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PREVALENCE OF MALNUTRITION AMONG UNDER FIVE YEAR OLDS ATTENDING THE MATERNAL CHILD HEALTH CLINIC AT BUSIA COUNTY REFFERAL HOSPITAL

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**PREVALENCE OF MALNUTRITION AMONG UNDER FIVE YEAR OLDS
ATTENDING THE MATERNAL CHILD HEALTH CLINIC AT BUSIA COUNTY
REFFERAL HOSPITAL**

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ABSTRACT

Objective: To determine the prevalence of malnutrition among under five-year-old children attending the maternal child health clinic (MCH) at Busia county referral hospital.

Study Design: A retrospective study

Study Setting: Busia County Referral Hospital in Busia County, western Kenya

Study Subjects/Participants: All children under five years attending the maternal child health clinic in BCRH from 1st June to 1st august 2018.

Results: Majority of the children were of good nutritional status 65%, followed by those who have mild acute malnutrition 23% and finally marasmus and kwashiorkor at 9.35% and 1.1% respectively. The most affected gender was females at 53.4%. Age group 6-23months was the majority at 79% followed by 0-5months at 11.04% and finally 24-59months at 9.9%. 84% had a MUAC reading that was normal and indicated normal nutritional status while just 11% had a MUAC reading that indicated risk for acute malnutrition and 5% had MUAC reading that indicated poor nutrition.

Conclusion: Majority of the children are of good nutritional status. The challenge is that those of poor nutritional status are significant as the prevalence is at 35%. The recommendation is that the county government should set aside enough funds to oversee countywide campaigns on nutrition, targeting specific cohorts within the community.

INTRODUCTION

Malnutrition or malnourishment is a condition associated with either consuming a diet without enough (under nutrition) or too much nutrients (over nutrition). Malnutrition refers to deficiencies, excesses, or imbalances in a person's intake of energy and or nutrients the term malnutrition addresses 3 broad groups of conditions. Under nutrition which includes wasting (low weight for age), stunting (low height for age) and underweight (low weight for age) (1). Micronutrient related malnutrition which includes micronutrient related malnutrition (lack of vitamins, minerals or an excess). Malnutrition can also be in the form of over nutrition. An individual, who is overweight, is predisposed to obesity and diet related non communicable diseases (such as heart diseases, stroke, diabetes and some cancers (1). One point nine billion adults are overweight or obese, while 462 million are underweight (1). In developing countries and other less developed countries, food malnutrition often refers to under nutrition. Under nutrition among children is a major public health problem in developing countries, including Kenya. UNICEF estimates that nearly 195 million children suffering from malnutrition across the globe. Measures of child under nutrition are used to track development progress. In the post-2015 development era, estimates of child malnutrition will help determine whether the world is on track to achieve the sustainable development goals 'particularly goal 2 to end hunger, achieve food security, improved food security and promote sustainable agriculture.(2) Malnutrition also prevents millions of children from reaching their full intellectual and productive potential. The effects are long lasting and go beyond childhood. For instance, undernourished children are often physically and intellectually less productive such complications can be easily prevented

through economic development and public health measures (3). In Kenya, malnutrition remains a serious health and welfare problem affecting the under-five children to whom it contributes significantly to mortality and morbidity. Out of a population of about 48.5 million people of whom 7 million are under-five's 11% are underweight and 26% are stunting. (4) According to Kenya Demographic and Health Survey of 2014, there is significant progress in nutrition in Kenya over the years. Stunting levels decreased from 35% to 26%; wasting rates declined from 7% to 4%; and the proportion of underweight babies dropped from 16% to 11% (5).

The staple food of the people in Busia is maize and cassava. Cassava is very important in the diets of sub Saharan Africa and is the second after maize in western Kenya food systems. Busia ranks first in both consumption and monetary value and high levels of malnutrition have been attributed to use of cassava, millet and sorghum. Cassava contributes to calories and has the lowest protein energy ratio, approximately 2% compared to other staple foods (6). The study revealed that cassava utilization was high (94.3%) and mainly as porridge, boiled roots and ugali (6).

MATERIALS AND METHODS

Study Setting: This study was carried out in Busia County Referral Hospital located in township area of Busia county, western Kenya.

Study Design: A retrospective study was conducted by reviewing the medical records of the malnutrition cases for children under 5yrs attending the maternal child health clinic at Busia county referral hospital. The medical records from 1st June to 1st August 2018 were reviewed for 3weeks.

Study Population: Records of all the children under 5 years of age, attending the MCH clinic at Busia county referral hospital.

Sampling Technique: Purposeful sampling was adopted in selection of a study population, that is, all children under 5yrs attending the maternal child health clinic in BCRH from 1st June to 1st august 2018 with complete data records. For the purpose of data analysis ONLY those with complete data records were sampled as they qualified for the study. Data collection was done by the researcher for 3weeks. Data was obtained by going through the records and with the help of a data collection form.

Eligibility Criteria:

Inclusion criteria: All medical records of under five-year olds attending MCH at BCRH from June to August 2018.

Exclusion criteria: Incomplete records and files.

Data Collection: Data collection sheet/forms were used in collecting the data whereby clinical records were obtained from the patient files. Data entry sheets and record sets of statistical packages for example, were used to enter data from the data collection forms. Parsing technique was used to cleanse data by identifying syntax errors

Data Analysis: Data collected were analyzed using the following methods;

Percentages were calculated to analyze data obtained.

The variables were obtained from medical records in BCRH.

SPSS Software version 22 was used to analyze the data collected.

Data Storage: The information was stored in form of soft copy in flash disks and compact disks and printed copies in form of compiled reports. To ensure data safety, copies of the results were backed up in different media to guard against data loss.

Ethical Considerations: Approval to carry out the research was sought from medical superintendent of B.C.R.H. Patient identities were hidden for confidentiality purposes. Consent was sought from the COBES committee Moi University. The study was done under careful supervision of the researcher and qualified staff.

RESULTS

Out of a total of 172 subjects studied, majority were female in each of the age groups. As shown in the table 1.

Table 1
Age Distribution by Gender

Age	Male	Female	Total
0-5months	6	13	19
6-23months	66	70	136
24-59months	8	9	17
Total	80	92	172

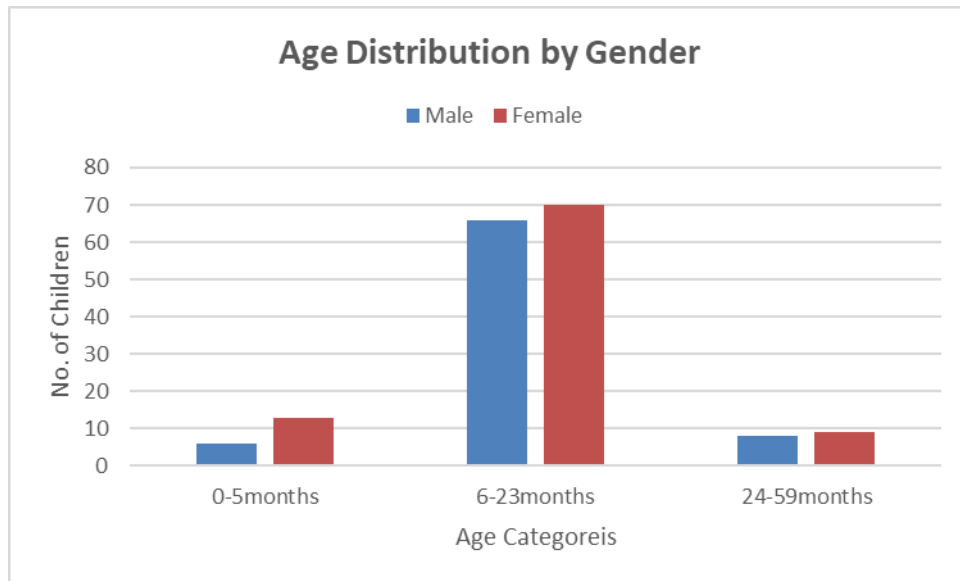


Figure 1: Age Distribution by Gender

Cumulatively, from the data obtained under 5’s attending their M.C.H clinic at BCRH. females were the majority at 53.4% while the males were closely by at 46.5% among the

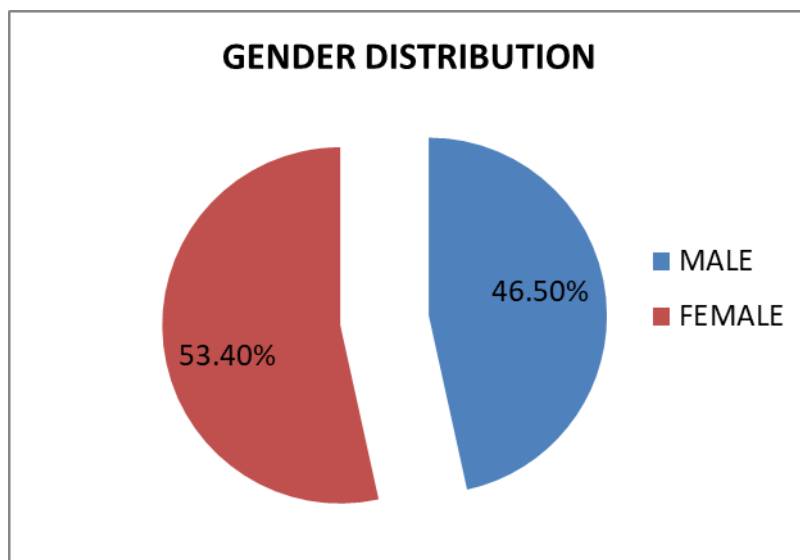
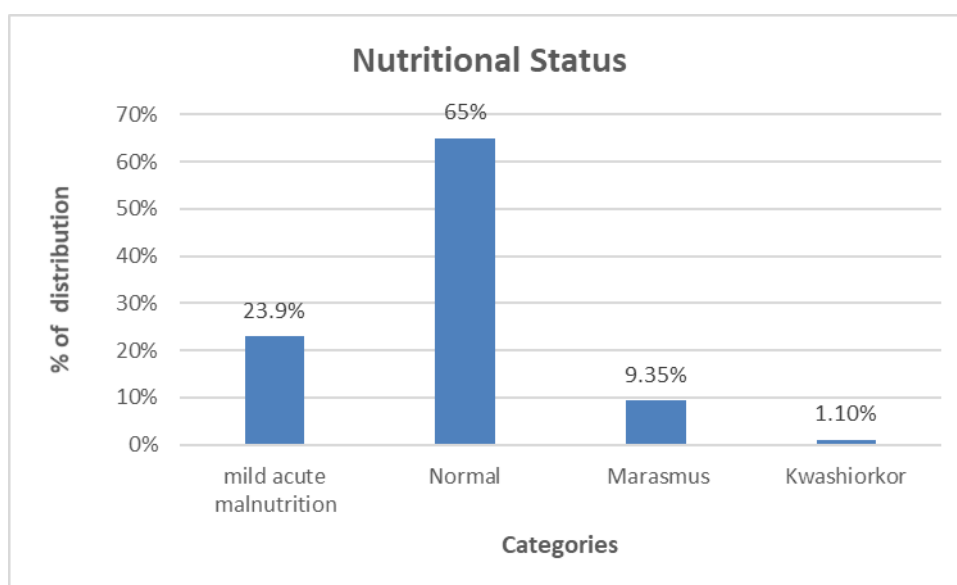


Figure 2: Gender Distribution

The nutritional status of the under 5’s attending there MCH at BCRH was as shown below. Out of the 172, majority that is 65% were of normal nutritional status. 23.9% had mild acute malnutrition, 9.3% had SAM (marasmus) and just 1.1% had SAM (kwashiorkor)

Table 2*The nutritional status of the under 5's attending their MCH at BCRH*

NUTRITION STATUS	PERCENTAGE	FREQUENCY
Normal	65%	112
kwashiorkor	1.1%	2
Marasmus	9.3%	16
Mild acute malnutrition	23.9%	41

**Figure 3: Nutritional Status**

A breakdown in terms of age groups was done to determine their nutritional status in a more specific perspective. This also helped identify which among the age groups was most affected.

Table 3*Specific Nutritional status per age group*

Age	Nutritional status				Total
	Mild acute malnutrition	Normal	Severe acute malnutrition (marasmus)	Severe acute malnutrition (kwashiorkor)	
0-5months	3	14	1	1	19
6-23 months	34	90	10	1	135
24-59months	4	8	5	0	17
Total	41	112	16	2	171

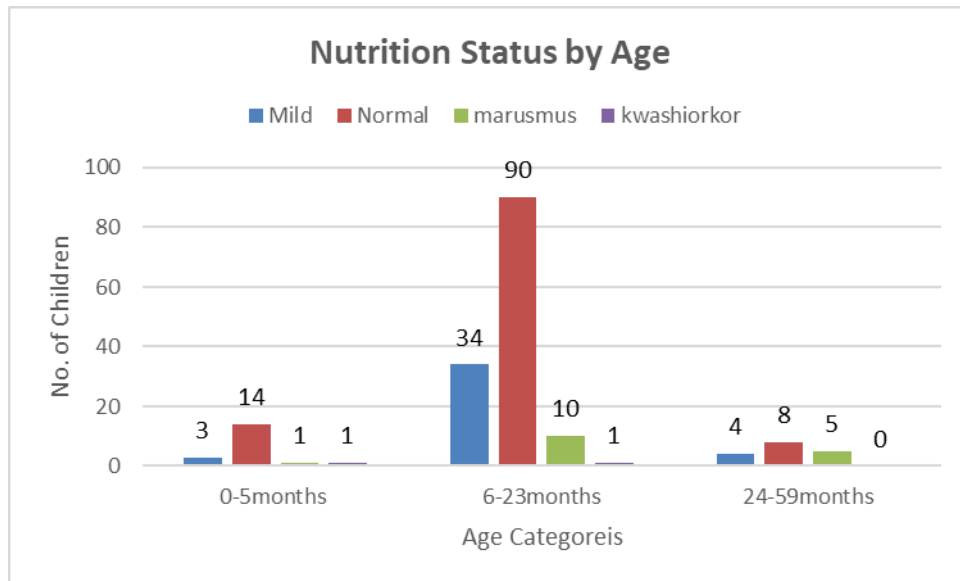


Figure 4: Nutrition Status by Age

From the data obtained age group 6 - 23 months were at 11.04% while 24-59months were the months was most affected as 79% of the least affected at 9.9% under 5's were in this category. 0-5 months

Table 4
Nutrition Status by Age

Age Group	Frequency	Percentage
0 - 5months	19	11.04%
6 - 23months	136	79%
24 - 59months	17	9.90%

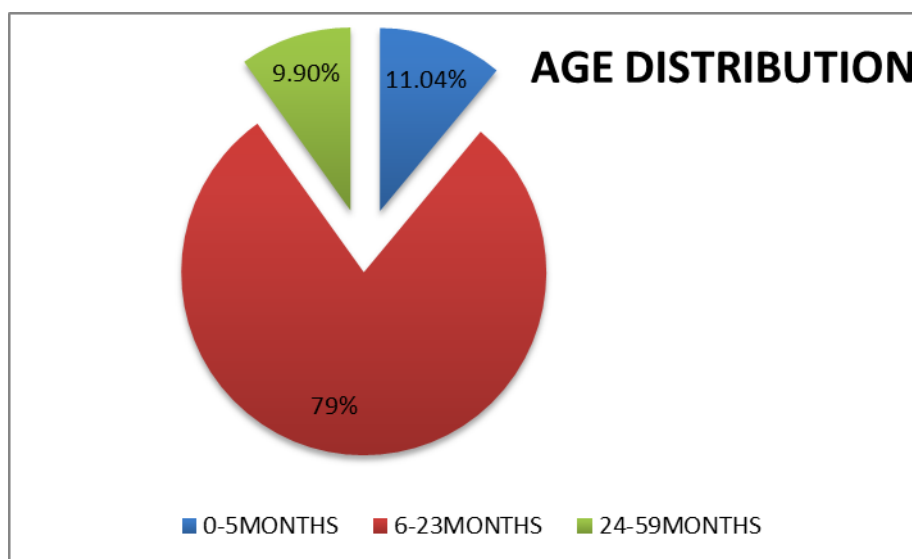


Figure 5: Nutrition status and age distribution

MUAC Results were as follows, majority of the children attending their MCH at BCRH had a normal MUAC reading, shown by the green at 84%. Only 11% had a yellow MUAC reading and just 5% had their MUAC reading as red.

Table 5
MUAC Results

COLOUR	PERCENTAGE	INTERPRETATION
Red (<11.5Cm)	5%	Clinical Malnutrition
Yellow (11.6-12.5cm)	11%	Risk for acute malnutrition
Green (12.6-26.5cm)	84%	well nourished

DISCUSSION

Malnutrition is one of the challenges still affecting children in Busia County. The common form of malnutrition was mild acute malnutrition. Twenty-three-point nine percent (23.9%) of children attending their MCH clinic at BCRH were mildly malnourished. Nine-point three five percent (9.35%) had marasmus (wasting) and 1.1% had kwashiorkor. The majority of children however were of normal nutritional status 65%. The most affected were female 53.4% while male were at 46.5%. Age group 6-23months were the majority at 79% followed by 0-5 months at 11.04% and finally 24-59 months at 9.9%. Eighty four percent (84%) had a MUAC reading that was normal and indicated normal nutritional status while just 11% had a MUAC reading that indicated risk for acute malnutrition and 5% had MUAC reading that indicated poor nutrition.

Child under nutrition is a major public health concern, especially in many low incomes and middle-income counties (7). Child growth is most widely used measure of children's nutritional status. The first 1000 days (0-23 months) is a very critical phase in a child's life during which rapid physical and mental development occurs (8). A study done in Sudan revealed that 31% of children

under 5years of age are moderately to severely malnourished. (9)

Results obtained from Busia County Referral Hospital confirmed that there is significant under nutrition among under five-year olds in the area. Malnutrition prevalence was at 35%. Of which 23.9% were mildly malnourished, 9.9% and 1% of the children had marasmus and kwashiorkor respectively.

According to Kenya demographic health survey, the level of wasting countrywide was at 4% in 2014 (5). In this study, the 9.9% in Busia shows rise in the levels of wasting. A study carried out in Kaduna state, Nigeria showed that the most affected age group among the under five-year olds was 23-36 months at 33% (10), this was contrary to our study carried out in Busia which had the most affected age group as 6-23months, 79% were of this age group

The most affected gender were females at 53.4% and males were at 46.5%. This was in contrast to the results obtained in Nambale area of Busia county which had the males more affected in comparison to the female (6). The level of severe acute malnutrition (SAM) specifically kwashiorkor among the under five-year olds attending MCH at BCRH was such that only 1.1%, were affected. This was in contrast to a study carried out in the sub-Saharan region of Africa which suggested that kwashiorkor is

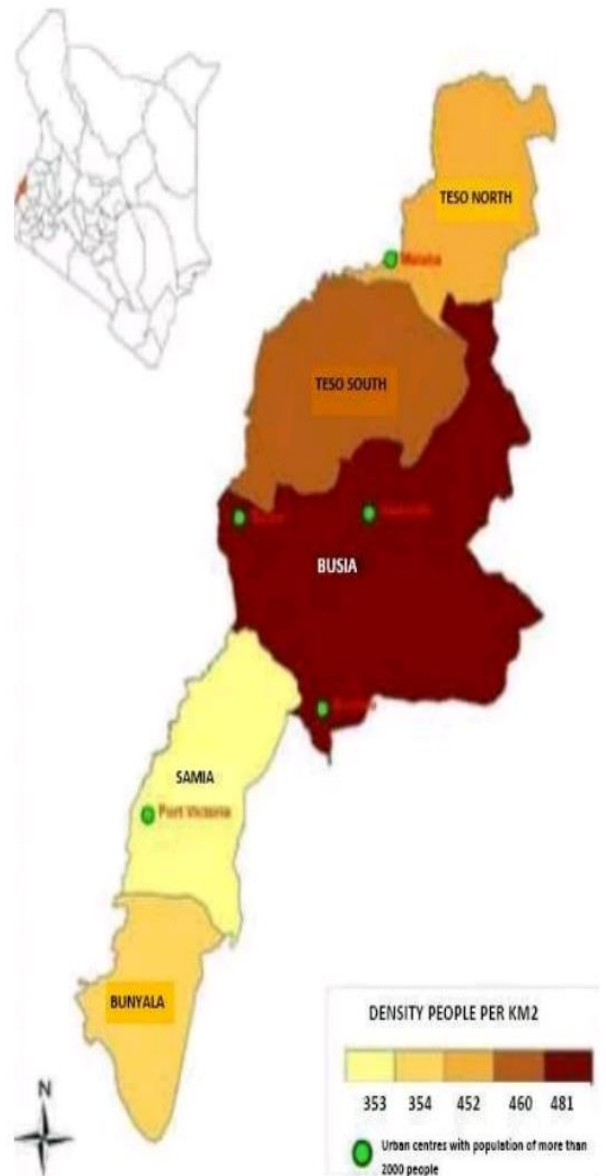
more extensive specifically in Malawi and the Democratic Republic of Congo where 50% and 30% of the severe acute malnutrition cases respectively had kwashiorkor (11).

The level of SAM, marasmus among the under five-year olds attending the MCH at BCRH, was 9.9%. This was greater than those with kwashiorkor. This finding was in agreement to a study carried out in Borno state Nigeria that revealed a greater number of children with SAM marasmus, 74% in comparison to severe acute malnutrition kwashiorkor 16% (12).

CONCLUSION

In conclusion nutritional status of the children attending MCH at BCRH needs to be improved, as the prevalence is higher than the average quoted by KDHS. A majority of the children were of good nutritional status 65%, followed by those who have mild acute malnutrition 23% and finally marasmus and kwashiorkor at 9.35% and 1.1% respectively. Malnutrition is a public health problem in Kenya. We therefore recommend that National and county governments make malnutrition one of their top priorities in order to provide children with optimal conditions for a healthy future.

Busia County Map



Busia County Map

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