Evaluation of Factors associated with Malnutrition under 5 year old children in DHQ Hospital Sahiwal.

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Abstract

Background:

Malnutrition is a serious child health issue throughout the developing world. Pakistan has the second highest infant and child mortality rate in South Asia. This study was carried out to assess the Factors of malnutrition under 5 years of age children and to determine the frequency and association of malnutrition with various demographic variables in the study group.

Methods:

A cross sectional study was conducted at the PAEDS ward and OPD of the DHQ Hospital Sahiwal during July-August 2017. Malnourished children of under 5 years of age without confirmed diagnosis of any disease/ailment were included. Guardians of 41 children were interviewed using a structured questionnaire. Demographic variables include age, gender, family size, family income, breastfeeding, maternal education & presence of siblings under 5 years in family. Weight (kg) was measured and malnutrition was assessed by weight for age.

Results:

Our study indicated malnutrition to be significantly associated with Child Age, Use of formula Milk, Occurrence of diarrhea, Mother Illiteracy & Lack of Access to Filtered Water. No significant association was found between malnutrition and gender, family size, family income, breast feeding and presence of siblings under 5 years of age.

Conclusion:

There is a need to plan composite interventions to elucidate the factors that place children at greater risk for malnutrition.

Keywords:

Malnutrition, Child nutrition, Child nutrition disorders, Child nutritional status, Infant nutrition disorders

(Continued)

INTRODUCTION:

World Food Programme (WFP) defines malnutrition as "A state in which the physical function of an individual is impaired to the point where he or she can no longer maintain adequate bodily performance process such as growth, pregnancy, lactation, physical work and resisting and recovering from disease."

1. Malnutrition is a serious child health issue throughout the developing countries and the cause of approximately 50% of the 10.7 million deaths each year among under-five children in the developing world.

2. The Lancet series on maternal and child under nutrition (2008) reported that 20% of underweight children younger than 5 belonged to low and middle income countries.

3. After India (39%) and Bangladesh (5.7%), Pakistan (5.5%) contributes the third largest share of under-weight children in the world.

4. Malnutrition has a complex etiology related to several factors that alter the nutritional status of a child at varying levels. It should be kept in mind that malnutrition is totally a preventable pandemic provided that the risk factors involved are identified and combated at an early stage of child growth.

Keeping in view, this study was conducted with an Objective to assess the factors of malnutrition of children <5 years of age and to determine the frequency and association of malnutrition with various demographic variables in those children.

The conclusions drawn from the study can be used for creating a conducive environment at local level by eliminating those risk factors. At the national level, this could be used to mobilize opinion leaders and decision makers.

The study is expected to enrich the existing body of research and may herald further research aiming at defining linkage between under five malnutrition and various demographic variables.

MATERIAL AND METHODS:

This was a cross-sectional study conducted at the PAEDS ward and OPD of DHQ Hospital Sahiwal during July-August 2017. The study population comprised of children presenting to the OPD & PAEDS Wards of District Headquarter Hospital Sahiwal.

The general health status of children was assessed by taking a detailed history from their parents/guardians. Malnourished children, under-five years of age, without confirmed

diagnosis of any disease were included in the study. All children either greater than five years of age or diagnosed with severe illness were excluded.

A pre-tested questionnaire was used to collect information from the guardians of the children after taking their informed oral consent. Questionnaire was consist of 36 questions containing Demographic variables to identify individual factors, family factors & socioeconomic or environment factors as predicted in referential studies include like age, gender, family size, family income, breastfeeding, maternal education, the presence of siblings <5 years of age in the family. Weights (kg) of the children were measured using standard measuring devices in PEADS ward and OPD.

The World Health Organization (WHO) classification of weight-for-age (W/A) index was used to assess the nutritional status of the children. Underweight, based on weight-for-age, is a composite measure of stunting and wasting and is recommended as the indicator to assess changes in the magnitude of malnutrition over time.

The nutritional status of children in our study population is compared with the WHO Child Growth Standards. The data was entered and analyzed using Statistical Package for Social Sciences (SPSS) version 22. Weight-for-age (W/A) were calculated using WHO weight/age graph for girls and boys.

Results:

A total of 41 subjects were included in this study comprising 20 males and 21 females with a mean age of 20.31 months ranging from 0–60 months. All the participants were malnourished as we compared their current weights with WHO W/A standard charts.

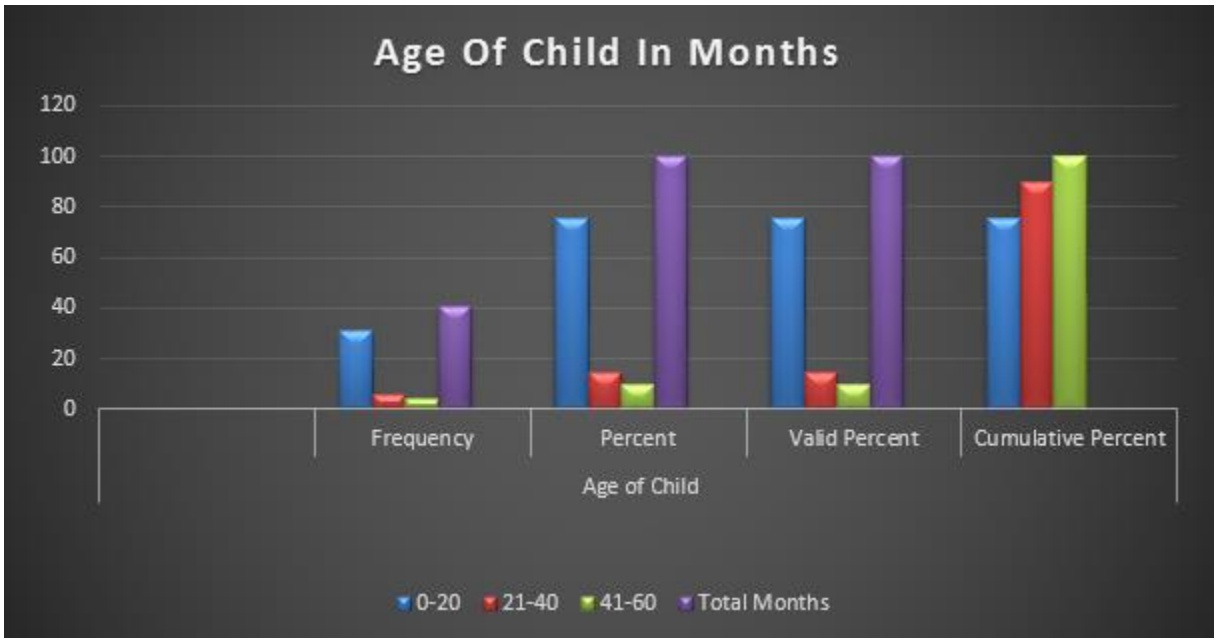
Findings of factors and their frequencies and relations associated with malnutrition are displayed below.

The frequency of malnutrition was highest in the 0-20 months (75.6%) age group and was comparatively lower in other groups. No significant association was found between malnutrition and gender. It occurred with the same frequency in both males and females.

A statistically significant relationship was established between maternal education and malnutrition in our study. The frequency of malnutrition was higher in the children whose mothers had no or very little education (80.5% children's mothers were illiterate).

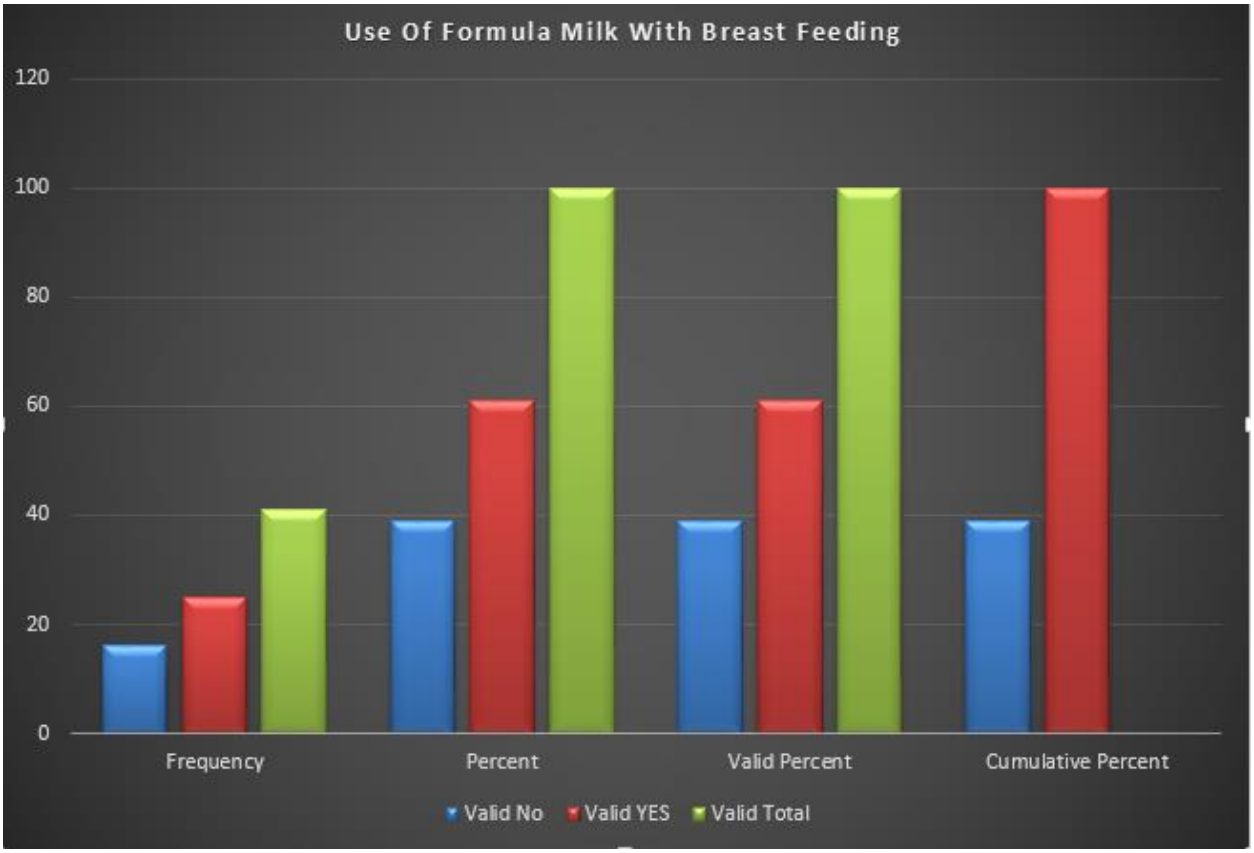
Our study indicates that those families which don't have access to filtered water, their child's suffer more from diarrhea and are malnourished. This is an important factor of malnourishment in children under 5 at DHQ hospital Sahiwal. Our study also gives the statistical relation between malnourishment and use of formula milk **(Dabba Dodh)** as compensation of mother milk.

No significant association was found between malnutrition and family size, family income, breastfeeding ,age of weaning ,and presence of siblings <5 years of age in the family.



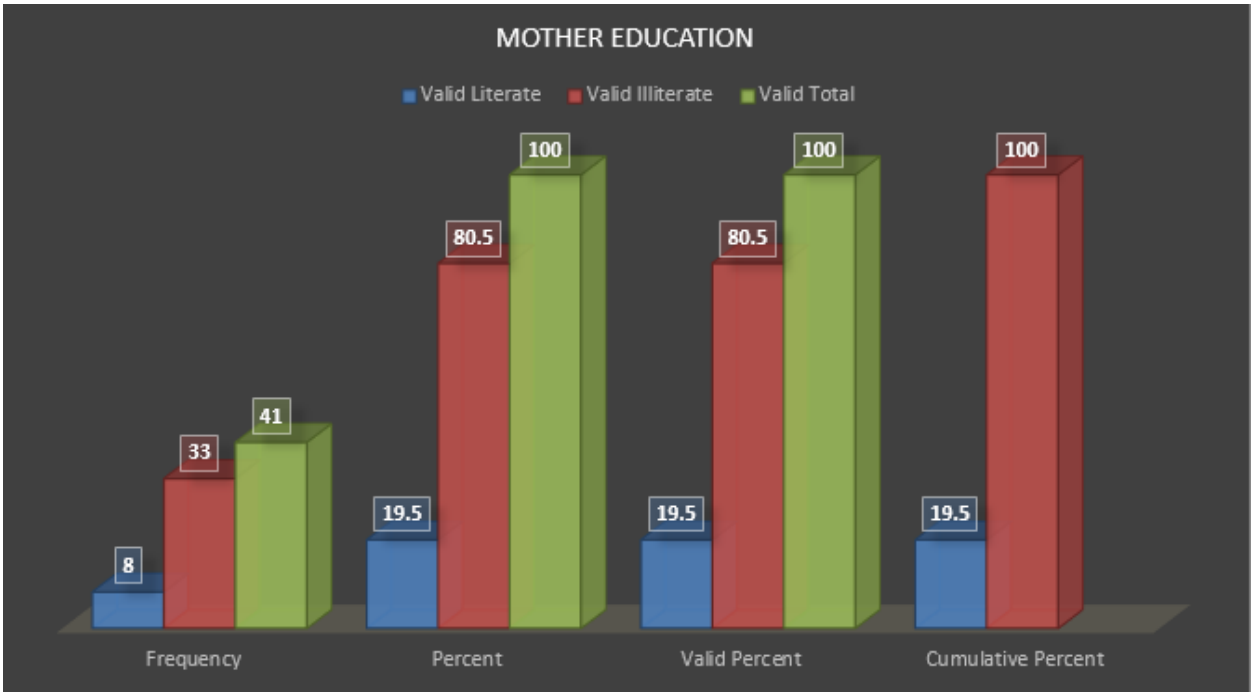
Age of Child

	Frequency	Percent	Valid Percent	Cumulative Percent
0-20 Months	31	75.6	75.6	75.6
21-40 Months	6	14.6	14.6	90.2
41-60 Months	4	9.8	9.8	100
Total	41	100	100	



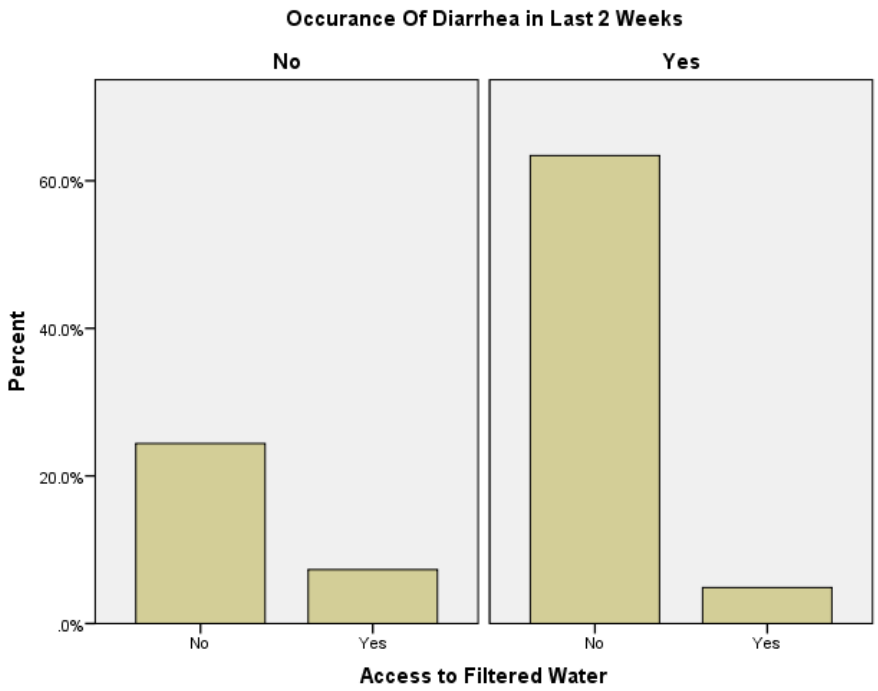
Use of Formula Milk With Breast Feeding

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	16	39	**39**	39
	YES	25	61	**61**	100
	Total	41	100	100	



Mother Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Literate	8	19.5	19.5	19.5
	Illiterate	33	80.5	80.5	100
	Total	41	100	100	



DISCUSSIONS:

Worldwide, malnutrition is an underlying cause of death for 2.6 million children each year. To combat such a high mortality rate, a vigilant identification and comprehension of each factor influencing malnutrition is required. To our knowledge, this is probably the first study to recognize the associated factors of under-five malnutrition in PEADS Ward and OPD of DHQ Hospital sahiwal.

Our study was conducted in July -August 2017. According to Pakistan Panel Household Survey (PPHS-2010) micro-data, 56.9% children were adequately nourished, 15.7% were moderately malnourished and 23.7% were severely malnourished, whereas in our study we took only malnourished child and did not categorized them into moderate or severe categories to avoid complication of data.

In the first place, according to a study conducted in Iran (2011), male gender was considered as a protective factor against malnutrition, whereas, females were found to be more strongly related to under-nutrition, however, as per a study from Luangprabang province, Laos, males were more likely to be underweight.

On the other hand, in our findings, gender is not a key indicator of malnutrition. Secondly, our study has shown that the frequency of malnutrition was highest in the age group of 0-20 months as compared to remaining age groups. Conversely, a study of Oromia indicated children aged 48–59 months as the important factor of malnutrition.

A similar study conducted in Sialkot found the highest proportion of malnourished children in 13–36 months age group. This demands further research to probe if this is a high-risk group in our population. Furthermore, poverty and nutritional status of the child are not the directly correlating factors in this study, a finding consistent with a similar study carried out in India. In addition to that, previous studies have suggested malnutrition to be significantly associated with breastfeeding.

Whereas this factor remained insignificant in our study contrary to previous results. Moreover, Bahawaluddin J et al21 concluded in 2012 that the maternal illiteracy plays a major contributing role to child malnutrition.

Another study in Ludhiana found 40.7% cases of malnutrition associated with maternal illiteracy.Identically, our results also established a statistically significant association between malnutrition and maternal education and found 85.5% cases of malnutrition associated with maternal illiteracy.

Similarly, Henry FJ et al23 stated an increased risk of malnutrition among children with siblings under-five years old. Our results also identified a comparatively higher percentage of malnourished children in families having more than 1 child under 5 years of age.

However, this result was not statistically significant. The specific objectives of this study target child-survival and well-being. These have been a focus of public health communities for over last two decades. Unfortunately, they still remain an important issue in a developing country like Pakistan. This is reflected in United Nations Millennium Development Goals 4 (MDG 4) and 1 (MDG 1).

MDG 4 sets its targets (from 1990 to 2015) as a reduction in under-five mortality by two-thirds and MDG 1 as a reduction in prevalence of under-weight children by half. According to the United Nations Development Programmes (UNDP) report in Pakistan, progress on all indicators is lagging in MDG 1. Progress on MDG 4, in all but 1 target, is also off track. Currently, Pakistan stands among the worst in child and infant mortality. The child mortality rate has only marginally decreased, from 117 per thousand live births in 1990–91 to 94 per thousand in 2006–07.25.

The performance of Pakistan in achieving these goals is severely lagging and it is likely to miss them. The need, of measuring progress towards meeting these goals, has always been strongly felt by public health professionals and policy makers. Our study has tried to help satisfy this need by developing a better understanding of the individual contribution of each factor towards malnutrition.

This may go a long way in strengthening the impact of the Child Nutritional Programmes in whole Pakistan and also in Sahiwal. Some of the limitations of this study need to be noted. The sample size of this study was small due to limited resources and time. In this regard, a

community-based survey with large sample, including the children visiting the private setup in addition to public facilities is strongly recommended in the future.

Conclusion:

Children are the most vulnerable members of the society and to allow their development to be affected by poor nutrition is a waste of human potential. This research study would be of little value if the assessment is not followed-up by policy actions, which are most likely to have the greatest impact on child malnutrition if directed at an early stage of child growth.

In order to attain better nutritional outcomes for their children, women must be educated beyond primary school level. Moreover, offering frequent nutritional education programs can also be beneficial to the mothers, particularly those with no or very little education.

The local Government of Sahiwal should provide filtered water in localities of sahiwal and an appropriate surveillance system should be devised for prompt and timely diagnosis of malnutrition in children and its management at PEADS Ward DHQ Hospital sahiwal.

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AUTHOR'S CONTRIBUTION:

Baber khan: Study conception and design, Acquisition of data & Interpretation of Data.

Shahbaz Bashir: Drafting of manuscript, Analysis of Data and Final Approval of the version to be published

Arslan Khalid: Drafting of Questionnaire & Acquisition of data.

Hafiza Arooj Fatima, Hafiza Iqra Faryad & Wara Saeed: Drafting of Questionnaire & Acquisition of data.

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