ASSESSMENT OF FEEDING PRACTICES AND NUTRITIONAL STATUS OF UNDER-FIVE CHILDREN IN ORPHANAGES IN ABEOKUTA, OGUN STATE

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Abstract

Malnutrition is a major health challenge of children in the developing countries especially among orphans. It is a major obstacle that prevents children from reaching their full potential development. The study assessed the feeding practices and nutritional status of under five children in orphanages in Abeokuta, Ogun State. It is a descriptive cross-sectional study involving 54 under-five children exhaustively selected from six (6) orphanages in Abeokuta. A semi-structured questionnaire was used to collect data on socio-demographic characteristics of the children, information about care givers/orphanages, and feeding practices of the under five children. Height and weight measurements of the children were taken using standard procedure, and anthropometric status was computed using WHO anthro software. The data collected was subjected to descriptive and inferential statistics using SPSS version 20.0. Majority of the children (79.6%) were male, belonged to Yoruba ethnic group (98.1%), and were of the Christian faith (94.4%). Moreso, 68.5% of the children were not breastfed at all, and only few of the children were exclusively breast fed. The nutritional status shows that 51.9% have normal weight for age, while 35.2% and 7.4% were mildly and moderately underweight respectively. Also, 31.5%, 14.8 and 9.3% were mildly, moderately and severely stunted respectively, while 22.2%, 16.7% and 33.3% were mildly, moderately and severely wasted respectively. Most of the children were not breastfed up to the expected period of time. High prevalence of stunting, underweight and wasting was observed among the children and this was significantly associated with the duration of feeding of infants.

Keywords: Feeding practices, nutritional status, orphanages, under-five

Introduction

Infants and young children belong to the vulnerable groups in the society. Orphans are more vulnerable as they have lost one or both parents to death or are totally abandoned. They depend on others for good nutrition and survival. There are about 140 million orphans in the world, and 52 million of them live in Africa (UNCEF, 2017). According to Federal Ministry of Women Affairs and Social Development, there are about 17.5 million orphans and vulnerable children in Nigeria (SPRING, 2016). UNICEF has projected that 8.2 million children in Nigeria, which constitute about 10 percent of the children population would be orphaned (Adeomi *et al.,* 2019). Most of these orphans are accommodated by relatives and other caring families, while others get accommodated in orphanages owned by individuals, religious bodies, government and non-governmental organizations. Orphanages may experience increase in proportion of children due to the gradual breakdown of the extended family settings, especially in the urban and semi-urban communities in Nigeria (Adeomi *et al.,* (2019).

Furthermore, children living in orphanages world-wide tend to be neglected but are often susceptible to undernutrition. Malnutrition is the major health problem of children in the developing countries especially among orphans (Reddy *et al.,* 2019). "Malnutrition refers to deficiencies, excesses or imbalances in a person's intake of energy and/or nutrients (WHO, 2020). Childhood malnutrition has long term consequences because it impedes motor, sensory, cognitive, social and emotional development (Reddy *et al.,* 2019). With the national prevalence rate of 32 percent of under five children, Nigeria is known to have the second highest burden of stunted children in the world (UNICEF, 2020). This prevalence of 32 percent falls within the World Health Organization serious levels of stunting.

Orphaned children are more vulnerable to undernutrition (Adeomi *et al.,* 2019; Senthilkumar *et al.,* 2018). Infant and young children feeding is a very important aspect of child care. Proper feeding of infants and young children increase their chances of survival and also promote optimal growth and development (UNICEF, 2019). Poor infant and other

factors such as poverty, poor living standard, access to health care facilities, poor sanitation among others are leading causes of malnutrition, morbidity and mortality among children (Pieris, 2010).
There is scarcity of data on the nutritional status and feeding practices of orphans in Nigeria especially Ogun state. This study therefore is aimed at assessing the feeding practices and nutritional status of under five children in orphanages in Abeokuta, Ogun state.

2.0 Materials and Methods

Study Area

This study was conducted from October to December, 2020 in Abeokuta, Ogun State. Abeokuta is the capital of the state and the largest urban centre in the state. It is about 90 kilometres from Lagos and 740 kilometres from Abuja, the capital of Nigeria (Ogun State Government, 2020). With a postal code of 110, Abeokuta has an area of 71Km^2 and a population of 250, 278 at 2006 census. Its occupants are predominantly the Egbas, a Yoruba ethnic group. Christianity, Islam and traditional religions are the three major religions of the people.

Research Design

For the purpose of this research work, Cross-sectional descriptive research design was adopted for this research work

Population of the Study

The population of the study was all under five children in all the registered orphanages in Abeokuta, Ogun, State.

Sample size

This comprises the 54 under-five children found in the six (6) selected registered orphanages .

Ethical clearance and consent form

Before the implementation of the project, an extensive consultation was undertaken between the researchers and the management of the orphanages, and all ethical issues were adhered to; informed verbal consent was obtained from the management of the orphanages prior the commencement of the study. Neither the children nor workers/management of the orphanages were paid to participate in the study; participation was voluntary.

Method of Data Collection

A semi-structured interviewer administered questionnaire was used in the study to collect the background information of the orphanage, staff/caregiver which include, sex, age, number of under five children in the orphanage, staff strength educational background of caregivers, child feeding practices and childcare practices. Other health demographic, and socioeconomic characteristics (such as source of fund, water supply, electricity) which may affect the nutritional status of the under five children were also included in the questionnaire.

Nutritional status

Anthropometry measurements (weight and height) were made, and z-scores were generated and compared with reference standard. The children's weight and length/height were measured wearing light clothing. The measurements were taken following WHO standard. The children's date of birth was obtained from the child register in the orphanage homes.

Data Analysis

The data obtained from the study was subjected to both descriptive and inferential statistics using statistical package for social science (SPSS V.20.0). Descriptive statistics such as frequency, percentage, mean and standard deviation was used while inferential statistics like chi-square was used to determine the association between the categorical variables, and analysis of variance (ANOVA) was used to determine the difference between means. Anthropometry was used to determine the nutritional status of the children. Z-scores were generated with the help of "Anthro" and used to assess the nutritional status of children. The children were classified into categories of nutritional status using the National Centre for Health Statistics (NCHS/WHO) as a reference data (WHO, 2006).

3.0 Results

Table 1 shows the socio demographic characteristics of the respondents. Almost all (79.6%) of the respondents were male, Christian (94.4%) and belonged to Yoruba ethnic group (92.6%). Also, majority (31.9%) of the under-five children were within the age range of 48-60 months, while few (1.9%) were within 0-6 months.

Table1: Socio-demographic Characteristics of the children

Variable	Frequency	Percentage (%)
Sex		
Male	43	79.6
Female	11	20.4
Total	54	100
Age range		
0-6month	1	1.9
6-12 month	2	3.7
12-24 month	3	5.6
24-36 month	13	24.1
36-48 month	7	13.0
48-60 month	28	31.9
Total	54	100
Ethnic group		
Yoruba	50	92.6
Igbo	1	1.9
Hausa	3	5.5
Total	54	100
Religion		
Christian	51	94.4
Islamic	3	5.6
Total	54	100

Table 2 shows the information about the orphanage homes and the care givers. More than half of the caregivers (52.1%) were within the age range of 30-35 years, 30.4% of them were within 26-30 years, while 17.4% of the caregivers were 36 years and above. The educational level revealed that majority of the caregivers had primary (43.5%) and secondary (32.6%) level of education respectively. Only few of them had ND/NCE (15.2%) and HND/B.Sc (8.7%) respectively. Half of the orphanages were owned by nongovernmental organization (50%) and received an income of between ₦100, 000 – ₦150, 000 monthly. The result also shows that majority (66.7%) of the orphanages had borehole, while 66.7% had the combination of both water system and pit toilets.

Table 2: Information about the orphanages and the care givers

Variable	Frequency	Percentage (%)
Age of the caregivers (n = 46)		
26-30 years	14	30.4
30-35 years	24	52.1
36 years and above	8	17.4
Educational level of the caregivers (n = 46)		
Primary	20	43.5
Secondary	15	32.6
ND/NCE	7	15.2
HND/B.Sc	4	8.7
Ownership of the orphanages (n = 6)		
Private	1	16.7
Nongovernmental organization	4	66.6
Faith-based	1	16.7
Total	6	100

Level of income (n = 6)		
₦50,000 - ₦100,000	2	33.3
₦100,000 - ₦150,000	3	50.0
Above ₦150,000	1	16.7
Source of water supply (n = 6)		
Pipe borne water	2	33.3
Borehole	4	66.7
Sanitary facility		
Water system	2	33.3
Water system and pit latrine	4	66.7
Source of electricity		
Ibadan Electricity Distribution Company (IBDC)	3	50.0
Generator and IBDC	3	50.0
Total	6	100
Access to health care first aids	54	100
Yes	54	100
No	0	0

Furthermore, in assessing the nutritional status of the respondents, anthropometric measurement was taken and presented in table 5. The table shows that the male respondents had average weight and height of 14.95 ± 2.45kg and 0.97 ± 0.96m respectively. The female average weight and height respectively were 14.82 ± 2.72kg, and 0.96 ± 0.12m. There was no significant difference ($p < 0.05$)

between the mean weight and mean height of the children.

Table 3: Anthropometric measurement of the respondents

Sex	Average weight (kg)	Average height (m)
Male	14.95 ± 2.46	0.97 ± 0.96
Minimum	8.0	0.64
Maximum	21.2	1.10
Range	13.2	0.46
Female	14.82 ± 2.72	0.96 ± 0.12
Minimum	7.0	0.47
Maximum	19.1	1.10
Range	12.1	0.63
F	0.456	0.091
P-value	0.50	0.77

Significantly different at $p < 0.05$

Result in figure 1 reveals the nutritional status of the respondents. According to their weight-for-age (WAZ), it was noted that more than half of the children (51.9%) were normal, more than one-third (35.2%) were mildly underweight, while (7.4%) were moderately underweight. Also 3.7% were mildly overweight while 1.9% were moderately overweight. The Height-for-age (HAZ) of the children shows that 35.2% were normal while 31.5% of the children were mildly stunted and 14.8% moderately stunted. 9.3% were severely stunted and tall respectively. Furthermore, one-third of the children were severely wasted, 22.2% were mildly wasted, 16.7% were moderately wasted while 18.5% were normal.

Figure 1: Nutritional status of the respondents using anthropometric indices

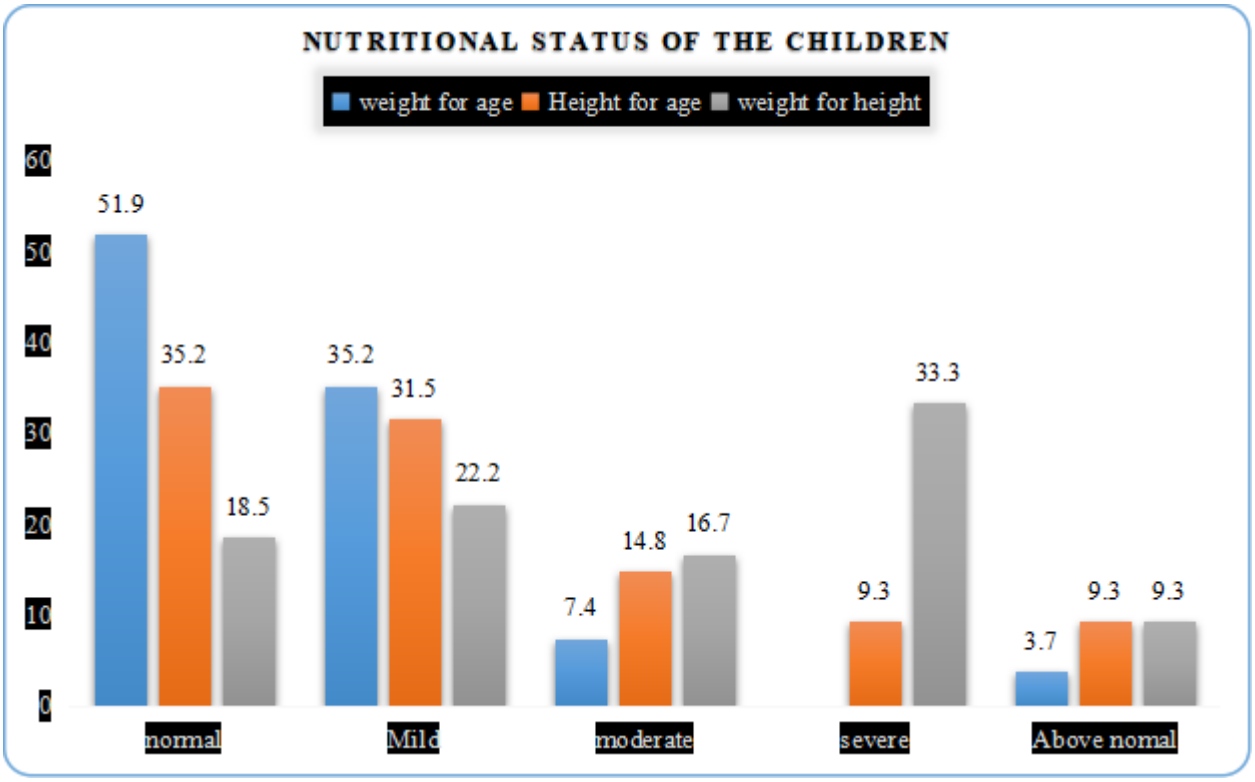


Table 4 shows the feeding practices of the respondents. Majority of the children (68.5%) were breastfed, while less than one-third (31.5%) of the children were not breastfed. 20.4% of them were breastfed by their mothers, 3.7% by their step mothers while 7.4% of these children received breast milk from their nannies/caregivers in the orphanage. Furthermore, 3.7% of the children received breast milk for 1-2 months, 9.3% between 3-4 months and 4-6 months respectively. More than half (51.9%) of the children were given infant formula instead of breast milk at infancy stage. More than one-third (37%) of them were introduced to solid food when they were within 3-6 months, 27.8% started eating solid food when they were between 7-12 months, 31.5% 12-24 months, while few of them (3.7%) started eating solid food when they were just between 0-3 months.

Also, majority of the respondents (57.4%) did not take in-between meal/snacks, while 42.6% do take snacks. The snacks usually given to these children are biscuits (20.4%), peanuts (9.3%), chin-chin (7.7%), fruits (5.6%), and meat pie (1.9%).

Table 4: Feeding practices of the respondents

Variable	Frequency	Percentage (%)
Was the child breastfed?		
Yes	17	31.5
No	37	68.5
If yes, by whom?		
Mother	11	20.4
Stepmother	2	3.7
Nanny	4	7.4
Not applicable	37	68.5
For how long was the child breastfeed?		
1-2month	4	3.7
3.4month	5	9.3
4-6month	5	9.3
6month above	3	5.6
Not applicable	37	68.5
If no, what kind of food did you give		

Infant formula	28	51.9
Solid food	5	9.3
Other	3	5.6
No response	1	1.9
When did you introduce formula milk or solid food?		
0-3month	2	3.7
3-6month	20	37.0
7-12month	15	27.8
12-24month	17	31.5
What type of utensils did you use		
Bottle	44	81.5
Cup and spoon	7	13.0
Plate and spoon	3	5.6
How did you sterilize the feeding utensils?		
By boiling	24	51.9
By soaking	14	25.9
Use of disinfectant	2	3.7
Rinsing	10	18.5
Do he /she refuse to eat?		
No	10	18.5
Yes	28	51.9
Sometime	12	22.2
Never	4	7.4
If she refuses to eat what do you do?		
Leave him/her	7	13.0
Force him/her	21	38.0
Beat him/her	7	13.0
Try another food	17	31.5
Other	1	1.9
No response	1	1.9
Do you give snack?		
Yes	23	42.6
No	31	57.4
What type of snack do you give?		
Fruit	1	5.6
Peanut	3	9.3
Chin-chin	5	7.7
Meat pie	4	1.9
Biscuit	1	20.4
NA	11	55

Statistically, significant association was observed between nutritional status and some of their feeding practices such as duration of feeding, who breastfed the child, and eating of breakfast. However, no significant relationship was observed between the anthropometric indices and most of their feeding practices.

Table 6: Association between feeding practices and nutritional status of the respondents

	Weight for height		Height for age		Weight for age	
Feeding practices	X^2	p-value	X^2	p-value	X^2	p-value
Breastfeeding of child	2.682	0.61	1.605	0.81	9.804	0.44
Who breastfed the child	29.81	0.03*	8.165	0.77	20.16	0.06
Duration of breastfeeding	28.91	0.03*	15.99	0.45	39.5	0.01*
Time of introducing solid milk	16.35	0.18	18.37	0.11	17.9	0.12
Type of complementary feed introduced	9.259	0.69	10.48	0.57	24.8	0.16
Type of utensils used	4.634	0.80	10.42	0.24	14.5	0.07
How did you sterilize the feeding utensils?	13.88	0.31	15.43	0.22	38.13	0.00*
Does he/she refuse to eat?	13.70	0.32	10.86	0541	16.51	0.16
Does he/she feed him/herself?	4.216	0.38	5.812	0.21	11.92	0.02*
If he/she refuses to eat what do you do?	18.57	0.55	20.24	0.44	42.79	0.00*
How many times did you feed the child per day?	5.372	0.94	8.839	0.72	9.660	0.65
Do you skip meal?	2.482	0.65	4.796	0.31	2.799	0.59
Do you give the child breakfast?	26.49	0.00*	9.985	0.04*	4.483	0.39

Significantly different at p< 0.05

4.0 Discussion

Majority of the respondents were male (79.6%), while 20.4% were female. This finding is similar to that of Ali *et al.* (2018) and Sewnet *et al*. (2021) which reported 56.9% and 60.1% male orphans respectively. This is however contrary to the findings of Nietmat *et al.* (2019) in a study conducted among under-five orphans in Sudan and that of Adeomi *et al.* (2019) in a study conducted in southwestern, Nigeria. Almost all the children belong to Yoruba ethnic group and practiced Christian religion. Majority of the caregivers in this study were above 35 years and either have primary or secondary school education. This is in line with the findings of Nietmat *et al.* (2019). In a similar study conducted among orphans and non-orphan children less than five years in Ghana by Ali *et al.* (2018), majority of the care givers were below 35 years and had at least senior high school certificate. The child's growth and development, and quality of care can be affected by the care giver's education and child related training (Bradley, 2007; & Sule, *et al.*, 2013).

"Infant and young child feeding is a key area to improve child survival and promote healthy growth and development" (WHO, 2020). Infants and young children are among the vulnerable groups in the society and therefore need special nutritional attentions, because "they are the leaders of tomorrow". Appropriate feeding practices will reduce the economic burden on malnutrition in the country. The result on feeding practices show that majority of the children were not breastfed at all (68.5%). Out of the few privileged to be breastfed by their mother, step mother or nanny/caregivers, only few (5.6%) of them were breastfed exclusively. This is not surprising because they are orphans. This is consistent with the finding of Obiakor-Okeke and Nnadi (2014). Getaneh, *et al.* (2016) in a similar study reported high proportion (95.3%) of breastfeeding. The result in this study is however contrary to the findings of Steve-Edemba and Nnam (2014) in a study conducted in Abuja, Nigeria. The authors reported that none of the under-five children in the orphanages received breast milk; they were rather fed infant formula.

Furthermore, malnutrition is a significant problem in orphanages in developing nations of the world. Under-nutrition is responsible for at least 45% of child mortality worldwide (WHO, 2020). It is a major obstacle that prevents children from reaching their full potential development. This research found that 32.2%, 7.4% of the children are mildly and moderately underweight respectively. The result for moderate underweight in this study is lower, while mild underweight is higher than that of Reddy *et al.* (2018) which reported 24.6%moderate underweight and 13.9% mild underweight.

Furthermore, underweight in this study is lower than that reported by Adeomi *et al.* (2019) in a study conducted in southwestern, Nigeria, Nietmat *et al.* (2019) in a study conducted in Sudan. It is however, higher than the ones reported by Ali *et al.* (2018), Mwaniki & Makokha (2013) and Nwanerit & Omuemu (2013).

Also, stunting in this study is higher than that of Wwaniki & Makokha (2013) who reported 47.2% overall stunting. It is however, higher than that of Nwaneri & Omuemu (2013) who recorded 74.3% stunting and Adeomi, *et al.* (2019) who reported 62.3% stunting. The result of wasting is higher than that of findings of several studies (Wmaniki & Makokha, 2013; Ferdoushi *et al.* 2016; Mwaneri & Omuemu, 2013 and Adeomi *et al.* 2019). The result on wasting in this study is in agreement with the study conducted by Nietmat *et al.* (2019) on the nutritional assessment of under-five years' children in Mygoma orphanage home, Sudan. The poor nutritional status in this study could be as a result of the meagre financial assistance received by the orphanages which affect their feeding practices and consequently their nutritional status.

5.0 Conclusion

Optimum nutrition at early stage of life is a facilitator of healthy growth and development. The study revealed high malnutrition rate among the under five children in Abeokuta orphanages. The high prevalence of malnutrition found in this study could be linked to the poor feeding practices and low income received by the orphanages. Poor nutritional status will make those children susceptible to debilitating communicable and non-communicable disease in later life.

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