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MALNUTRITION AND FEEDING PRACTICES AMONG UNDER-FIVE CHILDREN IN RURAL COMMUNITIES OF FEDERAL CAPITAL TERRITORY ABUJA, NIGERIA

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ABSTRACT
Background: Poor dietary practices and malnutrition among under five children in Nigeria has remained a great public health concern.
Objective: This study assessed the feeeding practices and nutritional status of under-five children to determine the prevalence of malnutrition of under five children in Kuje area council, Abuja.
Methods: Cross-sectional study design was employed. Validated questionnaire was used to obtain information on the feeding practices of the respondents, while appropriate equipment was used for measurements of anthropometric parameters. Anthropometric data was analysed by comparing with reference standard and analysed statistically with $p<0.05$ considered significant.
Results: Result showed that 97% of the children were breastfed, 30.6% had early initiation to breastfeeding, 22.4% were breastfed exclusively, and 30.2% discarded colostrum. Only 27.7% had age appropriate timely introduction of complementary feeding. The prevalence of global acute malnutrition (GAM) was 12.8%, (severe wasting [5.4%] plus moderate wasting [7.4%]), underweight was 24.4%, stunting was 40.3% and overweight was 7.0%. Child left in the care of another child (younger than 14 years old), place of delivery, immunization status of the child, early initiation to breastfeeding, use of colostrum, and age of child were all significantly ($p<0.05$) associated with nutritional status.
Conclusion: There is high prevalence of malnutrition and poor infant and young child practice in Kuje Area Council.

Keywords: *Malnutrition, Infant and young child feeding, children*

INTRODUCTION
Optimal feeding practice is one of the important determinant of nutritional status in infants and young children (1). Some of these feeding activities are mostly carried out by mothers and they include; breastfeeding, complementary food preparation, feeding and storage practices (1). A global intervention strategy for optimal infant and young child feeding (IYCF) was set up by World Health Organization (WHO) and United Nations Children's Fund (UNICEF) in order to reduce malnutrition among children. This strategy recommends early initiation of breastfeeding within one hour of birth, exclusive breastfeeding for the first six months, and timely introduction of appropriate, adequate and safe complementary foods along with continuing breastfeeding up to two years and beyond (2). Early initiation of breastfeeding within 1 hour of birth, protects the newborn from acquiring infections and reduces newborn mortality while optimal breastfeeding is so critical that it could save the lives of over 820 000 children under the age of 5 years each year (3). Adequate complementary feeding entails feeding children aged 6 to 23 months with foods from four or more food groups at least twice daily (4). This strategy is crucial because at this age, the child becomes increasingly independent and also provides a critical window of opportunity for prevention of growth faltering and under nutrition through optimal nutrition (5,6).

Suboptimal feeding practices which makes infants and young children more susceptible to malnutrition include insufficient diet, frequent infections, poor breastfeeding practices, delayed introduction of complementary foods, inappropriate feeding frequency, inadequate nutrient density and food contamination (7). In the federal capital territory (FCT), Abuja, Nigeria, the recommendation to initiate breastfeeding within one hour of birth was met by only 11.9% of children, 33.1% met the minimum dietary diversity (feeding children from at least four groups out of seven) and 13.4% consumed the minimum acceptable diet (8). Suboptimal infant and young child feeding practices results to malnutrition which puts children at a greater risk of dying from common infections, increased the frequency and severity of infections and delays recovery (4,9). This interaction creates a potentially deadly cycle of deteriorating health and worsening nutritional status (9). Globally, more than a third of child deaths and 10% of disease burden are attributed to maternal and child undernutrition (10). Malnutrition in children under 5 years of age can affect intellectual performance, work

capacity and health conditions at later age as malnutrition in early life has been linked to various metabolic diseases (4,6,11).

Identifying risk factors by examining feeding practice as the cause of malnutrition is expected to provide information on the appropriate intervention or prevention actions. None or little effort has been devoted to examining the key determinants of malnutrition among under-five children and their mothers in communities of Kuje Area Council of the FCT that will effectively guide nutrition interventions. This study therefore assessed the feeeding practices and nutritional status of under-five children which would aid in establishing the prevalence of malnutrition among under five children in Kuje area council, Abuja as well as guide in providing informed and appropriate intervention.

METHODS

Study Design

The study was a cross-sectional survey among under five children in Kuje area council, Abuja, Nigeria.

Study Area

The study was conducted in Kuje Area Council, FCT - Nigeria. Kuje was chosen for this study because the Area Council ranks one of the lowest in the FCT in terms of nutritional status from the unpublished data from maternal newborn and child health week program generated by the FCT Primary Health Care Board over the years. Kuje Area Council is one of the six Area Councils of the FCT, others are; Abaji, Abuja Municipal, Bwari, Gwagwalada and Kwali Area Councils. The FCT falls within latitude 7° 25᾽ N and 9° 20’ North of the Equator and longitude 5° 45' and 7° 39' of the equator. Kuje Area Council shares boundaries with Gwagwalada and Kwali Area Council by west, with Abuja Municipal Area Council (AMAC) by the East, and by the South with Abaji Area Council and to the North by Bwari Area Council. It has 10 political wards with an administrative population of about 198,323 people (Projected 2006 Census Population) out of which under five children and Women of Child Bearing age account for about 39,785 (20% of Total Population) and 43,632 (22% of Total Population) respectively. The predominant tribes are Gbagyi, Gede, Gwandara, Ebira, Hausa and other tribes. There over 60 rural and semi urban localities with over 200 clusters (enumeration areas) in Kuje Area Council.

Study Population

Eligible mothers of under-five children who were willing to participate and gave their consent were included in the study. Unwilling mothers of under five children that were sick requiring hospitalization were excluded from the study.

Sample Size Determination

Considering prevalence of malnutrition and allowable absolute error (precision) of 5% (0.05), design defect of 1.5, average House Hold of 6, non-response Household of 3%. The minimum required sample size was selected from the selected 31 clusters using the sample size calculator of Emergency Nutrition Assessment (ENA) software for SMART. The selected cluster was generated by ENA software for SMART after entering the available clusters as provided by the National Population Commission (NPC), and their population size. Household listing survey was carried out in the selected clusters and the eligible households numbered and eligible households were selected using simple random sampling by HAT methods. Consenting under five mother in the selected households participated in the study.

Sampling techniques

A validated structured questionnaire was used to obtain data on demographic and household characteristics of the respondents. Questionnaires were administered with the help of trained research assistants.

Data Collection Techniques and Tools

A validated structured questionnaire was used to obtain data on demographic and household characteristics. Questionnaires were administered with the help of trained research assistants. Anthropometric measurements of length/height, weight and mid-upper arm circumference (MUAC) were obtained using standard procedures. The indices BMI- for-age, weight-for-height and height-for-age) derived from the measurements were compared with the WHO child growth standard. Food consumption pattern of the children was determined using Food Frequency Questionnaires (FFQ) and 24-hour dietary recalls techniques.

Data and Statistical Analysis

Emergency Nutrition Assessment (ENA) software was used for anthropometry data analysis (ENA for SMART 2011). Socio demographic data was presented as descriptive statistics of percentages, frequencies using statistical package for social sciences (SPSS) version 20. A multi variable analysis was done to ascertain the relationship of under-nutrition / malnutrition in relation to other variables.

RESULTS

The socio demographics characteristics of the caregivers of the under-five children sampled is shown in Table 1. The result showed that 94.2% of the households were headed by males and 5.8% were headed by females. Majority (99.2%) of the caregivers were females, 93.2% were married, and 32.9 % had no formal education, 6.8% did not complete primary

school, 18.8% of the household head had no formal education and 24% had a tertiary education. Among the household heads, 2.3% were unemployed, 54.2% were artisans, 19.9% were civil servants and 23.6% were traders. About 68.9% of the caregivers earned below ₦10,000 monthly, while 6.4% earned above ₦ 50,000. The table also showed that 20.7% of the households head earned below ₦ 10,000 monthly, 37.5% earned ₦ 10,000 to ₦ 20,000 monthly, and 10.6% earned above ₦ 50,000 monthly.

Table 1: Socio Demographic Characteristics of Care Givers of the Under Five Children in Kuje Area Council (KAC) of FCT Abuja

Demographics	Frequency	Percentage
Sex of Household head		
Male	455	94.2
Female	28	5.8
Total	**483**	**100**
Marital Status of Mother		
Married	450	93.2
Single	17	3.5
Divorced	5	1
Widowed	11	2.3
Total	**483**	**100**
Education Level Attained		
No formal education	159	32.9
Did not Complete Primary School	33	6.8
Primary School Completed	97	20.1
Completed secondary education	129	26.7
Vocational/Commercial	7	1.5
Tertiary education	58	12.0
Total	**324**	**100**
Education Level Attained of Household Head		
No formal education	91	18.8
Completed Primary School	92	19
Did not Complete Primary School	45	9.3
Completed secondary education	127	6.4
Vocational/Commercial	12	2.5
Tertiary education	116	24.0
Total	**483**	**100**
Occupation of Caregiver		
Business/Trader	126	26.1
Civil Servant	55	11.4
Artisan	234	48.4
None/Housewife	68	14.1
Total	**483**	**100**
Occupation of Household Head		
Business/Trader	114	23.6
Civil Servant	96	19.9
Artisan	262	54.2
Unemployed	11	2.3
Total	**483**	**100**
Estimated Monthly Income of Caregiver		
Below ₦10,000	333	68.9
₦10,000 to ₦20,000	78	16.2
₦ 21,000 to ₦50,000	41	8.5
Above ₦50,000	31	6.4
Total	**483**	**100**
Estimated Monthly Income of Household Head		
Below N10,000	100	20.7
N10,000 to N20,000	181	37.5
N21,000 to N50,000	151	31.3
Above N50,000	51	10.6
Total	**483**	**100**
Household Estimated Monthly Expenditure on Food		
Below N10,000	388	80.3
N10,000 to N20,000	61	12.6
N21,000 to N50,000	28	5.9
Above N50,000	6	1.2
Total	**483**	**100**

Table 2 shows the breastfeeding practices of infants (0-24) months. Majority (96.7%) of the children sampled were breastfed, 30.6% had early initiation to breastfeeding within 1 hour of birth, 69.4% were fed after hours and 18.8% after days. About 45.5% had prelacteal feeding, 69.8% fed infant's colostrum, however, 30.2% discarded it. Only 33.1 % of the children were fed breast milk exclusively within the first 3 months. Whereas, 22.4% children were breastfed exclusively from 3-6 months. About half (47.6%) of the respondents for the survey were breastfeeding their babies at the time of this study. Majority (76%) of the respondents breastfed their babies for a period of 1 to 2 years.

Table 2: Breastfeeding practices of the under five children Sampled in Kuje Area Council (KAC) of FCT Abuja

Variable	Frequency	Percentage
Breastfeeding		
Child that breastfed	467	96.7
Not breastfed	16	3.3
Total	**483**	**100**
Initiation to breastfeeding		
Within 1 hour	148	30.6
Hours	244	50.5
Days	91	18.8
Total	**483**	**100**
Prelacteal Feeds		
Had Prelacteal feeds	220	45.5
No Prelacteal feeds	263	54.5
Total	**483**	**100**
Colostrum		
Fed baby colostrum	337	69.8
Discard	146	30.2
Total	**483**	**100**
Exclusive Breastfeeding		
Birth – 3months	160	33.1
3 – 6months	108	22.4
Birth – 6months	268	55.5
Total	**476**	
Feed from Birth to 3 months	160	33.1
Breast milk only	160	33.1
Water and Breast milk	196	40.6
Water in first week, continued with breast milk only	31	6.4
Breast milk, Water, Grains	34	7.0
Breast milk, Water, other foods	14	2.9
Breast milk, Infant formula	30	6.2
Infant Formula, Water	1	0.2
Others	17	3.5
Total	**483**	**100**
Feed from 3 to 6 months		
Breast milk only	108	22.4
Water and Breast milk	88	18.2
Water in first week, continue d with breast milk only	11	2.3
Breast milk, Water, Grains	61	12.6
Breast milk, Water, other foods	152	31.5
Breast milk, Infant formula	17	3.5
Others	46	9.5
Total	**483**	**100**

Table 3 shows the complementary feeding practices of the under five children. It shows that 40.6 % of the children had complementary food introduced at age 3-6 months, 8.5% were introduced complementary foods

at below 3 months. Majority (75.6%) of the children had their complementary food sources from locally available foods and a few (8.7%) had complementary foods that are commercially prepared. Most (62.5 %) of the children were fed 3-4 times per day while 20.3% were fed 1-2 times. Majority of the children ate freshly prepared foods and 25.9% of them ate stored foods. The consistency of the foods were thick for 69.2% of the children while 30.8% had thin foods.

Table 3: Complementary Feeding practices of the under five Children Sampled in Kuje Area Council (KAC) of FCT Abuja

Variable	Frequency	Percentage
Age of Introductory of complementary foods		
Below 3 months	41	8.5
3 – 6 months	196	40.6
6 months	134	27.7
Above 6 months	112	23.2
Total	**483**	**100**
Type of Complementary foods Sources		
Prepared from Locally available	365	75.6
Commercially prepared	42	8.7
Others	78	15.7
Total	**483**	**100**
Frequency of Feed per day		
1 – 2 times	40	20.3
3 – 4 times	302	62.5
5 – 6 times	97	20.1
7 – 8 times	44	9.1
Total	**483**	**100**
Duration of foods given		
Freshly prepared	358	74.1
Stored	125	25.9
Total	**483**	**100**
Consistency of food		
Thick	334	69.2
Thin	149	30.8
Total	**483**	**100**

The food consumption pattern of the under-five children for food varieties according to WHO IYCF categorization (4-star diets) shows that majority (88%) of the children consumed staples, fats and vegetables (70.8). Less than half (47.6%) consumed legumes while 39.1% consumed animal sourced foods.

The prevalence of acute malnutrition among the under five children in KAC of FCT Abuja is presented in Table 4. The prevalence of acute malnutrition (GAM) for both boys and girls were 12.8%, among the boys 16% and among the girls were 9.6%. Prevalence of moderate acute malnutrition (MAM) was for both genders were 7.4%, for boys were 9.0% and for the girls were 5.7%. Also the table showed that the prevalence of severe acute malnutrition (SAM) for both genders were 5.4%, for boys were 6.9% and for girls were 3.9%.

Table 4: Prevalence of Acute Malnutrition among Under five Children in Kuje Area Council Of FCT Abuja

Prevalence	Weight for Height (Wasting) n=569 F (%)	Weight for Age (Underweight) n=589 F (%)	Height for Age (Stunting) n=575 F (%)
Global Malnutrition (<-2 z-score)	73 (12.8) (10.3 - 15.9% C.I.)	144 (24.4) (21.0 - 28.2% C.I.)	232 (40.3) (35.3 - 45.5% C.I.)
Moderate Malnutrition (<-2 z-score and >=-3 z-score)	42 (7.4) (5.4 - 10.0% C.I.)	89 (13.6) (11.3 - 16.2% C.I.)	107 (18.6) (15.4 - 22.2% C.I.)
Severe Malnutrition (<-3 z-score)	31 (5.4) (3.9 - 7.5% C.I.)	64 (10.9) (8.3 - 14.1% C.I.)	125 (21.7) (17.4 - 26.7% C.I.)

The prevalence of malnutrition based on MUAC cut off's (and/or oedema) and weight-for-height is presented in Table 5. The result indicated that the GAM for both genders was 12.1%, 12.6% was for boys and 11.6% was for girls. Also. MAM for both genders was 8.5%, 8.1% was for boys and 8.8% was for the girls. SAM for both genders was 3.6%. 4.5% was for boys and 2.8% was for girls. The prevalence of overweight and obesity were 7.0% and 1.4% respectively. Among the boys, the prevalence of overweight were 7.6% and obesity was 1.7% while the prevalence among female children was 6.4% and 1.1% for overweight and obesity respectively.

Table 5: Prevalence of Malnutrition Based on MUAC Cut off's (and/or Oedema) and Weight-for-Height

Prevalence	Boys F (%)	Girls F (%)	Total F (%)
Global Malnutrition (< 125 mm and/or oedema)	31 (12.6) (9.0-17.3 95% C.I.)	29 (11.6) (9.6-15.0 95% C.I.)	60 (12.1) (8.4-15.7 95% C.I.)
Moderate Malnutrition (< 125 mm and >= 115 mm, no oedema)	20 (8.1) (5.4-12.1 95% C.I.)	22 (8.8) (6.5-10.9 95% C.I.)	42 (8.5) (6.1-12.4 95% C.I.)
Severe Malnutrition (< 115 mm and/or oedema)	11 (4.5) (2.2-8.7 95% C.I.)	7 (2.8) (2.2-6.0 95% C.I.)	18 (3.6) (1.2-6.2 95% C.I.)
Overweight (WHZ >+2 z-score)	22 (7.6) (5.0-11.5 95% C.I.)	18 (6.4) (4.0 -10.2 95% C.I.)	40 (7.0) (4.8 - 10.1 95% C.I.)
Obesity (WHZ > +3 z-score)	5 (1.7) (0.7 - 4.0 95% C.I.)	3 (1.1) (0.3 - 3.4 95% C.I.)	8 (1.4) (0.7 - 2.6 95% C.I.)

MUAC = Mid-Upper Arm Measurement (Boys [n=246], Girls [n=251], Total [n=497]). WHZ = Weight-for-Height Z-Score (Boys [n=288], Girls [n=281] , Total [n=569])

The determinants of malnutrition amongst under-five children in Kuje Area Council (KAC) of FCT Abuja are presented in Table 6. It shows statistically some key determinant of malnutrition amongst under-five children in Kuje Area Council (KAC) of FCT Abuja. The table revealed that with the exception of the variables, monthly income, educational and marital status, all other parameter tested in this study were found to be statistically significant in affecting the child's nutritional status. The variables which were statistically significant at $p < 0.05$ include: Child left in the care of another child (younger than 14 years old), place of delivery, immunization status of the child, early initiation to breastfeeding, use of colostrum, and age of child. Other key determinant of malnutrition includes, dietary diversity, amongst others.

Table 6: Determinants of Malnutrition amongst Under Five Children in Kuje Area Council (KAC) of FCT Abuja

Variables	Significant Level (p-value)	Coefficient Value (r)
De-worming Tablet Intake	0.000	-.198
Vitamin A Supplementation	0.000	-.169
Animal Sourced Food Consumption	0.000	-.160
Formal Education Access	0.001	-.141
Household Vegetables Consumption	0.006	-.117
Vegetable Foods Per Week	0.010	-.109
Fruits Per Week	0.011	-.107
Place Of Delivery	0.013	-.104
Child Left in The Care of Another Child (Younger Than 14 Years Old)	0.221	.036
Household Estimated Expenditure On Food	0.023	.093
Main Material Of Outside Wall Of Household	0.005	.119
Household Estimated Income	0.000	.167
Main Material Of Floor Of Household	0.000	.179
Estimated Monthly Income	0.000	.184

DISCUSSION

The present study gave an insight on the infant and young child feeding practices and prevalence of malnutrition in Kuje Area Council of FCT, Abuja. The present study revealed that 96.7% of children in KAC had ever been breastfed. This is comparable (96.1%) to that reported in 2018 National Nutrition and Health Survey for infants and young children ever breastfed in FCT (12). A study on infant and young child feeding practices in two local government in Ekiti state reported 100% of the infant and young children had been breastfed (13). Early initiation of breastfeeding within the first 30 minutes to 1 hour of birth is highly desirable. In the present study, a total of 30.6% mothers initiated breastfeeding within the first hour after delivery. This finding is low compared to 87% reported by Olodu et al. in a study on nutritional status of under-five children born to teenage mothers in an urban setting, south-western Nigeria (1) but higher than the national (19.2%) and state (11.9%) indices of children breastfed in the first hour of birth (12). Initiation of breastfeeding within the first hour after delivery promotes bonding between mother and child and hence gives the mother a sense of satisfaction (14). Late initiation of breastfeeding prevents infants from assessing colostrum which has anti-infective properties and exposes the infants to unnecessary death (13).

Feeds given to infants before initiation of breastfeeding have been shown to delay the initiation of breastfeeding and increase the risk of illness and newborn mortality (3). Pre-lacteal feeds fills the infants' stomach quickly and interferes with sucking and makes breastfeeding more difficult to establish (15). Consequently, this can decrease breast milk production and provides an avenue for early discontinuation of exclusive breastfeeding (16). Pre-lacteal feeding assumes top position of harmful traditional feeding practices of global public health concerns (17). In the present study, the prevalence of pre-lacteal feeding was 45.5%. This result is comparable (49.8%) to the prevalence of pre-lacteal feeding in urban Nigeria but lower than the prevalence (66.4%) in rural Nigeria (18). This finding is also higher than those reported in similar studies (14.2%) (17), (10.8%) (19), (20.6%) (20) and 26.3% (15) but lower than 85.2% reported in a study conducted in rural northern Nigeria (21). This disparity in the prevalence of pre-lacteal feeding can be attributed to culture, religion and traditional beliefs in different regions of the world.

The benefits of colostrum to infants cannot be overemphasized. Colostrum contains growth factors and protective proteins as well as serves as an infant's first immunization against bacterial, viral, fungal and protozoa infection (19,22). Despite the immense benefits of colostrum to infants, many still discard it for various reasons (23). Colostrum was fed by 69.8% of mothers sampled in the present study. This result is low compared two studies conducted in Ethiopia where 88% and 74.4% of mothers were reported to have fed their infants colostrum at birth (19,22). A study conducted in Nnewi South east Nigeria reported 88.5% of mothers to have fed colostrum to their infants. Prelacteal feeding is positively associated with colostrum avoidance and late initiation of breastfeeding (19). Mothers who consider colostrum as bad for their baby are more likely to introduce prelacteal feeds, taking more time to discard the colostrum and initiating breast feeding later (24).

Exclusive breastfeeding involves feeding only breast milk to infants without supplementation of any type of foods or drinks, except vitamins, minerals and necessary medications up to the age of 6 months (25). The practice of exclusive breastfeeding in the study area was found to be 22.4%. This prevalence is lower than the WHO recommendation of 50% (25). Despite the importance of exclusive breastfeeding, only 28% of infants under 6 months of age were reported to have been exclusively breastfed in the 2018 Nigerian national nutrition health survey while 34.7% of infants were exclusively breast fed in the entire North central region. The result of the present study is in discordance with study carried out in Nnewi south-east Nigeria, Egor local government area of Edo state, Nigeria and in Southwest Nigeria where 33.5%, 36.6% and 27.4% of the mothers surveyed practiced exclusive breastfeeding (13,26,27).

WHO recommends that infants start receiving complementary foods at 6 months of age in addition to breast milk, initially 2 – 3 times a day between 6-8 months, increasing to 3 – 4 times daily between 9 – 11 months and 12 – 24 months with additional nutritious snacks offered 1 – 2 times daily (28). Timely initiation of complementary foods remain a challenge as most Nigerian infants are introduced to complementary foods too early or later in life. Early introduction to complementary foods, reduces the quantity of breast milk consumed by the infant and hence deprives them of the many benefits of breast milk (27). Premature introduction of complementary foods before 4 months of age has been associated with childhood overweight, increased risk of diarrheal disease, food allergies and iron and zinc deficiencies (29,30). Late initiation (after 6 months) of nutritious complementary foods especially in low income countries has been linked with micronutrient deficiencies (2,31). Eight point five percent of infants below three months of age in the present study were introduced to complementary foods before three months of age, 40.6% between 3 – 6 months and 23.2% after 6 months. A study in Ijero and Ikole local government area of Ekiti state reported 69.5% of infants to have been introduced to complementary feeding at 6 months of age (13). This is high compared to the present study. The reported finding is also inconsistent with other studies in Lagos (47.9%) (32) and Cross River (25%) State, Nigeria (33).

With regards to the quality of complementary foods, most are prepared from locally available sources consisting mostly of starchy grains which have low nutrient density. In the context of the present study, 75.6% made infant complementary foods from locally available sources while 8.7% used commercially prepared foods. A diet lacking in essential nutrients predisposes young children to stunting in early life (7,34). Hence, complementary feeding process has been associated with major changes in both macronutrients and micronutrient intake of children resulting in malnutrition (33). Minimum dietary diversity (eating from at least four food groups out of seven) in the present study was low as majority (88%) of infants were fed mainly starch based staples, fats and oils (70.8%) as these are inexpensive compared to animal source proteins, legumes and seeds as well as fruits. In a study among mothers of under-five in Lagos, only 16% of children between 6 and 9 months and 65.6% of children above 9 months of age attained the minimum dietary diversity. A study on trends of complementary feeding indicators in Nigeria showed that among educated mothers, minimum dietary diversity depreciated from 33% to 24% (35). Udoh and Amodu in their study on complementary feeding practice reported the minimum dietary diversity among infants 6-8 months and 9-11 months of age to be 25.5% and 43.2% respectively (33). Many studies in Nigeria and other low income countries have recorded a poor dietary diversity of meals fed to infants and young children (4,6,32,36). Low dietary diversity in the present study can be as a result of low income status of the parents, culture or religious beliefs.

A report on nutrition and mortality survey in Borno State by Save the Children International showed that the prevalence of global, moderate and severe malnutrition were 15.7%, 11.4% and 4.2% respectively (37). This prevalence is higher than that reported in the 2018 National Nutrition and Health Survey (NNHS). National prevalence of GAM for Nigeria among children aged 6-59 months was 7% (6.5 – 7.5: 95% CI) while moderate and severe acute malnutrition were 5.5% (5.1 – 6.0; 95% CI) and 1.5% (1.3 – 1.7: 95% CI) respectively (8). In the Federal Capital Territory, the prevalence rate of global acute malnutrition was estimated at 5.5% (2.8 – 10.3: 95% CI) (8). Using the mid-upper arm circumference (MUAC), GAM prevalence was estimated at 12.1% (8.4-15.7 95% C.I.), MAM (8.5%) (6.1-12.4 95% C.I.) and SAM (3.6%) (1.2-6.2 95% C.I.) With the prevalence being more in males than in females. This finding is in discordance with a study carried out in Borno state where the GAM, MAM and SAM prevalence were 9.0% (6.2 – 12.8 95% CI), 5.9% (3.8 – 8.9 95% CI) and 3.1% (1.9 – 4.9 95% CI) respectively (37). The same study reported a higher prevalence of GAM, MAM and SAM among females than the males under five years, though no significant difference was reported (37). Overweight and obesity prevalence were 7% (4.8 - 10.1:95% C.I.) and 1.4 (0.7 - 2.6 95% C.I.) respectively. This is higher than the overweight prevalence rate of 1.5% in a study in Okrika town, Port Harcourt, Nigeria (38). Overweight and obesity in the present study was more prevalent

among boys than girls. This is comparable to a finding in Kenya where it was reported that males consistently had better caloric intake compared to the females (39).

CONCLUSION

Infant and young child feeding practices in the study area is poor. There is a high prevalence of double burden of malnutrition among under-five children in Kuje Area Council with multifactorial determinants. These findings reinforce the importance of proper infant and child feeding practices and appropriate maternal care in prevention of malnutrition.

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