Original Article

Prevalence of Malnourish Children among Malnourish Mothers in Tertiary Teaching Hospital Larkana, Pakistan

Malnourish Children among Malnourish Mothers

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ABSTRACT

Objective: To assess the prevalence of malnourished children among malnourish mothers in tertiary teaching hospital Larkana, Pakistan.

Study Design: Cross-sectional study

Place and Duration of Study: This study was conducted at the Pediatric Medicine department, Chandka Medical College / SMBBMU Larkana from 15.6.2018 to 31.6.2020.

Materials and Methods: After taken permission from the ethical review committee of CMC Children Hospital/ SMBBMU Larkana; patients who fulfilled the inclusion criteria were included in the study. Mid upper arm circumference (MUAC) of a child, as well as the mother, was measured, Child with MUAC <11.5cm and the Mother with MUAC <21 cm was labeled Malnourished. All the collected data were entered into the proforma attached at the end.

Results: Mean ± SD of the age of children and mothers were 16.20 ±7.96 with C.I (15.02- ---17.37) months and 27.57 ±4.83 with C.I (26.86----28.28) years respectively. 179 children 94 (52.5%) were male and 84 (47.5%) were female. Most of the women were found to be multigravida i.e. 154 (86%) and 25 (14%) had primigravida. The frequency of malnourished children among malnourished mothers was 150 (84%). 3

Conclusion: It is to be inferred that the frequency of maternal and child under-nutrition is high in both communities even though more seemed in rural areas. Efforts are needed to reduce the vicious cycle of undernutrition in children and mothers should focus on tending to hazard factors especially to each community. Males were more prone to contrasted with females.

Key Words: Malnourish Children, Malnourish Mothers, Larkana

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INTRODUCTION

Malnutrition (measured as poor anthropometric status) of under-five children is an important public health problem that is one of the major killers of children in developing countries. Worldly, about 35% of under-five deaths are related to malnutrition.[1]Child malnutrition can be expressed as a pathological condition resultant from inadequate nutrition, as well as under nutrition (protein-energy malnutrition) due to not enough intake of energy and other nutrients; Malnourished children are significantly more prone to die because of a typical childhood infection than the individuals who are enough nourished. In developing countries, of the almost 12 million children under 5 who die every year, basically from preventable causes, the deaths of more than 6 million, are either directly or indirectly attributable to malnutrition. Some 2.2 million children die from diarrheal dehydration as a consequence of persistent diarrhea that usually increases with malnutrition.[2] The World Health Organization during that MDG 4 has perceived that improved nutrition is vital in lessening the under-5-years mortality, particularly in the developing nations.[3] In Pakistan statistics, 800,000 children die every year and 35% of deaths happened due to malnutrition. The danger of death is nine times higher among malnutrition children as compared to balanced diet children.

In Pakistan, 40.2 percent of children under five are currently stunted according to the National Nutrition Survey (a prevalence considered 'critical' by WHO's thresholds). Besides, 17.7 percent of this age group are wasted (the highest level of wasting in the country's history) and 28.9 percent are underweight. [4]Globally, child malnutrition is the most critical problem, a wide

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range of deaths of children occurred due to malnutrition. The degree of malnutrition among children, outstandingly high in South Asia, like India, Bangladesh, and Nepal ranging from 45-48 percent, while in Pakistan and Sri Lanka 38% and 30% respectively.

Poverty, illiteracy, and lack of health services are the main underline cause of malnutrition. Anthropometric records showed the cumulative outcome of access to food, parental education, health, food practices as well as environmental health. Nutritional status is a sensitive indicator of preschool children, as they are more vulnerable to nutritional imbalances.[5] The employ of mid-upper arm circumference (MUAC) has improved quality to screen the acute malnutrition among children to enhance the reach and improve the quality of the Community-Based Management of Acute Malnutrition (CMAM) program.[6]World Health Organization (WHO) and UNICEF updated guidelines in 2009 that a MUAC cutoff of <11.5 cm as one of three screening standards for identifying and treatment of severe acute malnutrition in infants and children 6-60 months.[8] To a great extent because of the direction from WHO and UNICEF on a standardized cutoff, MUAC has become a widely utilized and effective diagnostic device for screening children and help to manage acute malnutrition.

Likewise, with children, the utilization of MUAC among younger and adults offers the benefits of being a simple and moderately economical measure that can be done in both community and facility-based situations.

MUAC measure requires minimum instruments and calculations as contrasted with weight and height estimations for figuring of the basal mass index (BMI) or other anthropometric estimations, for example, skinfold thickness.

Various investigations have indicated that MUAC relates well with BMI in an adult population.[6] According to the current study, it is demonstrated that there was no significant difference in the frequency of under nutrition sustenance as evaluated by BM1 and MUAC (50.5 VS 55.7%, p>0.05).

Around 23percent, 36percent and 3percent children were seemed to be stunted, underweight, and wasted.[7] It is also notified that the percent of malnourished infant was more in undernourished (CED) mothers.[7]

Rationale: In Pakistan, the frequency of malnutrition has not improved in the last two decades despite the increase in per capita food availability and increased intake of calories and protein. There is a need for immediate solution such as maternal, environmental and sociocultural factors also need to be improved. Poor maternal nutritional status can result in undernourished generation. Although data is available, but little work is done, we see the current magnitude of undernourished children among undernourished mothers.

Operational Definition:

Malnourished Child: Children with MUAC less than 11.5cm termed malnourished.

Maternal Malnutrition: Mothers had MUAC <21 then termed as malnourished

MATERIALS AND METHODS

Descriptive Cross-Sectional Study, was conducted at Department of Pediatric Medicine, CMC Children Hospital Larkana, during the period of 15-6-2018 to 31-6-2020.

A total of 179 patients who fulfilled the inclusion criteria was included in the study. Mid upper arm circumference (MUAC) of the child, as well as the mother, was measured, Child with MUAC <11.5cm and the Mother with MUAC <21 cm was labeled Malnourished. All the collected data were entered into the proforma.

Sample Size: The sample size was calculated by using the WHO Sample size calculator taking the prevalence of malnutrition 13.4%[7] with a confidence level of 95% and margin of error of 0.05 then the estimated sample size was n= 179

Sampling Technique: Non-probability consecutive sampling

Sample Selection

Inclusion Criteria

- Children of age 6 to 59 months
- Patients of both gender
- Mothers giving informed consent

Exclusion Criteria:

- Children having the congenital disease
- Cardiac disease Inborn error of metabolism
- Chronic Illness
- Celiac disease Tuberculosis Cystic fibrosis
- Miscellanies (Chronic kidney disease)
- CP child
- Major Family Problems (Divorce, Bereavement, etc)
- All these will be confirmed by detailed history and available records,

Data Collection Procedure: The study was conducted at CMC Children Hospital/ SMBBMU Larkana. All children who meet the inclusion criterion were enrolled into the study after taking written consent from Parents or Guardian and data was entered into study-specific Proforma, Mid upper arm circumference (MUAC) of the child as well as a mother had measured, the child with MUAC <11.5cm and Mother with MUAC <21 cm were labeled as Malnourished. Other data like age, gender, weight, and height/ length of the child were also recorded. All the measurement was done by the researcher herself under the supervision of a concerned supervisor.

Data Analysis Procedure: Data were analyzed applying SPSS version 21. Descriptive statistics were used to calculate mean and standard deviations for Quantitative Variables including the age of child and mother, the weight of the child, length/height of the child, MUAC of child and mother. Frequencies with percents were presented for qualitative variables like residence, educational, and socioeconomic status. Stratification was done further to control effect modifiers like age; gender, weight, and length of the child, MUAC of children and mothers, etc. Chi-square test was applied and $P \leq 0.05$ was taken as significant.

RESULTS

This study was planned to assess the prevalence of malnourished children among malnourished mothers. Total 179 patients were included in the study, after result analysis, 94 (52.5%) were male and 84 (47.5%) were female and the mean age of child's and mother showed 16.20 ±7.96 months and 27.57 ±4.83 years respectively, while the weight and height of child were 6.37 ±2.19 kgs and 63.25 ±8.61 cm respectively.

In the study, the demographic and other variables showed that the greater part of the patients have belonged to rural areas i.e. 169 (94%) and 10 (6%) belonged to urban. And also most of the women were found to be multigravida i.e. 154 (86%) while 25 (14%) seemed primigravida. (Table 01)

In the study, the educational status of most of the women was illiterate i.e. 153 (85%), secondary 16 (9%) and primary educated was 10 (6%), while the distribution of socioeconomic status family income of 132 (73.7%) families was between 10000---15000, 10 (5.6%) 16000----20000, 37 (20.7%) had family income between 21000---25000. (Table 01)

Table No.1: Demographic and Other Variables Regarding Children & Mothers

Children Data		Frequency	%
Gender	Male	94	47.5
	Female	85	52.5
Residence	Rural	169	94
	Urban	10	06
Malnourish child	Yes	150	86
	No	29	14
Mothers Data		Frequency	%
Parity	Multigravida	154	86
	Primigravida	25	14
Education status	Illiterate	153	85
	Secondary	16	09
	Primary	10	06
Socioeconomic status	10000-15000	132	73.7
	16000-20000	10	5.6
	21000-25000	37	20.7

The prevalence of malnourished children among malnourished mothers was 150 (84%). (Figure 01)

Middle upper arm circumstance (MUAC) measurement for child's and mother's malnutrition seemed 9.73 ±1.15 cm and 20.04 ±1.71 cm respectively.

In stratification of malnourished children concerning the age of child and mothers, the gender of children, weight, height, the number of children under five years of age, socioeconomic status educational and residential status were done. (Table: 02).

Table No.2: Stratification of Demographic and Other Variables

Children Data		Malnourish Child		P-Value
		Yes	No	
Age (month)	6-16	82	18	0.462
	>16	68	11	
Gender	Male	77	17	0.472
	Female	73	12	
Weight (Kgs)	3-6	58	15	0.190
	>6	92	14	
Height (cm)	45-65	95	15	0.240
	>65	55	14	
Children Muac (cm)	8-10	90	15	0.407
	>10	60	14	
Mothers data		Yes	No	P-value
Age (Years)	19-27	84	14	0.444
	>27	66	15	
Residence	Rural	140	29	0.152
	Urban	10	0	
Mother (MAUC)	18-22	144	23	0.001
	>22	6	6	
Parity	1-3	145	29	0.409
	>3	5	0	
Education Status	Illiterate	124	29	0.053
	Secondary	16	0	
	Primary	10	0	
Socioeconomic Status	10000-15000	103	29	0.002
	16000-20000	30	0	
	21000-25000	37	0	

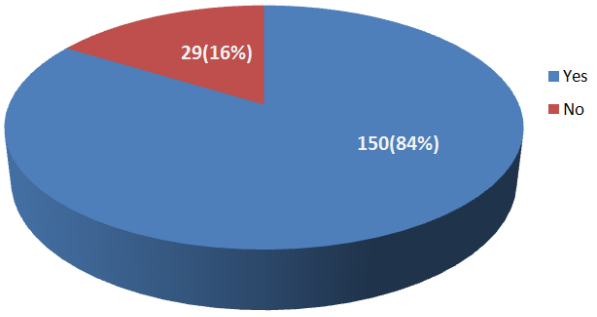

Figure No.1: Frequency of Malnutrition

DISCUSSION

Globally, according to Unicef, the prevalence of undernutrition in the particular community was found to be 16 percent underweight, 23 percent stunting and 7 percent wasting, according the 2016 survey undernutrition showed wasting 10.5percent, stunting 31.5 percent, and underweight 45percent.[9]

This demonstrates that the current investigation population is having a higher extent of stunting (chronic malnutrition) and underweight when contrasted with the public figures overall. In nutritional survey stated that interprovincial contrast was observed in the nutritional status of preschool children.[11] The study was done in two separate areas of the nation, at the north end and the south end has revealed that malnutrition was a medical issue of concern.[05,12] Southern Sri Lanka study revealed that 59% of the under-5 years old had some type of malnutrition. A greater part of them was wasted (42.7%). As per a similar report, the frequency of underweight and stunting among these children was 41.2 percent and 11.8 percent, respectively.[5] It has been accounted for in the war influenced Jaffna landmass the issue of malnutrition records to about 26 percent of the preschool children suffering from malnutritional problems. Along with 15.9 percent belonged to the poor socioeconomic group.[12]Therefore it is supported that the correlation of malnutrition with socio-economic conditions of the children. Amongst the socio-economic determinants of malnutrition of children, the education level of mothers proven to play a significant role. In different studies revealed that parental education was observed to be an important role in influencing the nutritional status of children. [13.14/15]

The current investigation likewise shows a significant association between parental education with the malnutrition health status of children, however not with the level of parents. In Bangladesh parent education, wealth status, drinking water facility, toilet facility, or even no of children to women showed a significant relation with the malnutrition of children.[10]

CONCLUSION

It is to be concluded that the prevalence of maternal and child under-nutrition is high in both communities although higher in rural communities. Efforts at reducing the vicious cycle of under-nutrition among mothers and children should concentrate on addressing risk factors specific to each community. Males were more commonly affected as compared to females. However, a larger prospective randomized study comparing the relationship between malnourished children and malnourished mothers will be needed. Further, more controlled prospective studies are necessary to compare the two treatment modalities to establish clinical protocols.

Author's Contribution:

Concept & Design of Study:	Nazia Faraz Shaikh
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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