

An Assessment of Child Malnutrition and its Association with Socio-Economic and Medical Factors in Under Five-Year Children in District Lahore, Pakistan

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ABSTRACT

Background Child malnutrition has become one of the major health problems of various developing and under-developed countries. Child would have to take proper diet that can fulfill the nutritional requirements after the age of six months. Malnutrition effects the growth and increase the risk for morbidity. It has become an important health issue in South Asian countries.

Aim: To access the child malnutrition and its associated responsible risk factors. Child malnutrition is a viscous cycle of malnutrition which circles from mother to fetal and so.

Methodology A cross-sectional study design was used to conduct the current research. A sample size of 148 children was taken and data were collected from middle class locality of Lahore during the month of March 2020 to Sept 2020. A self-designed questionnaire was used to access malnutrition. The questionnaire was divided into three sections such as Socio-economic factors, medical illness and maternal health. Bivariate analysis has been performed to access association.

Results The overall children from the selected sample of 148 effected from severe malnutrition are 83(56.1%), mild malnutrition 24(16.2%) and normal 41(27.7%). The incidence rate of mother's being under-weight 84(56.8%) in the observed sample.

Conclusion The prevalence rate of malnutrition is higher in younger age as compared to older age. The maternal BMI is associated with child malnutrition. The household income is another significant factor for child malnutrition. Gender is insignificant for malnutrition.

Keywords: BMI, Child health, Malnutrition, Maternal health.

INTRODUCTION

Proper diet and nutrition are important for the child under 5 years to ensure strong immune system that is necessary for physical and mental development¹. Child malnutrition has become one of the major health problems of various developing and under-developed countries². Child would have to take proper diet that can fulfill the nutritional requirements after the age of six months³. Malnutrition effects the growth and increase the risk for morbidity⁴. It has become an important health issue in South Asian countries⁵.

Pakistan is also one of those countries with high prevalence rate of child malnutrition². Child malnutrition has become a fatal disease responsible for more than half of deaths of children worldwide⁶. Pakistan stands third largest wasting rate and second largest in the stunting rate after Afghanistan⁶. Overall Pakistan has the third highest share of under-weight children after India and Bangladesh⁷. The probability of being malnourished is increasing rapidly.

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Malnutrition has cause and effect relationship with various factors. One of the main factors is low-birth weight (under-weight birth)⁸. About 25% of the children are born under-weight⁹. This fact leads us to intergenerational malnutrition cycle of mother to child which means most of under-weight malnourished child being a mother producing another malnourished infant.

Malnutrition is mainly associated with poverty and illiteracy. Less use of food is the biggest factor that contributes to child malnutrition. The situation gets worst during flood and other disasters due to the shortage of food¹⁰.

Malnutrition causes the immune system weaker and put the child on risk for developing various other infectious diseases. These infections could be life-threatening bacteria and causes a severe medical illness. Studies in the literature indicate that care given by mother and maternal education are the factors that are associated with child malnutrition⁹. Deficiency of Vitamin A and iron deficiency anemia are caused by malnutrition and leads towards the stunting, wasting and under-weight³.

The present research is to investigate the role of maternal health for child malnutrition. Any significant

relation exists between a malnourished children being a mother giving birth to a malnourished infant.

METHODOLOGY

A cross-sectional study design was used to conduct the current research. A sample size of 148 children was taken and data were collected from middle class locality of Lahore during the month of March 2020 to Sept 2020.

A self-designed questionnaire is used to gather information on three different sections such as on Socio-economic & Demographic factors such, child medical and nutritional status and mother’s malnourished status. Socio-Economic & Demographic factors based on age of child in months, gender, socio-economic status, presence of family member with special needs, height, weight, number of siblings. Medical and Nutritional status of child comprised on other health issues such as ear, nose, throat problem, diarrhea, vaccination status, regular intake of milk and consumption of fruits and vegetables and Mother’s Malnourished status was accessed through height, weight and Body Mass Index (BMI). The BMI greater than 18.5 was considered as normal while less than 18.5 were taken as under-weight. The child’s malnutrition status was accessed using the middle of upper arm circumference (MUAC). Bivariate analysis was conducted to analyze the association between the child malnutrition and risk factors.

RESULTS

The overall children from the selected sample of 148 affected from severe malnutrition are 83(56.1%), mild malnutrition 24(16.2%) and normal 41(27.7%). The incidence rate of mother’s being under-weight 84(56.8%) in the observed sample. Table 1 indicated the classification of

Socio-Economic & Demographic and medical problems into various categories.

Table 2 indicating most of the children with under-weight mothers were suffered from severe malnutrition. More than half of the mothers were also victim of malnutrition. Approximately 14% of the mothers with their children were found as healthy.

Table 1: Frequency Distribution of Various Risk factors for Child Malnutrition

Variable	Categories	Count	%age
Age	6-18	49	33.1
	18-26	58	39.2
	26-36	29	19.6
	36-46	7	0.05
	46-59	5	0.03
Gender	Male	75	50.7
	Female	73	49.3
Family Member with Special Need	No	142	95.9
	Yes	06	4.1
No. of Siblings	0	64	43.2
	1	49	33.1
	2	26	17.6
	3	07	4.7
	4	02	1.4
Low Socio-Economic Status	No	70	47.3
	Yes	78	52.7
ENT Issue	No	102	68.9
	Yes	46	31.1
Diarrhea	No	57	38.5
	Yes	91	61.5
Vaccination Status	No	14	9.5
	Yes	134	90.5
Regular Milk Intake	No	54	36.5
	Yes	94	63.6
Consumption of Fruits	No	112	75.5
	Yes	36	24.3

Table 2: Cross-Tabulation of Malnutrition Status of Child and Mother

Risk Factors	Category	Child’s Malnutrition Status			Chi-square	p-value
		Normal	Mild	Severe		
Gender	Male	14	13	48	6.299	0.043
	Female	27	11	35		
Family member with special need	No	40	22	80	1.446	0.485
	Yes	1	2	3		
No. of Siblings	0	24	12	28	12.203	0.142
	1	13	5	31		
	2	4	5	17		
	3	0	2	5		
	4	0	0	2		
Socio-Economic Status	No	22	16	32	6.823	0.033
	Yes	19	8	51		
ENT Disease	No	30	21	51	6.378	0.041
	Yes	11	3	32		
Diarrhea	No	22	11	24	7.743	0.021
	Yes	19	13	59		
Vaccination Status	No	12	6	19	0.595	0.643
	Yes	29	18	64		
BMI of Mother	Under-weight	20	8	56	10.309	0.006
	Normal	21	16	27		

DISCUSSION

Current study reported a high malnutrition incidence rate as compared to another research conducted in Pakistan. A study reported the prevalence rate as 66.1% when the data was collected from flood effected areas³. The incidence of child malnutrition was found as higher in early age in the study under discussion. The prevalence is common in younger age³. However, the severe malnutrition was found in advanced age³. Younger children have more odds of being malnourished⁷.

Various risk factors were reported as responsible for child malnutrition¹¹. The most significant being the Socio-economic status and poverty. In the current study, Socio-economic status was found as significant for malnutrition. Another study opposed to the findings that poverty was not associated with nutritional status⁹. Same findings were observed in another study conducted in India¹². Family size and household economic conditions did not exert any significant effect on chronic malnutrition but it possess effect on acute malnutrition¹³.

In the study under discussion another significant association was found between the nutritional status of child and mother. Those children with unhealthy or underweight mothers were observed at high more risk of being affected. No such evidence was found in literature.

Gender and malnutrition were not significantly linked to each other^{9,11}. No significant association was observed between gender, family size, vaccination status and number of siblings⁹. The contribution of child vaccination in malnutrition is significant in some quantiles¹⁴. Current study reported that no significant association was found between child malnutrition and family member with special needs, number of siblings. Gender and medical illness were found as directly related to malnutrition. Higher intake of fruit and vegetables might reduce the odds¹⁵.

CONCLUSION

The main rationale is to assess the association of child malnutrition and mother's health status. The main risk factor behind child malnutrition is mother's health. Various Socio-Economic and medical risk factors are analyzed through frequency distribution. The vaccination status shows that almost all the healthy children are vaccinated. The mother's malnutrition status is significantly associated with child's malnutrition. Proper dietary pattern, intake of

fruits, juice and supplements during pregnancy had effect on fetal health.

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