

Socio-Demographic Factors Associated with Malnutrition Among Children Less Than Five Years

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ABSTRACT

Objective: To determine the socio-demographic factors responsible for malnutrition among children less than five years of age. **Study Design:** Cross-Sectional Study. **Settings:** Department of Pediatrics of Bilawal Medical college Hospital Kotri-Pakistan. **Duration:** One-year duration from Dec 2017 to Nov 2018. **Methodology:** All the children having age 6 months to 59 months, presented with malnutrition were included. All the children underwent measurement of height, weight, mid upper arm, and circumference of head of children. Parents of all the selected children were interviewed regarding their educational status, socioeconomic status, maternal antenatal history, birth history (pre-term or term), vaccination status, diet status and history of breast feeding in terms of exclusive and un-exclusive. All the children were categorized according to Gomez's classification of malnutrition. **Results:** Total 106 children were studied; their mean age was 35.07+12.14 months. Severe malnutrition was most common among 70.8% of the cases. Severe malnutrition was significantly linked to the poor socioeconomic status, p-value 0.001. Inadequate diet was also found as responsible factor for severe malnutrition, because most of the severely malnourished children had history of inadequate diet, p-value 0.041. Inadequate feeding was significantly correlated with severe malnutrition, p-value 0.010. **Conclusion:** It was concluded that poor socioeconomic Status, poor antenatal care, poor diet and inadequate breast feeding are responsible factors for severe malnutrition.

Keywords: Malnutrition, Responsible factors, Children.

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INTRODUCTION

Malnutrition is also a key factor for child deaths globally.¹ A 2013 study of Global Burden of Disease reported that around 200/100,000 deaths per children having age less than five years are accredited to malnutrition during childhood, which is 21.0% of overall deaths reported among this age group.¹ It is a distressing public health concern among South Asian nations, particularly Pakistan, India, and Bangladesh.^{1,2} In Pakistan, 428/100,000 deaths per year among children <5 years are accredited to childhood malnutrition, and 96.0% children aged below 2 years do not receive sufficient diet suggested by the World Health Organization.¹ Development and growth is directly associated with nutrition and diet taken by an individual. Use of balance diet supports one to stay healthy and to carry out the social activities in beneficial manner. Lack of balanced diet has adverse effect on functional capacity and the structure of the bodies.³ The consequences of malnutrition on human survival, performance, and health have been extensively researched for many decades.^{4,5} In the long term, early nutritional insufficiencies are associated to deficiencies of reproductive outcomes, work capacity, intellectual performance and total health in the course of adulthood and adolescence.^{4,5} Additionally the significant negative impact of the child's malnutrition exceeds the individual, distressing society and upcoming generation.⁵

Many socio-demographic factors are responsible for child malnutrition.⁶ Recently malnutrition prevention has re-gained a

renewed attention though there is inadequate data regarding uptake of these health interventions and the factors which affect them. As per UNICEF the major factors of childhood under nutrition can be grouped into 3 major underlying factors as; domestic food insecurity, unhealthy domestic environment and inadequate care, and absence of healthcare services.^{7,8} These sequentially are influenced by employment, poverty, income, dwelling, remittances and assets which are also affected by political and socio-economic factors.⁸ On the other hand it is reported that undernourishment among children is directly associated to their parental socioeconomic status and inversely correlated to their parental educational level.⁹ After above mentioned controversial findings regarding factors responsible for malnutrition in children, this study has been conducted to know the association between socio-demographic factors and malnutrition among children having age less than five years.

METHODOLOGY

Study Design: Cross-Sectional Study.

Settings: Pediatric Department, Bilawal Medical College Hospital Kotri-Pakistan.

Duration: One year from December 2017 to November 2018.

Inclusion Criteria: All the children having age 6 months to 59 months, presented with malnutrition were included.

Exclusion Criteria: All the children with congenital abnormalities and their parents unwilling to partake.

Method: All the children underwent measurement of height, weight, mid upper-arm and head circumference of the children. Parents of all the selected children were interviewed regarding their educational status, socioeconomic status, maternal antenatal history, birth history (pre-term or term), vaccination status, diet status and history of breast feeding in terms of exclusive and un-exclusive. All the children were categorized according to Gomez's classification of malnutrition.^{10,11}

RESULTS

Total 106 children were studied, their mean age was 35.07±12.14 months, with range of minimum 12 months and maximum 59 months. Mean of MAUC was 11.89±3.45. Table 1

Table 1: Mean statistic of age and MAUC in cases (n=106)

Statistic	Mean	SD	Minimum	Maximum
Children	35.07 months	12.14 months	12 months	59 months
MAUC	11.89	3.45	9	20

On malnutrition classification, severe malnutrition was most common among 70.8% patients. 13.2% children had moderate malnutrition and 16.0% had mild malnutrition. Table 2

Table 2: Malnutrition status in children (n=106)

Malnutrition	No of patients	Percentage
Mild	17	16.0
Moderate	14	13.2
Severe	75	70.8
Total	106	100.0

Table 3: Demographic characteristics of patients (n=106)

Demographic characteristics		Classification of malnutrition			p-value
		Mild	Moderate	Severe	
Residential status	Urban	2	0	11	0.307
	Rural	15	14	64	
	Total	17	14	75	
Socio-economic status	Poor	14	14	75	0.0001
	Middle	3	0	0	
	Total	17	14	75	
Birth status	Term	15	14	71	0.360
	Pre-term	2	0	4	
	Total	17	14	75	
Educational status	Illiterate	10	10	58	0.519
	Primary	5	2	10	
	Higher	2	2	7	
	Total	17	14	75	
Antenatal care	Good	13	6	59	0.020
	Poor	4	8	16	
	Total	17	14	75	
Vaccination status	Complete	15	8	61	0.075
	Incomplete	2	6	14	
	Total	17	14	75	
Diet status	Good	8	2	15	0.041
	Poor	9	12	60	
	Total	17	14	75	
Feeding status	Appropriate	11	4	20	0.010
	Inappropriate	6	10	55	
	Total	17	14	75	

Almost of the parents of children were illiterate, poor socioeconomic status, urban, history of poor antenatal care and poor dieting cases. There was no significant association of severe malnutrition according to residential status, birth status, educational status and vaccination status, p-values were quite insignificant. Severe malnutrition was significantly linked to the poor socioeconomic status, p-value 0.001. Inadequate diet was also found as responsible factor for severe malnutrition, because most of the severely malnourished children had history of inadequate diet, p-value 0.041. Inadequate feeding status was significantly associated with severe malnutrition, p-value 0.010.

DISCUSSION

Pakistan like other countries has highest rates of child under-nutrition (Wasting 15.0%, Stunting 44.0%, & underweight 31.0%) and its improvement in child health and nutritional aspects remained slower contrasted to other South Asian regions.¹² In our study, severe malnutrition was most common among 70.8% of the cases. 13.2% children had moderate malnutrition and 16.0% had mild malnutrition. In comparison to our results, study conducted by Pawellek I et al¹³ found in their study that 24.10% cases were undernourished, with 17.70% cases mildly, 4.40% moderately and 1.70% cases were severely malnourished. Similar results were observed by Laghari ZA et al¹⁴ who found in their study that out of 221 children, 43.20% had mild undernourishment, 65 12.70% had moderate and 10.20% had severe malnutrition. One more study performed by Ullah H et al¹⁵ also documented that according to Gomez's classification in their study, 19 (7.10%) children were malnourished, 14.20% children were moderate, while 48.30% children had mild malnutrition. In study conducted by Lodhi HS et al¹⁶ 21% children were underweight and out of them 50% were severely underweight. Among male children 22% and in females 19% children were underweight. In comparison to national figures it was observed that 38.0% children aged below-5 years is underweight. In our neighboring nations such as in India (47.0%), Bangladesh (48.0%), Nepal (48.0%) and in Afghanistan (39.0%) children aged below-5 years were underweight.¹⁷ The very high incidence of malnutrition in children who were admitted to children's health facilities, are considered intolerable, given the adverse outcomes for long- and short-term well-being and health.

The major positive factors contributing to malnutrition are poor health status and insufficient food intake that are affected by poverty and scarcity of access to food, family size, and feeding practices.⁹ In this study, Severe malnutrition was significantly linked to the poor socioeconomic status, inadequate diet and inadequate feeding. Similar results are observed in study of Zere E et al.¹⁸ obviously, income remain a highly important factors for access to education, healthcare, and nutritional facilities and thus among the factors precipitating malnutrition. Another study conducted by Babar FN et al¹⁹ reported that low literacy rate, poverty, food safety, food insecurity, women's education, and large families appear to be significant underlying factors accountable for poor health status of children belonging

to poor families. The nutritional status of children aged below-five is an indicator of household well-being and child survival. Child malnutrition is a highly significant cause of child and infant mortality. Breastfeeding can diminish rates of dehydration and malnutrition resulting from diarrhea; however, mothers are occasionally advised incorrectly for restraining to breastfeed their kids.²⁰ Breastfeeding can diminish mortality in young children and infants.²¹ Malnutrition results from several intertwining causes that form a causation network and increase each other's effect. It is mostly the by-product of low income, ignorance, insufficient education, poverty, occupation, and large family size, etc. These are the real determinants of undernourishment in society as they impact on the quality of life directly. The existing evidence make it clear that malnutrition during childhood is correlated with several environmental and socioeconomic characteristics for example poverty, access to healthcare services, and parental occupation/education.¹² Low nutritional levels among children lead to serious longstanding and temporary consequences in their mental and physical growth. In Pakistan, malnutrition is correlated with illiteracy and poverty.²² Lower educational level of mothers is correlated with late beginning of breastfeeding following birth and poor corresponding feeding practices of children of age below 2 years, thus affecting nutritional status during childhood.²³ But our study found no significant association of severe malnutrition with educational status of mother. In comparison to our results, study conducted by Khan GN et al¹² reported that socio-economic status was significantly correlated with stunting, underweight and wasting, however factors for example parity, maternal education, and family size had no association with malnutrition. Research studies have identified education of mother above primary school, as a major factor of childhood malnutrition. Because several females in our study region were illiterate and we anticipate that education of mother had limited effects for inter-household variances in nutrition, and comparable finding were documented in a study from Democratic Republic of Congo.²⁴

CONCLUSION

It was concluded that poor socioeconomic Status, poor antenatal care, poor diet and inadequate breast feeding are responsible factors for severe malnutrition. Special packages should be developed for poor mother during pregnancy and after birth. Adequate breast-feeding counseling should be done for every woman to cure their babes. Proper diet and adequate breast feeding can reduce the burden of malnutrition for healthy coming generation.

REFERENCES



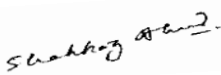
1. Tariq J, Sajjad A, Zakar R, Zakar M, Fischer F. Factors Associated with Undernutrition in Children under the Age of Two Years: Secondary Data Analysis Based on the Pakistan Demographic and Health Survey 2012–2013. *Nutrients*. 2018;10(6):676.
2. Akhtar, S.; Ahmed, A.; Randhawa, M.A.; Atukorala, S.; Arlappa, N.; Ismail, T.; Ali, Z. Prevalence of vitamin A deficiency in South

Asia: Causes, outcomes, and possible remedies. *J. Health Popul. Nutr.* 2013;31:413–23.

3. Khan A, Khan S, Zia-ul-Islam S, et al. Causes, sign and symptoms of malnutrition among the children. *J Nutr Hum Health*. 2017;1(1):24-7.
4. De Onis M, Dewey KG, Borghi E, Onyango AW, Blössner M, Daelmans B, Piwoz E, Branca F. The World Health Organization's global target for reducing childhood stunting by 2025: rationale and proposed actions. *Matern Child Nutr.* 2013;9(2):6-26.
5. Ma'alin A, Birhanu D, Melaku S, Tolossa D, Mohammed Y, Gebremicheal K. Magnitude and factors associated with malnutrition in children 6–59 months of age in Shinille Woreda, Ethiopian Somali regional state: a cross-sectional study. *BMC Nutrition*. 2016;2(1):44.
6. Talukder A. Factors associated with malnutrition among under-five children: Illustration using Bangladesh Demographic and Health Survey, 2014 data. *Children*. 2017;4(10):88-92.
7. UNICEF: Underlying causes of undernutrition: Food insecurity. Food insecurity. In. Geneva: UNICEF. UNICEF: Underlying causes of undernutrition: Food insecurity. In. Geneva: UNICEF. <http://www.unicef.org/nutrition/training/2.5/9.html>.
8. Tette EM, Sifah EK, Nartey ET. Factors affecting malnutrition in children and the uptake of interventions to prevent the condition. *BMC pediatrics*. 2015;15(1):189-95.
9. Gul R, Kibria Z. Prevalence and predeterminants of malnutrition in children under 3 years of age in the two rural communities of Peshawar. *Khyber Med Univ J* 2013;5(4):190-4.
10. Ullah H, Ullah B, Karim S, Tariq I, Khan AK, Mir S, Baseer A, Azhar S, Murtaza G. Malnutrition amongst under-five years children in Swat, Pakistan: Prevalence and Risk Factors. *Tropical Journal of Pharmaceutical Research*. 2014;13(8):1367-70.
11. Badar S, Channer IS, Channer MS, Yasmeen S, Channer MF, Channer SS. Malnutrition; determinants in children between six months to five years of age in Bahawalpur. *Prof Med J*. 2007;14:669-76.
12. Khan GN, Turab A, Khan MI, Rizvi A, Shaheen F, Ullah A, Hussain A, Hussain I, Ahmed I, Yaqoob M, Ariff S. Prevalence and associated factors of malnutrition among children under-five years in Sindh, Pakistan: a cross-sectional study. *BMC nutrition*. 2016;2(1):69.
13. Pawellek I, Dokoupil K, Koletzko B. Prevalence of malnutrition in paediatric hospital patients. *Clin Nutr*. 2008;27(1):72-6.
14. Laghari ZA, Soomro AM, Tunio SA, Lashari K, Baloach FG, Baig NM, et al. Mal-nutrition among children under five years in District Sanghar, Sindh, Pakistan. *Gomal J Med Sci*. 2015;13:54-7.
15. Ullah H, Ullah B, Karim S, Tariq I, Khan AK, Mir S, Baseer A, Azhar S, Murtaza G. Malnutrition amongst under-five years children in Swat, Pakistan: Prevalence and Risk Factors. *Tropical J Pharma Res*. 2014;13(8):1367-70.
16. Lodhi HS, Lodhi FS, Wazir S, Jadoon H. Assessment of nutritional status of 1–5-year-old children in an urban union council of Abbottabad. *J Ayub Med Coll Abbottabad*. 2010;22(3):124-7.
17. UNICEF. Progress for children. Number 4. New York, May 2006. p.3–32
18. Zere E, McIntyre D. Inequities in under-five child malnutrition in South Africa. *Int J Equity Health*. 2003;2(1):7.
19. Babar NF, Muzaffar R, Khan MA, Imdad S. Impact of socioeconomic factors on nutritional status in primary school children. *J Ayub Med Coll Abbottabad*. 2010;22(4):15-8.

20. Facts for Life" (PDF). UNICEF. Retrieved March 3, 2014
21. Bhutta ZA, Ahme, T, Black RE, Cousens S, Dewey K, Giugliani E, Haider BA, Kirkwood B, Morris SS, Sachdev HPS, Shekar M. What works? Interventions for maternal and child undernutrition and survival. Lancet. 2008;371(9610):417-40.
22. Hirani SA. Malnutrition in young Pakistani chil-dren. J Ayub Med Coll Abbottabad 2012; 24: 150-3.
23. Mohammed S, Getinet T, Solomon S, Jones AD. Prevalence of initiation of complementary feeding at 6 months of age and associated factors among mothers of children aged 6 to 24 months in Addis Ababa, Ethiopia. BMC Nutrition. 2018;4(1):54.
24. Kismul, et al. The social context of severe child malnutrition: a qualitative household case study from a rural area of the Democratic Republic of Congo International. J Equity Health. 2015;14:47.

AUTHORSHIP AND CONTRIBUTION DECLARATION

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Dr. Naheed Haroon Kazi Assistant Professor, Pediatrics Muhammad Medical College, Mirpur	Literature review Comparison of finding, Proof reading	
Dr. Shehbaz Ahmed Memon Medical officer, Department of Pediatrics Bilawal Medical College Hospital, Kotri	Review of statistical analysis	
Dr. Hira Saeed Khan Senior Lecturer, Department of Physiology Bhitai Dental and Medical College, Mirpurkhas	Results and Discussion	