ASSESSMENT OF INFANT AND YOUNG CHILD FEEDING PRACTICES AND NUTRITIONAL STATUS OF UNDER-FIVE CHILDREN IN SOME INTERNALLY DISPLACED PERSONS (IDPS) CAMPS, WITHIN FEDERAL CAPITAL TERRITORY.

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JUNE, 2021

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A THESIS SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES, AHMADU BELLO UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIRMENTS FOR THE AWARD OF MASTER OF SCIENCE (MSc) IN NUTRITION

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JUNE, 2021

DECLARATION

I hereby declare that this thesis entitled “ASSESSMENT OF INFANT AND YOUNG CHILD FEEDING PRACTICES AND NUTRITIONAL STATUS OF UNDER FIVE CHILDREN IN SOME INTERNALLY DISPLACED PERSONS (IDPS) CAMPS, WITHIN THE FEDERAL CAPITAL TERRITORY” was performed by me in the Department of Biochemistry under the supervision of Professor A. B. Sallau and Professor D.A Ameh. The information derived from the literature has been duly acknowledged in the text and a list of references provided. No part of this thesis was previously presented for another degree or diploma at any Institution.

__________________   __________________

Nakakana Hussaina   Date

CERTIFICATION

This thesis titled "ASSESSMENT OF INFANT AND YOUNG CHILD FEEDING PRACTICES AND NUTRITIONAL STATUS OF UNDER FIVE CHILDREN IN SOME INTERNALLY DISPLACED PERSONS (IDPS) CAMP, WITHIN THE FEDERAL CAPITAL TERRITORY" by Nakakana, Hussaina meets the regulations governing the award of the degree of Master of Science (MSc) of Ahmadu Bello University and is approved for its contribution to knowledge and literary presentation.

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DEDICATION

This work is dedicated to all the people suffering from displacement in Africa. May Allah (S.W.T) have mercy on them, Amin.

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All acclamations and appreciations are for Almighty Allah, who bestowed mankind with knowledge and wisdom. Allah knows of known and unknown and equipped his humble creature with the mental facility to search for his creation. This is his mercy and grace that enabled me to complete this work.

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ABSTRACT

A study on the assessment of feeding practices and nutritional status of under-five children in internally displaced person camp, Federal Capital Territory, Abuja-Nigeria was carried out. The study was a cross-sectional descriptive study where one hundred and eighty (180) caregivers and child pair were interviewed using a semi-structured questionnaire. Anthropometric measurements of children were taken using a Seca weighing scale, stadiometer and infantometer. Data analysis was done using SPSS version 25.0 and WHO Anthro software version 3.2.2 Caregivers age ranged from 15-49 years, more than 50% of the caregivers in the IDP`s were not employed while 49% do not have any form of education. Two-thirds (68.9%) are in polygamous marriages, and 64.7% had 1-3 children in the camp. From anthropometric data obtained, 62.2% of the children were stunted, 12.6% wasted and 48.7% underweight. The main source of drinking water was from protected sources like borehole (24%) while the predominant source of energy for cooking and the main type of toilets in the camp tents were wood (85.7%) and bushes (67%) respectively. On average, over 70% of mothers were still breastfeeding at the time of the survey and the duration of breastfeeding was between 13-24 months (73.4%). Only 2.3% of mothers in the camps practised exclusive breastfeeding for the first six months but in addition to breastmilk over three-quarter of caregivers gave plain water. The caregivers (50%) bottle-fed their children with infant formula mostly from the 6th month. Few caregivers (9%) always sterilized the bottles they use. Complementary foods were introduced to the majority (41.2%) of the children much earlier at the 3rd month and not the 6th month recommended, while some caregivers introduced complementary foods at 1-2 months (17.8%). The caregivers farm vegetables and eat more cereals and gruel (70%). There was a significant association $X^{(2)} = 2.454$, $p = .025$ between exclusive breastfeeding and the nutritional status of the under-five children in the IDP camps. The prevalence of malnutrition was high with poor child feeding practices.

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LIST OF ABBREVIATIONS ABBREVIATIONS MEANING

IYCF	Infant and Young Child Feeding
FGD	Focus Group Discussion
UNICEF	United Nation Children`s Fund
WHO	World Health Organisation
NPC	National Population Commission
RTI	Respiratory Tract Infection
MNCHW	Maternal Newborn Child Health Week
USAID	United States Agency for International Development
IDPs	Internally Displaced Persons
FMOH	Federal Ministry of Health
NDHS	National Demographic Health Survey
IOM	International Organization for Migration
IDMC	Internal Displacement Monitoring Centre
NEMA	National Emergency Management Agency
BoF	Bottle feeding 0–23 months
CBF	Continued breastfeeding 12–23 months
EBF	Exclusive breastfeeding under six months
EIBF	Early initiation of breastfeeding
EvBF	Ever breastfed
MAD	Minimum acceptable diet 6–23 months
MDD	Minimum dietary diversity 6–23 months
WASH	Water, Sanitation and Hygeine
MICS	Multiple Indicator Cluster Surveys
NPHCDA	National Primary Health Care Development Agency

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the Study

Nutritional status is the state of the body concerning each nutrient, body size and overall condition (WHO, 2013). It is a powerful factor in the prevention and treatment of diseases (WHO, 2013).

Nutritional status affects immune response and response to medical therapies (Fieldman *et al.,* 2010). Globally, almost seven million children under the age of five die every year, and undernutrition directly or indirectly accounts for about 35% of all the deaths among these children (WHO, 2012). The risk factors of malnutrition are multifaceted and complex, these include poverty, the seasonal supply of food, poor infant and young child feeding (IYCF) practices, limited access to healthcare, unsafe drinking water and inadequate sanitation (WHO, 2012). In Nigeria, an estimated 60% of all child deaths in the country are attributable to underlying malnutrition that results from poor infant and young child feeding and hygiene practices (FMOH, 2012).

Infant and young child feeding (IYCF) practice is a set of well-known and common recommendations for appropriate feeding of newborn and children less than 2 years of age (FMOH, 2012); it comprises breastfeeding as well as complementary feeding which plays a major role in determining the nutritional status of children (Das *et al.,* 2013). Optimal IYCF practices play an important role in reducing early childhood morbidity and mortality, as well as improving early child growth and development (FMOH, 2012). Global estimation showed that 34.8% of infants are exclusively breastfed for the first six months of life, while the majority of infants (76.2%) receive some other foods or fluids in the early months (WHO, 2008). Adequate nutrition is required in early childhood to ensure healthy growth, proper organ formation and function, strong immune system, and neurological and cognitive development (UNICEF, 2012). Ogbo and Agho, (2015) have reported that caregivers level of education, socioeconomic status, type of delivery and lack of access to healthcare services are among the factors affecting optimal lYCF practices.

Breastfeeding is the healthiest and least expensive feeding method that fulfils the infant's need (Oche *et al.,* 2011: Okafor *et al.,* 2014). It is considered the most complete nutritional source for infants because breast milk contains the essential fats, carbohydrates, proteins, and immunological factors needed for infants to thrive and resist infection in the first year of life (Singhal, 2009; Okafor *et al.,* 2014). It has been estimated that exclusive breastfeeding reduces the infant mortality rate by up to 13% in low-income countries (Jones *et al.,* 2003). Similarly, the work of Kayode *et al*. (2012) confirmed that breastfeeding of children for more than 18 months contribute immensely to reducing the risk of under-five mortality.

A revised set of population- based Indicators of IYCF was developed in 2007 which came up with a set of simple, valid and reliable indicators that measure food-related aspects of complementary feeding (including dietary variety and frequency of eating episodes), as well as current guidance on the feeding of non-breastfed infants and young children up to 24 months of age which was aimed at enhancing IYCF practices to reduce the risk of under-five mortality (WHO, 2008). This is a major strategy for the prevention of infant and child malnutrition (Bhutta, 2010).

Conflicts and disasters often cause large-scale displacement of people due to the destruction of homes and environment, religious or political persecution or economic necessity (IDMC, 2016). Internally displaced persons (IDPs) are 'persons or groups of people who have been forced or obliged to flee or leave their homes or places of habitual residence, in particular as a result of, or to avoid the effects of armed conflicts, situations of generalized violence, violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognized state border'. (IDMC, 2016) They are distinct from refugees who are displaced outside their national borders. Furthermore, IDPs are often more disadvantaged than refugees because they do not benefit from the assistance provided by international agencies unless the national government requests such assistance (IOM, 2020).

Between July and October 2012, the National Emergency Management Agency (NEMA)

estimated in a published report that a total of 7.7 million people were affected by the flood disaster across the federation. Out of the affected population, 2.1 million people were internally displaced (IDPs); 363 persons died and 18,282 people were treated for injuries they sustained during the flooding. As of January 2014, about 165,000 people were displaced by both floods and conflicts in IDP camps in Nigeria. The population of displaced persons in Nigeria is estimated at 3.3 million

(NEMA, 2015).

1.2 Statement of Research Problem`

Malnutrition continues to be a problem of public health importance based on the reported number of infant and maternal deaths in Nigeria which was reported second highest in the world after India (WHO, 2013). Suboptimal IYCF practices directly affect the nutritional status of children under two years of age and ultimately, impact child survival (Anjana and Dattatreya, 2015). The NDHS (2013), reported a stunting prevalence of 37% among children under 5 years of age, while 29% and 18% were underweight and wasted, respectively. Also, Black *et al*. (2013) suggested that suboptimal breastfeeding increases the risk of child mortality in the first two years of life. Infant and Young Child Feeding practices in Nigeria are characterized by low rates of early initiation of breastfeeding after birth, very low rates of exclusive breastfeeding (17%) and poor quality of complementary foods that result in deficiencies of vitamins and minerals (FMOH, 2012; NDHS,

2013). Thus, assessment of IYCF practice data is low at the community level especially internally displaced person camps in Nigeria.

Nigeria is reaching a peak in its 20 years of a humanitarian crisis, driven mainly by armed conflict, generalized insecurity, extensive internal displacement and the situation is compounded by poverty. Some 1.64 million Nigerians require emergency assistance or livelihood support, which is nearly half of the displaced population (IDMC, 2020). Currently, 1 in 5 children under the age of five is acutely malnourished, while 1 in 20 is severely malnourished. Nigeria now has one of the highest levels of malnutrition in the world, with up to 240,000 children 6-59 months affected, of which 63,000 are severely malnourished. More than two-thirds of these children are located in Abuja, the Federal Capital Territory of Nigeria. Internally displaced persons (IDP) children now have one of the highest levels of malnutrition in the world, with up to 40,000 cases of malnutrition reported (IDMC, 2016).

1.3 Justification

- This work will unravel the much-needed information/data on some nutritional problems associated or found in internally displaced peoples camps and literature evidence of nutritional problems encountered in them.
- There is a paucity of information on the relationship between infant feeding practice and the nutritional status of children in IDP camps.
- This study will give a better understanding of how a change in socioeconomic status affect infant feeding practices and nutritional status in IDP camps
- To the best of our knowledge, there is hardly any data in Nigeria showing the nutritional status and morbidity patterns of children in IDP camps in the Northern part of the country.
- A comprehensive study on the relationship between infant feeding practices and the nutritional status of under-five children must be conducted which will help to identify current good practices to be supported for improving the feeding practices as effective strategies for solving childhood malnutrition.

1.4 Aim and Objectives

1.4.1 Aim

This study aims to assess the infant and young child feeding practices among caregivers of underfive and the nutritional status of under-five children in the IDP camps in FCT Abuja.

1.4.2 Specific Objectives

i. To assess the socio-demographic characteristics of caregivers of under-five children in the

IDP camps. ii. To evaluate the infant and young child feeding practices among the caregivers in the IDP camps.

iii. To assess the hygienic practices of the caregivers of under-five in the IDP camps. iv. To assess the nutritional status of the under-five children in the IDP camps.

v. To determine the relationship between infant feeding practice and the nutritional status of the under-five children in the IDP camps.

1.5 Null Hypothesis

IYCF practices do not affect the nutritional status of under-five children in an internally displaced person camp within FCT, Abuja.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Infant and Young Child feeding practices

Appropriate feeding practices are essential for the nutrition, growth, development and survival of infants and young children (Kumar *et al.,* 2006; Tessema *et al.,* 2013; Ekerette and Olukemi,

2016). The first two years of life are critical stages for a child's growth and development (WHO, 2013). Damage caused by nutritional deficiencies during this period could lead to impaired cognitive development and low human and economic productivity (Grantham *et al.,* 2007 and Victoria *et al.,* 2008). The major causes of malnutrition in the first two years of life are poor breastfeeding and complementary feeding practices which result in high rates of morbidity from infectious diseases (Murage *et al.,* 2011). The aspect of IYCF practice include early initiation of breastfeeding, exclusive breastfeeding for the first six months, continued breastfeeding, appropriate timing of introduction of complementary foods, and optimum quantity and quality of

the foods consumed (WHO/ UNICEF/ USAID, 2010). Following the WHO/UNICEF

recommendations on improving infant and young child feeding practices, Nigeria initiated several programs and policies to promote and support infant and young child feeding practices (FMOH, 2012); these included the Baby-Friendly Hospital Initiative (BFHI) in 1992 (Ogunlesi *et al.,* 2004),

National Breastfeeding Policy in 1998 by Federal Ministry of Women and Youth Development in

2000, National Policy on Food and Nutrition in 2001 and National Policy on Infant and Young

Child Feeding in 2005 (FMOH, 2005). Some improvements were observed in early or timely initiation of breastfeeding following the introduction of these programmes and policies, from 31.4% in 1990 to 39.2% in 2008 (UNICEF, 2012). In comparison to other developing countries such as Ethiopia, India and Indonesia where the national policy, strategy, and plans of action and health system framework to improve IYCF practices are poor, Nigeria has established a national legislative and health system framework to promote and support infant and young child feeding practices (UNICEF, 2012). Despite these initiatives, malnutrition, and early childhood feedingrelated diseases and mortality remain problems of public health importance in Nigeria (NPC, 2013). Although, there has been a drop in the proportion of children under 24 months of age who were fed by IYCF (breastfeeding and complementary feeding) guidelines in Nigeria, from 30% in

2018 (NDHS, 2018) to 10% in 2013 (NDHS, 2013).

2.2 Feeding Practices

2.2.1 Breastfeeding

The composition of breast milk changes quality to meet the nutritional and immunological needs of the baby at different stages of child growth (Monika and Raj, 2004). The numerous benefits of breastfeeding are of public health relevance for developing countries as well as for industrialized nations. Breastfeeding is a cornerstone of a healthy foundation that confers both short-term and long-term benefits to the child (WHO, 2000).

Short-term effects include; lowering the incidence of many infant and childhood diseases, including ear and respiratory tract infections (RTI), diarrhoea and sudden infant death syndrome (WHO, 2000; Grummer, Strawn and Mei, 2004). Another term effect of breastfeeding is that it reduces infections and mortality among infants as well as improves mental and motor development

(Murage *et al.,* 2011). While the long-term outcomes of Sub-optimal breastfeeding practice are blood pressure, type-2 diabetes, serum cholesterol, overweight/obesity and reduced intellectual performance (Murage *et al.,* 2011; WHO, 2013). As a result of both the short and long term effects of suboptimal breastfeeding practices, the Nigerian government introduced Maternal Newborn Child Health Week (MNCHW) along with other interventions designed to encourage appropriate feeding practices which include exclusive breastfeeding for the first six months of life, early initiation of breastfeeding with colostrum, timely and appropriate complementary feeding practices, and adequate micronutrient intake (particularly twice-a-year which consist of vitamin A, iron, iodine, and zinc supplementation and deworming of children above 12 months of age).

These key nutrition-specific interventions were scaled up in health facilities across the nation

(NPHCDA, 2019)

2.2.2. Early Initiation of Breastfeeding

Early initiation of breastfeeding (EIB) is a simple and cost-effective intervention that benefits the health of both mothers and newborns (UNICEF, 2002). There have been many cultural practices on how best to breastfeed children however the WHO and UNICEF, recommend initiation of breastfeeding within the first hour after birth. Early initiation of breastfeeding ensures more intake of the highly nutritious colostrum by the child. It contains a high concentration of immunoglobulins, especially immunoglobulin A (IgA) which has a protective role against viral and bacterial pathogens in the gut (UNICEF, 2002). Studies have shown that 22% of neonatal deaths could be prevented if all infants are put to the breast within the first hour of birth (Edmond *et al.,* 2006).

The merits of early initiation of breastfeeding also include the mother, early suckling stimulates the release of prolactin, which helps in the production of milk, and oxytocin (responsible for the ejection

of milk) and it is also interrelated with early contact that is important for mother-to-infant relationships that have long-lasting effects on health and development (WHO, 2010). Other benefits include decreased risk of subsequent breast and ovarian cancers and hip fractures (Gartner *et al.,* 2005). However, despite the benefits of EIB and the efforts made to help mothers by increasing community awareness about the benefits of early and exclusive breastfeeding and addressing harmful practices, such as discarding colostrum that may prevent optimal infant feeding (FMOH, 2011), the results of National Nutrition and Health Survey showed that 22% of mothers practice EIB within one hour after birth in the country respectively (NNHS, 2014; NDHS, 2018)

2.2.3 Exclusive Breastfeeding

Exclusive breastfeeding refers to feeding an infant with breast milk from the mother or a wet nurse or expressed breast milk without any additional solid or liquid foods, except for oral rehydration salt, syrups of vitamins, minerals and medicines (WHO, 2008).

Infants should be exclusively breastfed from birth to six months and continued to two years, with the introduction of complementary food after the age of six months (WHO, 2008; National Coordinating Committee on Food and Nutrition, 2010). Exclusive breastfeeding confers immunity against childhood illnesses such as diarrhoea, pneumonia and measles and lowers susceptibility to obesity, type-2 diabetes and high blood pressure in later life (WHO/OECD, 2012). For mothers, breastfeeding enhances bonding, reduces the risk of breast and ovarian cancer, lowers rates of obesity and aids in fertility control (WHO/OECD, 2012).

Scientific evidence indicates that infants not exclusively breastfed are at increased risk of death from diarrhoea, pneumonia and neonatal sepsis (Jones *et al.,* 2003). Also, a systematic review by

Kramer *et al.,* (2004) and Oche, (2011) confirmed that exclusive breastfeeding in the first 6 months decreases morbidity from gastrointestinal and allergic diseases, without any negative effects on growth. Conversely, non-EBF has been associated with high infant mortality, increased susceptibility to diseases and risk of dying from pneumonia and diarrhoea; and several life-long defects such as cognitive abnormalities, poor academic performance, decreased productivity and impaired social and intellectual development (Setegn *et al.,* 2012). As a result of the effect of nonEBF, Nigeria introduced a national nutrition strategy to promote exclusive breastfeeding through the first 6 months (NDHS, 2013). Despite the importance of EBF, effects of non-compliance to EBF and the efforts of the national strategy, overall, only 17% of children less than 6 months are exclusively breastfed and this has remained unchanged since 2008 in Nigeria (NDHS, 2018; NDHS, 2013). Exclusive breastfeeding status of children is, therefore, an issue of concern due to the low percentage.

2.2.4 The Status and Benefits of Complementary Feeding Practices

The WHO recommends nutritionally-adequate, safe, age-appropriate complementary feeding starting at six months (WHO, 2003). From six months onwards, when breast milk alone is no longer enough to meet all nutritional requirements, infants enter a particularly vulnerable period

of complementary feeding during which they make a gradual transition to eating family foods most of which are not enough to meet the daily nutrient requirement hence deficiency and malnutrition (Bhan, 2010).

Inappropriate timing in the introduction of complementary foods and improper feeding practices deprives the infant of optimum nutrition, leading to under-nutrition and increased mortality and morbidity (Hazir *et al.,* 2011). According to the new WHO indicators, the timeline is assessed by whether infants aged 6 to 8 months are receiving solid, semi-solid or soft food irrespective of being breastfed or not (WHO *et al.,* 2010). Bottle feeding, fast foods and lack of proper family support are the most important barriers of appropriate complementary feeding practices followed by prelacteal feeding, formula feeding, commercial cereals, feeding during sleep and negative attitude of mothers/caregivers all which a recipe for malnutrition among under-five children (Paul *et al.,* 2015). The WHO recommended meal frequency of 2-3 times a day for infants between 6-8 months old, 3-4 times daily for 9-11 months old and in case of 12-23 months old children, additional nutritious snacks should be offered 1-2 times per day, as desired (WHO, 2010) however evidence from a survey carried out in northwestern Nigeria showed low compliance and high prevalence of malnutrition among under-five children (Anigo *et al.,* 2009). Studies in four anglophone West African countries have revealed that children who were given foods according to the timing set by the WHO are well-nourished when compared with children who were introduced to solids too early (Issaka *et al.,* 2014). Data from the NNHS (2014) showed that more than 70% of children in Nigeria started receiving complementary foods at the appropriate age of 6-8 months. In the case of dietary diversity and frequency, only 18% of children aged 6-23 months (breastfed and nonbreastfed) received the minimum acceptable diet (NNHS, 2014).

In achieving dietary diversity, the use of fortified complementary foods, vitamin and mineral supplements may be necessary to ensure the adequacy of particular nutrient intakes to avoid malnutrition among children (Bhan, 2010). To guarantee the satisfaction of the child's nutritional needs, complementary foods must be timely, adequate, innocuous, offered with the frequency and consistency that are adequate for the age, and must attend to the child's feelings of hunger and satiety (Parada, *et al.,* 2007) these are necessary ingredients to prevent malnutrition. Hence to avoid undernutrition among children, meals should include adequate quantities of cereals, legumes and nuts, meat/poultry/fish, dairy products, eggs, as well as vitamin A-rich fruits and vegetables every day (UNICEF, 2011). A minimum of 4 out of the seven food groups is viewed as sufficient to meet the child’s needs. Overall, only 10% of children aged 6-23 months are fed appropriately to avoid malnutrition based on recommended infant and young child feeding (IYCF) practices in

Nigeria (NDHS, 2013).

2.3 Conceptual Framework of Malnutrition

The interplay between the two most significant immediate causes of malnutrition, inadequate dietary intake and illness tends to create a vicious cycle. A malnourished child, whose resistance to illness is compromised, is likely to fall ill and thus worsening malnutrition case (UNICEF, 1990). Factors that cause malnutrition such as poverty, the seasonal supply of food, gender inequality, poor infant and young child feeding (IYCF) practices, limited access to healthcare, unsafe drinking water and inadequate sanitation (WHO, 2012) predispose children to increased prevalence of malnutrition and infectious diseases like diarrhoea, coughs and colds. Infections cause loss of appetite, mal-absorption and metabolic and behavioural changes (UNICEF, 2016). These infections, in turn, increase the body's requirements for nutrients, which further affect the eating pattern of young children and how they are cared for (WHO, 2013).

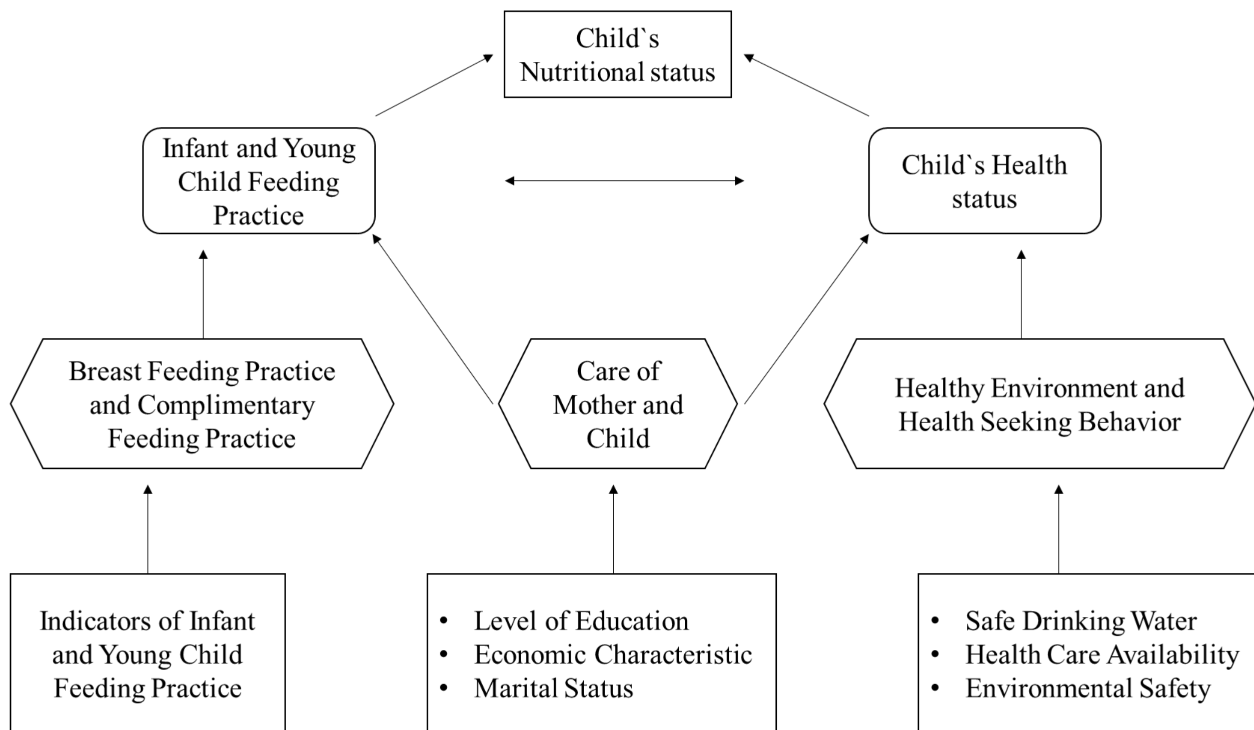

Figure 2.1 Conceptual framework of child malnutrition. (Adapted from UNICEF, 1999).

2.4 Maternal Demographic and Socioeconomic Status Characteristics in relation to Child's Nutritional Status.

Level of education of caregivers was reported to have an inverse relationship with stunting and household income (WHO, 2013). A study conducted by Ojiako *et al.* (2009) in Kaduna and Kano states among pre-school children showed an inverse association of maternal level of education with the nutritional status outcome. Children in rural areas are more likely to be stunted (43%) than those in urban areas (26%), and the pattern is similar for severe stunting (26% in rural areas and 13% in urban areas) (Ojiako *et al.,* 2009).

2.5 Nutritional Status of Children in Relation to Feeding Practices

Nutritional status is an integral component of the overall health of an individual and provides an indicator of the well-being of children living in a particular region (Goon *et al.,* 2011). Adequate growth and nutritional status of children are monitored by the use of anthropometric indices (MICS, 2017).

Nutrition has a great impact on a child's life and feeding practices have a direct impact on the nutritional status and well-being of a child (Malla and Shrestha, 2004). In Sub-Saharan Africa, the prevalence of malnutrition among the group of under-fives was 41% (WHO, 2010). Results of

NDHS (2013) showed that 37% of children under the age of 5 are stunted (chronic malnutrition), 18% were wasted (acute malnutrition), and 29% were underweight (combined malnutrition). Thus, from 2008 to 2013 there was 4% decline in the proportion of Stunting in Nigeria (NDHS, 2013).

Nutritional status data are central to improving the health of the children in this generation and also for the overall development of developing countries soon (NDHS, 2013).

2.6 Internally displaced persons and feeding practices

At the end of 2014, of the global 38 million forcefully displaced by armed conflicts and generalized violence, Nigeria accounted for at least one million. Between July and October 2012, the National Emergency Management Agency (NEMA) estimated in a published report that a total of 7.7 million people were affected by the flood disaster across the federation. Out of the affected population, 2.1 million people were internally displaced (IDPs); 363 persons died and 18,282 people were treated for injuries they sustained during the flooding. As at January 2014, about 165,000 people were displaced by both floods and conflicts in IDP camps in Nigeria.The population of displace persons in Nigeria is estimated at 3.3 million people (NEMA, 2015). A recent report, Silvia *et al* (2018) enumerates that feeding practices which refer to the behaviours of parents that influence children's eating. Families living in informal settlements/slums struggle to provide the basic needs to their children; however, United Nations Children"s Fund (UNICEF) report (2002) suggested that the overall global food shortage precipitates child malnutrition, but poverty and child care practices such as feeding practices and responsive caregiving are major factors contributing to malnutrition. Alemu, (2019) opined that malnutrition is increasingly being replaced with the more specific terms “undernutrition” and “overnutrition” and that both are important in terms of health and development outcomes. They further emphasize that the coexistence of undernutrition and overnutrition in the same country (double burden) is a global public health challenge. According to the World Health Organization (WHO), UNICEF and World Bank joint child malnutrition estimates report (2012), high prevalence levels of stunting of children under five years are experienced in Africa, 36% in 2011 and this remains a public health problem.

The joint child malnutrition estimates report noted that the prevalence of under-five overweight increased from 4% in 1990 to 7% in 2011 in Africa; Food and Agriculture Organization (FAO) report (2013) notes that the prevalence of overweight and obesity is increasing even in low-income countries where it coexists with high rates of undernutrition, they observed increase in the prevalence of overweight and obesity as occurring in conjunction with a marked shift in dietary consumption patterns worldwide; whereby there is increased consumption of foods high in fat and sugar with concurrent decreased consumption of grains, fruit and vegetables. UNICEF (2012) adds that a diet of saturated fats, refined sugars and salt 2 combined with sedentary lifestyle puts children at increased risk of obesity and chronic ailments such as heart disease, diabetes and cancer. One of the indicators used to assess progress towards MDG 1 (eradicate extreme poverty and hunger) is the prevalence of children under 5 years old who are underweight, or whose weight is less than it should be for their age (stunted), (UNICEF, 2009). This report also indicates that the achievement of other MDGs, including goals to achieve universal primary education (MDG 2), reduce child mortality (MDG 4) and improve maternal health (MDG 5) is dependent on achieving

MDG 1.

2.6.1 Internally displaced persons and Malnutrition

The world has had to content with the menace of insurgencies as seen in the cases of Hezbollah in

Lebanon, Taliban in Pakistan, the Syrian Islamic Liberation in Syria as well as the Al-Qaeda in Afghanistan to mention a few. Africa has had and is still having her fair share of insurgencies that has severely ravaged the continent since many of its states gained independence. The National

Movement of Azawad (MNLA), Al- shabaab in Somalia, the Lord's Resistance Army in Central

African Republic, the M23 Rebels in Democratic Republic of Congo, the Al-Qaeda in the Islamic Maghreb (AQIM) in Mali are some of the armed groups that over the time have threatened the security and general development of the region. The activities of these grouphave wrecked unimaginable havoc on the people, causing a rise in humanitarian crisis in form of displacement of people, refugee incursion into neighboring countries, spread of disease, gender and sexual based violence as well as food insecurity within the continent and the world at large. (Hughes, 2012). Malnutrition is a global problem in the developing countries, the high mortality rates among children due to infectious disease is a reflection of their poor nutritional states (UNICEF, 2009). Malnutrition is a public health problem among children under five years of age in developing countries with the outcome usually being high in IDPs. Children are one of the major vulnerable groups to malnutrition. Children under five years of age are more vulnerable because they are at a stage of rapid growth and development and their immune system is not fully developed to fight infection (Silvia et al., 2018). The displaced population, estimated at 230,000 persons and the poor urban residents of Northern Nigeria remain chronically vulnerable to malnutrition. Despite awareness about the dire impact of malnutrition on health and the availability of health and nutrition interventions, malnutrition continues to be one of the leading causes of morbidity and mortality worldwide, particularly in developing countries. Globally it has been estimated that stunting, severe wasting and intra-uterine growth restriction together accounted for 2.2 million deaths of children aged under five (Black, 2008). In developing countries, the prevalence of malnutrition is high with 1 out of 3 preschool children affected (UNICEF, 2004). Malnutrition refers to the various forms of under-nutrition, which are stunting, wasting and underweight.

Underlying causes of malnutrition as described in the United Nations International Children's Emergency Fund (UNICEF) framework on child malnutrition include environmental, economic and socio-political factors, with poverty playing a major role (UNICEF, 1990).

The main feature of armed conflicts is violence or the threat of violence during which large numbers of the civilian population are displaced and end in temporary camps without sanitary facilities. Women and children make up the larger proportion of the displaced population and they normally suffer the most in such situations. The other effects of conflict on public health are mediated through a wider complex of circumstances (Adedeji *et. al.,* 2019). The public health

impact of these conflicts comprises increased prevalence of acute and chronic malnutrition, low cognitive development and school performance, high mortality rates and high rates of diarrheal diseases (Adedeji *et. al.,* 2019).

The effects of the insurgency in Nigeria forced the displaced people to move frequently from camp to camp in different parts of the country until they arrived in the camps in and around Abuja which were safer from further attacks by the rebels (NEMA, 2014)

Growth and development of children are determined by the quality of the food they eat. Balanced and adequate diets are required for proper cell functioning, rapid growth, development of good immunity system and normal brain functioning in humans, especially children as they are mostly the vulnerable group. In Nigeria, decades of protracted poor governance deepened poverty and created a situation in which many children are undernourished. According to the National Demographic and Health Survey (NDHS, 2003), 29% of Nigerian children under five years are considered underweight. Today Nigeria is among the ten countries in the world with the largest number of underweight children, with an estimated 6 million children under five who are underweight (UNICEF, 2006).

CHAPTER THREE

3.0 MATERIALS AND METHODS

3.1 Materials

Portable bathroom scale (Hanson model), Seca digital scales (model 835; CMS Instruments, Oxford, United Kingdom).,Leicester height measure (CMS Instruments), Mid upper arm circumference tape, non-elastic measuring tape, audio recorder.

3.1.1 Survey questionnaire

The questionnaire was developed in English and translated into Hausa (the main language spoken in the area) during the interview. The questionnaire contained questions which were coded and contained six sections: (1) Background information (2) Demographic and Socioeconomic status,

(3) Child information and anthropometric measurements (4) Breastfeeding practice (5)

Complementary feeding practice as presented in Appendix I.

3.2 Study Area

The Federal capital territory is located on Coordinates: 9°4′N 7°29′E, At the 2006 census, the city of Abuja had a population of 776,298 making it one of the ten most populous cities in Nigeria. According to the United Nations, Abuja grew by 139.7% between 2000 and 2010, making it the fastest-growing city in the world. As of 2015, the city experienced annual growth of at least 35%.

The inhabitants of the FCT are predominantly Gwari and Fulani by tribe.

3.2.1 Study Location

The study was conducted in four informal IDP settlements in the Federal Capital Territory (FCT),

Abuja. They are the Durumi IDP settlement (Abuja Municipal Area Council), the New Kuchingoro IDP settlement (Abuja Municipal Area Council), Lugbe IDP Settlement and the Pegi IDP settlement (Kuje Area Council).

3.2.1.1 Study population

The study population are children between 0-59 months and their caregivers present in the study location.

3.2.1.2 Inclusion Criteria and Exclusion Criteria

Mothers with apparently healthy children 0-59 months i.e. mother/child pair present in the study area were included while mothers with children more than 59 months i.e. mother/child pair or

mothers with children less than 59 months who are visiting or sick requiring hospitalization present in the study area were excluded.

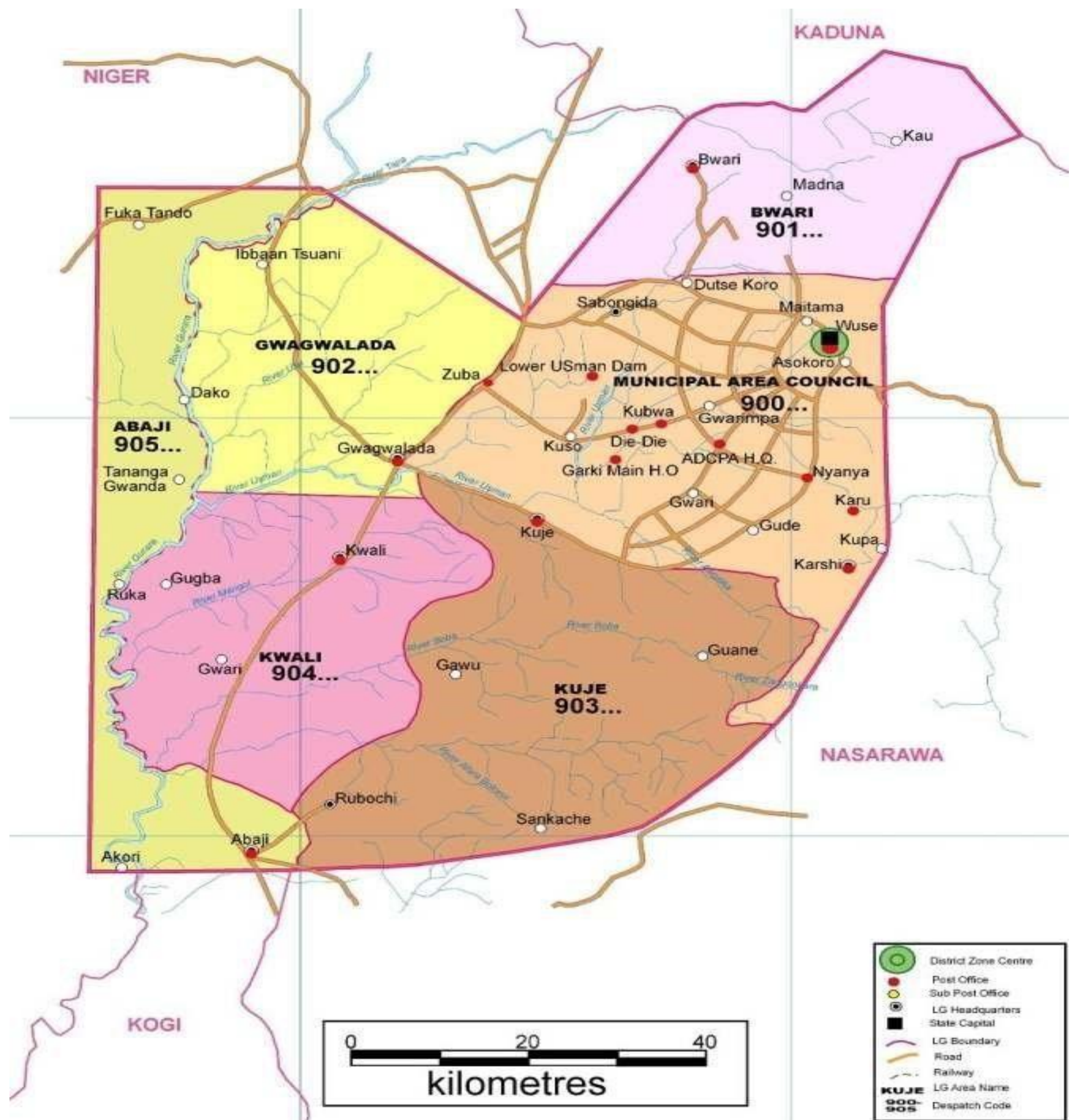

Figure 3.1 Administrative Map of FCT, Abuja showing locations of IDP camps.

(Modified from Administrative Map of FCT, 2019)

3.3 Study Design and Sampling Procedure

3.3.1 Study design

A cross-sectional descriptive study was carried out which incorporated qualitative and interview data collection techniques with focused group discussion.

3.3.2 Sampling procedure

This was a cross-sectional study. The study populations comprised children aged 0–23 months and their caregivers. We used a multistage sampling procedure to select Camps, Sub-camps, zones and households for the household survey. There are four (4) major camps in the federal capital territory. Thus a total of four subcamps from the cluster of camps within the main camp were randomly selected from the four major camps. In each of the 4 subcamps selected, 2 zones were randomly selected. Hence a total of 8 zones were included in the study. A zone constituted the study cluster. To select a household per camp, probability proportional to size was used. Thus the zone with a bigger number of households had more participants selected and interviewed. The modified WHO cluster sampling technique was used to select study households and participants (WHO, 2003). In the selected zones a borehole or central well was considered as the centre of the cluster/zone. To determine the direction of movement, the survey leader spun a pen. The direction pointed by the tip of the pen was followed. The households in the direction the pencil pointed (from the centre to the end of the cluster) were allocated numbers. To determine the starting point (household) random selection was made.

In each selected household, the parents/caregivers were interviewed to obtain information about their children aged 0 – 23 months. Anthropometric measurements (weight and height) were taken.

If more than one child between the age of 0 to 23 months was found in the same household, then one of them was selected. The child selected was referred to as an index child. If the index child was from multiple births (twin or triplet), then both or all the children of that birth were assessed in order to conform to the cultural practices. The next household chosen for the interview was the one whose door was nearest to the previous household in which the interview had been conducted.

A household with no child under five years of age was skipped.

3.3.3 Determination of Sample Size

The required sample size was calculated according to the formula for a cross-sectional study (Naing *et al*., 2006):

$$n = \frac{t^2 \times p \times q}{c^2}$$

Where:

n= required sample size t= confidence level at 95% (standard value =1.96) p= estimated prevalence of under-five malnutrition 12% (MICS, 2017).

q= Complementary probability (1- p) = 0.89
c= margin of error at 5% (standard value= 0.05)

$$n = \frac{96^2 \times 0.12 \times 0.88}{0.05^2} \quad 1.$$

$$n = \frac{0.41}{0.0025}$$

Sample size= 164

Non response rate of 10% = 180

3.3.4 Survey approval and Informed Consent

Approval was obtained from the Camp officials. The cooperation of the Chairman of the camps through the camp heads and cluster leaders was also sought. Informed consent of the caregivers assuring them of confidentiality of all the information provided were obtained.

3.4 Data collection

A team of five interviewers were recruited and trained for four days and the questionnaire used in the study was translated in Hausa and pretested on the study protocol and data collection. The administration of the questionnaire commenced at about 6 am and finished at 6 pm every day. The interview and the anthropometric measurements lasted for about 12 minutes for each child and the administered questionnaire was checked for completeness by the team leader.

3.4.1 Anthropometric measurement

Anthropometric measurements of all eligible children including weight and heights were taken.

Weight

Weight was recorded in kilograms (kg) to the nearest 0.1kg. Children were weighed using electronic weighing scales and those who were unable to stand, had their weights obtained from the difference between weights of mother/caregiver as she/he holds the child.

Heights/lengths

Heights/lengths measurements were carried out using measuring boards (stadiometers) and were recorded in centimetres (cm) to the nearest 0.1 cm. Children aged more than 24 months (more or equal to 85cm) heights were measured while standing, while those less than 24 months or less than

85cm, had their lengths measured while lying down.

The Z-scores outcome was used as the nutritional status for children according to the WHO (2006) criterion based on height or length-for-age, weight-for- height or length and weight-for-age for stunting, wasting and underweight, respectively.

3.4.2 Qualitative data collection

Three focus group discussions were conducted with the parents and caregivers of the children. The FGDs consisted of 8 people each from the caregivers who had not participated in the questionnaire interview. Each discussion took about one hour. The focus group discussions were recorded. In-depth key informants' interviews (KIIs) were conducted. The key informants comprised camp leaders, cluster leaders; camp community-owned resource persons and health workers in charge of health centres serving the camps. The key informants provided information on causes of malnutrition, and utilization of nutrition and health services offered in the camp settings.

3.4.3 Training of interviewers

The research assistants were trained for four days on how to take measurements including weights and lengths/heights. The questionnaires were translated into Hausa language and back-translated into English. The selected research assistants were fluent in both English and Hausa languages. The questionnaires were pre-tested in a none participating IDP camp. The weighing scales and measuring boards (stadiometers) were standardized to the nearest 0.1kg and 0.1cm respectively. The weighing scale was recalibrated to zero after every child was weighed. Completed questionnaires were checked by the principal investigator daily for accuracy, completeness and consistency before leaving the IDP camps.

3.5 Data Analysis

Nutritional status was expressed in standard deviation (Z-scores) and presented as length or heightfor-age (LAZ), weight-for-length or height (WHZ) and weight-for-age (WAZ) for stunting, wasting and underweight, respectively, which were calculated using WHO Anthro software v 3.2.2 2011(WHO, 2011). Infant and Young Child Feeding (IYCF) indicators were expressed in percentages. The data was analyzed using SPSS version 25.0. Pearson's correlation test was used to assess the relationship between the IYCF indicators and the nutritional status of the children.

Results with $P < 0.05$ were considered significant.

CHAPTER FOUR

4.0 RESULTS

4.1 Socio-Demographic Characteristics of Caregivers of Children Under Five

Table 4.1 describes the Socio-demographic characteristics of caregivers in internally displaced persons within the FCT. The findings in this study indicated 51.1% of the caregivers were mothers and mostly Fulani and Hausa by tribe, 35.0% (63) and 32.2% (58) respectively. In the case of marital status, 35.6% (64) of the caregivers were married, 14.4% (26) were separated while 21.1%

(38) were widowed. Besides 34.4% (62) of the caregivers had children between four to six and 26.1% (47) had between seven to twelve children. It was observed that 54.4% (98) of the caregivers were artisans, 16.1% (29) were involved in petty trading and 5% (9) of the caregivers were civil servants. Household monthly income status indicated 45.6% (82) of the caregivers earned less than

5,000 (five thousand naira) monthly although 2.7% (5) earn above 45,000 as monthly income. Caregivers had various levels of education ranging from no formal education to secondary education while some of the respondents (19.4%) had attended Islamiya School, while only (13.9%) have completed secondary school.

Table 4.2 illustrates the care resources and source power available to the caregivers of under-five children in the internally displaced camps, FCT. The majority (73.3%) use firewood as a source of cooking energy, while 1.1% (2) had access to electricity they illegally tapped from the high tension wire passing through the camp, the main source of drinking water is the central borehole that serves 93 (51.6%) of the caregivers. They had pit latrine used by 76.7 (138) of the caregivers and 17.8%

(32) use the bushes around as toilets.

4.1.1 Sources of foodstuff

The caretakers reported various ways of obtaining foodstuff. The majority of households obtained foodstuff through WFP food distributions coordinated by NEMA, purchase of food, cultivation and worked in exchange for foodstuff.

Table 4.1 Socio-demographic Characteristics of Caregivers of Under five in the Internally Displaced Persons Camps within FCT.

CHARACTERISTICS	FREQUENCY	PERCENTAGE
Caregivers		
Mother	92	51.1
Father	14	7.8
Grandmother	23	12.8
Aunt	25	13.9
Relatives	26	14.4

Ethnic Groups		
Hausa	58	32.2
Fulani	63	35.0
Kanuri	24	13.3
Marghi	32	17.8
Others	3	1.7
Marital Status		
Married	64	35.6
Single	46	25.6
Divorced	4	2.2
Separated	26	14.4
Widow	38	21.1
Declined	2	1.1
Household Size 1-3	41	22.8
4-6	62	34.4
7-12	47	26.1
13-15	19	10.6
>15	11	6.1

Main Occupation		
Civil Servant	9	5.0
Trader	29	16.1
Farmer	13	7.2
F/T housewife	22	12.2
Artisan	98	54.4
Others	9	5.0

Household Average Monthly Income (Naira)		.
<5,000	82	45.6
5,000-14,999	38	21.1
15,000-24,999	24	13.3
25,000-34,999	26	14.4
35,000-44,999	6	3.3
>45,000	4	2.2
Caregiver Level of Formal Education		
None	63	35.0
Islamiyah	35	19.4
Primary School	24	13.3
Secondary school uncompleted	33	18.3
Secondary school completed	25	13.9

Table 4.2 Care Resources Available to Caregivers of Under Five Children in the Internally Displaced Camps within FCT.

Characteristics	Frequency	%
Source of cooking energy		
Wood	132	73.3
Kerosene	29	16.1
Gas	13	7.2
Electricity	2	1.1

Others	4	2.2
Main source of drinking water		.
Public tap	54	30
Public well	14	7.8
Private well	5	2.8
River/Stream	12	6.7
Borehole	93	51.6
Rainwater	2	1.1
Main type of toilet		
Bush	32	17.8
Pit latrine	138	76.7
VIP latrine	0 7	0.0
River		3.9
Others	3	1.6

4.2 Infant and Young Child Feeding Practice Indicators of Children Under Five within the IDP Camps.

Table 4.3 describes the breastfeeding practice among caregivers of under-five children in the internally displaced camps, FCT, Abuja. A majority (91.1%) of the children 0-23 months had early initiation of breastfeeding was exclusive breastfeeding was practised by (3.3%). Whereas exclusive breastfeeding under six months was very high 96.7% (174). Continued breastfeeding at one and two years was practised by 1.1% (39) and 12.7% (23) of the respondents respectively and 45.0% of the caregivers observed appropriate feeding practice during illness by continuing to breastfeed, increased feeding frequency and amount of breast milk and food for children 0-59 months while 55% do not breastfeed during childhood illnesses as shown in Figure 4.1. The initiation of breastfeeding immediately after delivery was high (39.4%) and within 24 hours of delivery (26.1%), while 53.3% do not count the number of times they breastfeed the baby but feed

on demand, while 57.8% give colostrum the duration of breastfeeding was highest > 11 minutes (47.2%).

Complementary feeding was observed in table 4.4 to be practised by 33.3% (60) of the caregivers, 56.6% used feeding bottle to give the foods (Table 4.4). Minimum dietary diversification was practised by 6.6% of the caregivers by giving ≥4 food groups of grains, roots and tubers, legumes and nuts, dairy products, flesh foods, eggs, vitamin A rich foods and other fruits and vegetables except for a food group that is used as a condiment to the children, minimum meal frequency of 3 times per day 14.4% (26). The percentage of breastfed children aged 6-23 months who met the recommended minimum meal frequency, was 38.2% (69) while breastfed children (23) between (

9-23 months) had 12.7% minimum meal frequency of three meals in a day whereas the minimum meal frequency for non-breastfed children between 6-23 months was 18.8 as seen in Table 4.6. While 20.5% (37) of 180 children that were between 6-23 months had received iron-rich foods.

Though (31.1%) stopped breastfeeding because the child can eat on his own, (22.2%) stopped because it is the tradition while 14.4% stopped breast feeding as a result of their challenges in the IDP camps as shown in table 4.5.

Table 4.6 shows bottle feeding practice among cargivers with 36.2% starting between 3-4 months and 30.9% starting from 6 months and above as they majorly bottlefed their child on demand without counting (36.8%).

Pre-lacteal feeding practice among caregivers were mainly consumption of dates (41.8%) and plain water (33.1%) while they give reasons like it makes the child healthy (35%) and childs mother not around as why they introduce pre-lacteal feeds before initiation of breastfeeding as seen in table 4.7.

Table 4.8 shows the feeding pattern of children (0-59) months in the IDP camps, majority (55.7%) Consume bread, cereals and grains 2-3 times daily while 38.9% consume vegetables, soups and sauces once daily. Averagely 67.8% and 67.8% consume meat,fish poultry and roots and tubers once daily respectively.Legumes (28.9%), pasta and other processed food (77.2%), Fruit juices/drinks (37.8%), fats,oils and sweets (33.9%) where all consumed once daily.

Hygienic practice like washing of hands with soap and water was always practiced by 41.8% of the respondents, while hand feeding and mastication for children was never practiced by 36.1% and 54.4% respectively ,however washing of fruits (77.2%), sterilization of feeding bottle (45.5%), boiling of drinking water (55.5%), re-heating of left over food (52.2%) and use of cup and spoon (60.5%) were practiced by the respondents sometimes.

Table 4.

3 Breastfeeding Practices Among Caregivers of Under Five Children in the Internally Displaced Camps within FCT.

Breastfeeding Practices	Frequency	%
Early initiation of breastfeeding (0-23 months) within one hour.	164	91.1
Exclusive breastfeeding up to six months	6	3.3
Continued breastfeeding under six months	174	96.7
Continued breastfeeding up to 1 year	39	1.1
Continued breastfeeding up to 2 years	23	12.7

Breastfeeding Practices	Frequency	%
Initiation		
Within 1 hour after delivery	71	39.4
Within 12h	32	17.8
Within 24h	47	26.1
Within 48h	30	16.6

Table 4.

Frequency per day		
2-4 times	71	39.4
5-6 times	32	17.8
7-8 times	47	26.1
> 8 times	22	12.2
Don't count feed on demand	8	4.4
Duration/Termination of breastfeeding		
2-3 mins	3	1.7
4-5 mins	8	4.4
6-7 mins	63	35.0
8-10 mins	21	11.7
> 11 mins	85	47.2
Colostrum		
Yes	76	42.2
No	104	57.8

4 Complementary Feeding Practice of Under Five Children in the Internally Displaced Camps within FCT.

Complementary feeding practice among children 6-23 months old	N=180	
	Frequency	%

Table 4.

Introduction of solid, semi-solid or soft food for children 6-8 months old	60	33.3
Number of caregivers that practised bottle-feeding	102	56.6
Minimum dietary diversity for children 6-23 months old	12	6.6
Minimum meal frequency for children 6-23 months old:		
2 times for breastfed infants 6- 8 months old	22	12.2
3 times for breastfed children 9-23 months old	26	14.4
4 times for non-breastfed children 6-23 months old	21	11.6
Minimum acceptable diet for children 6-23 months old		
Breastfed	23	12.7
Non-breastfed	34	18.8
Consumption of iron-rich foods for children 6-23 months	37	20.6

60

Table 4.

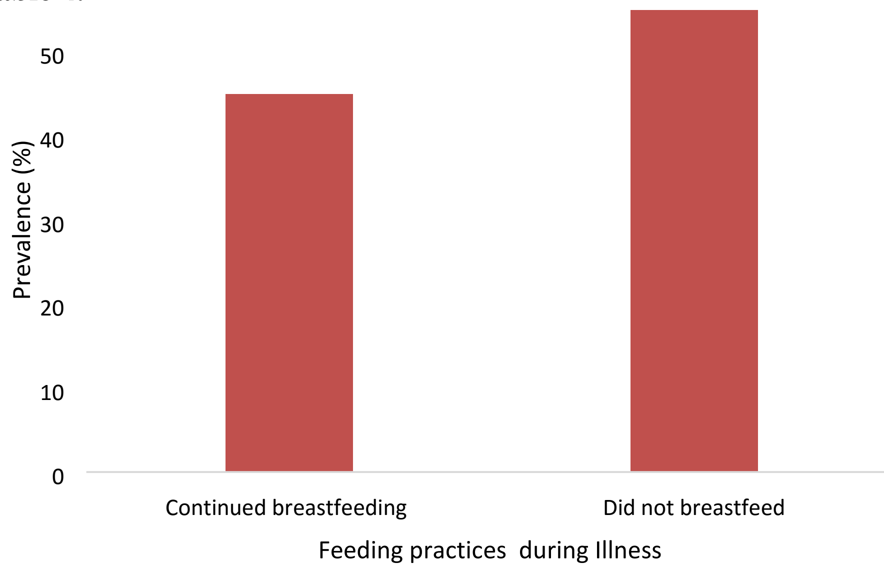

Figure 4.1: Caregivers Feeding Practices During Childhood Illnesses Under five in IDP Camps within FCT.

5: Reasons for Stopping Breastfeeding Before 24 Months Among Caregivers in The Internally Displaced Camps within FCT.(N=157)

Reasons	Frequency	%
Child can eat on his own	46	29.2
Weaning	28	17.8
No breast milk	1	0.6
Tradition	32	20.4
Breast pain	3	1.9
Child is healthy	13	8.3

Table 4.

Pregnancy	9	5.7
Present situation in camp	21	13.4
Child refuses breast milk	4	2.5

6 Bottle-Feeding Practice Among Caregivers of Under Five in the Internally Displaced Persons Camps within FCT.

Practice	Frequency	%
Age of Starting Bottle Feeding		
< 1	23	13.4
1-2	12	7.0
3-4	62	36.2
5-6	21	12.2
> 6	53	30.9

Table 4.

Average bottle feeding time per day		
< 5	7	4.0
5-10	31	18.1
11-15	18	10.5
16-20	16	9.3
< 20	36	21.0
Don't count feed on demand	63	36.8

7 Pre-Lacteal Feeding Practice Among Caregivers of Under Five in the Internally Displaced Persons Camps within FCT (N=180)

Pre Lacteal Feeding Practice	**Frequency**	**%**
Give anything before initiating breast milk		
Dates	72	41.8
Plain water	57	33.1
Glucose water	2	1.1
Honey	12	6.9
Milk formula	26	15.1
Others	3	1.7

Table 4.

Reasons for giving it		
Childs mother not available	43	21.5
Make child healthy	63	36.6
Reduced thirst	3	1.7
Cleanse child stomach	7	4.0
Tradition	30	34.3
Not enough breast milk	33	1.1
Child cry due hunger	1	0.5

Table 4.8 Feeding Pattern of Children under five in the Internally Displaced Camps within FCT.

Food Groups	Once a week	2-3 times a week	4-5 times a week	6 times a week	Once a day	2-3 times a day
Bread, Cereals and Grains	0.0	0.0	19.4	0.0	27.2	53.4
Vegetable, Soups and Sauces	0.0	30.6	2.8	18.9	38.9	8.9
Meat, Fish and Poultry	67.8	29.4	2.8	0.0	0.0	0.0
Root and Tubers	67.8	21.1	2.8	8.3	0.0	0.0
Legumes	28.9	13.9	8.3	33.9	15.0	0.0
Pastas and other processed food	77.2	8.3	5.6	3.3	5.6	0.0
Fruit juices/drinks and other fluids	37.8	5.6	8.3	25.6	17.1	5.6
Fat, oil and sweets	33.9	17.2	14.4	20.0	8.9	5.6

9 Hygienic Practice Among Caregivers of Under Five in The Internally Displaced Camps within FCT.

Hygienic Practice	Frequency	%
Washing of hands with soap and water		
Always	11	6.1
Sometimes	149	82.7
Never	20	11.1
Washing of fruits		
Always	9	5.0
Sometimes	139	77.2
Never	32	17.7
Sterilize feeding bottle		
Always	41	22.7
Sometimes	82	45.5
Never	57	31.6
Boiled drinking water		
Always	13	7.2
Sometimes	100	55.5
Never	67	37.2
Re-heated leftover food		
Always	33	18.3
Sometimes	94	52.2
Never	53	29.4
Use of cup and spoon		
Always	61	33.8
Sometimes	109	60.5
Never	10	5.5
Hand feeding		
Always	54	30.0
Sometimes	61	33.8
Never	65	36.1
Masticate/Pre-chew food		
Always	52	28.8
Sometimes	30	16.6
Never	98	54.4

4.3 Nutritional Status of Under five Children in the Internally Displaced Camps within FCT.

Figure 4.3 shows the prevalence of wasting among the under-five children, the children were mostly mildly and severely wasted 21.1% and 17.2% while underweight was moderate at 32.7% as shown in figure 4.4. Stunting however was also mild 35.5 as shown in Figure 4.5. Prevalence of malnutrition was severely high in wasting (35.5%), moderately high underweight (32.7%) and mildly high stunting (17.2%).

Table 4.10 shows the age and gender distribution of nutritional status of the children, male children within the age range of 6-11 months had a higher percentage of underweight 18.0%, while those within the age of 24-59 months had a higher percentage of stunting 23.2%.

The female children within the same age bracket of 6-11 months had a higher percentage of wasting 17.5% while those within the age range of 24-59 months had a high er percentage of stunting 23.0%

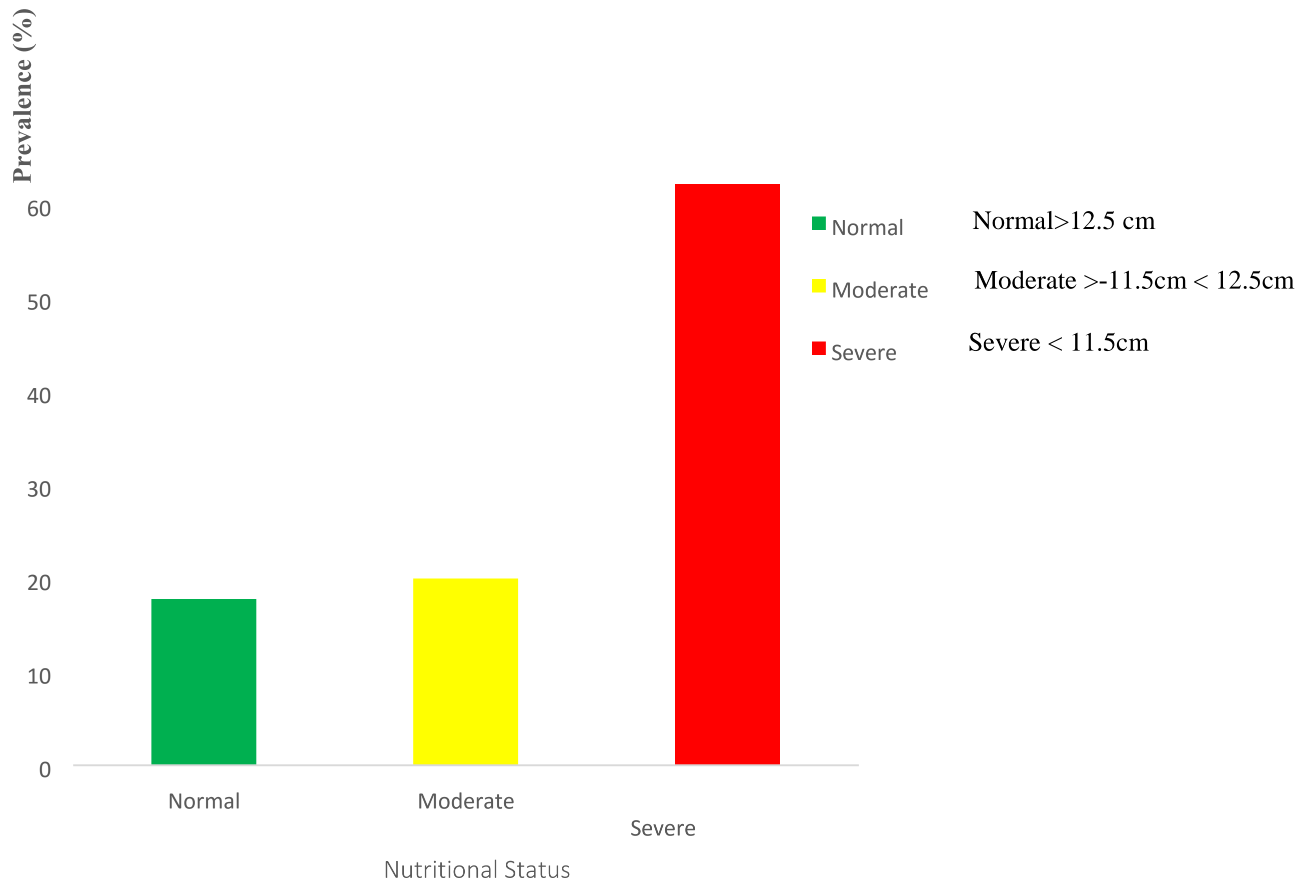

Figure 4.2: Prevalence of Malnutrition (MUAC) Among Under Five Children within IDP Camps, FCT.

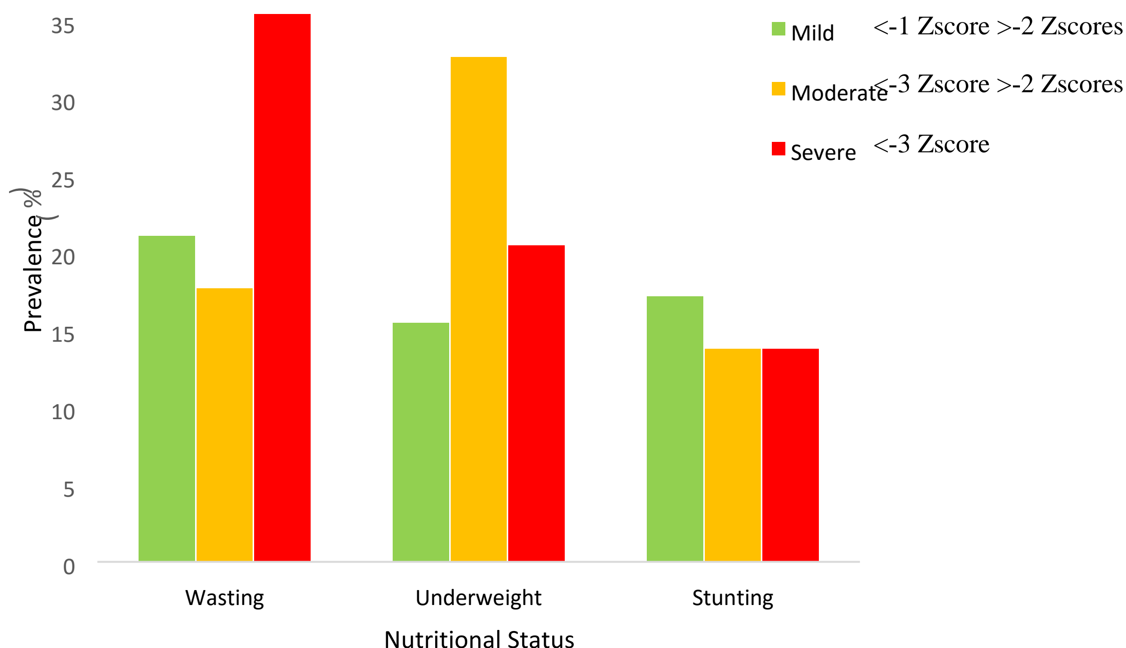

Figure 4.3: Prevalence of Malnutrition Among Under five Children in IDP Camps within FCT.

Table 4.10 Nutritional Status by Age and Gender of Children (0-59 Months) in the Internally Displaced Camps, FCT, Abuja.

Gender	Age distribution (Months)	Wasting %	Stunting %	Underweight%
Males	0-5	4.6	6.4	3.9
	6-11	10.1	3.5	18.0
	12-23	2.7	7.2	10.0

	24-59	2.8	23.2	6.5
	All age groups	20.2	40.3	38.4
Females	0-5	4.1	1.1	7.3
	6-11	17.5	3.0	3.6
	12-23	12.0	3.0	12.0
	24-59	0.0	23.0	2.3
	All age groups	33.6	30.1	25.2

4.5 The Association Between Feeding Practice Indicators and Nutritional Status of Children 0-59 Months in the Internally Displaced Camps, FCT, Abuja.

Table 4.11 showed a strong positive relationship between indices of nutritional status (Wasting and Stunting) with exclusive breastfeeding, α = 0.028 and 0.010 respectively at (p = 0.05).

Table 4.11: Association Between Nutritional Status and IYCF of Caregivers of Under Five Children in the Internally Displaced Camps within FCT.

Nutritional Status	Initiation ing breastfe		clusive eastfeeding		nimum accepta		
	X^2	α	X^2	α	X^2	α	
Wasting	2.563	0.965	2.454	0.028*	2.610	0.937	7.
Stunting	14.053	0.571	2.579	0.010*	5.453	0.263	16
Underweight	13.246	0.349	3.770	0.189	2.268	0.801	12

Values with an asterisk have significant association.

CHAPTER FIVE

5.0 DISCUSSION

WHO (2011) reported that 54% of all childhood mortality was attributable, directly or indirectly to malnutrition. A child's first 2 years of life is considered a critical "window of opportunity" for prevention of growth faltering and under-nutrition (Victora *et al.,* 2010). Causes of malnutrition in children are many and diverse, but it has been recognized that poor feeding practices by caregivers are a major contributing factor where the assessment of breastfeeding practice is one of the key factors considered in IYCF and it is a strategy used in bringing down high infant mortality rate (Muliira and Nankumbi, 2015).

In the present study, most of the caregivers are the mothers while some are grandmothers, aunties and fathers who are separated from their family and others who are married with half in a polygamous family. Marital status is known to influence the quality of care given to the child because both the parents can contribute to the care of the child by providing the basic needs, psychological support and general welfare (PAHO, 2003). However, the peculiar nature of the camp did not provide this ideal situation for development. Level of education of caregivers that have attended tertiary education in the present study is in agreement with National report, <10% of Nigerian women have attended tertiary education (NDHS, 2013). Majority of the caregivers are artisans with low income of <5,000 Naira per month which according to the UN definition of poverty, any person earning < 1 dollar per day is considered to be poor (UNDP, 2016).

This is due to the regimental life of the camp and lack of adequate attention and provision of basic skills for the caregivers in the camp. Breastfeeding they say can provide eye-to-eye contact, physical closeness and emotional bonding and it is essential for optimal child growth and development (WHO, 2010). Based on WHO (2007) report, there are four basic indicators of breastfeeding practices which are; early initiation of breastfeeding in children (0-23 months); exclusive breastfeeding of infants for six months, continued breastfeeding at 1 year (12-15 months of age) and continued breastfeeding at 2 years (20-23 months old) (UNICEF, 2011). A vast majority of our respondents in the internally displaced person camps could not breastfeed the children exclusively or optimally even though they introduced breastfeeding early, though the settings are not same, this is quite different to the findings of MICS, (2017) where 93.5% of Nigerian women breastfed their babies and the findings of Okafor *et al*. (2014) who reported that 91.2% of women were found to breastfeed their children in the semi-urban community. Majority of the respondents stop breastfeeding before 24 months due to the fact they have to go out to find food, hence introducing the child to family food early, However, their practices of prelacteal feed and poor complementary feeding (Giving water, chewed dates and honey immediately after birth and giving kunu at 3 months) regarding breastfeeding were poor and these poor practices may have contributed in compromising the nutritional status of their children. Early initiation of breastfeeding serves as the starting point for the continuum of care for the mother and newborn that can have long-lasting effects on health and development (WHO *et al.,* 2010). Initiation of

breastfeeding immediately after birth ensures that the newborn receives the first milk (colostrum/ foremilk), which is rich in proteins, immunoglobulin, lactoferrin and growth factors that aid in the treatment of autoimmune disorders and other diseases such as gastrointestinal conditions) (WHO *et al.,* 2010). Children were put to the mother's breast within one hour after birth in this study, the result was in contrast with what was reported by Okafor *et al.,* (2014) that early initiation of breastfeeding (59.2%).

The WHO recommends exclusive breastfeeding for the first six months of life to achieve optimal growth, development and health (WHO, 2011). Despite the widely acknowledged benefits of exclusive breastfeeding (EBF) and its well-recognized role in averting infant mortality, adherence to the practice is very low globally (UNICEF, 2011). In the present study, EBF rate was much lower than the 23.7% and 17% national exclusive breastfeeding rates recorded nationally (MICS, 2017 and NDHS, 2013). The rate of continued breastfeeding at 1 year and Continued breastfeeding for two years or beyond among children (1.1% and 12.7%) was not impressive in the present study compared to the national average.

It was observed that the main sources of foodstuff for the IDPs included food rations distributed by WFP/NEMA. The food rations supplied is supplemented by limited cultivation, food for work and through the purchase of foodstuff. However, several caretakers reported that the WFP/NEMA food rations were inadequate in quantity and limited in variety. The ration comprises principally beans, rice and cooking oil. Furthermore, access to foodstuff by new camp IDPs was reported to be difficult. New IDPs often had to wait till their names were included in the registry. This process was reported to take very long - up to a year or more. The process of screening and registration of the beneficiary displaced population ought to be hastened to ensure quicker access to foodstuff by the affected populations.

The study revealed that the cultivation of foodstuff is grossly limited in the IDP camp settings. The reasons for this include insecurity and lack of land to cultivate. The IDPs in both peri-urban and rural areas have to hire land for cultivation. Many IDP couldn't afford to hire sizable land areas for cultivation because of financial difficulty. Moreover, the time for cultivation is also restricted.

IDPs can only access their gardens during a particular time of the day, usually between about 10.00 am and have to return to the camps by about 4.00 pm. Men, on the other hand, were reported to spend most of the time drinking tea and sugarcane leaving the women to do most of the cultivation and to look for money to feed their families in the settings. Hence women tend to engage in a variety of casual labour activities to generate money to buy foodstuff to feed their families. Thus, most mothers tend to stay away from home for long-duration compounding the problem of caring for and feeding their children in the camp settings.

The main nutritional interventions implemented in the settings include blanket food distribution, supplementary feeding of children with moderate malnutrition and therapeutic feeding centres children with severe malnutrition (UNICEF, 2005), During the study period, however, it was established that the amount of foodstuff supplied - the blanket food distributed had been reduced. The reduction was triggered by the prospects of IDPs return to their original homesteads. Although the implementing NGOs and charity organisation, reported that food distribution would continue during the period of camp decongestion, all the stakeholders (local government, NGOs/MEMA)

should ensure a phase reduction in food supplementation during the decongestion and resettlement periods. The supply of foodstuff to returnees ought to continue until the time when the returnees have harvested their foodstuff in order not to aggravate their already precarious nutritional status.

The study has revealed that male children had increased risk of becoming stunted and malnourished compared to the females, these findings are consistent with the findings of Anigo et al., 2008). The predisposition of the male children to increased risk of stunting may be due to several reasons. One of the explanations could be that the boys are hardly at home.

They tend to be active, running around in the neighbourhood as compared to the female children who probably eat whatever small feeds that their mothers got since they are always with them at home, hence the higher percentage of wasting seen in the female (33.6%). Furthermore, a study status of the parents predisposes the boy child to stunt/caretakers have very poor socioeconomic status, owing to several years of deprivation, homelessness, loss of their wealth, lack of farming and employment opportunities, Nationwide, the conflict-affected region of northern Nigeria has the lowest human development index (HDI) (Akombi *et al.,* 2017).

Complementary feeding covers the period from 6 to 24 months of age. This is the period when malnutrition starts in many infants as a result of the transition from exclusive breastfeeding (as breastmilk is not enough at that time) to eating other foods, contributes significantly to the high prevalence of malnutrition in children less than five years of age worldwide (Heinig *et al.,* 2006; USAID, 2008; WHO, 2014). Poor feeding practices and low-quality foods can affect future learning ability, economic productivity, immune response and reproductive outcomes (WHO, 2014). Cultural factors and taboos appeared to have an important influence on mothers' infantfeeding practices and eating patterns of their children (Tamanna, 2013). The findings of this study showed that most of the children between 6-8 months old, had been introduced to solids, semisolid or soft foods and this agreed with the national report of MICS, (2017) where 79.1% of Nigerian children were introduced to solid, semi-solid and or soft foods at due age of 6-8 months. Optimal infant and young child feeding (IYCF) practices also include ensuring intake of diverse food groups (USAID, 2008), because low diversity is closely linked to inadequate or poor quality of diets (Arimond and Ruel, 2004). Minimum dietary diversity is defined by the proportion of children between 6-23 months who received food from 4 or more food groups in the past 24 hours (UNICEF, 2011). The food groups are grains, roots and tubers, legumes and nuts, dairy products, flesh foods, eggs, vitamin A-rich fruits and vegetables and other fruits and vegetables (UNICEF,

2011) and this grouping is to ensure that changes that a child eats food from both plant and animal sources and promote intake of bioavailable iron, zinc and calcium, among other nutrients (WHO, 2001; WHO and UNICEF, 2003; UNICEF, 2016).

The rate of dietary diversity in the present study is higher than the national report of 11% (NDHS, 2013). The proportion of breastfed children who receive minimum meal frequency in the present study lower than the national report of 40.2% (MICS, 2017). The minimum acceptable diet is defined by the proportion of children (6-23 months of age) who received minimum dietary diversity and minimum meal frequency 24 hours preceding the study. In this study, the proportion of both breastfed and non-breastfed children who met the minimum acceptable diet was very low and agreed with the national report of 15.3% (MICS, 2017).

World Health Organization (2004) reported that two out of five children are stunted in low-income countries. The findings on stunting in the present study are higher than the national prevalence report of 37% but in line with. It is classified as serious according to the WHO criterion of classification of severity of malnutrition (WHO, 2008). All the nutritional status indicators did not show a significant association ($p<0.05$) with IYCF indicators except for stunting and wasting that had a relationship to exclusive breastfeeding. The hypothesis that there is no significant association between feeding practices and nutritional status of children (0-59 months) in the internally displaced person camp was rejected. The findings compare with those by Dinesh *et al* (2007), that improper complementary feeding is a significant risk factor for undernutrition among under-fives. They also compare with those of Amegah (2009) in Kwale District Kenya, concluding that feeding practices influence nutritional status in children. The findings further compare with the findings by Nti (2011), a study done in Ghana where dietary diversity was significantly related to nutritional status.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

Sociodemographic characteristics show the majority of the caregivers as mothers (51.1%), they are mainly craftsmen (54.4%) and no formal education (35%) and had a monthly income of < N5,000 (45.6%).

This study found that IYCF practices, Exclusive Breastfeeding (3.3%) and complementary feeding (74%) practices are initiated early, status are major contributors to the poor nutritional status

The anthropometry results reveal the prevalence of wasting, 17.2% prevalence of underweight 13.8%, the prevalence of stunting 35.5% and severe acute malnutrition of 14 which indicates nutrition emergency among the under-five children living in the IDP camps.

IYCF Practices showed significant ($P < 0.05$) association with nutritional status.

The consumption of foods that contain essential nutrients is very less, this could account for the high rate of malnutrition in the camp

- The respondents show averagely good hygienic practices in the core WASH indicators. The high level of stunting reflects the longstanding displacement and poor availability of and access to food in the IDP camps.

6.2 Recommendations

i. Nutrition Education programs should be strengthened and implemented to promote exclusive breastfeeding and enhance sensitization on IYCF practices, and the effect of "Hidden hunger".

ii. Mothers with low income within the camps should be supported through an improved training in skill acquisition to improve their income generating potential.

iii. There is a need for regular nutritional surveillance for children under five years of age, and interventions such as health education, social support for caregivers, and the distribution of low-cost, ready-to-use foods for complementary feeding.

iv. The process of decongestion of the camps should be hastened to enable IDPs (caregivers) access and cultivate their land to have adequate foodstuff.

6.3 Contribution to the knowledge

i. Data on exclusive breastfeeding, complementary feeding practices,dietary pattern, minimum acceptable practice for breastfed and non-breastfed children and hygiene practice in internally displaced persons camp was established.

ii. Status of undernutrition among under five children in the internally displaced persons camps were documented in this survey.

iii. It has also provided information for possible and urgent interventions.

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APPENDICES

Appendix 1

ASSESSMENT OF INFANT FEEDING PRACTICES AND NUTRITIONAL STATUS OF UNDER FIVE CHILDREN IN SOME INTERNALLY DISPLACED PERSONS (IDPS) CAMP, FCT, ABUJA

SURVEY QUESTIONNAIRE

(This is to be used on a caregiver with child that is between 0-23 months of age)

SECTION 1: Background Information

Date……/…………/……… Questionnaire No……/……… State………………….

Ward…………………………………… Community…………………………………………….

Address……………………… HH Unit…………………… HH Number……………………….

Child Number…………Interviewers Name………………………………. Signature……………

SECTION 2: Socio-economic and demographic information of caregiver

1. Care giver: 1= Mother 2= Father 3=Grandmother 4= Aunt [ ]
   5= Older siblings 6= Others (Specify)
2. Age of caregiver [ ]
3. Marital Status of caregiver: 1=Married 2=Single, never married 3= Seperated

   4= Widowed 5=Declined response [ ]

4. Type of family: 1= Polygamy 2= Monogamy [ ]
5. Household Size [ ] 6. Number of children [ ]

7. What is your main occupation?
   1=Civil servant 2= Farmer 3=Trader/Business 4=Artisan

   5=others (Specify) [ ]

8. What is your level of formal education? 1=None 2=Islamiyya Education

   3=Primary School completed 4= Junior Secondary School completed

   5=Senior Secondary School Completed 6=Tertiary Education [ ]

9. Estimated household monthly income.
   1= < 5000 2=5000 – 9999 3=10,000 - 19,999 4=20,00O- 29,999
   5= 30000-39999 6=40000- 499999 7= >50,000 [ ]

Section 3: Child Information

10. What is the name of your last child? ………………………………………………………….
11. What is the age of your last child? ……………… Months
12. What is the sex of the child? 1=Female 2=Male [ ]
13. Weight……… kg 20. Length ……………. cm MUAC……… cm

Section 4: Breastfeeding practices.

14. Did you breastfeed this child yesterday? 1=Yes 2=No [ ]
15. When did you start (Initiate) breastfeeding this child after birth?

    1=Immediately after delivery 2=Within 12 hours 3=within one day

    4=within two days 5=After two days 6=Others (Specify) [ ]
16. What do you do with the first yellowish milk (colostrum) that comes out when you started breastfeeding?
    1=Feed the child 2=Discard/throw away 3=Don't know 4=Others (Specify) …………. [ ]
17. FOR THOSE THAT DID NOT FEED THE BABY WITH COLOSTRUM, **ASK WHY?**

    ………………………………………………………………………………………

    ………………………………………………………………………………………
18. On the average, how many times do you breastfeed your child yesterday? [ ]
    1=<3 times 2=3-5 times 3=6-9 times 4=> 10 times

    5=Don't count but breastfeed on demand 6=Can't remember 7=Others (Specify)

19. When do you intend to stop breastfeeding this child?

    1=≤3 months 2=4-6 months 3=7-11months 4=12-15 months 5=16-19 months 6=20-23months 7=>24months [ ]

20. If less than 24 months, state the reasons for stopping before 24 months

    ……………………………………………………………………………….

    ……………………………………………………………………………….

21. Do you give your child any other food apart from breast milk and medicine before they are six months old?1=Yes 2=No [ ]

22. When did you start giving water to this baby?

    1=Immediately after birth 2=Specify exact age ……… Months

23. Did you give anything to the baby before starting (Initiating) breastfeeding?

    1=Yes 2=No [ ]

24. If yes, what did you give?

    1=Plain water 2=Glucose water 3=Honey 4=Milk formular

    5=Others (Specify)……………… [ ]

Section 5: Complementary Feeding Practices

25. At what age (months) do you start to give your baby any other food apart from breastmilk?

    1= Immediately after birth 2=specify exact age…... months [ ]

26. What do you usually use to give other foods apart from breastmilk to this child?

    1= Cup /spoon 2=Feeding bottle 3=Plate/spoon [ ]

    4= others (Specify) ……………………

27. Did this child eat any solid, semi-solid, or soft foods yesterday during the day or at night?

    1=Yes 2=No [ ]

28. If 'YES' PROBE: What kind of solid, semi-solid, or soft foods did this child eat yesterday?

    ………………………………………………………………………………………

    ……………………………………………………………………………………….

29. How many times did this child eat solid, semi-solid, or soft foods other than liquids yesterday during the day or at night?

    1=2 time 2= 3 times 3=4 times 4=> 4times

30. Tell me how you handle your child feeding during illness: PLEASE PROBE FOR:

a. Continue breastfeeding 1=Yes 2=No [ ]

b. Increase feeding (frequency and amount) 1=Yes 2=No [ ]

c. Increase fluid intake (frequency and amount) 1=yes 2=No [ ]

d. Other (Specify)…………………………………………

31. Please describe everything that this child ate yesterday during the day or night, apart from breast milk whether at home or outside the home.

NAME OF FOOD	DESCRIPTION OF FOOD	MAJOR FOOD STUFF AND INGREDIENTS USED IN PREPARING FOOD	RECIPES/PREPARATION METHOD

Focus group discussion

1. How does the community cope with food shortages?
2. What are the major sources of household income in this area?
3. What has been the trend of food availability in this area?
4. What are the major common illnesses experienced by the area residents?
5. How accessible are health facilities in the area?

Key Knowledge interview

1. What is your general view of child nutrition and morbidity pattern?
2. What are food types are readily available to feed young children in these IDP camps?
3. Is there farming done around here? How is it important as a source of food?
4. Do you have any data for the last 3 months on children regarding nutritional status in this IDP camps?
5. What supplements do you have for malnourished children?
6. What qualifies a child to be put under food supplements?
7. Do you conduct sessions to educate mothers on good nutrition?
8. In your own view, what hinders caregivers from feeding their children with proper balanced meals?
9. What is the Nigerian Government doing to improve the nutritional status of young children?
10. How can other stakeholders assist in improving the nutritional status of young children?

Appendix II

Operational Definition of Terms

Complementary feeding: This refers to the provision of semi- solid and solid foods to children from 6 months of age in addition to breast milk to meet their daily nutrient requirements (WHO/UNICEF, 2010).

Continued breastfeeding at one year: Proportion of children 12-15 months who are fed breast milk (WHO/UNICEF, 2010).

Early Initiation of Breastfeeding: Proportion of children born in the last 24 months who were put to the breast within one hour of birth (WHO/UNICEF, 2010).

Exclusive breastfeeding: Refers to feeding a child below six months with breast milk only, be it directly from breast or expressed, with no addition of any liquid or solids apart from drops or syrups consisting of vitamins, mineral supplements or medicine, and nothing else 24 hours preceding the study (WHO/UNICEF, 2010).

Feeding practices: These refer to practices (both breastfeeding and complementary feeding) in feeding infants and young children based on WHO/UNICEF recommendations (WHO/UNICEF, 2011).

Malnutrition: In the technical nutrition community, malnutrition can refer to a child being both over and underweight, but for the purposes of this report we will take it to mean underweight **Nutritional status:** This refers to the anthropometric status for children, weight-for-age, weight-for-Length and length-for-age indices.

Standard Definition of terms

Minimum dietary diversity: Percentage of children 6–23 months of age who consumed

foods and beverages from at least five out of eight defined food groups during the previous day

(WHO/UNICEF, 2021).

Minimum meal frequency: Percentage of children 6–23 months of age who consumed solid, semi-solid or soft foods (but also including milk feeds for non-breastfed children) the minimum number of times or more during the previous day (WHO/UNICEF, 2021).

Minimum acceptable diet: Percentage of children 6–23 months of age who consumed a minimum acceptable diet during the previous day (WHO/UNICEF, 2021).
Stunting: The relationship between observed height to the expected height for the specific age and sex of the child (H/A) (WHO/UNICEF, 2010).

Underweight: The relationship between observed weight to the expected weight for the specific age and sex of the child (W/A) (WHO/UNICEF, 2010).

Wasting: This phrase refers to the relationship between body mass and body stature of the child (W/L) (WHO/UNICEF, 2010).

Z-scores: Measure of the degree of dispersion of the series of observations (L/A, W/A, W/L) with reference to the median of the series (WHO/UNICEF, 2010).

Appendix III Sources of foodstuff

The caretakers reported various ways of obtaining foodstuff. The majority of households obtained foodstuff through WFP food distributions coordinated by NEMA, purchase of food, cultivation and worked in exchange for foodstuff.

"The amount of food given to us is not enough and lasts for a maximum of only one week, yet food distribution is monthly. We are therefore involved in all kind of casual labour activities so as to get money to buy food or sometimes work in exchange for food" **(Asabe FGD Mothers)**

Other sources of food include cultivation. However the men (FGD) reported difficulty in acquiring land for cultivation in the camp settings and in obtaining money for purchasing food stuff for their families.

"We are in this camp, but our home land is far from here. We do not have land to cultivate. Its expensive to hire land around here. We don't even have the money. We therefore have to depend on Food Programme rations and charity from individuals and organizations which are very little" **(Abubakar FGD Men)**

"We go the whole day in search of casual work to get some money for buying food. Our children are left home without food the whole day. Our children eat food in the morning and have to wait for their next meal in the evening when we return from doing menial jobs". **(FGD Women)**

The caretakers reported that new comers to the camps were not immediately entitled to the World Food Programme through NEMA food rations. They have to wait until their names are included in the registry for food distribution and this may take a minimum of one year.

"Sometimes the number of members in the households is being reduced to a smaller number in the registry at the NEMA offices, reducing the amount of foodstuff given further and yet food is distributed only once a month." **(KII-Camp leader — Mallam Isa)**

The types of food distributed are not diverse and consists of maize seeds, beans and cooking oil, with no animal protein.

"We do not have a variety of foodstuff to feed on as before we came to the camps. Our children are now forced to feed on only one type of food for a long period of time." **(Ibrahim- FGD Men)**