>

#### **6.4.1.1 Findings on programme implementation evaluation**

In this part, participants stated what they had learned, what they did or did not understand, which sessions were useful, and their general comment regarding the programme. Their verbatim comments and answers to specific questions are presented in italics.

What did you learn in today`s training? The responses to this question are presented below.

*“I learned how to feed a child especially how to breastfeed, I came to realize that it is very important to breastfed a child up to two years.”*

*“I have learned how to feed my children so that they can be very clever.”*

*“I learned about how to prepare children`s food in a hygienic manner in order to prevent disease such as diarrhea and malnutrition, I also learned the importance of giving food to children soon after preparing them.”*

*“I learned about exclusive breastfeeding in which the baby has to breastfeed for 6 months without giving him/her any other food or water.”*

*“I learned about many things especially the time to start complementary food.”*

*“I learned about feeding a child under the age of 5 years especially the giving of variety and healthy food to the child.”*

*“I learned feeding practices of children under the age of 5 years such as breastfeeding and other optimal feeding practices which can prevent the child from malnutrition.”*

The above quotations indicated that participants did learn something from the programme. This justifies the quality of learning that had taken place.

The participants responded as follows to: “which session(s) were most useful?”

*“All sessions were important to me as they taught me about feeding practices of children under the age of 5 years.”*

*“The session regarding correct feeding practices of children from birth to 5 years.”*

*“The session which talk about breastfeeding, adding complementary food and different types of food I can give to the child.”*

*“The session which talk about the importance of breastfeeding, disadvantages of using formula milk or cow`s milk.”*

*“The session which was about the importance of giving food which contains vitamin A and also breastfeeding.”*

*“The session which talk about factors influencing feeding practices negatively and how to prevent those factors.”*

*“All sessions were useful for me.”*

*“All sessions were very good especially the one on breastfeeding and food which are suitable for the children under the age 5 years as well as preparing the child`s food hygienically.”*

Responding to the question on what they did not understand in today`s sessions, participants replied as follows.

*“None, all sessions were clear and they made me understand better.”*

*“All sessions were clear.”*

*“I understood everything and they taught me everything which I will also teach others who were not able to attend.”*

*“I understood all sessions.”*

*“I understood everything very well.”*

When participants were asked if they had any other comments, they responded as follows.

*“I just want to say this training should continue and it is good if health workers can go out in the community to educate people in the community, because this is really helpful.”*

*“I think it is good if such kind of training be given to all mothers and caregivers of children under the age of 5 years, so that malnutrition can be prevented as it can cause death among children under the age of 5 years in Namibia.”*

*“This type of training need to be given to all people, mothers and caregivers of children under the age of 5 years.”*

*“I just want to add that mothers and caregivers need to take this type of training serious, so that we can prevent our children from diseases.”*

*“Mothers and caregivers of children under the age of 5 years need to be trained also on hygiene and feeding children on time.”*

*“The comment I have is that as mothers and caregivers of children under the age of 5 years we need to pull up our socks when it comes to feeding of our children, because these are the leaders of tomorrow and they are going to help us in future, I am going to implement what I learned from this training.”*

*“I just want to say health workers need to go out in the community and give us more information*

*“Once we have the information we can be able to select our representative who can represent us in health related matters.”*

*“I think these types of information need to be given in the community, schools and anywhere else. All health workers especially nurses need to give such information to mothers who just gave birth.”*

*“I am encouraging you to continue training all those who are taking care of children under the age of 5 years.”*

#### **6.4.2 Evaluation on the effectiveness of the programme**

Participants were also asked to evaluate the usefulness of the programme by completing a programme evaluation tool that is presented in Table 6.9.

**Table 6.9:** Programme evaluation tool

<b>Dear Participant</b>	
<b>Please share your views regarding effectiveness of this programme by answering the following questions. The 1<sup>st</sup> five questions encircle the number 0 = no, 1= less and 5 = most</b>	
Do you think that this training is important?	0 1 2 3 4 5
Do you think this training was helpful to you?	0 1 2 3 4 5
Do you think this training has achieved its objectives?	0 1 2 3 4 5
Do you think that this training has improved your knowledge?	0 1 2 3 4 5
Are you going to implement what you have learned from this training?	0 1 2 3 4 5
Which sessions do you think were most useful to you and why?	
Which sessions do you think were not useful to you and why?	
What do you think needs to be changed in this training?	
What challenges did you experience during this training?	

#### **6.4.2.1 Findings related to effectiveness of the programme**

All participants in this training programme rated it as most important, useful and helpful to them. According to them, the training achieved its objectives and assisted them to improve their knowledge. They indicated that they did learn a lot from the training, and they would implement their new knowledge to improve the nutritional status of their children under the age of five years. Responding to the question which sessions they thought were most useful to them and why, they replied as follows.

*“The session which talked about breastfeeding was very much important as it taught me a lot on how to breastfeed my child.”*

*“The session about feeding of children under the age of 5 years especially breastfeeding has helped me a lot and this empowered me to breastfeed my baby till six months without giving her any other food.”*

*“The session about the importance of breastfeeding and disadvantages of formula milk and giving other food to the child before 6 months.”*

*“All sessions were useful as this empowered us to feed our children well so that they can become clever.”*

*“All sessions were very useful, because some sessions have added a lot to my knowledge since I did not have some information.”*

*“All sessions were very much useful from session one to session five.”*

*“All sessions were useful and they helped me a lot.”*

*“The session about breastfeeding and starting complimentary feeding was very useful to me.”*

*“The session about optimal feeding practices and factors influencing feeding practices were very useful.”*

From these responses it is evident that the training programme was useful to them. When they were asked which sessions were not useful and why, they responded as follows.

*“There was nothing which was not useful, all sessions were important to me.”*

*“I think all sessions were useful and they have given me a very good guide.”*

*“I do not think there is a session which is not useful; all sessions have taught me a lot.”*

*“I think all sessions were useful and they have added some new information to the little knowledge that I had.”*

*“All sessions were really useful.*

*“There was no session which was not useful*

Participants were also asked to indicate what they thought needed to be changed in the training programme. They responded as follows.

*“This training programme needs to be extended to all mothers and caregivers of children under the age of 5 years.”*

*“There is nothing which needs to change, because all sessions are very clear and well explained.”*

*“This training programme is fine and what we learned here is correct.”*

*“I do not think there is anything which needs to change, all we need to do is to implement what we have learned so that we can prevent malnutrition among children under the age of 5 years.”*

*“There is a need to have health workers in the community giving such type of information so that people can work together in the prevention of malnutrition.”*

*“I do not think there is anything which needs to change, I am only encouraging you to continue training as many people as you can.”*

*“I think everything is fine, but these type of information need to be given at other places like in villages and schools. Health workers need to educate mothers who just gave birth.*

Responding to the question on what challenges they experienced during this training programme, they replied as follows.

*“I did not experience any challenge, everything was fine.”*

*“I was a bit tired; the time was a bit long.”*

*“I did not experience any problem, the training was fruitful.”*

*“I followed almost everything, there was nothing preventing me from listening.”*

*“Though I was a bit tired, it did not prevent me from listening.”*

*“I did not have any challenge, I have learned a lot from this training.”*

Participants were also asked to give their comments; they commented as follows.

*“I want to urge mothers and caregivers of children under the age of 5 years to breastfeed their children exclusively for 6 months and add complimentary food at the age of 6 month and such food should be clean and nutritious.”*

*“I am just going to implement what I have learned from this training programme.”*

*“I just want to encourage the facilitator to go ahead and train many people as this is an eye opener since it is teaching mothers and caregivers on how to feed children under the age of 5 years.”*

*“I just want to say this training programme should continue, because it is teaching people a lot, therefore this training programme needs to be conducted in the community, because there are a lot of people who are need of such information.”*

*“I just want to thank institutions sending health workers to educate us and give us health information; it is good if they can continue giving such information to the people in the community.”*

*“I just want to say that as mothers and caregivers we need to implement what we have learned from this training programme, so that we can feed our children properly for them to grow very well. We must also stop going to cuca shop, because drinking alcohol is not good, it will only destroy our children `s lives.”*

From these responses it is evident that the training programme was very useful and the participants did learn something from the programme.

### 6.4.3 Evaluation on the impact of the training programme

Participants were also evaluated to determine whether the programme has improved their knowledge. This was done through pre- and post-training assessment tests. Participants were given a test before the commencement of the training programme to determine their current knowledge in order to compare it the training knowledge. They were again given a post training test consisting of the same questions they answered during the pre-training test (sample of pre- and post-training test is attached as annexure O). The results of these two tests showed that there was a great improvement in their knowledge. The table below indicates the pre and post-test results.

**Table 6.10:** Pre-test and posttest results

Participant	Pre-test%	Post-test%
1	45	59
2	55	92
3	55	82
4	64	86
5	45	77
6	68	86
7	23	82
8	64	77
9	73	91

The above percentages are clear indication that the training programme has improved participants` knowledge on feeding practices of children under the age of 5 years. Therefore, the educational programme was successfully implemented as suboptimal feeding practices, factors influencing feeding practices, shortage of nutritional information, and limited resources, were addressed. The mothers and caregivers were empowered with knowledge related to feeding practices of children under the age of five years.

## **6.5 SUMMARY**

This chapter discussed the programme implementation and its evaluation to empower mothers and caregivers on feeding practices of children under the age of five years. Different strategies used during implementation of the programme, were explained. The programme evaluation was also discussed. The results of the evaluation indicated that the programme was effective and it did improve the participants` knowledge. The next chapter focuses on conclusion, limitations and recommendations.

## **CHAPTER SEVEN**

### **CONCLUSIONS, RECOMMENDATIONS, CONTRIBUTION AND LIMITATIONS OF THE STUDY**

#### **7.1 INTRODUCTION**

This chapter discusses the conclusions, limitations and recommendations regarding an educational programme to empower mothers and caregivers on feeding practices of children under the age of five years. Conclusions are made based on the findings in terms of what are the experiences of mothers and caregivers on feeding practices of children under the age of five years. Conclusions which were made indicated that the purpose and objectives of the study were achieved.

#### **7.2 AIM OF THE STUDY**

The aim of this study was to develop an educational programme to empower mothers and caregivers on feeding practices of children under the age of five years in the Oshikoto region. Four objectives were formulated to achieve this aim.

- To explore and describe experiences of mothers and caregivers on feeding practices of children under the age of five years who are diagnosed with undernutrition.
- To develop a conceptual framework which form the basis of an educational programme.
- To develop an educational programme to empower mothers and caregivers on feeding practices of children under the age of five years.

- To implement and evaluate an educational programme on feeding practices of children under the age of five years.

### **7.3 CONCLUSION IN TERMS OF THE OBJECTIVES OF THE STUDY**

A conclusion can be defined as a last resolution or judgment that is made after a period of thought about all information connected with a situation (Hornby, 2015). Conclusions from the findings are presented in relation to the four objectives of the study.

#### **7.3.1 Objective 1: Explore and describe experiences of mothers and caregivers on feeding practices of children under the age of five years**

The following was concluded from the findings regarding this objective.

- Mothers and caregivers used of suboptimal feeding practices, which include early cessation of breastfeeding, bottle feeding, early introduction of complimentary food, non-responsive feeding, less frequency of feeding and poor dietary diversity.
- Mothers and caregivers experienced some factors which influence feeding practices in a negative way, and include food refusal and picky eating behaviour, abandoning and neglecting children, alcohol abuse, and unhygienic food practices.
- Mothers and caregivers experienced shortage of nutritional and feeding practices information.
- Mothers and caregivers experienced limited resources needed to facilitate feeding practices of children under the age of five years which include household food insecurity and financial difficulties.

### **7.3.2 Objective 2: Develop a conceptual framework which form the basis of an educational programme to empower mothers and caregivers on feeding practices of children under the age of five years**

The challenges identified during the situational analysis resulted in the development of conceptual framework which was guided by Dickoff, James and Wiedenbach`s survey list. The conceptual framework formed the basis of an educational programme to empower mothers and caregivers on feeding practices of children under the age of five years. Dickoff et al`s survey list includes: the agent (who performs the activity), recipient (who is to receive the activity), the context (framework), procedure (the guiding technique), the dynamics (the energy source for the activity), and terminus (the end point of the activity). Therefore the agent was the researcher, the recipients were mothers and caregivers of children under the age of five years; the context was health facilities in the Oshikoto region where children under five years receive health services; the dynamics were the challenges experienced by mothers and caregivers related to feeding practices of their children. The procedure was an educational programme and the terminus was empowered and knowledgeable mothers and caregivers on feeding practices of children under the age of five years.

### **7.3.3 Objective 3: Develop an educational programme to empower mothers and caregivers on feeding practices of children under the age of five years**

Due to various challenges experienced by mothers and caregivers, the researcher decided to develop an educational programme to empower them on feeding practices of children under the age of five years. The programme consisted of five sessions.

- Session 1 covered general information related to feeding practices of children under the age of five years.
- Session 2 addressed suboptimal feeding practices utilised by mothers and caregivers of children under the age of five years.
- Session 3 addressed factors which influenced feeding practices negatively.
- Session 4 addressed shortage of information related to feeding practices and suitable food for children under the age of five years.
- Session 5 addressed limited resources which influence feeding practices.

**7.3.4 Objective 4: Implement and evaluate an educational programme to empower mothers and caregivers on feeding practices of children under the age of five years**

The programme, which was developed to address identified challenges, was implemented by conducting a two-day workshop with mothers and caregivers of children under the age of five years from the Oshikoto region. The programme was then evaluated during and at the end of the training. The participants evaluated the programme as being helpful and useful. A pre- and post-evaluation was also conducted and the results indicated that the programme improved the participants` knowledge.

**7.4 RECOMMENDATIONS**

According to Hornby (2015), a recommendation refers to an endorsed suggestion about the best thing to do. Recommendations are presented based on the findings of the study.

#### **7.4.1 Recommendations to the Ministry of Health and Social Services**

The following were made by the programme's participants, and by the researcher.

**For programme sustainability, it is recommended that**

- Sessions on feeding practices should be given during antenatal care and soon after delivery.
- The researcher needs to work in collaboration with the MOHSS, Nutrition unit to develop fact sheets on optimal feeding practices in local languages.
- Resources and materials promoting optimal feeding practices should be developed and displayed in health facilities.
- Health extension workers (HEWs) need to be well equipped with information related to feeding practices of children under the age of five years, so that they can educate community members to prevent undernutrition.
- MOHSS should collaborate with stakeholders on refresher courses for health workers on feeding practice

#### **7.4.2 Recommendations to the training institutions**

Literature revealed that the reason why health workers do not provide information related to feeding practices is because they lack relevant knowledge to provide such information.

To address this gap the following is recommended.

- Trainers should strengthen and up date their curriculum so that they can equip their students with information related to feeding practices.

#### **7.4.3 Recommendations for future research**

Research studies need to be conducted with regards to the following.

- For comparison purposes, the same study may be replicated to other regions in Namibia to determine whether there are any similarities in challenges or not, and if possible to adopt the same educational programme.
- Other studies need to be conducted to determine why health workers are not providing feeding practices information.

### **7.5 CONTRIBUTION OF THE STUDY**

The study has contributed to scientific body of knowledge in the following way:

- Evidence was generated which revealed that mothers and caregivers utilise suboptimal feeding practices, they experience different factors and limited resources which influence feeding practices negatively and they lack nutritional information.

- A conceptual framework was developed and formed the basis of an educational programme.
- An educational programme to empower mothers and caregivers on feeding practices of children under the age of five years was developed based on the findings of the study; it was implemented and the workshop participants evaluated the programme as being useful.

## **7.6 LIMITATIONS**

Limitations are shortcomings or influences that a person is unable to control (Hornby, 2015). According to Lobiondo-Wood and Harber (2013), research studies have limitations and some of them can be controlled. The limitation for this study is: the programme was developed based on the findings from Oshikoto region only; it might not be applicable to other regions as they may not experience the same challenges and some regions have different cultural background and food preferences.

## **7.7 SUMMARY**

This chapter covered conclusions, recommendations and limitations. The researcher is of the opinion that this study has empowered mothers and caregivers on feeding practices of children under the age of five years.

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# ANNEXURE A: PERMISSION LETTER FROM UNAM POSTGRADUATE COMMITTEE

University of Namibia, Private Bag 13301, Windhoek, Namibia  
340 Mandume Ndemufayo Avenue, Pioneerspark  
☎ +264 61 206 3111, URL: <http://www.unam.edu.na>



19 February 2015

**TO WHOM IT MAY CONCERN**

**RE: RESEARCH PERMISSION LETTER**

1. This letter serves to inform that student: **Mulenga Ester** (Student number: **9115676**) is a registered student in the School of Nursing and Public Health at the University of Namibia. Her research proposal was reviewed and successfully met the University of Namibia requirements.
2. The purpose of this letter is to kindly notify you that the student has been granted permission to carry out postgraduate studies research. The School of Post-graduate Studies has approved the research to be carried out by the student for purposes of fulfilling the requirements of the degree being pursued.
3. The proposal adheres to ethical principles.

Thank you so much in advance and many regards.

Yours truly,

Name of Main Supervisor: **Dr HJ Amukugo**

Signed: -----

**Dr. C. N.S. Shaimemanya**

Signed: -----

**Director: School of Postgraduate Studies**  
Tel: 2063523  
E-mail: [cshaimemanya@unam.na](mailto:cshaimemanya@unam.na)

## ANNEXURE B: ETHICAL CLEARANCE CERTIFICATE FROM UNAM



### ETHICAL CLEARANCE CERTIFICATE

**Ethical Clearance Reference Number: SONPH/14/2015**

**Date: 10 February, 2015**

This Ethical Clearance Certificate is issued by the University of Namibia Research Ethics Committee (UREC) in accordance with the University of Namibia's Research Ethics Policy and Guidelines. Ethical approval is given in respect of undertakings contained in the Research Project outlined below. This Certificate is issued on the recommendations of the ethical evaluation done by the Faculty/Centre/Campus Research & Publications Committee sitting with the Postgraduate Studies Committee.

**Title of Project:** The lived experiences of caregivers on feeding practices of children under the age of 5 years with malnutrition, Oshikoto Region, Namibia : An Educational Programme

**Nature/Level of Project:** Doctorate

**Researcher:** MULENGA ESTER

**Student Number :** 9115676

**Host Department & Faculty:** School of Nursing and Public Health

**Supervisor :** Dr. H. Amukugo ; (Main) (Co) Dr. S. David

Take note of the following:

- (a) Any significant changes in the conditions or undertakings outlined in the approved Proposal must be communicated to the UREC. An application to make amendments may be necessary.
- (b) Any breaches of ethical undertakings or practices that have an impact on ethical conduct of the research must be reported to the UREC.
- (c) The Principal Researcher must report issues of ethical compliance to the UREC (through the Chairperson of the Faculty/Centre/Campus Research & Publications Committee) at the end of the Project or as may be requested by UREC.
- (d) The UREC retains the right to:
  - (i). withdraw or amend this Ethical Clearance if any unethical practices (as outlined in the Research Ethics Policy) have been detected or suspected,
  - (ii). request for an ethical compliance report at any point during the course of the research.

UREC wishes you the best in your research.

  
Prof. I. Mapaure  
UNAM Research Coordinator  
ON BEHALF OF UREC

ANNEXURE C: APPROVAL LETTER FROM THE MINISTRY OF HEALTH  
AND SOCIAL SERVICES



REPUBLIC OF NAMIBIA

*Ministry of Health and Social Services*

Private Bag 13198  
Windhoek  
Namibia

Ministerial Building  
Harvey Street  
Windhoek

Tel: 061 – 203 2562  
Fax: 061 – 222558  
E-mail: [hnangombe@gmail.com](mailto:hnangombe@gmail.com)

OFFICE OF THE PERMANENT SECRETARY

Ref: 17/3/3  
Enquiries: Mrs. H. Nangombe

Date: 11<sup>th</sup> June 2015

Mrs. Ester Mulenga  
P.O. Box 870  
Ondangwa  
Namibia

Dear Mrs. Mulenga

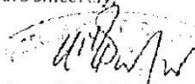
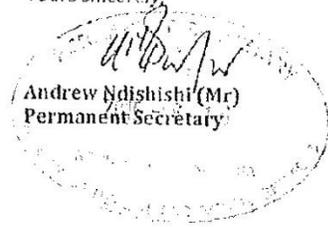
*Re: The lived experiences of caregivers on feeding practices of children under the age of five years with malnutrition, Oshikoto region: An educational programme.*

1. Reference is made to your application to conduct the above-mentioned study.
2. The proposal has been evaluated and found to have merit.
3. **Kindly be informed that permission to conduct the study has been granted under the following conditions:**
  - 3.1 The data to be collected must only be used for operational purpose;
  - 3.2 No other data should be collected other than the data stated in the proposal;
  - 3.3 Stipulated ethical considerations in the protocol related to the protection of Human Subjects should be observed and adhered to, any violation thereof will lead to termination of the study at any stage,

4

- 3.4 A quarterly report to be submitted to the Ministry's Research Unit;
- 3.5 Preliminary findings to be submitted upon completion of the study;
- 3.6 Final report to be submitted upon completion of the study;
- 3.7 Separate permission should be sought from the Ministry for the publication of the findings,

Yours sincerely,

Andrew Ndishishi (Mr)  
Permanent Secretary

ANNEXURE D: REQUEST AND APPROVAL LETTER FROM THE DIRECTOR  
OF OSHIKOTO HEALTH REGIONAL DIRECTORATE

P.O.Box 870

Ondangwa

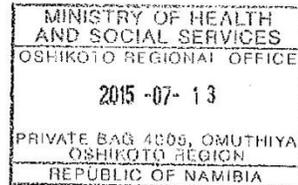
Tel:264-65-2232203(w); Fax: 264-65-2232271

E-mail: [emulenga@unam.na](mailto:emulenga@unam.na); Cell: 0812284197

10 July 2015

The Regional Director  
Ministry of Health and Social Services  
Oshikoto Region

Dear Sir



*Director*  
*approved - 13/07/15*  
*Med. sup. O-five*  
*Sms - Tsumeb*  
*Ceus*

**Re: Request for permission to conduct research at Onandjokwe, Omuthiya and Tsumeb district hospitals, Oshikoto region.**

I am Ester Mulenga doing a Doctor of Philosophy (PHD) in Public Health at the University of Namibia under the supervision of Dr. Amukugo Hans and Dr. David Sabina. I hereby wish to request a permission to conduct a research to meet the requirements for the above mentioned degree.

The Title of the study: *The lived experiences of caregivers on feeding practices of children under the age of 5 years with malnutrition, Oshikoto region: An educational programme.*

The purpose of the study is to explore and describe the lived experiences of caregivers on feeding practices of children under the age of 5 years who are diagnosed with malnutrition in Oshikoto region for the development of educational programme which will support caregivers of children under the age of 5 years with regards to feeding practices.

The objectives of the study are to:

Explore and describe the lived experiences of caregivers on feeding practices of children under the age of 5 years with malnutrition (Phase 1)

Develop a conceptual framework which will be the basis of an educational programme to support caregivers on feeding practices of children under the age of 5 years. (Phase 2)

Develop an educational programme to support caregivers on feeding practices in order to prevent malnutrition (Phase 3)

Implement and evaluate the educational programme (Phase 4)

The study will assist in identification of feeding practices which contributed to the development of malnutrition in children under the age of 5 years which need to be corrected. The results of the study will be used to develop an educational programme to support caregivers of children under the age of 5 years with regards to feeding practices, so that malnutrition can be prevented.

The study will assist in identification of feeding practices which contributed to the development of malnutrition in children under the age of 5 years which need to be corrected. The results of the study will be used to develop an educational programme to support caregivers of children under the age of 5 years with regards to feeding practices, so that malnutrition can be prevented.

If caregivers are equipped with knowledge and skills on feeding of children under the age of 5 years, this will contribute to the achievement of Millennium development goal which aims at reducing the proportion of undernourished and stunted children in Namibia.

The proposal is already approved by the University of Namibia and by the Ministry of Health and Social Services

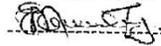
Enclosed, please find the following documents:

Approval letter from The Ministry of Health and Social Services

Ethical clearance from the University of Namibia

Thank you for your prompt response.

Sincerely Yours

-----

Ester Mulenga

Cc: Medical Superintendent and Nurse Manager of Onandjokwe District  
PMO and Nurse Managers of Tsumeb and Omuthiya District hospital

## ANNEXURE E: CONSENT FOR PARTICIPATION IN THE STUDY (English version)

To: Mothers and caregivers of children under the age of 5 years

Oshikoto region

### CONSENT TO PARTICIPATE IN A RESEARCH PROJECT

Dear Participant

I am Ester Mulenga registered with University of Namibia, doing a Doctor of Philosophy in Public Health. I wish to conduct a research project entitled: “The experiences of caregivers on feeding practices of children under the age of 5 years with undernutrition in Oshikoto region: An educational programme”. The study will be conducted under the supervision and guidance of Dr. H. Amukugo, Tel (061) 2064617 and Dr. S. David, Tel (065) 2232295, School of Nursing and Public Health, University of Namibia.

The purpose of the study is to explore and describe the experiences of caregivers on feeding practices of children under the age of 5 years who are diagnosed with undernutrition in order to develop an educational programme to empower mothers and caregivers with regards to feeding practices in order to prevent undernutrition.

With your permission, you will participate in the interview whereby you will describe your experience related to feeding practices of your child under the age of 5 years who is diagnosed with undernutrition. The interview will take about 20- 30 minutes to complete. A voice recorder will be used during the interview session to ensure trustworthiness.

The recorded voice will be deleted after the study is completed. The researcher will share the transcribed materials with the supervisors. Your input in this research will be highly appreciated.

Anonymity and confidentiality will be maintained as no name or address will be required from you, so the information will not be linked to you. The interview will be conducted in a private room so that no one can hear the conversation except the researcher. You have the right to withdraw from the study anytime or discontinue participating without any penalty. You are under no obligation to participate in this research. Participation is voluntarily and there will be no reimbursement.

The study will provide a better understanding on the experience of mothers and caregivers regarding feeding practices of children under the age of 5 years. Findings from the study will be used as a basis for educational programme of which you will be invited to attend if you are willing.

Should you agree to participate, please sign the consent provided. My contact number is 0812284197. If you have any question that need clarification you are welcome to contact me or my supervisors.

I ----- have understood the purpose and objectives of this study as it was fully explained to me and I have agreed to participate in this research project on my own will.

Signed at -----

-----

-----

Participant signature

Date

-----

Researcher signature

## ANNEXURE F: CONSENT TO PARTICIPATE IN THE STUDY (Oshiwambo version)

### **Consent for participation –Oshiwambo version**

#### **Ku meme nenge omutekuli gwokanona keli koho yoomvula ntano**

#### **Oshikoto Region**

Edhina Iyandje Ester Mulenga, ondi li omunasikola moshiputudhilo shopombanda (UNAM) tandi ningi onkatu yuundohotola. Otandi ningi omapekapeko opo ndi gongele uuyelegele wu na sha nepalutho lyuunona wu li koho yoomvula ntano mbu wa kwatwa komukithi gondjala moshitopolwa shaShikoto. Elalakano lyomapekapeko oku e ta po opolohalama yoku gandja uuyelegele kaavali nokakaasilishimpwiyu yuunona wu li koho yoomvula ntano, opo ya vule okupalutha nawa uunona wawo ko ku keelelwa omukithi gondjala. Omapekapeko ngano otaga ningwa koho yetonantelo lyomundohotola Hans Amukugo, ongodhi (061) 206 4617 nomundohotola Sabina David, ongodhi (065) 2232295. Ayehe yaali ohaya longele oshiputudhilo shopombanda oUNAM.

Ngashingeyi otandi ku indile opo u kuthe ombinga momapekapeko ngaka, u kwathe ndje u lombwele ndje nkene wa kala to palutha okanona koye ha ka kwatwa komukithi gondjala. Omapulapulo otaga kwata uule wominute 20 -30 lwaampoka. Otandi ku undile wo opo wu pitike ndje ndi longithe okakwatamawi ndi kwate oonkundathana dhetu, shino otashi ka kwathela ndje ndi vule oku ka shanga nawa uuyelegele mbu to pendje. Ngele omapekapeko gapu uuyelegele mbuno otandi ke u dhima mo mokakwatamawi. Uuyelegele mbuno tandi gongele mpano itau ka pewa aantu yalwe yi ili, kakaele aakuluntu yomapekapeko.

Onda hala oku ku kwashilipaleka kutya edhina lyoye itali tumbulwa momapekapeko ngaka, nuuyelegele mbu to gandja itau ka kopekwa kedhina lyoye, onkene kapu na ngu ta

vulu okumona kutya ongoye wa gandja uuyelege mbu. Omapulapulo otaga ningilwa mokandunda koonkundathana tu li mo otse atuke, kapu na ngu ta vulu okuuva sho tatu kundathana.

Ngele owu uvite kutya ino manguluka okukutha ombinga owu na uuthemba okutinda nenge oku kala ino yamukula omapulo nga inoo mangulukila.

Kapu na oshilanduli shasha ngele owa tindi, ashike ehalelo lyandje olyo ndika andola u kuthe ngaa ombinga momapekapeko ngaka. Kapu na sha tashi ka gandjwa kaakuthimbinga, ihe kehe gumwe oteshi ningi noku iyamba, ashike opolohalama ngele ya totwa, naamba ya kutha ombinga momapekapeko otaya ka hiywa opo ye ye ya mone uuyelege ngele otashi vulika.

Ngele owa zimine oku kutha ombinga, oto indilwa u shaine ombapila ndjika. Ngele owu na omapulo oto vulu okupula ndje ethimbo kehe. Ongodhi yandje 0812284197, nenge u ninge ekwatathano naakuluntu ya tumbulwa metetekelo koongodhi dhawo.

Ngame (edhina lyomukuthimbinga) ----- ondi uvite ko nawa elalakano lyomapekapeko ngaka, nonda zimina oku kutha ombinga momapekapeko.

Ya shaininwa (ehala) -----

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Eshaino lyomukuthimbinga

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Esiku

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Eshaino lyomupekapeki

ANNEXURE G: INTERVIEW GUIDE (ENGLISH VERSION)

TITLE: THE EXPERIENCES OF MOTHERS AND CAREGIVERS ON FEEDING PRACTICES OF CHILDREN UNDER THE AGE OF 5 YEARS WITH UNDERNUTRITION, OSHIKOTO REGION, NAMIBIA: AN EDUCATIONAL PROGRAMME

Main question

Tell me your experiences regarding feeding practices of your child who is diagnosed with undernutrition?

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**Possible probing questions**

How do you feed your child? (**Method of feeding, amount of food and how many times per day**)

What types of food do you give to the child?

How do you prepare the child`s food?

What challenges did you encounter with regards to the feeding of this child?

What do you think are the contributing factors that led to your child to develop undernutrition?

What do you think need to be done so that undernutrition can be prevented among children under the age of 5 years?

What do you think can be done so that mothers/caregivers of children under the age of 5 years can feed their children properly?

## ANNEX H: INTERVIEW GUIDE –OSHIWAMBO VERSION

### Interview guide – Oshiwambo version

#### Main question

**“Kwatha ndje u lombwele ndje nkene wa kala to palutha okanona koye ha ka kwatwa komukithi gondjala”**

Possible probing questions

1. Oho palutha ngiini okanona koye?

- Omikalo dhini ho longitha okupalutha okanona koye?
- Oho kape ikulya yi thike peni poshikando?
- Oho kape lungapi mesiku?
- Omaludhi giikulya yini ho palutha nayo okanona koye?

2. Ikulya yokanona koye ohoyi longekidha ngiini?

4. Omaupyakadhi geni wa tsakakaneka gena sha nokupalutha okanona koye?

5. Oto dhiladhila kutya oshike mbela she etitha opo okanona koye ka kwatwe komukithi gondjala?

6. Oshike mbela shina okuningwa po opo ku keelelwe omukithi gondjala?

7. Oto dhiladhila kutya ngiika oshike shina okuningwa po opo aasilishimpwiyu yuunona wu li kohi yoomvula ntano ya vule okupalutha nawa uunona wawo wo waa kwatwe komukithi gwondjala?

## ANNEXURE I: TRANSCRIPTION OF AN INTERVIEW

*Interviewer:* As you have agreed to participate in this study I want you to tell me your experience regarding the feeding of your child who is diagnosed with undernutrition.

*Respondent:* As from birth I feed my child with breast milk, then I thought breast milk was not enough I started feeding him with lactogen, the tin milk. From there I stopped again the lactogen, then I continued with breast milk. From 3 months I started feeding him a little bit of food, but then they told me I should not do that I must wait then I stopped a little bit again, then when he turned 6 months then that's the time I started feeding him with some food again which basically that I also use to eat I also feed him, e.g. what we have for supper I will also feed him. That's how we continued, but lately, because I have to run and look for a job here and there I gave him to someone to take care of which I realized that she started neglecting him, she did not have time for him the child developed malnutrition and that is when I came to the hospital and they admitted him in the hospital, so we were just discharged yesterday.

*Interviewer:* The time you started feeding him with lactogen, how old was he?

*Respondent:* That was right after birth. He was only just two weeks, because that was soon after birth.

*Interviewer:* How were you feeding him/giving him the lactogen?

*Respondent:* I was using the bottle , yes the bottle, but not giving him lactogen the whole day, we just give him during the morning and in the evening ,but he was drinking this milk well and he also get the breast milk, so he was taking both milk, breast milk and lactogen.

*Interviewer:* You indicated that you started giving him some food sometime.

*Respondent:* Mmmh

*Interviewer:* How old was he that time?

*Respondent:* He was 3 months, then we were told we should not give him the type of food I was feeding, it was wrong I was told if you want to feed him you must give him mashed potatoes or porridge which is mixed with peanut butter we were trying to feed him then, but we stopped again and continued giving him mashed potatoes only.

*Interviewer:* Who told you to stop the other food that you were giving him?

*Respondent:* At 3 months it was my mom that stopped.

*Interviewer:* Not the nurses?

*Respondent:* No

*Interviewer:* Besides breast milk and lactogen were you also giving him some water?

*Respondent:* Yes, I was giving him water.

*Interviewer:* How did you give him some water and which months you started giving him water?

*Respondent* (looking up): I think we started giving him water at 2 months; yes we started at 2 months.

*Interviewer:* And you were using what?

*Respondent:* We were using mineral water giving him on a spoon, and that is it.

*Interviewer:* How long have you breastfeed him?

*Respondent:* I breastfeed him until he was one year and one month and that's when I took him off from the breast.

*Interviewer:* You indicated that you left your child with somebody to take care of him?

*Respondent:* Yes I left him with my cousin, but she is distant cousin of mine. I asked her since I was going to work I asked her can you take care of him ,so that I can go to work ,but then as I was seeing the way she was taking care of him and the way I was taking care of him was very different. I could see he was losing weight, but then I did not pay attention I thought maybe is just because he used to cry, because I am not around. When I came back I try to feed him but he also lost appetite , so that is when I decided that it is no use for me going to work while he is suffering. So I just dropped everything to take care of him.

*Interviewer:* Now you have stopped working?

*Respondent:* Yes, I stopped working.

*Interviewer:* Were you working far from the house?

*Respondent:* No, I was working in Tsumeb town, but I was doing this domestic work, I was doing work for someone.

*Interviewer:* So you were staying at someone's house?

*Respondent:* Aahaha, no, we were staying together with him, my child, only that during the day I was not with him, but during the night I was with him. So I will check now if the condition will improve.

*Interviewer:* Now what type of food is he eating?

*Respondent:* Now he is eating everything that we are eating so we give him whatever we eat we will feed him. I think they also told me that the way I was feeding him was also wrong, my time, my timing was wrong.

*Interviewer:* wrong, how?

*Respondent:* Because I was feeding when I am eating or when we are having our lunch, of which I was not suppose to feed him like that. I was supposed to feed him or suppose to have his own timetable of eating, but my timing was just when the whole family was eating.

*Interviewer:* How do you prepare his food?

*Silence*

*Interviewer:* Is his food prepared the same way as for the family members?

*Respondent:* No, no, no, no his food I have changed the way of preparing his food,like morning time I prepare and give him jungle oats with an egg or peanut butter then around twelve or ten there I give him e.g. a jougart just to keep him going and for some energy. Lunch time he eats what we will eat , then I will give him a cup of milk, then again around 4 or 5 there I will give him something, just something to keep him going maybe a fruit or something then he eats dinner and a cup of milk then he will go to sleep.

*Interviewer:* When he was very young do you use to feed him during the night?

*Respondent:* Mhumhu, he just use to drink / to breastfeed during the night.

*Interviewer:* Did you encounter any challenges in feeding him?

*Respondent:* Ya, cause we struggled , we have to force him to eat ,that is him, basically that is him no matter how much medicines ( *referring to vitamins*)) you give to give him appetite , you have to force him to eat .

*Interviewer:* So he does not like eating?

*Respondent:* No he does not like eating, he liked breast milk, if you him breast milk that time he will not want to take any food, not at all he does not want to take any food.

*Interviewer:* When you gave birth, did you deliver in the hospital?

*Respondent:* Yes, here in this hospital (*referring to Tsumeb hospital*).

*Interviewer:* Were you given any information on how to feed the child?

*Respondent:* Aaha, no

*Interviewer:* You did not get any information?

*Respondent:* Nothing, nothing, my doctor told me nothing at all.

*Interviewer:* You delivered at a private hospital?

*Respondent:* Yes, I delivered here in this hospital but I had a private doctor, so he did it here to deliver the baby, but after that he did not tell us anything about feeding.

*Interviewer:* But you were among the group of women who were discharged that day or you were discharged and go home without seeing the nurses?

*Respondent:* My doctor just came and checked on me then he said everything is ok then he went , we were discharged, so they told us we should come back after how many weeks visit which was our first visit then we came back , then the baby was just given some injection , but they told me nothing about feeding .

*Interviewer:* Then where did you try to get the information?

*Respondent:* I just get the information on my own; I just gather it from those who already have children that is where I use to ask.

*Interviewer:* Now when the boy was admitted was he given certain food or did the nurses tell you anything?

*Respondent:* The nurses told me that he will be put on certain milk, so he was just taking that milk and we were not allowed to give him water, it is just that milk we were just giving him that milk and then after, on Thursday when they told us he can start eating we can bring him some porridge, then that is when we started bringing him some porridge and mixing with some other food that we can buy and so on , then they discharged him yesterday .

*Interviewer:* When they discharged you yesterday did they tell you on how are you going to feed him?

*Respondent:* No I was not told anything they just gave me that paper (*referring to the health passport*) and they told me I should force him to eat, but one thing I can remember while he was still in the hospital I went there to find out what can I give him, so the nurse was explaining to me, she explained a few things how I, what I should be giving him, the diet that I should be giving him.

*Interviewer:* What did she say then? Can you recall any of the information you were given?

*Respondent:* Which she was telling me, no she was basically telling me that the child needs like him he is having malnutrition, I should apparently give him

porridge with an egg or peanut butter and I must give him beans, that is what I can recall and milk I should give him.

*Interviewer:* Now have you started giving him those foods already?

*Respondent:* Yes I have already started to give him.

*Interviewer:* What do you think has contributed to your child to lose some weight and become malnourished?

*Respondent:* I will basically say is because he was not eating well, so that thing of losing appetite and he was not eating at all, he was just drinking water. Us parents we do not want to force our kids we just say ah, we just give what they want, that is also what leads him to lose weight, he just wanted to drink water and we were just giving him that he can drink.

*Interviewer:* When you brought him to the hospital what did you see? What makes you bring him to the hospital?

*Respondent:* I saw that he was getting weak, no matter the medicine that I was trying to give him, it was not helping, so and he was also having a bit of diarrhea so I decided this I can't keep him at home, I can't treat him at home, it is out of my hands, then I brought him here that `s when they admitted him and told me that he is underweight they will admit him.

*Interviewer:* At home do you get some challenges of getting food?

*Respondent:* Ah, no challenges the food is there

*Interviewer:* Do you have any suggestion of what can be done to prevent children under the age of 5 years from undernutrition?

*Respondent:* Not that I really thought about, but I will advise also like for the nurses when we are coming to the hospital and they see that this weight is not supposed to be there, at least they must try giving us advice on how to feed the kids, because some of us do not know. (*raising her voice*) I will strongly advise to give us some information like you should try giving this and this, because this will also help us, instead of health workers scolding us, give us some information.

*Interviewer:* Anything else that you want to add?

*Respondent:* No

*Interviewer:* Let me thank you very much for taking part in this study, the information you gave me I will make use of it.

*Respondent:* I want to add again on giving of information. You find some nurses, I don't know the person slept with stress or what, they start scolding us ya I told you do this of what is not proper, the nurses should also have patience with their patient

*Interviewer:* Ok thank you very much.

ANNEXURE J: REQUEST FOR PERMISSION TO UTILIZE HALL AS A  
VENUE FOR CONDUCTING A TRAINING

P.O.Box 870

Ondangwa

[Tel:264-65-2232203\(w\)](tel:264-65-2232203); Fax: 264-65-2232271

E-mail: [emulenga@unam.na](mailto:emulenga@unam.na); Cell: 0812284197

3 April 2017

Senior Medical officer

Onandjokwe Intermediate Hospital

Oshikoto Region

Dear Sir

**Re: Request for a permission to utilize a venue (hall at Onandjokwe Regional health training centre) to conduct training for mothers and caregivers on feeding practices of children under the age of 5 years at Onandjokwe Intermediate hospital, Oshikoto region.**

I am Ester Mulenga doing a Doctor of Philosophy (PHD) in Public Health at the University of Namibia under the supervision of Dr. Amukugo Hans and Dr. David Sabina. I hereby wish to request for a permission to utilize a venue to conduct training for mothers and caregivers on feeding practices of children under the age of 5 years.

I have conducted a study which was approved by Permanent secretary, MOHSS, Director of Oshikoto. The purpose of the study was to explore and describe the experiences of caregivers on feeding practices of children under the age of 5 years who are diagnosed with undernutrition in Oshikoto region for the development of educational programme which will empower mothers and caregivers of children under the age of 5 years with regards to feeding practices

The study was conducted into phases

Phase 1: Explored and described the experiences of mothers and caregivers on feeding practices of children under the age of 5 years with malnutrition

Phase 2: Developed a conceptual framework which formed the basis of an educational programme to empower mothers and caregivers on feeding practices of children under the age of 5 years.

Phase 3: Developed an educational programme to empower mothers and caregivers on feeding practices in order to prevent undernutrition

Phase 4: Implement and evaluate the educational programme

The study has identified that participants are utilizing sub-optimal feeding practice; participants experienced different factors which influenced feeding practices negatively; participants experienced shortage of nutritional and feeding practices information and they experienced limited resources needed to facilitate feeding practices. Therefore, the researcher has developed a training manual which will be used to train mothers and caregivers on the identified issues.

I intend to conduct such training on the 11 -12/04/2017 and I need to utilize the hall from 8H30 -16H00.

Attached find permission letters to conduct the study and training guide

Thank you for your prompt response.

Sincerely Yours

A handwritten signature in dark ink, appearing to read 'Ester Mulenga', with a stylized flourish at the end.

Ester Mulenga

ANNEXURE K: INVITATION LETTER TO THE PARTICIPANTS TO ATTEND  
TRAINING (English version)

**Invitation to a workshop**

Enquiry: Ms. E. Mulenga

Cell: 0812284197/0812080800

To: Ms. /Mr. -----

**Subject: Invitation to the training of mothers and caregivers on feeding practices of  
children under the age of 5 years**

Dear Madam/sir

You are cordially invited to attend a training of mothers and caregivers of children under the age of 5 years regarding feeding practices which will take place as follow:

Date: 11-12 April 2017

Venues: Onandjokwe Regional Health Training Centre Hall

Time: 8H00 -16H00

Your presence will be highly appreciated

Thank you

Yours sincerely

Ester Mulenga

PHD in Public Health student

ANNEXURE L: INVITATION LETTER TO PARTICIPATE IN THE TRAINING  
(Oshiwambo version)

Omapulapulo: E. Mulenga

Cell 0812284197/0812080800

Ku meme/tate: -----

**Ehiyo komadheulopukululo**

Omusimanekwa

Oto hiywa nesimaneko enene komadheulopukululo gaavali naatekuli yuunona u li kofi yoomvula ntano gena sha nepalutho lyuunona mbuka, ngoka taga ka kala ko:

**Esiku: 11 -12 April 2017**

**Ehala: Kosikola yaapangi monandjokwe**

**Otundi: okutameka po 8H00 yongula sigo ontine komatango**

Eholoko po lyoye otali simanekwa unene.

Tangi unene.

Gweni

Ester Mulenga

Omunasikola moshiputudhulo shopombanda (UNAM)

**ANNEXURE M: SCHEDULE FOR PROGRAMME IMPLEMENTATION AND  
EVALUATION**

**An educational programme to empower mothers and caregivers on feeding practices of children under the age of 5 years in Oshikoto region (Implementation and evaluation phase)**

**Date: 11 -12 April 2017**

**Venue: Onandjokwe Regional Health Training Centre**

**Programme Schedule**

**Day 1: Tuesday 11 April 2017**

<b>TIME</b>	<b>ACTIVITY</b>
8H30- 8H45	Registration
8H45- 9H00	Introduction of participants
9H00- 9H30	Training introduction, expectations and objectives
9H30- 9H40	Ground rules
9H40 -10H10	Pre- assessment test
10H15 -10H30	Tea Break
10H35 – 11H35	General information regarding feeding practices

11H40 – 12H00	Discussions (on general information)
12H05 -13H00	Optimal feeding practices
13H00 -14H00	Lunch break
14H00 -14H 20	Discussion ((on optimal feeding practices)
14H25 -14H45	Daily evaluation
15H00	End of day 1

**Day 2: 12 April 2017**

<b>TIME</b>	<b>ACTIVITY</b>
8H00-8H30	Registration
8H30 -8H45	Recap of day 1
8H45 – 9H45	Factors influencing feeding practices of children under the age of 5 years
9H45 -10H00	Discussion on factors
10H00 -10H20	Tea break
10H 25 -11H25	Resources needed to facilitate feeding practices of children under the age of 5 years

11H25 -11H40	Discussion on resources
11H40 -12H00	Daily evaluation
12H00 -12H20	Programme evaluation
12H20 -12H50	Post assessment test
13H00	Closure and Lunch

## ANNEXURE N: PRE AND POST TEST –ENGLISH VERSION

Pre and post assessment test

Answer all the questions in this paper. Encircle or tick the correct answer from alternatives and write the information required in the space provided.

1. The correct duration of breastfeeding is:
  - A. One year
  - B. Two years
  - C. Nine months
  - D. One year and six months
2. Namibia guideline on adding of complimentary food indicate that the child should start complimentary food at:
  - A. Six months
  - B. Four months
  - C. One year
  - D. Nine months
3. Formula milk has all the nutrients than breast milk
  - A. True
  - B. False
4. If the child start complimentary food before the age of 6 months she/he will:
  - A. grow well
  - B. Be healthy
  - C. Infected by diarrhea
  - D. Be clever

5. If the child refuse to eat, mother or caregiver needs to force him/her

A. True

B. False

6. A child under the age of 5 years does not need to eat variety of food

A. True

B. False

7. Name any four (4) advantages of breastfeeding

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8. Mention any four (4) disadvantages of formula milk or cow`s milk

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9. State any five (5) local available food which can be eaten by a child under the age of 5 years.

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10. Name any three (3) factors which can hinder feeding of a child under the age of 5 years.

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## ANNEXURE O: PRE AND POST TEST- OSHIWAMBO VERSION

### **Pre and Post Test- Oshiwambo version: Mothers and caregivers training:**

Yamukula omapulo agehe mombapila ndjika. Tula ongombe peyamukulo ndi to dhiladhila kutya olyo lyi li mondjila, ngoye to nyola mpoka sha pumbiwa

1. Okanona oke na oku yamuthwa uule wethimbo li thike peni?
  - A. Omvula yimwe
  - B. Oomvula mbali
  - C. Omweedhi omugoyi
  - D. Omvula noomwedhi hamano
  
2. Omulandu gwaNamibia guna sha nepalutho lyokanona otagu ti okanona naka gwedhelwe iikulya ethimbo lini?
  - A. Opoomwedhi hamano
  - B. Opoomwedhi ne
  - C. Opomvula yimwe
  - D. Opoomwedhi omugoyi
  
3. Omahini goomondoha ogo gena iitungithi ayihe ge vule gokontulo
  - A. Osho
  - B. Hasho
  
4. Okanona ngele oka tameke okulya iikulya yilwe kuyele manga oomwedhi hamano inaadhi adha:
  - A. Otaka koko nawa
  - B. Otaka kala kena ukolele
  - C. Otaka vulu oku kwatwa koshimela
  - D. Otaka kala kena oondunge odhindji

5. Okanona ngele otaka tindi okulya oka pumbwa okuthindilwa ka lye

A. Osho

B. Hasho

6. Okanona keli kohi yoomvula ntano inaka pumbwa okulya iikulya yomaludhi ga yooloka.

A. Osho

B. Hasho

7. Tumbula omauwanawa gane gokuyamutha kontulo

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8. Tumbula uuwinayi une (4) wokupalutha okanona nomahini goongombe nenge gomoondoha

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9. Tumbula iikulya itano hayi vulu okumonika megumbo inaa yi landwa, tayi vulu oku liwa kokanona keli kohi yoomvula ntano

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10. Tumbula iinima itatu (3) mbyoka tayi vulu oku etitha epalutho lyokanona keli kohi yoomvula ntano kali ende nawa.

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## ANNEXURE P: EXPERT'S COMMENTS ON THE TRAINING MANUAL

**Mulenga, Ester**

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**From:** Peter Njuki <nampeta@gmail.com>  
**Sent:** Wednesday, April 19, 2017 9:07 PM  
**To:** Mulenga, Ester  
**Subject:** Re: Training manual

Dear Ester,

Thank you for the privilege of having to look at your work. Other than a number of grammatical errors, I found it very fine going by the criteria you have set on page 54. I think you will get more input if you pretest it. If you would need my presence when pre-testing it, I can try to be available.

How are you planning to address the grammatical issues?

Njuki

On 4/5/17, Mulenga, Ester <[emulenga@unam.na](mailto:emulenga@unam.na)> wrote:

> Dear Dr.

>

> attached receive the manual which I have developed as part of my study

> for Doctor of Philosophy in Public Health. I am required to conduct a

> workshop for mothers and caregivers of children under the age of 5

> years using that manual. Can you please send me Dr. Mtombeni 's email,

> so that I can forward it to him as well, it need to be seen by at

> least two people as part of validation process. I was trying to contact him but may be he is too busy.

> Please look at it and give some comments and input.

>

> Thank you in advance.

>

> [<http://www.unam.edu.na/email/unamlogo.png>] Ester Mulenga

> Co-ordinator of Clinical Unit

> Oshakati Campus

> University of Namibia

> Tel: +264 65 2232203

> Fax: +264 65 223 2302

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>

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Cell: +264 812 626007  
E-mail: [nampeta@gmail.com](mailto:nampeta@gmail.com)

ANNEXURE Q: DAILY AND PROGRAMME EVALUATION (Oshiwambo version)

**Daily evaluation: Mothers and caregivers training programme: Date** -----  
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1. Owi ilongo mo shike moshigongiilonga shonena to ke shi longitha monkalamwenyo yoye?

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2. Oshitopolwa/iitopolwa yini wu uvite ye ku longa sha?

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3. Oshitopolwa shini wu wete inaashi ku kwathela sha?

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4. Oshike ishewe wa hala okugwedha po shina sha nomadheulo ngano?

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**Evaluation for the training of mothers and caregivers on feeding practices of children under the age of 5 years Oshiwambo version**

<b>Komukuthimbinga</b>		
<b>Lombwela ndje nkene wu uvite shina sha nomadheulopukululo ngaka, mokuyamula komapulo taga landula. Epulo lyotango sigo etitano sinda nenge u gandje ongombe keyamukulo ndi tali opalele nopo nomola ndji tayi opalele 0 otayi ti aawe nandenande, 1 otayi ti kashona ngaa, nontano otayi ti unene lela.</b>		
Ou vite kutya omadheulo ngano oge na oshilonga?	Eeno/ aawe	0 1 2 3 4 5
Omadheulo ngano ou wete ngaa ge ku kwathela sha	Eeno/aawe	0 1 2 3 4 5
Omadheulo ngano og adha ngaa omalalakano nga ga tumbulwa?	Eeno/ aawe	0 1 2 3 4 5
Omadheulo ngano owu uvite kutya oga gwedha kosha kontseyo yoye	Eeno/aawe	0 1 2 3 4 5
Shi wi ilongo momadheulo ngano oto keshi tula ngaa miilonga?	Eeno/aawe	1 2 3 4 5

6. Oshitopolwa/ iitopolwa yini wu wete yi na oshilonga kungweye noshe ku kwathela unene?

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7. Oshitopolwa shini wu wete kaashi na oshilonga unene nenge inaashi ku kwathela sha?

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8. Uupyakadhi wuni wali wuna momadheulo ngano, we ku imbi okwi ilonga nokulandula nawa?

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9. Oshike wi ilongo momadheulo ngano toke shi tula miilonga?

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10. Oshike ishewe wa hala okugwedha po shina sha nomadheulo ngano?

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ANNEXURE R: TRAINING GUIDE

**EDUCATIONAL PROGRAMME FOR MOTHERS AND CAREGIVERS ON  
FEEDING PRACTICES OF CHILDREN UNDER 5 YEARS**



**Compiled by: E. Mulenga**

**April 2017**

# **PART 1: BACKGROUND OF THE TRAINING MANUAL**

## **1. INTRODUCTION AND BACKGROUND**

Feeding practices of children under the age of 5 years is one challenge experienced by mothers and caregivers, which results in many children suffering from undernutrition due to poor feeding practices. The World Health Organisation (WHO) (2009) indicated that poor nutrition increases the risk of morbidity and mortality, and in 2006 contributed, directly or indirectly to an estimated 9.5 million deaths globally of children under the age of five years. According to Gyumapoh, Otoo and Aryeetey (2014) an estimated 35% of deaths among children under the age of five years, and 50 – 70% of diarrhea diseases, measles, malaria and lower respiratory infections, were a result of poor feeding practices in terms of poor nutrition in developing countries.

Optimal feeding practices play an important role in the prevention of undernutrition in children under the age of five years, Such practices include exclusive breastfeeding for six months; followed by complementary feeds with continuation of breastfeeding up to or beyond two years, appropriate feeding frequency, dietary diversity and responsive feeding (WHO, 2009; Perera et al, 2011). It is estimated that globally only 34.8% of infants are exclusively breastfed for the first six months. The majority of infants are given other foods or fluids too early or too late which contain inadequate and unsafe nutrition (WHO, 2009; Dabar et al, 2014).

Namibia, as a developing country, is not exempted from poor feeding practices causing undernutrition of infants and young children. The MOHSS (2014) reported that only 49% of Namibian infants, under the age of six months, were exclusively breastfed, and only 28% of children were breastfed up to the age of two years. Although many Namibian caregivers introduced complementary feeding at the age of six to eight months, only 32% of infants received a variety of foods. As a result 24% of children under the age of five years have stunted growth, and 8% are severely stunted (MOHSS, 2014).

In the Oshikoto region, where the study was conducted, 26% of children have stunted growth, 8.5% are wasted, 21% underweight, and child mortality, due to malnutrition, is 37% (Ministry of Health and Social Services (MOHSS), 2008; MOHSS, 2014).

### **1.1 Problem statement**

Although mothers are being given health information on feeding practices of children under the age of 5 years, it seems the impact of such information is scanty, because mothers and caregivers seem to have inadequate information on feeding practices of children under the age of five years. According to the WHO (2010) and MOHSS (2014), only 49% of Namibian infants were exclusively breastfed up to the age of five months, and 28 % of children were breastfed till the age of two years. Furthermore, the WHO (2010) indicated that bottle feeding started as early as two to three months, and about 26% of newborn babies were bottle-fed. Complementary feeding in Namibia is introduced early or late: some of the food is not safe and does not include adequate nutrients.

In the Oshikoto region, undernutrition, because of poor feeding practices, has contributed to high prevalence and mortality rates among children under the age of five years. MOHSS (2014) reported that 26.3% of children in the Oshikoto region had stunting, 8.5% are wasted, and 21% were underweight. It is therefore ranked as one of the top regions with children affected by undernutrition. In this region, the child mortality rate, which is linked to undernutrition, is 37%. The region is thus ranked as number one for undernutrition causes of deaths of children under the age of five years. However, the experiences of mothers and caregivers, on feeding practices of children under the age of five years in Oshikoto region are not known as there is no documented literature in this regard.

This led to these questions. What are the experiences of mothers and caregivers on feeding practices of children under the age of five years? What should be done to prevent undernutrition in children under the age of five years?

To address these questions, the developer of this training manual deemed it necessary to explore the experiences of mothers and caregivers on feeding practices of children under the age of five years who are diagnosed with undernutrition in the Oshikoto region, and to

develop an educational programme to empower mothers and caregivers on feeding practices.

### **1.2 The purpose of the study**

The purpose of this study was to develop an educational programme to empower mothers and caregivers on feeding practices of children under the age of five years in the Oshikoto region.

### **1.3 The objectives of the study**

The study had four objectives.

- To explore and describe experiences of mothers and caregivers on feeding practices of children under the age of five years who are diagnosed with undernutrition.
- To develop a conceptual framework which forms as a basis of an educational programme to empower mothers and caregivers on feeding practices of children under the age of five years?
- To develop an educational programme to empower mothers and caregivers on feeding practices of children under the age of five years.
- To implement and evaluate an educational programme on feeding practices of children under the age of five years.

### **1.4 Methodology and design**

A qualitative, exploratory, descriptive and contextual design was used in the first of four phases in the study. Phase 1 covered a situational analysis aiming at exploring and describing the experiences of mothers and caregivers on feeding practices of children under the age of five years. This phase was conducted using an unstructured individual in-depth interview.

Mothers and caregivers of children under the age of five years, whose children are diagnosed with undernutrition admitted in the Onandjokwe Intermediate, Omuthiya and Tsumeb district hospitals, or registered on the Nutrition Assessment Counseling and Support (NACS) programme (primary health care based) in those three district hospitals, were targeted.

Phase 2 included identifying the relationship of central concept. Concepts were classified according to Dickoff's survey list, which includes agent, recipient, framework (context), dynamics, procedure and terminus (Dickoff, James & Wiedenbach, 1968). A conceptual framework and the findings from phase 1 formed the basis of the study.

Phase 3 involved the development of a programme and its objectives. The programme is an intervention to empower mothers and caregivers on feeding practices of children under the age of five years so that the problem of undernutrition can be prevented.

Phase 4 involved implementation and evaluation of an educational programme. A workshop was conducted in the Onandjokwe Intermediate Hospital: a referral hospital for the Oshikoto region. The study population for this phase was mothers and caregivers of children under the age five years diagnosed with undernutrition and who were receiving care in this hospital.

### **1.5 Findings of the study**

The study revealed that the respondents were utilising sub-optimal feeding practices such as early cessation of breastfeeding, bottle feeding, early introduction of complementary food, non-responsive feeding, less feeding frequency and poor dietary diversity. They experienced different factors, which influenced feeding practices, such as food refusal, picky eating behaviour, abandoning and neglecting of children, alcohol abuse, and unhygienic food practices. They also experienced a shortage of nutritional and feeding practices information, which included lack of information regarding types of food suitable for children and feeding practices. Household food insecurity and financial difficulties meant they had limited resources needed to facilitate feeding practices.

## **1.7 Recommendations**

Due to challenges identified during the study, it is recommended that mothers and caregivers of children under the age of five years need to be empowered with information which can assist them to utilise optimal feeding practices, control factors that have a negative impact on feeding practices, feed their children with suitable food and source out resources needed to facilitate feeding practices. To address these recommendations, an educational programme, using a training manual, was developed to empower mothers and caregivers on feeding practices of children under the age of five years. The manual is presented below.

## **PART 2: STRUCTURE OF THE TRAINING MANUAL**

### **2.1 Name of the training programme**

An educational programme to empower mothers and caregivers feeding practices of children under the age of five years

### **2.2 Aim of the training programme**

To empower mothers and caregivers of children under the age of five years to be knowledgeable on feeding practices of their children.

### **2.3 Objectives of the training programme**

At the end of the training mothers and caregivers should be able

- To utilise optimal feeding practices in feeding children under the age of five years.
- To describe different factors which influence feeding practices of children under the age of five years?
- To demonstrate nutritional knowledge related to types of food suitable for children under the age of five years.
- To use knowledge gained to source resources needed to facilitate feeding practices of children under the age of five years.

## **2.4 Target population**

The programme is targeted for mothers and caregivers of children under the age of five years diagnosed with undernutrition and receiving services in the Onandjokwe Intermediate Hospital. This hospital was chosen because it is a referral hospital for the Oshikoto region.

### **2.4.1 How will participants in the programme learn?**

To ensure that the time spent at the training is productive, certain rules and procedures to be followed were put in place. This includes identifying expectations and determining group norms.

- **Identifying expectations**

At the beginning of the training the participants will be asked to indicate what they expect to learn from the course. Their expectations will be recorded on a flip chart and displayed throughout the training. The facilitator will then identify which expectations are within the description of the training and which are outside. This should assist them to understand what will be covered in the training.

- **Determining group norms/ground rules**

Ground rules are not meant to constrain participants, but to contribute to a quality learning environment. They need to commit to their own group norms set on the first day. The following points are important for their effective learning.

- **Build an atmosphere of trust and support**

In order to build an atmosphere of trust and support, they need to listen actively to the ideas of others and provide constructive feedback, which will help them to improve learning. If a participant does something that others like, they need to indicate their approval. If participants experience challenges, they should request help from other participants and the facilitator.

- **Maintain positive attitude**

Hard work and lots of energy is required to learn new things. Sometimes participants may find themselves very tired, but they must try to stay positive and productive while participating in each session. They need to take note that negativity does not support quality learning.

- **Contribute to others` learning**

Participants are the most valuable source in this training programme. They need to help each other to learn by sharing information and experiences. They can ask each other question, engage them in conversation and share relevant examples from their experience.

- **Participate actively**

They need to actively listen, look at other participants when they are speaking, contribute ideas during group work, answer questions posed by the facilitator, and ask their own questions.

## **2.5 The facilitator of the training**

The facilitator of the training is the researcher of the study, who developed the educational programme to empower mothers and caregivers on feeding practices of children under the age of five years. The manual was used to conduct training of mothers and caregivers of children under the age of five years.

### **2.5.1 How the training was facilitated?**

A variety of teaching and learning strategies was adopted. The underlying assumption is that participants are adult learners who will take responsibility for their own learning. The focus is on experiential learning, which emphasises the key knowledge needed for mothers and caregivers to optimally feed their children under the age of five years. The knowledge and skills that participants will bring to this training are important to the learning process and they will be encouraged to share them.

This was a two-day training programme comprising six units. The following teaching/learning methods were utilised.

- Lecture
- Large group work and discussions
- Small group work and discussions
- Role play
- Debate

## **2.6 The benefits of the training manual**

The training manual was used to train mothers and caregivers of children under the age of five years to empower them with knowledge so that they will be able to:

- Use optimal feeding practices to feed children under the age of five years.
- Address factors which have a negative influence on feeding practices of children under the age of five years.
- Gain nutritional and feeding practices information.
- Source resources needed to facilitate feeding practices of children under the age of five years.

## **PART 3: GENERAL INFORMATION REGARDING FEEDING PRACTICES**

### **3.1 Feeding practices**

Feeding means to give food or provide adequate supply of food (Concise Oxford English dictionary, 2011). Feeding practices refer to ways of giving an infant or child food in order for them to grow and develop normally. Appropriate infant and young child feeding practices have a positive effect on their growth and development (WHO, 2010).

## **3.2 Types of feeding**

### **3.2.1 Breastfeeding**

This refers to feeding an infant or child with human milk which is their natural food source (King, Burgess, Quinn & Osei, 2015).

#### ***3.2.1.2.1 Advantages of breastfeeding***

Breastfeeding has the following advantages.

- It help the baby to grow well
- Breast milk is easily digestible
- It protects breastfed babies from infections
- It helps the bonding between mother and baby
- It helps to prevent another pregnancy
- Breast milk's temperature is correct
- Breast milk is sterile
- There is no risk of error in preparation of feeds
- If a mother breastfeeds there are no additional expenses to buy milk

Breastfeeding does not have disadvantages except when a mother is infected by HIV; she can pass the virus to her baby through breastfeeding.

#### ***3.2.1.2.2 Nutrients in breast milk***

Breast milk contains all nutrients and water needed by children, namely

- Essential fatty acids needed for brain development
- Carbohydrate in lactose form
- Protein
- Vitamins
- Minerals such as sodium, calcium, phosphate, zinc, and iron

### ***3.2.1.3 Promotion of breastfeeding***

Healthcare workers need to do the following.

- Inform all pregnant women about the benefits of breastfeeding (see Figure 3.1).
- Assist mothers to initiate breastfeeding within one half-hour to one hour of birth.
- Show mothers how to breastfeed and how to maintain lactation.
- Show mothers the correct positioning and attachment for the baby to suckle very well.
  
- Encourage breastfeeding on demand and discourage the use of pacifiers.
- Discourage mothers from giving infants any food or drink other than breast milk unless medically indicated.
- Help mothers to practice rooming in (mothers and baby to stay together for 24 hours a day).

Benefits of breastfeeding are depicted in Figure 3.1



**Figure 3.1:** Breastfeeding promotion.

#### ***3.2.1.4 Practicing breastfeeding***

Practicing breastfeeding requires effective positioning and good attachment of the baby (Lewis, 2015).

##### **3.2.1.4.1 Effective positioning**

- The baby should be held close to the body of the mother
- The baby's head and body should be in alignment
- The shoulder of the baby should be supported
- The nose of the baby should be opposite to the nipple

#### 3.2.1.4.2 Good attachment to the breast

- The baby`s mouth should be wide open, bottom lip curled back
- The baby should have a mouth full of breast
- Cheeks should look full and rounded
- The chin of the baby should be in contact with the breast
- The dark area of the breast (areola) should be visible above the baby`s top lip and below the bottom lip



**Figure 3.2:** Good attachment to breast.

According to the Namibian infant and young child feeding policy, infants should be exclusively breastfed till the age of six months. This means only feeding a child with breast milk and when applicable prescribed medicines; no other foods, water or drinks to be used for feeding (MOHSS, 2011; King, Burgess, Quinn & Osei, 2015).

At six months, safe and nutritious complementary foods should be added. Breastfeeding should continue until a child is two years old or beyond; frequency of feeding to be increased as a child grows older; and a child needs to also be fed with a variety of food (WHO, 2009).

### 3.2.2 Formula or artificial feeding

This type of feeding refers to feeding the child with formula milk. Such milk can be from a cow or other animals and it is modified (CDPH, 2012). Figure 3.3 is an example of artificial bottle feeding.

Formula milk is not appropriate for children as it does not contain all nutrients. Its disadvantages in formula feeding are listed by King, Burgess, Quinn and Osei (2015) and presented below.

- Increases the risk of diarrhea and respiratory infections
- Interferes with bonding
- Feed may contain germs if made with unsafe water, or in an unsterilised container
- It does not contain antibodies, which protect a child against disease.
- It causes underdevelopment of a child and undernutrition e.g. vitamin A deficiency
- Increases risk of allergies and milk intolerance
- Lowers score of intelligence tests
- A mother may become pregnant sooner
- Increases the risk of ovarian and breast cancer



**Figure 3.3:** Artificial bottle feeding.

### 3.2.3 Combination or mixed feeding

This is a combination of formula and breast milk, or giving a baby breast milk and other food or liquids within the first six months. Figure 3.4 is an example of mixed feeding. Some reasons for a mother to practice mixed feeding are presented below.

- Concern about baby`s weight gain
- Concern about breast milk supply
- Concern about breastfeeding in public
- Returning to work

#### 3.2.3.1 Advantages of mixed feeding

- Mixed feeding enables partners, and other family members, to feed a baby
- Helps a father to bond with his baby

#### 3.2.3.2 Disadvantages of mixed feeding

- It reduces a mother`s milk production and intake
- Reduces the ability of a mother`s milk to protect her child against infection
- Introducing other foods or liquids, even water, while a child is breastfeeding can disrupt the developing gastrointestinal tract
- Irritation of gastrointestinal tract increases the risk of inflammation and allergies
- Risk of HIV transmission to an infant is higher
- It is not a good method compared to breastfeeding



**Figure 3:** Mixed feeding method.

### **3.3 Relationship between feeding practices, child nutrition and health**

Feeding practices play an important role in the nutrition and health of a child.

Children, whose mothers and caregivers do not utilise optimal feeding practices, are likely to develop undernutrition which includes stunting, underweight and wasting (Zhou, et al. 2012).

Some causes of undernutrition in children under the age of five years: lack of exclusive breastfeeding, abrupt weaning, and inappropriate introduction of complementary food.

Mothers thus need to exclusively breastfeed their children until six months, and then introduce complementary foods while continuing to breastfeed for a further 24 months (WHO, 2009).

Mothers and caregivers also need to increase feeding frequency as a child grows old, and also give a variety of food and practice responsive feeding (WHO, 2009). Appropriate feeding practices result in better child growth and development Saha (2008).

### **3.4 Conditions which can occur due to poor feeding practices**

#### **3.4.1 Malnutrition**

This condition is more common in developing countries, and results from diet which is not balanced and lacks adequate calories and protein (Vasuthevan & Mthembu, 2013).

##### ***3.4.1.1 Signs and symptoms of malnutrition***

The signs and symptoms of malnutrition include:

- Anemia
- Diarrhea
- Disorientation
- Enlarged thyroid
- Lack of coordination
- Scaling and cracking of lips and mouth
- Different forms of malnutrition are presented below.

### **3.4.1.2 Kwashiorkor**

This is a condition caused by lack of protein in a diet; it is a life-threatening and debilitating form of malnutrition, and is also known as edematous malnutrition (Vasuthevan & Mthembu, 2013, LaFlamme, 2015). Figure 3.5 shows children with kwashiorkor.

#### **3.4.1.2.1 Signs and symptoms of kwashiorkor**

- Changes in skin and hair colour (rust colour) and texture
- Fatigue
- Diarrhea
- Failure to gain weight
- Swelling of ankles, feet and belly
- Irritability

#### **3.4.1.2.2 Prevention of kwashiorkor**

- Feed a child with enough calories and protein-rich foods which include eggs, meat, beans and nuts

#### **3.4.1.2.3 Complications of kwashiorkor**

- Even with treatment, children with kwashiorkor will never reach their full growth
- If treatment is started late, a child may have permanent physical and mental disabilities
- If left untreated, it may lead to shock,coma or death



**Figure 3.5:** Children suffering from kwashiorkor.

### **3.4.1.3 Marasmus**

This condition is associated with failure to thrive and weight loss resulting from insufficient intake of kilojoules; a marasmus child will be small and wrinkled (Vasuthevan & Mthembu, 2013). Figure 3.6 is a photograph of a child with marasmus.

#### **3.4.1.3.1 Signs and symptoms of marasmus**

- Weight loss
- Dehydration
- Chronic diarrhea
- Dry skin
- Brittle (delicate) hair
- Irritable

#### **3.4.1.2.2 Prevention of marasmus**

Feed a marasmus child , food containing different nutrients, which include protein, carbohydrates and other nutrients



**Figure 3.6:** A child with marasmus.

### **3.4.1.4 Overnutrition**

This condition is common in developed countries. It is a form of malnutrition caused by excessive consumption of junk food such as pizzas, chips and fizzy drinks (Vasuthevan & Mthembu, 2013).

#### **3.4.1.4.1 Signs and symptoms of overnutrition**

- Obesity
- Difficult in walking

#### **3.4.1.4.2 Prevention of overnutrition**

- Decrease calorie intake
- Eat low fat diet



**Figure 3.7:** Children suffering from overnutrition.

### **3.4.1.5 Undernutrition**

This is a condition in which the body does not get adequate nutrients to produce energy, grow, repair tissues and carry out normal functions (King, Burgess, Quinn & Osei, 2015).

Figure 3.8 shows a child suffering from undernutrition.

#### **3.4.1.5.1 Signs and symptoms of undernutrition**

- Fatigue
- Lower body temperature
- Diarrhea
- Reduced appetite
- Irritability
- Weakness
- Numbness and tingling of the hands and feet
- Dry skin

#### **3.4.1.5.2 Prevention of undernutrition**

- Consume a variety of food which contains different nutrients
- Eat plenty of fruits and vegetables



**Figure 3.8:** A child with undernutrition.

#### **3.4.1.6 Underweight**

This is a condition in which a child has a low weight compared to the normal for the same age, due to stunting or wasting (King, Burgess, Quinn & Osei, 2015). Figure 3.9 is an example of an underweight child.

#### **3.4.1.6.1 Signs and symptoms of underweight**

- Brittle thinning hair
- Dry skin
- Poor memory
- Digestive disturbances
- Poor sleep

#### **3.4.1.6.2 Prevention of underweight**

- Restore nutrients lacking in the body
- Feed an undernourished child with a high calories diet
- Provide a high protein diet
- Good carbohydrates, fat, vitamins and minerals are important for weight gain



**Figure 3.9:** An underweight child.

#### **3.4.7 Micronutrients deficiency**

This refers to a lack of one or more micronutrients which include vitamins (e.g. vitamin A) and minerals such as iron (King, Burgess, Quinn & Osei, 2015).

### ***3.4.7.1 Vitamin A deficiency***

A condition caused by an inadequate intake of vitamin A, which may result in lowered resistance to infection (Vasuthevan & Mthembu, 2013).

#### **3.4.7.1.1 Signs and symptoms of vitamin A deficiency**

- Night blindness
- Stunted growth

#### **3.4.7.1.2 Prevention of vitamin A deficiency**

The diet should include dark green leafy vegetables or bright-coloured fruits such as “omboga” (wild spinach), pawpaw, oranges, carrots and pumpkins. Figure 3.10 shows a child with vitamin A deficiency.



**Figure 3.10:** A child with vitamin A deficiency.

### ***3.4.7.2 Iron deficiency***

This is a condition which refers to low levels of iron in the blood and other tissues which assist the body to function well (King, Burgess, Quinn & Osei, 2015).

Figure 3.11 shows a child with iron deficiency.

#### **3.4.7.2.1 Signs and symptoms of iron deficiency**

- General fatigue
- Body weakness
- Pale skin
- Shortness of breath
- Dizziness
- Tongue swelling or soreness

#### **3.4.7.2.2 Prevention of iron deficiency**

Feed a child, a diet which includes:

- Red meat
- Dark green leafy vegetables (e.g. wild spinach)
- Dried fruits
- Nuts

Foods rich in iron include:

- Meat: pork, chicken, beef
- Beans
- Pumpkins
- Green leafy vegetables (e.g. spinach)
- Dried fruits
- Eggs

#### **3.4.7.2.3 Complications of iron deficiency**

- Irregular heart beat
- Delayed growth in infants and children



**Figure 3.11:** A child with iron deficiency.

### ***3.4.7.3 Iodine deficiency***

This refers to a lack or low level of iodine in the body, and causes enlargement of the thyroid gland (Vasuthevan & Mthembu, 2013). Figure 3.12 shows a child with an iodine deficiency.

#### **3.4.7.3.1 Signs and symptoms of iodine deficiency**

- Muscle weakness
- Constant fatigue
- Feeling cold
- Difficulty in concentrating and poor memory
- Thyroid enlargement

#### **3.4.7.3.2 Prevention of iodine deficiency**

- Use iodised salt when cooking food, but do not use too much salt
- Feed a child food containing iodine such as milk and milk products



**Figure 3.12:** A child with iodine deficiency.

## PART 4: ADDRESSING UTILISATION OF SUBOPTIMAL FEEDING PRACTICES

### **4.1 What is suboptimal feeding practices?**

Suboptimal feeding practices refer to feeding practices which are below the accepted standard set by the WHO. Examples of suboptimal feeding practices include:

- Early cessation of breastfeeding
- Bottle feeding
- Early or late introduction of complementary food
- Non-responsive feeding
- Less frequency feeding
- Poor dietary diversity

#### **4.1.1 Early cessation of breastfeeding**

This refers to stopping breastfeeding early, namely, before a child turns two years or even at six months. Early stopping of breastfeeding poses the following risks to a mother and her baby.

- Baby will be at risk of developing infections
- Baby-mother bonding is interrupted
- Mother may become pregnancy early
- Increase risk of ovarian and breast cancer

It is recommended that a child should be exclusively breastfed for six months and continued to be breastfed for another 24 months or more (Kuzma, 2013).

#### **4.1.2 Early introduction of complementary food**

This is when the child is given additional food before six months of age. According to King, Burgess, Quinn and Osei (2015) there are risks of starting early complementary feeding, and include:

- Baby`s gut is not ready to digest other food
- Baby may suckle less, and breast milk supply may decrease
- Mother is at increased risk of becoming pregnant
- It increases the risk of diarrhea, pneumonia and other infections
- It reduces the chance of a child being exclusively breastfed

In order to reduce such risks, complementary food needs to be introduced at the age of six months.

#### **4.1.3 Bottle-feeding**

Feeding a child with a bottle instead of a cup or spoon, may expose a child to danger if the bottles are not adequately cleaned (Shetty, 2014). Potential dangers include:

- Increased risk of diarrhea and respiratory infections
- Feed may contain germs if made with unsafe water, or in unsterilised bottle

Mothers and caregivers should avoid bottle-feeding. Use spoons or cups since they are easy to clean.

#### **4.1.4 Non-responsive feeding**

This includes impatiently feeding or forcing a child to eat. The risks of non-responsive feeding include:

- A child may choke when force is used
- Some children may develop mouth sores as a result of forcing a spoon into their mouths

To reduce such risks, a child should be fed slowly and patiently, encouraged and not forced, (WHO, 2014; King, Burgess, Quinn & Osei, 2015).

#### **4.1.5 Less feeding frequency**

This includes a low number of daily meals given to a child. This may cause malnutrition as a result of inadequate food consumption. Feeding child one or two meals per day after breastfeeding has stopped poses risks, according to the WHO (2002), it:

- Decreased resistance to infections
- A child can develop diarrhea or other conditions

It is recommended that feeding frequency needs to increase as a child grows older. If a child has stopped breastfeeding, feeding frequency can be increased up to five daily meals (WHO, 2016).

#### **4.1.6 Poor dietary diversity**

This includes giving food from only a few food groups. If a child is not given a variety of food the following may develop: vitamin A deficiency; an iodine deficiency; an iron deficiency or any other deficiency.

To reduce the risks of such deficiencies, a child needs to be given food from all groups to get all necessary nutrients (Vasuthevan & Mthembu, 2013).

## **PART 5: FACTORS INFLUENCING ON FEEDING PRACTICE**

There are different factors which have a negative influence on feeding practices of children under the age of five years. Examples include:

- Unhygienic food practices
- Food refusal and picky eating behaviour
- Child abandonment and neglect
- Alcohol abuse

General factors (e.g. socioeconomic, cultural, physiological and food factors)

### **5.1 Unhygienic food practices**

Unhygienic food practices, according to Agustina et al. (2013), include poor hand washing before food preparation, and using dirty cooking utensils. There are several risks of unhygienic food practices (WHO and UNICEF, 2013).

- Unhygienic food practices increase the risk of diarrheal diseases.
- Children who eat food that has been placed on the floor are likely to develop persistent diarrhea.
- Unhygienic food practices result in malnutrition, especially stunting.

#### **5.1.1 Prevention of unhygienic food practices**

The following are recommended to prevent unhygienic food practices (King, Burgess, Quinn & Osei, 2015; WHO, 2016).

- Wash hands with soap before preparing meals.
- Prepare a child`s food a few minutes before eating.
- Kitchen areas need to be kept clean.
- Protect a kitchen from insects and rodents.
- Avoid placing children`s utensils on the floor.
- Wash utensils before using them for children`s food.
- Avoid touching food with dirty hands.
- Cover children`s food.

## **5.2 Food refusal and picky eating behaviour**

Some children refuse to eat certain types of food; others accept some food, but are not willing to eat new food (Goh & Jacob, 2012). Food refusal, and picky eating behaviour, result in lack of some nutrients leading to deficiencies and poor weight gain, stunted growth which affect a child`s physical and mental development.

### **5.2.1 How to handle food refusal and picky eating behaviour**

The following are recommended (King, Burgess, Quinn & Osei, 2015).

- Avoid making inappropriate threats as this exacerbates food refusal.
- Do not scold, punish or bribe a child during meal times.
- Do not force a child to eat.
- Give a child a chance to feed himself/herself.
- If a child refuses to eat new food, try it again after a few days.
- If a child prefers some food over others, mix it with the preferred food.
- Try to introduce one new food at a time in small amounts.
- Avoid distractions during meal times.

## **5.3 Child neglect and abandonment**

Child neglect refers to failure to provide, or meet the basic needs of a child, or leaving the total responsibility of children to grandparents or other caregivers (Dubowitz, 2013). Child abandonment is when a mother removes herself from her child physically and psychologically (Van Wyden,2015).

### **5.3.1 The effects of child neglect and abandonment**

- A child fails to gain weight and height as expected.
- A child may stay hungry which leads to a stunted brain.
- A child may develop undernutrition; a leading cause of morbidity and mortality.
- A child may develop a low self-esteem.

### **5.3.2 Prevention of child neglect and abandonment**

The Children Bureau (2006) recommends the following.

- Build families and social support.
- Positive parenting attitude.
- Pregnant mothers need to be given information on how to enhance a mother-child relationship.
- Effective communication among family members to minimise family problems.
- Mothers need to spend some time with their children.

### **5.4 Alcohol abuse**

Alcohol abuse refers to misuse of alcohol. According to Stanhope and Lancaster (2004) and Fenton et al. (2013) the impact of alcohol abuse is as follows.

- Increases the risk of child neglect
- Reduces the time and money needed to take care of a child
- Reduces a person's sense of responsibility to take care of a child

If a mother or caregiver abuses alcohol, a child is not likely to get adequate care, and provision of adequate food which results in malnutrition

#### **5.4.1 Prevention of alcohol abuse**

- According to Stanhope and Lancaster (2004) the following is necessary.
- Being assertive and taking responsibility for one's own decisions
- Adopting a healthy lifestyle, which includes eating a balance diet, exercising and reducing stress
- Taking part in community activities to avoid spending time at bars and shebeens.

### **5.5 General factors affecting feeding practices negatively**

The factors below need to be taken into consideration as they also influence feeding practices of children under the age of five years.

### **5.5.1 Biological and physiological factors**

- Age of the mother: young mothers do not give enough time to feed their children.
- Maternal illness: if the mother is sick, she will not be able to feed her child.
- Infant illness: if a child is sick, she/he is not able to eat.
- Milk insufficiency: if there is poor production of milk, a baby may not get enough milk.
- Fatigue: if a mother/caregiver is tired, a child may not be fed properly.
- Nipple pain: a mother who experiences pain on the nipple, will not breastfeed her baby well.

### **5.5.2 Psychological factors**

- Anxiety and depression: mothers who are anxious or depressed are not able to feed their children properly.
- Lack of confidence.
- Lack of desire/uncomfortable with breastfeeding: mothers, who feel that feeding a baby on the breast is disgusting, are unlikely to breastfeed.

### **5.5.3 Socio-economic factors**

- Marital status: single mothers are more likely to feed their children poorly due to lack of support
- Unemployment: unemployed mothers do not have access to safe, nutritious and variety of food due to lack of income.
- Lack of support network: mothers and caregivers, who do not have support network (e.g. of close relatives), are not likely to feed their children well.
- Lack of feeding corner (especially a breastfeeding corner) at a workplace in the case of employed breastfeeding mothers.
- Education level: educated mothers are more likely to use mixed feeding than mothers with a low education.

### **5.5.4 Cultural factors and beliefs**

- Beliefs that some foods are too heavy for a child and it makes him/her sick.
- Belief that a child is not satisfied with breast milk alone.
- Considers colostrum as dirty or curdled milk.

- Belief that a mother`s milk becomes unclean if she gets involved in extra-marital affairs.
- Fear of evil eye when breastfeeding in public.
- Breastfeeding is associated with sagging breasts.

### **5.5.5 Food factors**

- Food availability and accessibility: children choose to eat what is available and what they get most.
- Children`s tastes and preferences: children do not eat the food they do not like.
- Parents` preferences and choices: mothers and caregivers tend to feed their children with food which they like and prefer.
- Food seasonality: some food is seasonal which makes it difficult to obtain; fresh wild berries and many fruits and vegetables are only available during the rainy season.

## **PART 6: INFORMATION RELATED TO FEEDING PRACTICES AND SUITABLE FOOD FOR CHILDREN UNDER THE AGE OF FIVE YEARS**

### **6.1 Information related to feeding practices**

Lack of information, related to feeding practices, leads mothers and caregivers to utilise inappropriate feeding practices thus contributing to infants and young children to develop malnutrition (USAID, 2011). Mothers and caregivers lack information on the following.

- Duration of breastfeeding
- Time of starting complimentary feeding
- Feeding frequency
- How to feed young children
- Types of foods and nutritional value of the food

### **6.1.1 Duration of breastfeeding**

Some mothers tend to stop breastfeeding as early as six months or one year due to lack of information. The recommended age for stopping breastfeeding is two years or beyond ((Kuzma, 2013). Mothers need to breastfeed exclusively for six months and continue breastfeeding for another 24 months or more. Breast milk has many benefits to both a child and mother. These were presented in the advantages of breast milk in part 2 of this training manual.

### **6.1.2 Time to start complementary food**

Complementary feeding refers to giving child breast milk and other solid or semi-solid food (Young et al, 2010). Due to lack of information some mothers and caregivers commence complementary food as early as two months. As stated in part 2 there are some risks involved in starting complementary. To avoid those risks, the following should be considered.

- Complementary food should start at six months
- As a child grows older, the amount, and types of complementary food need to be increased
- Continue breastfeeding up to two years or beyond, then stop slowly

### **Good complementary food**

According to King, Burgess, Quinn and Osei (2015) complementary food is

- Rich in energy and nutrients
- Prepared from a variety of food groups
- Clean and safe
- Soft and easy to eat
- Easy for a family to obtain and cook

### **6.1.3 Feeding frequency**

Feeding frequency refers to the number of daily meals and snacks needed by a child (King, Burgess, Quinn & Osei, 2015). Due to lack of information some children, when breastfeeding has stopped, receive less than three daily meals from their mothers or caregivers.

This has contributed to children developing malnutrition. The WHO (2016) states that the frequency of eating needs to increase as a child grows. The following guidelines indicate the daily meals needed by a child according to age (King, Burgess, Quinn & Osei, 2015).

**If a child is still breastfeeding**

- Give two to three meals plus one or two snacks a day at six to eight months
- Give three to four meals plus one or two snacks a day from nine to twenty-three months

**If a child has stopped breastfeeding**

- Give two to three meals, 250 ml cup of milk (full milk cream or infant formula) plus one or two healthy snacks a day
- From nine to twenty-three months, give three to four meals, one or two healthy snacks, and two cups of milk a day
- If no milk is available, give four to five meals plus one or two healthy snacks a day.

**6.1.4 How to feed young children**

When children refuse food, some mothers and caregivers lack information on how to feed them. They then force their children to eat. It is important for mothers and caregivers to understand a young child and to be responsive to the cues which indicate when a child is hungry or full (King, Burgess, Quinn & Osei, 2015). The following points can guide mothers and caregivers on how to feed their young children.

- Feed a child slowly, patiently and encourage the child to eat without forcing him/her.
- Sit with a child and help him/her to eat until able to manage the food.
- As a child gets older give him/her a chance to feed himself/herself.
- Make sure all food gets from bowl to mouth.
- Do not hurry a child to eat.

- Give a child his own bowl of food, to prevent feeling that he/she has to compete with other children.
- Give food which a child can hold himself.
- Talk and encourage a child to eat.
- Never force a child to eat.
- If a child is picky with certain food, mix it with other food.
- Give a child a variety of food in order to have a healthy diet.
- Feed when a child is hungry and not tired.
- Avoid distractions.
- Let a child eat with other household members.
- Make sure a child is not thirsty
- Do not give a child too much water or other drink as this will suppress his/her appetite.
- If a child refuses new food:
  - Try again after few days, or
  - Mix the food with another food the child likes, or
  - Squeeze a little breast milk over the food, so that it smells like breast milk.

### ***6.1.5 Types of food and their nutritional values***

The following food groups are important in a child's diet as stipulated by Harriman (2015).

**Dairy:** the foods in this group are excellent sources of calcium, which is important for strong, healthy bones.

**Fruit:** fruit provides vitamins, minerals, dietary fibres and many phytonutrients (nutrients naturally present in plants), that help the body to stay healthy.

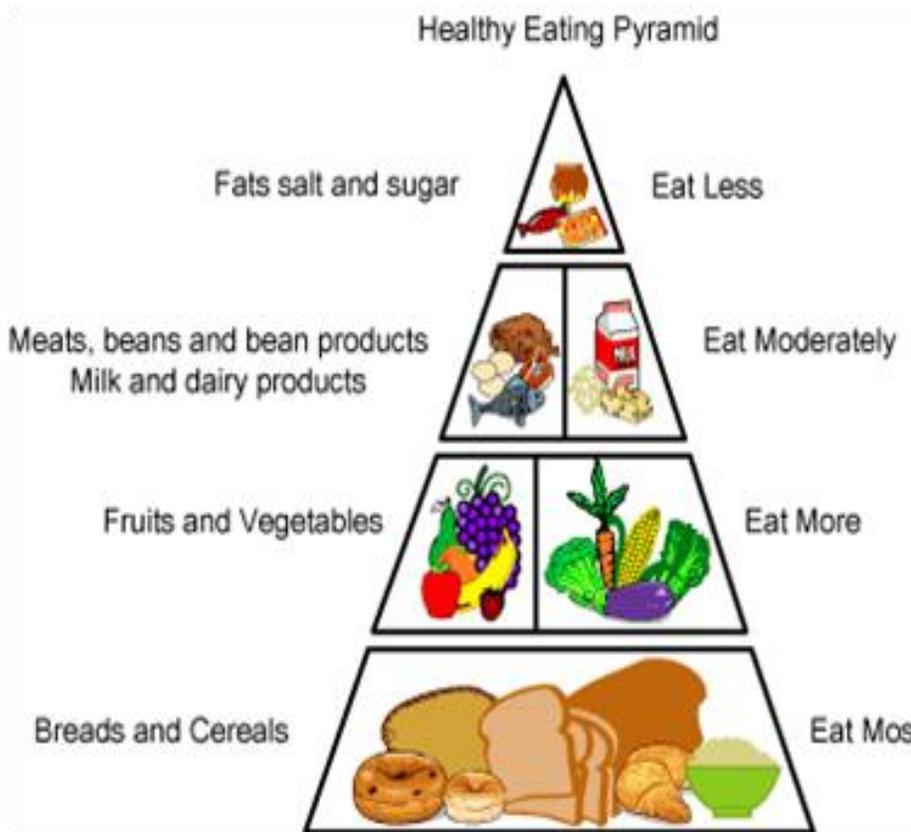
**Grain (cereal) foods:** always choose wholegrain and/or high fibre varieties of breads, cereals, rice, "mahangu", etc. Refined grain products (such as cakes or biscuits) can be high in added sugar, fat and sodium.

**Meats and poultry, fish, eggs, nuts and seeds:** the body uses the protein to make specialised chemicals such as hemoglobin and adrenaline.

Protein also builds, maintains, and repairs the tissues in our body. Muscles and organs (such as heart) are made of protein.

**Vegetables, legumes and beans:** vegetables should make up a large part of daily food intake and should be encouraged at every meal (including snack times). They provide vitamins, minerals, dietary fibres and phytonutrients to help the body stay healthy.

Figures 6.1 to 6.3 cover nutritional foods.



**Figure 6.1.** Healthy eating pyramids (Australian dietary guidelines, 2013).

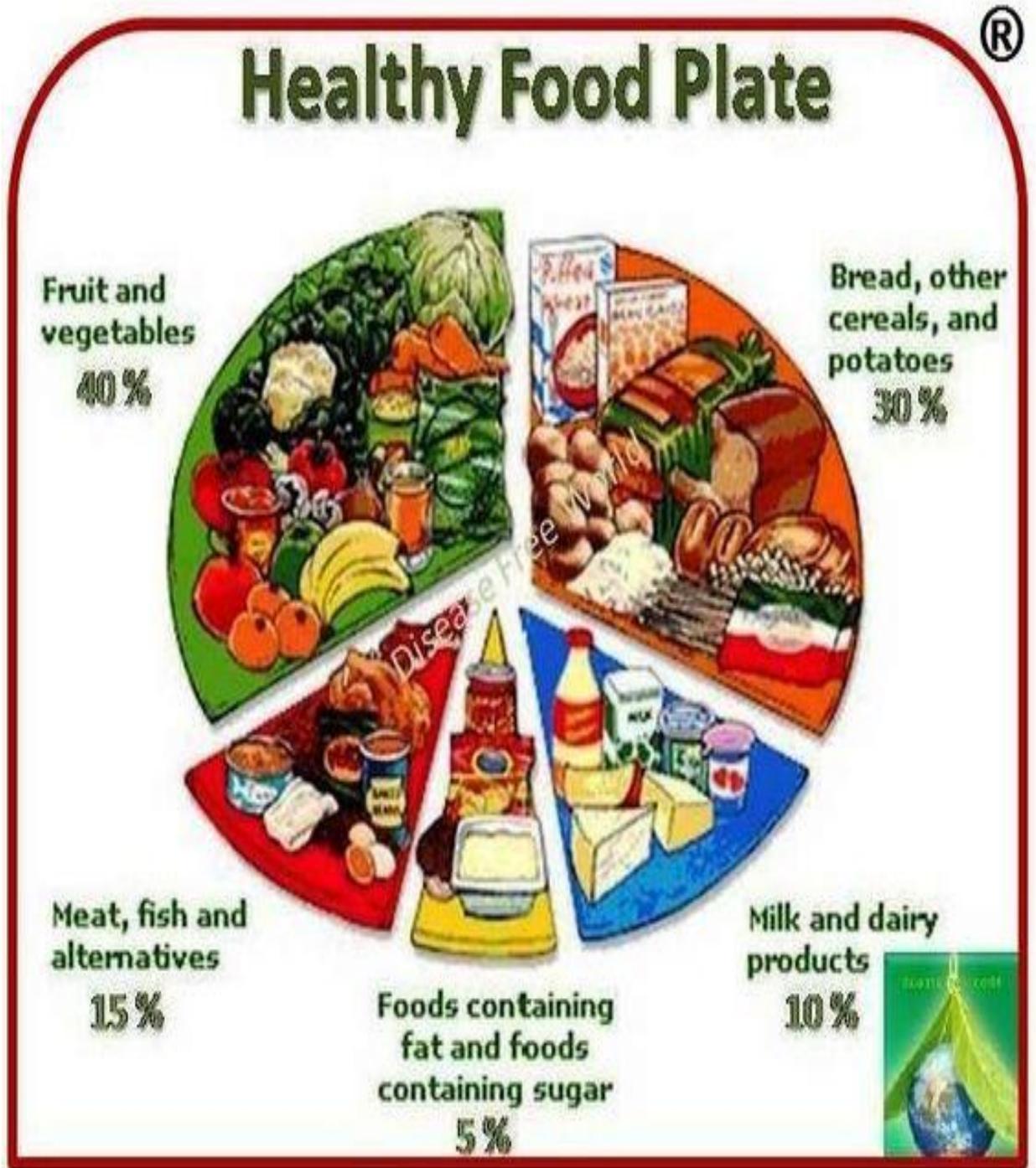


Figure 6.2 Healthy food plate (Harvard School of Public Health, 2011).

# Healthy Living Table

Food Group	What they do	Foods that contain them
Protein	Builds, grows and repairs our cells	eggs, cheese, milk, meat, poultry, fish, beans, lentils
Carbohydrate (starches)	Gives us energy	bread, pasta, rice, cereal
Carbohydrate (sugars)	Gives us energy	sweets, biscuits, cakes, ice cream
Fats	Gives us energy that is stored	Butter, cooking oils, milk, cheese, meat
Fibre	Digests our food more easily	fruit, vegetables, cereal, wholegrain bread
Vitamins and Minerals	Keeps our cells healthy	fruit, vegetables
Water	Keeps us healthy and hydrated	water, milk, juices, tea

**Figure 6.3** A healthy living tables.

### 6.1 Suitable foods for young children

Mothers and caregivers lack information on the types of food suitable for children under the age of five years. They then give food which they think is good for a child. As a result some children are given food from only one food group which results in a deficiency of some nutrients. The WHO recommends that children under the age of five years need to eat different types of food so that they can grow and develop normally. Different nutrients are found in different food groups (Vasuthevan & Mthembu, 2013). Examples are presented below.

- Energy food: milk and milk products
- Body tissue building foods: animal products and legumes such as meat, chicken, fish, eggs, beans, and nuts
- Protective food: fruits and vegetables
- Grains such as pearl millet flour, and bread

### **Nutrients found in different food**

The following are nutrients in different food (Vasuthevan & Mthembu, 2013).

- Milk and milk products: source of protein, fat, vitamin A, B, D and calcium
- Animal products and legumes: source of protein, fats, vitamin A, B, D and iron
- Fruit and vegetables: source of carbohydrates, vitamin C and mineral salts
- Grains: source of carbohydrates

### **Examples of food found in food groups including local food**

The below are example of food groups (Vasuthevan & Mthembu, 2013).

- Milk and milk products: fresh milk, skimmed milk, yoghurt
- Animal product and legumes: red meat, poultry, fish, eggs, beans and nuts
- Fruits: apples, bananas, grapes, wild berries, palm fruits, fig fruit
- Grains: brown and white bread, porridge and soft porridge made from mahangu flour, rice, macaroni

## **PART 7: RESOURCES WHICH INFLUENCE FEEDING PRACTICES**

If some resources are not available, this can negatively influence feeding practices. Lack of such resources includes household food insecurity and financial difficulties.

### **7.1 Household food insecurity**

Household food insecurity refers to a limited availability of food, and includes limited ability to acquire socially and culturally acceptable food (Salarkia, Neyestani, Omidvar & Zayeri, 2015). In simple terms household food insecurity means a household does not have sufficient, safe and nutritious food throughout the year to meet the nutrients needed by every family member. Household food insecurity results in some children eating less frequently, or eating food from one food group, and often being hungry.

#### **7.1.1 Prevention of household food insecurity**

Household food insecurity can be prevented by adopting the following strategies (King, Burgess, Quinn & Osei, 2015).

- Homestead food production (crops, animals and poultry)
- Food storage
- Buying of food when possible
- Food preparation

##### ***7.1.1.1 Homestead food production***

Homestead food production includes gardening and raising animals and has the following benefits.

- Usually it is low-cost, because household members do the work
- It can provide fresh and healthy foods
- It can also provide surplus food for a household to sell

Foods that can be produced from homestead (local foods)

- Vegetables: wild spinach (omboga), tomatoes, pumpkins, maize
- Fruits: wild berries, guavas, pawpaw, water melon
- Legumes: beans, sweet potatoes, ground nuts
- Chicken and eggs
- Milk and meat
- Cereals: pearl millet

#### **7.1.1.2 Food storage**

- Food needs to be stored properly
- Crops need to be well dried to prevent mold development
- Household needs to handle their harvest well e.g. beans, groundnuts can be dried and stored
- Pearl millet can also be dried, harvested and stored
- Fish and meat can be dried in the absence of the refrigerator
- Wild spinach (omboga) can be dried

#### **7.1.1.3 Buying of food**

Some food can be bought if the household can afford to do so. The following need to be considered.

- Buy food that:
- Provides essential nutrients
- Is clean and safe

Avoid buying unhealthy food, drinks and snacks such as chips, sweets, biscuits and sugary drinks, which lead to tooth decay.

#### **7.1.1.4 Food preparation**

A healthy meal needs to be prepared for children because it provides the correct amount of nutritious food. Children need to be given healthy snacks.

It is important to follow the Namibian dietary guidelines when preparing meals which include the following according to FAO (2000).

- Eat a variety of foods
- Eat fruit and vegetables every day
- Eat more fish
- Eat beans or meat regularly
- Use whole grain products
- Use less salt and iodised salt whenever possible
- Avoid drinking alcohol
- Consume clean and safe water and food
- Achieve and maintain a healthy body weight

## **7.2 Financial difficulties**

Families with no income are usually food insecure as they have no money to buy nutritious food (Kennedy, 2014).

Families with low or no income cannot afford to buy food which includes fruit and vegetables.

Financial difficulties prevent mothers and caregivers from feeding their children with nutritious food (Kennedy, 2014).

Financial difficulties can be overcome through income generating projects. These allow autonomy and being self-sufficient, and families can secure an income which is necessary to buy food. An example of income generating project includes a person using her skills to serve another person, or produce something and sell it to get money.

## PART 8 VALIDATION OF TRAINING MANUAL

### **8.1 Evaluators of the training manual**

The following people were involved in the evaluation of this training manual.

- Research supervisor (community department), and co-supervisors (midwifery department),
- Senior Health programme administrator, Nutrition department, MOHSS
- Public health, medical practitioner responsible for pediatric department
- Participants in the programme.

### **8.2 Aspects evaluated**

The following aspects were evaluated.

- organisation of the training manual
- content validity
- relevance and usefulness of the manual

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## ANNEXURE S: EDITING CONFIRMATION LETTER

MARLEO'S COMMUNICATION SERVICES

Cc 2009/033794/23

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23 June 2017

**Confirmation of sub-editing dissertation**

*An educational programme to empower mothers and caregivers on feeding practices of children under the age of five years in Oshikoto region, Namibia*

I, Leonie Munro of MarLeo's Communication Services, confirm that I subedited the text of the abstract, the chapters, and annexure R, of the above dissertation.

The final proofreading of the dissertation is the responsibility of Ester Mulenga.



MLC Munro