Prevalence of Malnutrition, Causal Factors of Malnutrition and Other Risk Factors in Nigeria Internally Displaced Persons (IDP) Camps

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Abstract

This study assessed the eating practices, nutritional status, and prevalence of malnutrition among inhabitants aged 6 to 59 in three Internally Displaced Persons (IDP) camps in Nigeria. It also examined the impact of nutrition education. 1,910 respondents provided information via semi-structured, pretested questions that were given by interviewers. In addition to employing established techniques for anthropometric measurements and proximate food composition analyses, statistical tools such as correlation and t-tests were used to evaluate the effect of eating behaviour on BMI both before and after nutrition education.Of the household heads, the majority were between the ages of 36 and 50; 54.5% were men, and more than 62% lacked formal schooling. Various occupations were represented, with menial labour (36.4%) and farming (40.9%) being the most prevalent. While 39.8% of respondents did not have a source of income, 60.2% did. Malnutrition was common in every age group:Among schoolchildren, 61.9% of boys and 66.7% of girls were underweight, whereas 26% of males and 23.5% of females were overweight.The percentage of underweight adolescents was 88.5% for females and 89.9% for boys. 19% of women and 20% of men were obese; 46.8% of men and 56% of women were underweight.According to the study, the main causes of the poor nutrition in the camps were lack of nutrition knowledge, poverty, and subpar living conditions. It urges the government and NGOs to act quickly to enhance the dietary health of those living in IDP camps.

Keywords

Prevalence, Malnutrition, Causal Factors, Risk Factors, Nigeria Internally Displaced Persons

1. Introduction

According to the United Nations Office for the Coordination of Humanitarian Affairs, internally displaced people (IDPs) are people who are forced to flee their homes due to armed conflict, widespread violence, violations of human rights, or natural or man-made disasters but remain in their own country. [1] Internally displaced people move within their own country in quest of safety and security [2]. Forced population movements that result in mass exoduses are fundamentally against international human rights and humanitarian law. There is a severe risk to lives and property due to conflicts in Nigeria that have resulted in thousands of deaths and millions of displaced persons in the northeast due to Fulani herdsmen and Boko Haram [3]. People may be forced to relocate due to volatile and unstable war situations, unhealthy power dynamics, harmful ethnic insurgencies, national rivalries, religious prejudice, government hypocrisy, and widespread poverty brought on by globalisation. All of these elements are a component of the unexpected new global order. [4] For those who are forcibly displaced, there are inherent risks of deprivation, further displacement, and other protection risks such as lack of access to basic services, family separation, sexual and gender-based violence, trafficking, discrimination and harassment, forced marriage, infant marriage, sexual diseases, and uncontrolled births that result in high infant and maternal mortality [5].

The impact of the conflict on the livelihoods and incomes of internally displaced individuals is the main cause of food insecurity among this population [6]. Displaced people are generally more vulnerable in a number of ways, particularly during periods of armed conflict. Not only do displaced individuals continue to have far higher mortality rates than the general population, but they also face increased risks of sexual assault, physical attack, and kidnapping. They usually don't have access to adequate food, housing, and healthcare. There have been several tribes and camps where life has been hard, primitive, and sometimes short [7]. Nevertheless, conflicts hinder the progress of development projects [8].

Reports indicate that prolonged wars and the conduct of abusive armed groups have caused food costs to rise and malnutrition rates among up to 1.35 million internally displaced people (IDPs) to rise by 20%. Furthermore, feeding population centres in productive areas has been hampered by logistical issues. Chronic malnutrition, a serious problem that impacts 48% of children in the Democratic Republic of the Congo, is caused by a number of reasons [9].

Internal displacement has a substantial influence on public health and the well-being of the affected population. These impacts could be categorised as direct, such violence and injuries, or indirect, like the increase in infectious disease and famine rates [10]. Risky drinking and increased smoking were among the harmful behaviours observed in IDP, which increased the burden of diseases like cancer, chronic pulmonary disease, and hypertension. In 2016, health officials found that nearly 6,500 youngsters in camps in northeastern Nigeria were very malnourished [11]. In Nigerian IDP

camps, the situation of food security and scarcity is worse. Their food insecurity stems from their loss of income and means of subsistence due to displacement and the insurgency [12]. This sickness poses a risk to camp residents, including adults and children. Heart disease, stroke, high blood pressure, tooth decay, esophageal damage from bulimia, ricket, despair, and anxiety are among the long-term effects of disordered eating [13]. Negative psychological repercussions might result from eating problems. It also has physical effects on the body, leading to dry skin, brittle nails and hair, decreased muscular mass, and extreme thinness [14].

A diet low in fats and calories can lead to cardiovascular health problems, heart problems, slowed brain function that impairs concentration, gastroparesis or slowed digestion, dehydration and malnutrition that cause anaemia and lower immune function, and decreased hormone levels, specifically a drop in oestrogen and testosterone levels. Hypothermia eating disorder causes the body to go into a state of hypothermia when there is insufficient calories to feed the metabolic fire [15].

The prevalence, causes, and risk factors of malnutrition in the Nigerian IDP camp are determined by this study.

2. Materials and Methods

2.1 Study Areas

This study was carried out in Nigeria Internally Displaced Persons camp in Abuja, Borno and Bayelsa.

2.2 Research Design

A descriptive cross-sectional design was adopted.

3. Population of the Study

The population used in this research work included all the Internally Displaced people in each household in designated IDP camps across Nigeria; such as School Children (6-10yrs), adolescents (11- 18yrs), adults (18< 59yrs) from the three geopolitical zones from Abuja, Borno, and Bayelsa states.

Distribution of target population across IDPs in the study area is shown in Table 1.

Table 1. Distribution of target population household.

Govt. Approved IDP Camps	Total Number of Households	Total Number of Target Population Selected
Abuja	300	171
Borno	260	158
Bayelsa	280	117
Total	840	446

3.1 Selection Criteria

Only household with target population; school children, adolescents and adults were used. However, school children, adolescents and adults who visited the camp during the study time were excluded.

Table 2. Distribution of target population

Names of IDP camps	School Children	Adolescents	Adults
New Kuchingoro Abuja	299	200	188
Bakassi Maiduguri Borno	180	180	162
Bakassi Bayelsa	160	160	150
Total	870	540	500

3.2 Recruitment and Training of Research Assistants

Five health workers from nearby health facilities within proximity (Pearl Family Hospital, General Hospital in Munguno and Bayelsa Specialist Hospital for New Kunchigoro camp Abuja, Bakassi camp and Borno and Bakassi camp in Bayelsa respectively) who communicate well in both English, Hausa and Ijaw languages were recruited as research assistants and were trained on the method of questionnaire administration.

The training was on the procedure for the anthropometric assessment, filling of the questionnaire and how to report on the 24hours dietary recall.

Ethical approval: The ethical approval was obtained from the ministry of Health Imo state Nigeria for the conduct of this study.

4. Method of Data Collection

4.1 Questionnaire Method

A pretested, semi-structured, interviewer-administered questionnaire was used to obtain information on socio-demographic and clinical characteristics of the selected dwellers. Anthropometric characteristics was determined using standard procedure. Information on the presence of locally and internationally nutritional interventions was gotten, eating behaviour were evaluated using selected feeding practices on the nutritional status of the respondents. The questionnaires were pre-tested at the Ox-Box Lake IDP camp in Bayelsa state with 50 respondents and necessary amendments were made to re-structure the questions that were found ambiguous for the respondents. A total number of 1,910 questionnaires were distributed and all retrieved. Then, they were collated and sorted out for accuracy and completeness before leaving the camp each day. The responses of each variable were converted to percentages. Calibration of weighing scales was done to checkmate the zero error.

4.2 Socio-demographic and Eating Behaviour

Information on socio-demographic characteristics, eating behaviour and causes of malnutrition etcetera, in the IDP camps was obtained by distribution of well-organized structured questionnaire to the caregivers of the households, and the adults.

Information on the regular skipping of meal, restraining of meals for adults and refusal to eat certain food groups or any solid or liquid food for the school children aged 6 to 11 years, adolescents and adults was obtained. The questionnaire was voluntarily filled by the help of the selected care givers and those who are not educated was helped. The questionnaire was partitioned into four (4) sections (A-D). section A – Demographic Data, Section B – Type of Food consumption (Quantitative analysis), Section C – Causal Factors,

4.3 Nature and Prevalence of Malnutrition and Nutritional Status in IDP Camp

Anthropometric measurements of weight and height were obtained for selected households, aged 6-59yrs (categorized into school children 6-11yrs, adolescent 12-18yrs, and adults 19-59yrs) in the selected three IDP camps namely, Abuja, Borno, Bayelsa following the standard procedure established by WHO

4.4 Prevalence of Malnutrition and Nutritional Status in IDP Camp

Data on anthropometric measurements of children, adolescents and adults from different household in Nigeria IDP camps was processed using the WHO Anthroplus software version 1.0.4 Weight and height were converted to anthropometric indices: weight for age (underweight), height for age (stunting) and weight for height (wasting) and BMI.

5. Statistical Package Analysis

Data entry and processing were done using the descriptive statistical analysis presented in frequency tables and percentages. Bivariate analysis was conducted using the Chi-square(X^2) test to determine the association between the nutrient consumption rate of the respondents and the WHO/FAO Standard which shows that there is no association between the WHO/FAO daily nutrient requirement and the quantity consumed by the respondents. Student T-test and Pearson correlation were calculated using statistical package for social science (SPSSversion20). Significant difference was judged at $p<0.05$. Student T-test was used to compare the anthropometric indices, nutrient intake etc of the IDPs in the camps for any two related groups mainly males and females for each group.

The mean, and standard deviation of the variables from anthropometric, and nutrient intake was determined. While percentages were calculated for data on socio-economic factors, causes of malnutrition and eating behaviour and classified into categories.

6. Results

6.1 Socio-demographic Characteristics of Households in IDP Camps

The table 3 shows the age of sociodemographic characteristics of the households. One hundred and sixty 160(36.4%) of the respondents were within the age range of 36-50 years, 86(19.5%) were between 51-59 years, 126(28.6%) were between 26-35years. 121(50.2%) were male, 219(49.8%) were female. 272(62.9%) had no educational background, 105 (23.9%) had FSLC; 240(54.5%) of the household were male, 92(20.9%) were female, relatives 55(12.5%), and siblings 53(12%). For duration in the camp, 154(35.0%) have stayed between 6 months to 1year, 148(33.6%) < 6months, 97(22.0%) < 2years, 180(40.9%) were farmers, 160 (36.4%) had menial jobs, 52(11.8%) were traders, 48(10.9%) do nothing.

Two hundred and forty 240(54.5%) of the respondents indicated father as their household head, 92(20.9%) of the respondents revealed that mother is their household head, 55(12.5%) reported the stature of their household as relatives; 53(12%) revealed that their household head was their siblings; 180(40.9%) of the respondents indicated that they were farmers, 48(10.9%) were engaged on menial jobs, 52(11.8%) were traders while 160(36.4%) were idle.

Table 3. Socio-demographic characteristics of households

Variables	**Frequency (percentage) n(%)**
State/ name of IDP camp	
Abuja (New kuchingoro)	168(38.2)
Bayelsa (Bakassi)	117(26.6)
Brono (Bakassi)	155 (35.2)
Total	**440 (100)**
Age of household head	
18-25	68(14.5)
26-35	126(28.6)
36-50	160(36.4)
51-59	86(19.5)
Total	**440(100)**
Gender	
Male	221 (50.2)
Female	219(49.8)
Total	**440 (100)**
Educational background	
FSLC	105 (23.9)
SSCE	56(12.7)
Graduate	7(1.6)
None	272(62.9)
Total	**440 (100)**
Status of Household Head	
Father	240(54.5)
Mother	92 (20.9)
Relative	55(12.5)
Sibling	53(12.0)
Total	**440 (100)**
Duration in camp	
<6 months	148 (33.6)
6months – 1year	154(35.0)
>2 years	97(22.0)
Not sure	41(9.3)
Total	**440 (100)**
Occupation	
Trader	52 (11.8)
Farmer	180 (40.9)
Menial jobs	48 (10.9)
None	160(36.4)
Total	**440 (100)**

6.2 Socioeconomic Characteristics of Households

Table 4 shows the socio-economic characteristics of dweller in the IDP camps; 265 (60.2%) of the dwellers had source of income, 175 (39.8%) do not have 345 (78.99%) said they earned <N10,000 monthly.58 (17.7%) earned N20,000 to N50,000 per month while 15 (3.4%) said they earned N60.000 to N80.000 monthly. Most 255 (55.7%) of the IDP dwellers said that their family size is 3-5 in number. Some 121 (27.5%) of them said their family size is 5-7, 41 (9.3%) said they were 1-2 in number while 33 (7.5%) indicated that they were >8 in number 292 (66.4%) of the IDP Camp dwellers lived in batcher, 103 (22.1%) lived in make-shift while 43 (9.8%) lived in shanty.

Table 4. Socio-demographic characteristics of households (cont.)

Variables	Frequency (percentage) n(%)
Any source of Income	
Yes	265 (60.2)
No	175(39.8)
Total	
Income level	
< N10,000	345 (78.9)
N20, 000-N50, 000	58 (17.7)
N60,000- N80,000	15 (3.4)
>N 80,000	-
Total	440 (100)
Household size	
1-2	41(9.3)
3-5	255(55.7)
5-7	121(27.5)
>8	33(7.5)
Total	440 (100)
Type of shelter	
Batcher	292 (66.4)
Make shift	103(22.1)
Shanty	43 (9.8)
Total	440 (100)

Table 5 shows the malnutrition status of school children before nutrition education. Two hundred and sixty-six 266 (61.91%) percent of male children in IDP camps were underweight, 296 (66.7%) of the female school children in Nigerian IDP camps were underweight. 109(26.0%) of the males were wasted. 104 (23.4%) of the female school children were overweight. Crude mortality of school children 10,000 per month were 2(0.2%) male and 1(0.1%) female. Presence of nutritional wasting was 6.8%.

Table 5. Malnutrition status of school age children in IDP camps

Variables	Frequency (percentage) (%)	
Common forms of Malnutrition	**Male (n=420)**	**Female (n-450)**
Wasting	31 (7.3)	28 (6.7)
Underweight	266 (61.9)	296 (66.7)
Overweight	109 (26.0)	104 (23.4)
Total	420 (100)	444 (100)
Crude mortality of school children 10,000 per month	2(0.2)	1 (0.1)
Odema	59	6.8

6.3 Malnutrition Status of Adolescent in IDP Camps

Table 6 shows that 258 (89.9%) of the male adolescent were underweight. 224 (88.5%) of the female adolescent were underweight; 18 (6.7%) of the male adolescent were wasted, 14 (5.5%) of the female adolescent were wasted.

Table 6. Malnutrition status of adolescent in IDP Camps

Variable	**Frequency (percentage) %**	
Common Forms of malnutrition	**Male (n= 287)**	**Female (n=253)**
Stunting	9 (3.1)	6 (2.4)
Underweight	258 (89.9)	224 (88.5)
Overweight	2 (0.7)	9 (3.6)
Wasting	18 (6.3)	14 (5.5)
Total	287 (100)	253 (100)
Crude Mortality Rate of Adolescent		
Number of death in Population per 1000 per month	1(0.2)	4(0.1)
Number of death in Population per 10,000 per day	0(0.0)	0(0.0)
Present of nutritional Odema	15	(2.8)

Table 7 also show that 117 (46.8%) of male adults were underweight; 140 (56.0%) of the female adults were underweight, 60 (24.0%) of the male adults were wasted; 47 (18.8%) female adults were wasted. Presence of nutritional obese in adults were 94 (18.8%). 4(0.8%) death per 1000 males per month.

Table 7. Malnutrition status of adults in IDP camps

Variable	**Frequency Percentage % n (%)**	
	Male (n=250)	**Female (n=250)**
Common forms of malnutrition		
Obese	50 (20.0)	44 (17.6)
Underweight	117 (46.8)	140 (56.0)
Overweight	23 (9.2)	19 (7.6)
Wasting	60 (24.0)	47 (18.8)
Total	250 (100)	250 (100)
Crude Mortality Rate		
Number of death in Population per 1000 per month	4	0.8
Number of death in Population per 10,000 per day	0	0
Presence of Nutritional Edema	94	18.8

6.4 Causal Factors of Malnutrition and Other Risk Factors

54.2% of the IDP participants agreed that inadequate sanitation and hygiene were the primary cause of malnutrition, according to the results of a study on environmental quality as a causal direct factor of malnutrition in the camps. While 45.6% and 14.8% of respondents answered that poor sanitation and hygiene and water supply sources were not to blame, 85.2% of respondents said that this was the case. The difference is statistically significant ($p<0.05$).

According to the results of the study on food variety, quantity, and quality as a causal direct factor of malnutrition in the IDP camps, 74.1% of households believed that low diet intake, both in terms of quantity and quality, was the cause of malnutrition, while 61.6% of households thought that food shortage and lack of variety were the main causes. There is no discernible difference between malnutrition and food quality, quantity, and variety, while 34.4% and 25.9% of respondents denied that it was caused by a lack of food variety or inadequate diet intake.

According to the results of the study on economic/financial capability and the causal direct factor of malnutrition in the chosen IDP camps, 100% of respondents agreed that poverty and low income were the main causes of malnutrition, 75.0% claimed that household food insecurity was the cause, and 25% disagreed. Given that the values in the two groups are almost the same, the finding indicates a highly significant connection.

According to the results of the study on quality health and medical accessibility as causal direct factors of malnutrition, 69.3% of the participants agreed that poor medical accessibility is the cause of malnutrition, 30.9% experienced episodes of fever or diarrhoea, and 77.5% were unaware of pregnant women and health issues. In contrast, 30.7%, 69.1%, and 22.5% disagreed that these factors were not the cause of malnutrition, while 30.9%, 69.1%, and 22.5% disagreed. With a considerable difference in numerical values (X2 2.65, P-0.008), they are significantly connected at $p<0.001$. 8.2% of respondents stated that they have access to sufficient school facilities, according to the findings of the study on the infrastructure in IDP camps as a causal direct factor of malnutrition. 67.5% of respondents agreed that there is water at the IDP camp, 29.5% claimed there is electricity, and 11.8% said they had access to good lavatory facilities. Although there is a strong correlation between water and malnutrition ($X2 = 66.06$, $p<0.001$), there is no significant difference in numerical values ($X2=0.00$, $p=1.00$). According to 91.8% of the subjects in the IDP camp, malnutrition in the IDP camp is caused by very poor access to school facilities, 88.2% by very poor access to good toilet facilities, 70.5% by the lack of electricity, and 32.5% by the lack of water.

Table 8. Causal factors of malnutrition and other risk factors

Variables (N=440)	Frequency		X^2	P-Value
Direct Factors **a. Environmental quality** (Poor Shelter/ Water, Poor Sanitation and hygiene	**N**	**(%)**		
Yes	239	54.2	3.52	0.005
No	201	45.6		0.005
Sources of water (Tap/Man-power/Borehole/well/stream)				
Yes	375	85.2	0.00	1.000
No	65	14.8	0.00	
b. Food Quality, quantity and Variety are adequate. **Lack of variety of food (Scarcity of food)**				
Yes	271	61.6	1.80	0.073
No	169	34.4		
Poor Diet intake (quantity and quality)				
Yes	326	74.1		1.000
No	114	25.9		0.04
Lack of appetite				
Yes	247	56.1		.000
No	193	43.9		.000
c. Economic/Financial Capability is adequate **Low income and poverty**				
Yes	440	100	.000	0.000
No	0	0		
Household Food security				
Yes	330	750		1.000
No	110	25.0		1.000
d. Quality Health/Medical accessibility are adequate (Poor medical accessibility)				
Yes	305	69.5	2.65	0.008[e]
No	135	30.7		.000

Table 9. Causal factors of malnutrition and other risk factors

Variables (N=440)	Frequency		X^2	P-Value
Episodes of Diarrhea and Fever				
Yes	136	30.9	6.61	1.96[e]
No	304	69.1		
Ignorance of pregnant mothers and health problems				
Yes	341	77.5		1.000
No	99	22.5		1.000
e. Adequacy of infrastructure in IDP camps Access to school facilities				
Yes (Adequate)	36	82	.000	0.000
No (Very poor)	404	91.8	5.10	7.66[e]
Access to good toilet facility				
Yes (Adequate)	52	11.8		0.005
No (Very poor)	388	88.2		1.000
Electricity				
Presence of Electricity	130	29.5		.000
Absence of electricity	310	70.5		0.36
Water				
Presence of water	297	67.5	0.00	1.00
Absence of water	143	32.5	0.00	1.00

7. Discussion

The Borno-Bakassi IDP camp, Bayelsa-Bakassi IDP camp, Abuja-new Kuchingoro, and IDP Camp were the sites of the respective studies. The household heads were between the ages of 18 and 59. The household head is the person who is acknowledged as having primary responsibility for the survival and nutritional well-being of the members of the household [16]. The majority of household heads (240, or 54.5%) are fathers, according to the status of the home heads. Being in the majority is advantageous since fathers are responsible for providing for their families' needs and protecting them, and they are expected to lead them with love and morals [17]. The head of the household's occupation is one of the primary factors impacting child malnutrition in Nigeria [18].

Colleagues in paediatrics who support fathers Being the head of the household demonstrates that when fathers are caring and supportive, it has a substantial impact on a child's cognitive and social development and instills a general sense of wellbeing and independence, unlike when siblings and family members are in charge. Since a person's or family's economic and social standing is based on their work, income, and degree of education-all of which also reflect how healthy they can be-a lack of education has a negative effect on household members [20]. More over half (265, or 60.2%) of all households said they had a good income that they should keep. Household nutrition is greatly influenced by money, and lower household income has been consistently associated with meals of lower quality. Households with lower incomes purchase fewer nutrient-dense foods than those with higher incomes. They reported purchasing more sweet foods and fewer fruits, vegetables, and fibre than people with greater salaries, based on their own estimation of family income.

The majority-55.7%-live in homes with three to five individuals, which affects their food intake and nutritional status. Large households are typically seen as a risk factor for malnutrition in developing countries, particularly for infants and

young children. Families with five or seven members make up about 27.5% of all families. The ability of the family to exhibit basic nutrition may thus be significantly impacted, especially for those with poor socioeconomic position. The household members will surely suffer from deteriorating health issues caused by malnutrition until the nutritional support in the camps is improved through interventions and appropriate dieting. 154 (35.0%) of the residences have been in the camp for longer than two years. This is due to the fact that these people have difficulty finding a place to live as well as the money to sustain themselves [20]. The living conditions of people living in Nigerian IDP camps have allegedly remained challenging, and reports indicate that the food shortage scenario is worse in Borno, Yobe, Adamawa, and Taraba [21]. The loss of income and means of survival brought on by the conflict and displacement is the main cause of food insecurity for IDPs. This condition puts children and other individuals in the camps and other areas of Nigeria at risk. It is also dangerous and worrisome, as it violates the rights of internally displaced children to proper nutrition and care [22]. Inadequate access to food, poverty, low income, improper cooking methods, a lack of nutrition education, and inadequate government assistance all make it impossible for internally displaced people (IDPs) in camps to eat healthily, according to a report on nutritional food intake and IDPs in camps. Many adults and children suffer from nutritional imbalance.

The results indicate that all of these problems are a result of their extended camp stay and displacement, as they are unable to access farmlands and practical means of achieving self-sufficiency. Stunting, wasting, kwashiorkor, marasmus, and deficits of essential vitamins and minerals that provide nutrients are among the different types of malnutrition that result from this. Inadequate consumption of these micronutrients can lead to goitre, anaemia, nutritional blindness, and other disorders [23]. Different levels of malnutrition are shown by the underweight status of 66.7% of females and 61.9% of boys, respectively. among the teenagers in the IDP camps. 89.9% of males and 88.5% of females were underweight as well. 46.8% of men and 56.0% of women in the adult population were underweight. Many adults and adolescents of both sexes were underweight. This disproves previous assertions that undernutrition among IDPs is still a result of their insufficient consumption of macro and micronutrients. [24] One major health concern for those residing in IDP camps is malnutrition. Their findings indicate that a number of demographic groups in the Abuja Municipal Area Council's internally displaced persons camp had significant rates of malnutrition, with children being one of the nutritionally variable groups. This results in impaired physical and cognitive development, which affects later learning abilities, earning potential, and general health. Furthermore, it was shown that 26.0% of school-age boys and 23.4% of school-age girls were overweight.

This may be the result of consuming a lot of fatty and starchy foods, which are the main mainstays in the tropics where we reside. Furthermore, 155 (15.8%) of the men and 157 (17.2%) of the girls were wasted. can therefore negatively impact a person's health and nutritional status, leading to disorders like obesity that are linked to weight increase. When fatty and starchy foods are consumed in excess, they displace nutrient-dense foods and cause deficits in important vitamins, minerals, and fibre.

There is a gender disparity in the burden of malnutrition, with men more likely than women to be underweight, overweight, or wasting. The findings of this study are in line with a study that found that women were more likely than males to experience wasting (29.50%). Children were more affected than adolescents and adults (29.20%). This is also in line with [20], which shown that the prevalence and severity of malnutrition were higher among children in IDP camps than the national average. In Nigeria, millions of children-roughly 37% of the total-are stunted.

Malnutrition has been caused by a number of risk factors and causative variables, including the quality of the environment, housing/shelter, water source, sanitation, food quantity, quality, and variety, medical accessibility, high-quality health, and suitable infrastructure in IDP camps. Another contributing issue is the use of inadequate intervention techniques. Poor environmental conditions, limited housing or shelter, and inadequate water supply can all lead to infections and deaths. Malnutrition was caused by crowded, poor housing and water sources, flooded surroundings, inadequate shelter, and inadequate water in around 239 (54.2%) and 375 (85.2%) of all households. It is believed that water-borne and vector-borne diseases like cholera, yellow fever, typhoid fever, and malaria can be spread by floods caused by unfavourable environmental circumstances. The most common problems associated with floods are the contamination of drinking water supplies and standing water, which can act as a breeding ground for mosquitoes, pose chemical risks, and cause injury. Making sure that safe drinking water is consistently available is the most important preventive measure that can be implemented to reduce the risk of a water-borne illness outbreak following flooding. Long-term effects of flooding are common and can be costly, distressing, and upsetting for the impacted populations. Overcrowded shelter or accommodation In IDP camps, overpopulation leads to infectious diseases, poor health, and food shortages. Asserted that a key element in deciding the displaced people's survival in terms of their immediate needs is having access to appropriate shelter. Shelter provides safety, security, and protection from the weather and its effects, but it is also a major cause of malnutrition in the IDP camp. Additionally, it strengthens resistance to extremely poor hygiene. Extremely poor and dirty sanitation is one of the primary causes of malnutrition in the IDP camps. While 341 (75.5%) respondents claimed that sanitation was unhygienic, about 26 (5.9%) respondents believed that sanitation was truly insufficient. This is due to the fact that IDP camps are low-income environments; poor sanitation and an inability to properly dispose of excreta often result in the introduction of pathogen-ridden human faeces into people's homes and surroundings [26], which can spread through the faecal oral transmission route and cause diarrhoeal illnesses. Chronic malnutrition is caused by repeated diarrhoeal disease infections that hinder intestinal absorption of nutrients.

The primary causes of malnutrition in IDP camps are food scarcity (169, 34.4%) and inadequate diet intake, both in terms of quantity and quality. If untreated, malnutrition results in death. Healthy eating habits lead to better health, a stronger immune system, lower morbidity, and the avoidance of non-communicable diseases. Eating a healthy, balanced diet is crucial to having a greater quality of life. Thus, undernutrition and specific food consumption habits are associated with several short-term problems as well as major long-term consequences, including functional impairment in maturity, reduced work capacity, and a reduction in an individual's economic productivity. The crude mortality rate is the number of deaths per 1,000 people in a population per month. About 305 homes, or 69.3%, said they did not have enough access to healthcare facilities. Access to healthcare refers to the ability to obtain and utilise high-quality medical equipment and supplies when required for optimum health [27]. This is challenging for IDPs because to the prevalence of some diseases, including starvation and malnutrition, diarrhoea, acute respiratory infections, fever, malaria, measles, pregnancy complications, and sexually transmitted infections. They argued for insufficient medical care in IDP camps in their study "Should Internal Displacement Mean Deprivation of Healthcare for Women and Children in Nigeria?" The statement claims that the health status of women and children in IDP camps has been contentious and that there is significant concern regarding their access to high-quality medical care in these areas. The study's conclusions indicate that there are still health inequalities in both groups and that the challenges facing the existing healthcare facilities must be adequately addressed. Furthermore, over half of the households-388-reported having very limited access to proper lavatory facilities, which may lead to open defecation (88.2%). This is one of the causes of malnutrition. Poor sanitation, particularly open defecation, makes intestinal parasites and diarrhoea more common, which in turn causes malnutrition. Roundworm, whipworm, and hookworm are intestinal parasites that can spread through contaminated soil in areas where open defecation is prevalent. Hookworm is one of the primary causes of anaemia in pregnant women, leading to underweight and malnourished babies. Sanjay Wijesekera, head of UNICEF's worldwide water, sanitation, and hygiene programs, stated, "We are failing millions of our children if we don't find innovative and tangible solutions to the problem of where people go to the toilet." The known connection to starvation is another element that emphasises how interconnected our solutions to sanitation must be if we are to succeed.

In conclusion, malnutrition or undernutrition continues to be the main issue among residents of internally displaced persons camps. According to this study, the prevalence of underweight was 43.5% for children aged 6 to 8 in Abuja, 52.5% for children aged 9 to 11 in the Bayelsa IDP camp, and 90 (40.7%) for adolescents aged 12 to 14 in Bayelsa: 7.5% for severely underweight. Ten (25.7%) persons aged 20–25 were severely underweight, while 147 (50.5%) adults aged 26–30 were similarly underweight. 153 (54.6%) of the children at Brono's IDP camp 9-11 were seriously underweight. for female students in the IDP camp in Bayelsa. In the Brono IDP camp, 136 (46.7%) of the female schoolchildren were moderately underweight. Obese 72 (48.0%) for women in the IDP camp in Bayelsa. Male and female residents of Nigeria's IDP camps suffer from inadequate nutrition because of a shortage of food, poor nutritional intake, low income, and an unclean environment, which puts them at risk for malnutrition, illness, and death. According to studies, people who live in IDP camps are typically low-income individuals who eat unbalanced meals with little in the way of fruits and vegetables.

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