ORIGINAL ARTICLE

Impact Of Maternal Education On Children's Health In Slum Area Of Karachi

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ABSTRACT:

Objective: To determine the impact of maternal education on children's health in a slum area of Karachi.

Materials and Methods: A population survey (cross-sectional study) was conducted on 390 children under 5years of age residing in Sharifabad, a slum area of Karachi. Systemic random sampling procedure was adopted to select 390 children. The selection of children was irrespective of gender, ethnicity and religion.

Results: Out of total 390 mothers, 273 (70%) mothers were illiterate and 117 (30%) were literate. In the literate group 21 mothers could read only, 42 had primary, 23 middle, 24 matric, 5 intermediate and 2 mothers had education up to graduate level. Overall a total 162 (41.54%) children were underweight, 205 (52.56%) were stunted and 89 (22.82%) had wasting. Maximum malnutrition regarding underweight and stunting was seen in children whose mothers had no education (illiterate). Maximum wasting was seen in children whose mothers could read only. There was a significant difference regarding underweight and stunting between the children whose mothers were illiterate in comparison to the children whose mothers had some education ($P<0.05$), but non-significant difference regarding wasting was found.

Conclusion: Mother's literacy status has a definite association with malnutrition of the children < 5 years of age which is one of the important risk factors.

Key words: Mother's literacy, Malnutrition, Children < 5 years, Slum area, Karachi.

INTRODUCTION:

Malnutrition may be defined as pathological state resulting from inadequate nutrition, including under-nutrition (protein-energy malnutrition) due to insufficient intake of energy and other nutrients; over-nutrition (overweight and obesity) due to excessive consumption of energy and other nutrients; deficiency diseases due to insufficient intake of one or more specific nutrients such as vitamins or minerals.[1] Under-nutrition is a global public health problem considered to be a principal cause of ill-health and premature morbidities. A total of 162 million and 99 million children aged <5 years were estimated to be stunted and underweight in 2012, respectively.[2] Under-nutrition is also a cause of high child mortality and has long-lasting physiological effects on children.[3] It is also considered to have critical adverse health effects among those children who survive to adulthood.[4,5] Despite economic developments, child under-nutrition still remains a major public health issue in third world countries as India, Pakistan, Bangladesh, Nepal, Sri Lanka etc. whose underlying cause is considered to be poverty .[4,6,7]

Adult literacy is defined as population aged 15 years and over who can both read and write with understanding a short, simple statement on his/her everyday life. Maternal literacy is said to be directly related to child`s nutritional status. A literate mother has increased awareness and importance of breast feeding, dietary components of her child and improved feeding practices, personal hygiene of herself and her child, importance of family planning, importance of vaccination of her child, and last but not the least a literate mother has a higher social network. Therefore an urban mother who has a higher educational status is expected to have children healthier than that of a rural mother. This awareness as a result of improved maternal literacy can prevent a child from severe and recurrent infections which definitely could have an impact on child's health. Therefore we can reach our goal with " TEACH THE MOTHER AND REACH THE CHILD".[8,9,10]

Children whose weight-for-age (W/A), children whose height-for-age (H/A) and children whose weight-for-height (W/H) is below minus two standard deviation (-2SD) from the median of the reference population (National Centre for Health Statistics) are considered to be under-weight, stunted and wasted respectively. According to the national figures of Pakistan given by the State of world's children UNICEF 2015, total adult literacy rate is 55% and in females it is 63% as a male adult literacy rate i.e. only 63 females are literate if there are 100 literate males that is mother's literacy status is more decreased. Among children under five years, prevalence of underweight, stunting and wasting are 32%, 45%and11% respectively in Pakistan.[11]

There is no scientific data available on prevalence of malnutrition among children under five years of age in slum area of Sharifabad, Karachi. The present study was designed to assess the prevalence of malnutrition and to identify the impact of maternal education on child's health.

MATERIAL AND METHODS:

A community based cross-sectional survey was conducted in Sharifabad, It is located in the industrial area of the Korangi town, Karachi. This area was established in 1983-84. It has a population of about 10,000 to 12,000 people and comprises of different ethnic groups. Study area consisted of different blocks spread over whole area of Sharifabad. Sample was taken from the area comprised of nearly 1000 households. Through statistical formula sample size was derived as

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$$n = \frac{Z^2 \alpha/_2 \; P\,(1 - p)}{B^2}$$

Z = Confidence interval = 95% i.e. 1.96

P = Prevalence= 50% i.e. 0.5

B = Bound of error=5% i.e. .05

$n = (1.96)^2 0.5\,(1 - 0.5) / (0.05)^2$

$n = 384.5 = 385$

At 95% confidence interval, we used the prevalence of 50% (underweight / stunting) and bound on error of 5%. We needed at least 385 children for the study. In this study 390 children were included. Systemic random sampling procedure was adopted to select 390 children. All the data was collected on a pre-defined questionnaire. This data was fed and analyzed on SPSS version 20.00.

The tools for data collection included:

1. Questionnaire for household information and child's information
2. Anthropometric measurements as weight and length (height) were taken to assess the nutritional status of the children.[12, 13]

The age of the child was determined by co-relating the date of birth with Islamic date or events as Ramadan or Eid, local and political events.

An infant weighing scale having a maximum weight capacity of 20 kg was used. Children were weighed with minimal clothing, and the weight was recorded to the nearest of 0.1 kg.

Recumbent length of the children was noted. Each child was made to lie on an adjustable wooden measuring board and length measurements were recorded to the nearest of 0.1 cm.

RESULTS:

The total children included in this study were 390, 174(44.62%) males and 216 (55.38%) females. Frequency distribution of age variables in these children was 90 (23.10%) up to one year, 93 (23.85%) between > 1 year and up to 2 years, 82 (21.00%) > 2 years and up to 3 years, 70 (17.95%) > 3 years and up to 4 years and 55 (14.10%) children were more than 4 years. (Table 1).

Table 1

Frequency Distribution of Age groups of Children

N=390

Age groups	Number	Percentage
Up to 1 year	90	23.10
> 1 year to 2 years	93	23.85
> 2 years to 3years	82	21.00
> 3 years to 4 years	70	17.95
> 4 years to 5 years	55	14.10
Total	390	100

Considering the educational status of the mothers, majority of them, 273 (70%) were illiterate and 117(30%) were literate. Among literate group 21 could read only, 42 had primary, 23 middle, 24matric, 5 intermediate and 2 received education up to graduate level (Table 2).

Association of 390 mother's education with the nutritional status in the children was analyzed. Among 390 children, 162(41.54%) children were underweight, 205(52.56%) stunted, and 89(22.82%) had wasting (Table 2).The mother's educational status was cross-tabbed with the type of malnutrition. We divided mothers of 390 children into two groups. Mothers of 273(70%) children were included in group one that is they were illiterate and second group comprised of 117 (30%) mothers, who had received some education that is mostly primary to matric. In group one (Illiterate Mothers), there were 129 (47.25%) children who were under-weight, 156 (57.14%) stunted and 64 (23.44%) wasted. In second group (Mothers with some education), 33 (28.21%)

Table 2

Frequency Distribution of Mother's Education by Type of Malnutrition

S.No.	Education	Total	Weight for Age		Height for Age		Weight for Height	
			Normal	Under Weight	Normal	Stunting	Normal	Wasting
1.	Illiterate	273	144	129	117	156	209	64
		(70.00%)	(52.75%)	(47.25%)	(42.86%)	(57.14%)	(76.56%)	(23.44%)
2.	Can read only	21	12	9	9	12	11	10
		(05.38%)	(57.14%)	(42.86%)	(42.86%)	(57.14%)	(52.38%)	(47.62%)
3.	Primary	42	27	15	21	21	34	8
		(10.77%)	(64.29%)	((35.71%)	(50.00%)	(50.00%)	(80.95%)	(19.05%)
4.	Middle	23	18	5	14	9	18	5
		(05.90%)	(78.26%)	(21.74%)	(60.87%)	(39.13%)	(78.26%)	(21.74%)
5.	Matric	24	21	3	18	6	22	2
		(06.15%)	(87.50%)	(12.5%)	(75.00%)	(25.00%)	(91.67%)	(08.33%)
6.	Inter	5	4	1	4	1	5	0
		(01.28%)	(80.00%)	(20.00%)	(80.00%)	(20.00%)	(100%)	(0%)
7.	Graduate	2	2	0	2	0	2	0
		(00.51%)	(100%)	(0%)	(100%)	(0%)	(100%)	(0%)
	Overall	390	228	162	185	205	301	89
			(58.46%)	(41.54%)	(47.44%)	(52.56%)	(77.18%)	(22.82%)

were under-weight, 49 (41.88%) stunted and 25 (21.37%) had wasting .There was a significant difference regarding underweight and stunting between the children whose mothers were illiterate in comparison to the children whose mothers had some education($P<0.05$), but non-significant difference regarding wasting was found ($P > 0.05$). (Table 3)

Table3

Frequency Distribution of Type of Malnutrition by Mother's Educational Status

	Normal	Underweight	P-Value
No Maternal Education	144	129	0.000
Some maternal Education	84	33	
	Normal	Stunting	
No Maternal Education	117	156	0.005
Some maternal Education	68	49	
	Normal	Wasting	
No Maternal Education	209	64	0.662
Some maternal Education	92	25	

DISCUSSION:

Our study's results showed that literacy status of mothers strongly affects the nutritional state of the children where illiterate mothers are a risk for the development of malnutrition in children <5 years of age especially underweight and stunting. This coincides with the studies of Sanghvi[14], Correia[15], Deshmukh[16], Ferdous[17], Islam[18] and Chen.[19] All of them have identified illiteracy of mothers as a strong risk factor for malnutrition in children < 5 years of age.

In our study, 205 (52.56%) children were found to be stunted. Majority of these children i.e. 156 (76.10%) belonged to illiterate mothers. Maximum underweight and wasting were found in 129(79.63%) and 64 (71.91%) children respectively and their mothers had no education. This coincides with the studies of Abuya[20], Ojofeitimi[21] and Ahmed.[22] In our study population , 273 (70 %) mothers of the 390 children were illiterate. Of these 273 mothers, 129 children were underweight and 156 children were stunted which on statistical evaluation was found to be significant $P<0.05$. This coincides with the studies of Rikimaru[23] and Lu[24], while wasting was found in 64 children which were found to have non-significant association with mother's education on statistical evaluation. . This coincides with one of our previous studies conducted in rural area of Malir Karachi[25] In our study, 47.25% children were underweight, 57.14% stunted and 23.45% were wasted. This does not coincides with the national figures of Pakistan i.e. 32% underweight, 45% stunting and 11% wasting which has been stated in "State of World's Children - 2015 by UNICEF".[11] This is probably due to the location of the study. Our sample was from a slum area with poor basic health facilities whereas the national survey included children from the entire country population.

CONCLUSION:

Mother's education has significant impact on the state of nutrition of children. It is therefore recommended that education of females especially in the slum areas should be promoted and given due importance.

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