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Effect of socio-demographic status on malnutrition among school going children

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Abstract
Presently more than 200 million school children are underdeveloped and underweight and if no action is taken and at this rate, by 2025 more than one billion school children will be growing up with impaired physical and mental development. Despite the economic growth seen in India especially in states like Delhi, malnutrition and especially under-nutrition are still highly prevalent. Therefore, keeping in view the above said, the present study was carried out in urban slums of Trilokpuri, Delhi. A total of 200 children (Age group – 6 -12 years) who were residing in different areas of Trilokpuri were selected from Nigam Prathmic Bal Vidhyalaya and Sarvodaya Bal Vidyalaya Kalyanpuri, for study through systematically random sampling. Data were collected from both primary and secondary sources. Study finding indicates that only 19 percent of the children found in normal BMI, while rest (81 percent) of them was malnourished. Significance relationship was observed between nutritional status of school going children with caste, number of sibling and mother' education, so there is urgent need for organized nutrition education and family planning programs especially for women in slums area.

Keywords: nutritional status, malnourished, slum, school going children

1. Introduction
India has 63% of the total slum dwellers in South Asia, or 17% of the world's slum dwellers. That is, a total of 16.9 million people live in slums (United Nations Habitat, 2006/7). 1 in 10 children born in urban slums are unlikely to reach their fifth birthday i.e. die (Agarwal, *et al*. 2005) [6]. Due to large scale migration to cities in the hope of better life and employment, the urban population is increasing rapidly, due to which the cities and towns are also expanding, along with the number of people living in slums is also increasing. Due to the development of these slums without any planning and basic facilities, many health problems are arising here, out of which malnutrition among children is a major problem. Malnutrition is of public health importance among children around the world, especially in developing countries. Globally, malnutrition among school-age children remains a major public health concern. Presently more than 200 million school children are underdeveloped and underweight and if no action is taken and at this rate, by 2025 more than one billion school children will be growing up with impaired physical and mental development. Despite the economic growth seen in India especially in states like Delhi, malnutrition and especially under-nutrition are still highly prevalent. Socio-economic background also has an important influence on the nutrition of the children, in poor families, many children are often given birth by parents due to lack of knowledge on family planning, which affects their health as well as their children. It is visible because due to insufficient family income, they are not able to provide proper nutrition to their children; as a result most of their children become malnourished. Childhood under-nutrition was and is one of the causes of high child mortality in poor settlements. Poor nutrition in childhood and slow cognitive development lead to many health problems later in life, which reduce the quality of life. Nutritional status is an important index of this quality. In this regard, understanding the impact of socioeconomic status on the nutritional status of children will have far-reaching implications for the better development of the future generations.
Therefore, Keeping in view the above said, the present study was carried out in urban slums of Trilokpuri, Delhi to assess the effect of socio-economic status on the nutritional status of the school-going children.

2. Methodology

A total of 200 children (Age group – 6 -12 years) who were residing in different areas of Trilokpuri were selected from (1) Nigam Prathmic Bal Vidhyalaya Main Road, Part 1, Trilokpuri and (2) Sarvodaya Bal Vidyalaya Kalyanpuri, Near Police Station, Block 2, Part 1 Trilokpuri**,** for study through systematically random sampling. Data were collected from both primary and secondary sources. Anthropometric measurement will be used for nutritional status of the school going children. Percentage, chi-square and p-value will be used for the data analysis.

3. Results & Discussion

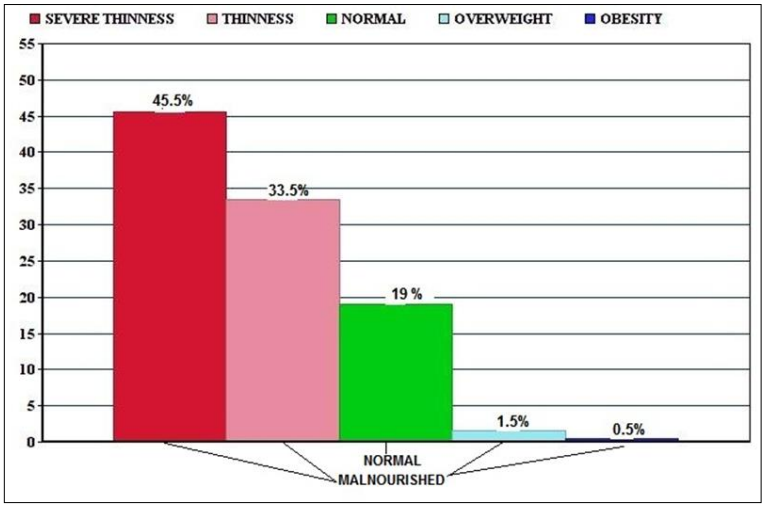

Fig 1: Nutritional status of the school going children

Figure-1 revealed the data on nutritional status of school going children of Trilokpuri slums. According to the figure data only 19 percent of the children found in normal BMI, while rest (81 percent) of them were malnourished i.e,. 45.5 percent of them were severe thinness, 33.5 percent thinness and 1.5 percent of them were found overweight. Obesity was seemed only 0.5 in the school going children.

Table 1: Nutritional Status of Children on The Basis of Caste Composition

Caste	Normal		Malnourished		Total		Chi-square	P-value
	(n)	(%)	(n)	(%)	(n)	(%)		
General	17	58.62	12	41.38	29	100.00	45.459	<0.00001*
OBC	18	23.08	60	76.92	78	100.00		
SC/ST	03	03.23	90	96.77	93	100.00		

Significance Level = 0.05 * significant at $p < .05$

Table-1 revealed the data on nutritional status of the children on the basis of caste composition. According to the data malnourished children were found more in SC/ST (96.77 percent) and OBC (76.92 percent). More than half of the general students were found in normal nutritional status. Significance relationship was observed between caste and nutritional status of the school going children (chi-square-45.459 and p-value <0.00001).

Table 2: Nutritional Status of Children on The Basis of Religion

Religion	Normal		Malnourished		Total		Chi-square	P-value
	(n)	(%)	(n)	(%)	(n)	(%)		
Hindu	22	18.49	97	81.51	119	100.00	0.0706	.995117
Muslim	13	20.00	52	80.00	65	100.00		
Sikh	01	20.00	04	80.00	05	100.00		
Christian	02	18.18	09	81.82	11	100.00		

Significance Level = 0.05 * significant at $p < .05$

Table-2 revealed the data on nutritional status of children on the basis of religion. According to the data near about 80 percent of the children in all the religion were found malnourished i.e., 81.51 percent in Hindu, 80 percent in Muslin, 80 percent in Sikh and also 81.82 percent in Christian, similarly normal nutritional status were found in same in all the religion. Significance relation was not found in religion and nutritional status of the children (chi-square statistic 0.0706 and p-value- .995117).

Table 3: Nutritional Status of Children on The Basis of Sibling

Sibling	Normal		Malnourished		Total		Chi-square	P-value
	(n)	(%)	(n)	(%)	(n)	(%)		
One Sibling	08	61.54	05	38.46	13	100.00	44.1109	<0.00001*
Two Sibling	16	48.48	17	51.52	33	100.00		
Three Sibling	09	10.84	74	89.16	83	100.00		
>Three Sibling	05	07.04	66	92.96	71	100.00		

Significance Level = 0.05
* significant at $p < .05$

Table-3 represents the data on nutritional status of children on basis of sibling. According to the data malnutrition was found more (92.96 percent) in children who had more than three siblings, similarly 89.16 percent of the children with three siblings were also found malnourished. More than half (61.54 percent) of the children with one sibling had normal nutritional status. The chi-square statistic 44.1109 and p-value-<0.00001 showed the significant relationship between nutritional status and number of siblings.

Table 4: Nutritional Status of Children on the Basis of Types of Family

Family	Normal		Malnourished		Total		Chi-square	P-value
	(n)	(%)	(n)	(%)	(n)	(%)		
Nuclear	29	17.26	139	82.74	168	100.00	2.0611	.151102
Joint	09	28.13	23	71.87	32	100.00		

Significance Level = 0.05 * significant at $p < .05$

Table-4 showed the data on nutritional status of children on the basis of types of family. 82.74 percent of children in nuclear family and 71.87 percent of the children in joint families were found malnourished. Only 17.26 percent of children in nuclear families and 28.13 percent of the children in joint families had normal nutritional status. Data also showed that the types of family were not a important factor for nutritional status in urban slums of Trilokpuri, Delhi. Chi-square statistic 2.0611 and p-value-.151102 also indicates that there is no significance relationship between nutritional status and types of family of children.

Table 5: Nutritional Status of Children on The Basis of Family Income

Income	Normal		Malnourished		Total		Chi-square	P-value
	(n)	(%)	(n)	(%)	(n)	(%)		
Rs. <2000	03	10.34	26	89.66	29	100.00	2.3757	.304879
Rs. 2001-5000	10	16.95	49	83.05	59	100.00		
Rs. >5000	25	22.32	87	77.68	112	100.00		

Significance Level = 0.05 * significant at $p < .05$

Table-5 revealed the data on nutritional status of children on the basis of family income. According to the data malnourished children were found more in all the income groups i.e., 89.66 percent in below Rs. 2000 income group, 83.05 percent in Rs. 2001-5000 income group and 77.68 percent in more than Rs. 5000 income group. In comparison of the entire mentioned income group more than Rs 5000 income group showed better nutritional status than other income groups. Significant relationship was not observed between income and nutritional status of the children (chi-square-2.3757 and p-value.304879).

Table 6: Nutritional Status of Children on The Basis of Mother Education

Education	Normal		Malnourished		Total		Chi-square	P-value
	(n)	(%)	(n)	(%)	(n)	(%)		
Illiterate	09	09.18	89	90.82	98	100.00	36.8835	<0.00001*
Below upper primary	13	17.11	63	82.89	76	100.00		
Above upper Primary	16	61.54	10	38.46	26	100.00		

Significance Level = 0.05 * significant at $p < .05$

Table-6 represents the data on nutritional status of children on the basis of mother education. According to the data better nutritional status (61.54 percent) were seemed in children whose mothers got above upper primary education normal. It was found that the majority of the children (90.82 percent) whose mothers were illiterate found malnourished, while rest of them (9.18 percent) had normal nutritional status. There is strong correlation was observed between nutritional status of the children and mother's education (chi-square 36.8835 and p-value <0.00001).

4. Conclusion

Nutritional status is a key indicator for all round development of the children. The socio-economic background of the family of children has a special impact on their development and nutritional status. Study finding indicates that the majority (81 percent) of the school going children of Trilokpuri were malnourished. In present study Significance relationship were observed between nutritional status of school going children with caste, number of sibling and mother' education, same finding was observed in a study conducted by Srivastava A. (December 2010 to April 2011) in urban slums of Bareilly, Uttar Pradesh and found that mother's education and the number of family members have a strong co-relation with the nutritional status of the children. In present study family income, types of family and religion were not significant associated with nutritional status of the school going children.

5. Recommendation

Government should be organized nutrition education and family planning programs especially for women in slums area.

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