

Prevalence of Malnutrition among Under Five Years Children at Pediatric Unit of Ahmadu Bello University Teaching Hospital, Shika, Zaria from January 2011 -December 2014

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ABSTRACT

The study aimed at identifying the prevalence of malnutrition among under five years children at Pediatric Unit of Ahmadu Bello University Teaching Hospital, Shika Zaria from January 2011-December 2014. This was a retrospective study using case notes, admission and mortality registers retrieved from the hospital's medical record department. A total of 342 children aged between 0-59 months who were admitted into the hospital on account of Protein energy malnutrition during the period of study served as the sample. 192 were males while 150 were females. The data revealed a decreasing trend in malnutrition. Unclassified type of malnutrition was the highest prevalent (34.2%) followed by marasmus (28.8%). Male children were mostly affected (56.1%). Outcome of treatment revealed that most (88.3%) of the children were discharged while a few died. It was therefore recommended that infant feeding practices should be strengthened and promotion of exclusive breastfeeding for children for the first six months of life emphasized to mothers, also increased caloric intake with vitamins and electrolyte supplements.

Keywords: Malnutrition, Prevalence, Under Five Years

INTRODUCTION

Globally, Protein Energy Malnutrition (PEM) continues to be a major health burden in developing countries and the most important risk factor for illnesses and death especially among young children (Muller & Krawinkel, 2005). The World Health Organization (2011) estimates that about 60% of all deaths, occurring among children aged less than five years in developing countries could be attributed to malnutrition. The improvement of nutrition therefore, is the main prerequisite for the reduction of high infant and under five mortality rates, the assurance of physical growth,

social and mental development of children as well as academic achievement (Ubesie & Ibeziakor, 2012). The majority of world's children live in developing countries. Lack of food & clean water, poor sanitation, infection & social unrest lead to LBW & PEM. Malnutrition is implicated in >50% of deaths of <5 children (5 million/yr) (Azizmin, 2014). The major contributing factors are: Diarrhea (20%), Acute Respiratory infections (ARI) (20%), Perinatal causes (18%), Measles (07%) Malaria (05%), 55% of the total have malnutrition. PEM in Africa

is related to the high birth rate, subsistence farming, overused soil, draught and desertification, Pests and diseases destroy crops, poverty, and low protein diet, political instability (war & displacement). "Malnutrition: Nigeria's Silent Crisis," presents the reasons why proper nutrition for women and children is so important, especially in the first 1,000 days from the start of a woman's pregnancy until her child's second birthday. The survey notes as a sad commentary that the rates of stunting in Nigeria have stagnated for more than a decade. About 2 in 5 Nigerian children are stunted, with rates of stunting varying throughout nationwide (Ogundipe, 2015). In Nigeria, malnutrition has been reported to be associated with increased morbidity and mortality such that about 30% to 40% of deaths in the preschool age group are associated with malnutrition (Sufiyan, Bashir & Umar, 2012). Survey found that malnutrition prevalence in the North West and East regions are higher than in the South of the country. The percentage of children in Nigeria, who are wasted, or too thin for their height, has steadily increased over the last decade, rising from 11 percent in 2003 to 18 percent in 2013. At least 1 million Nigerian children under the age of 5 are affected by Severe Acute Malnutrition (SAM), each year (Ogundipe, 2015). Precipitating factors include; lack of food (famine, poverty), inadequate breast feeding, wrong

concepts about nutrition, diarrhea, mal-absorption and infections (worms, measles)

Objectives of the study

- To determine the annual incidence of malnutrition among children less than 5 years of age admitted in the pediatric unit of ABUTH from 2011 to 2014.
- To identify the type of protein energy malnutrition prevalent among under five during the study period.
- To identify the sex specific prevalence of protein energy malnutrition among under five children in ABUTH during the study period.
- To determine the outcome of protein energy malnutrition during the study period.
- To highlight ways of improving the nutritional status of children

Scope of the Study

This study is a retrospective study in paediatric unit of ABUTH from January 2011 to December 2014 and limited to children under the age of five years.

RESEARCH METHODOLOGY

Research Design: A retrospective design using case notes, admission and mortality registers retrieved from the hospital's medical records department was used for the study.

Setting: Ahmadu Bello University teaching hospital Zaria was established as an institute of health in 1967 under the Ahmadu Bello University Law (Amendment Act) enacted by the former northern Nigeria. Zaria is a local government under the Kaduna state. The federal government took over the hospital in 1976 and later Ahmadu Bello University Teaching hospital Zaria was taken charge by Federal Ministry of Health in close relationship with the university. In 1988, the institution became legally and operationally separated from Ahmadu Bello University council and granted administration Autonomy. The objectives are: to provide facilities for training of health workers; to conduct relevant research on prevalent health problems; to provide broad range of tertiary services to meet health care needs etc.

Study Population

All children aged 6-59 months admitted into the paediatric wards of Ahmadu Bello University Teaching Hospital Shika between 2011 and 2014 with diagnosis of any form of Protein Energy Malnutrition.

Sample: All the 342 children between the ages of 6-59 months admitted into the pediatric wards of ABUTH Shika Zaria between January 2011 and December 2014 with the diagnosis of any form of PEM was included in this review. Their case files and/or registers

were retrieved from the medical records unit of the hospital.

Exclusion criteria: Children with the diagnosis of PEM but had in addition other chronic conditions such as congenital heart diseases, and cerebral palsy were excluded.

Study Period: May-August 2015

Ethical consideration: Permission to conduct the study will be taken from the hospital management

RESULTS

Table 1 shows the distribution of under five children with protein energy malnutrition by age, religion, gender and ethnic group. Majority of the children who reported with protein energy malnutrition during the study period were within the ages of 12-24months (40.6%). There was no report of protein energy malnutrition among children within the ages 49-60%. Based on religion, majority (71.3%) were Islam while 28.7% were Christians. More than half (56.1%) of children with protein energy malnutrition were males while 43.9% were females. The Hausas` were the majority (61.0%). Table 2 showed that the overall annual incidence of PEM amongst under-five as recorded by the pediatric unit of Ahmadu Bello University Teaching Hospital (ABUTH) Zaria during the study period was 342. Majority of the children reported with protein energy

malnutrition within the ages of 12-24 months (40.6%). A increasing trend of malnutrition was within the in the first two years (2011 and 2012) with same frequency of 90 each (2011 was 90(26%), 2012 was 90(26%), and then a decreasing trend as follows; 2013 was 84(24.6%) and 2014 was 78(23%) respectively.

Table 3 showed that unclassified PEM had the highest prevalence 117(34.2%)

followed by marasmus 99(28.9%). Table 4 further showed that the male children (56.1%) were mostly affected than female children 150(43.9%). The outcome as seen above in table 5 with regard to PEM was fair as most affected patients (88.3%) were discharged while 40(11.7%) died out of a total of 342 children admitted with protein energy malnutrition during the study period.

Table 1: Socio-demographic data

Variables	Frequency	Percentage (%)
Age(months)		
0-12	119	34.8
13-24	139	40.6
25-36	80	23.4
37-48	4	1.2
49-60	0	0
Total	342	100
Religion		
Christianity	98	28.7
Islam	244	71.3
Total	342	100
Gender		
Male	192	56.1
Female	150	43.9
Total	342	100
Ethnic groups		
Hausa	208	61.0
Igbo	8	2.3
Yoruba	20	5.8
Others	106	30.9
Total	342	100
Mean age= 17.4 months		SD= 9.5

Table 2 Annual incidence of malnutrition between 2011-2013

Year	Frequency	Cumulative frequency
2011	90	90
2012	90	180
2013	84	264
2014	78	342

Table 3: Type of PEM prevalent

Type of PEM	Frequency	Percentage (%)
Marasmus	99	28.9
Kwashiorkor	29	8.5
Marasmic kwashiorkor	38	11.1
Underweight	59	17.3
Unclassified	117	34.2

Table 4: Sex specific prevalence of PEM

Sex	Year 2011	Year 2012	Year 2013	Year 2014	Total
Male	48	52	46	46	192(56.1%)
Female	42	38	38	38	150(43.9%)
Total	90	90	84	78	342(100%)

Table 5: Outcome of PEM during the study period

Outcome	Kwashiorkor	Marasmus	Marasmic kwashiorkor	Under weight	Unclassified	Total
Admission	29	99	38	59	117	342(100%)
Discharge	26	89	33	59	95	302(88.3%)
Death	3	10	5	0	22	40(11.7%)

DISCUSSION

Most of the children with protein energy malnutrition were within the ages of 13-24months. This is in line with a study conducted in Maiduguri, Nigeria on the prevalence of protein

energy malnutrition by Hamidu et al (2003) which showed that the prevalence of marasmus was highest within the ages of 6-12months while kwashiorkor was highest among children aged 13-18months of age.

Ubesie et al (2012) also recorded that age group 6-24 months accounted for 92.5% of the total number of children admitted for protein energy malnutrition in their study. Considering the frequency on the basis of religion, most (71.3%) belonged to Islamic group. This may be due to the location of ABUTH as most of the people in Zaria are Muslims.

The highest incidence of Protein Energy Malnutrition was in the year 2011 and 2012 with equal frequency of 90 each. This was followed by the year 2013 and 2014 with frequencies of 84 and 78 respectively. This indicates that the number of PEM cases decreased yearly. This could be as a result of gradual awareness on PEM and measures on how to prevent the disease, early diagnosis, detection and treatment of the disease either through community mobilization or health talks during the antenatal period. Marasmus 99(28.9%) has the highest prevalence beside the unclassified cases of protein energy malnutrition. This was followed by underweight, marasmic-kwashiorkor and lastly kwashiorkor with percentages of 17.3%, 11.1% and 8.5% respectively. This agrees with the research conducted in Enugu by Ubesie et al, (2012) which showed that marasmus (34.9%) had the highest prevalence in their review beside the unclassified protein energy malnutrition cases. The table also showed that marasmic-kwashiorkor was associated with higher case fatality

rate than other types of protein energy malnutrition. This also corresponds with the study carried out in Enugu by Ubesie et al, (2012) which states that marasmic-kwashiorkor is associated with higher case fatality rate than other forms of protein energy malnutrition. Based on gender, majority of the under five years children who reported with protein energy malnutrition during the study period were males (56.1%). This concord with a study conducted in Enugu by Ubesie et al (2012) who recorded that 58.36% of the children with protein energy malnutrition were males while 41.74% were females out of 212 children with protein energy malnutrition who were admitted during the study period under review. This also corresponds with a research carried out by Gernaat et al, (2011) on the mortality of severe protein energy malnutrition at Nchelenge Zambia which documented that mortality was higher among males (50.9%) than females (34.1%). Singh et al, (2006) in his research on childhood illnesses and malnutrition in under five children in drought affected desert areas of Western Rajasthan, India also confirmed that malnutrition was higher in male children (39%) than in females (26%). Considering the outcome of protein energy malnutrition during the study period, the rate of protein energy malnutrition was fair between January 2011 to December 2014 as most affected children were discharged (88.3%) and only 40(11.7%) died out of the 342

children who were admitted during the study period. This is in contrast to World Health Organization (WHO) report of 60%. This low mortality rate might be as a result of early detection and adequate treatment. According to Sakharova (2012), early detection and adequate treatment are associated with good outcome. Oshogbo, Ibekwe and Ashworth (1994) documented an average mortality rate of 22% over a five year period among 803 children admitted for protein energy malnutrition in a nutritional rehabilitation centre which was also low compared to the WHO REPORT. Similarly, in a hospital based study in North Eastern Zambia involving children below the age of five (from 0-59 months), Gernaat et al (2011), documented an overall mortality rate of 25.8% among 288 children admitted for various types of severe/complicated malnutrition.

CONCLUSION

Malnutrition was highest within the first two years with a decreasing trend later. Kwashiorkor and Marasmus-Kwashiorkor had greater risk of morbidity and mortality compared to Marasmus and underweight. Early detection and adequate treatment were associated with good outcome. Despite the decrease in recent years, there is still need for increase awareness and intervention programmes to help rescue the lives of under five children in the studied area. This will help

prevent late ill-effects on Intellectual Quotient, behavior and cognitive functions.

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