ORIGINAL RESEARCH PAPER

Community Medicine

IMPACT OF SOCIOECONOMIC FACTORS ON NUTRITIONAL STATUS OF SCHOOL AGED CHILDREN RESIDING IN AN URBAN SLUM IN INDIA

KEY WORDS: Nutritional status, School aged children, Socioeconomic factors

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ABSTRACT

Background: Nutritional status of children is a by-product of a multitude of socioeconomic factors. Objectives:To study the impact of socioeconomic factors on nutritional Status of school aged children.
Methods : A Cross sectional Study comprising of 400 school aged children was carried out in an urban slum in Meerut
Results: A significant association was seen between nutritional status of children and educational status of both father and mother (P< 0.0001 for both) and also the occupation of father(P< 0.0001). No significant association was seen between occupation of mother (P= 0.228) and social class of the family(P=0.107).
Conclusion: Socioeconomic factors have an impact on the nutritional status in school aged children.

INTRODUCTION:

Children are the wealth of any nation as they constitute one of the important segments of the population.The foundation of good health and sound mind is laid during the school age period.School age is considered as dynamic period of growth and development because children undergo physical, mental, emotional and social changes. [1] According to Census 2011, 19.4% of the population comprises of school aged children. [2] Over the next decade the absolute numbers and proportion of this population is expected to grow. It is therefore essential that efforts should be focused on improving the health and nutritional status of school-aged children. There are various socioeconomic factors which govern the nutritional status of school aged children. Malnutrition is largely the by-product of poverty, ignorance, insufficient education, lack of knowledge regarding the nutritive value of foods, inadequate sanitary environment etc.[3] Many studies have reported the prevalence of underweight and malnutrition in school-aged children as around 50%.[4,5,6]

There are very few community based studies to assess factors associated with the nutritional status of school aged children. Therefore this study was undertaken at the community level with the objective to study the various socioeconomic factors associated with nutritional status in school aged children.

MATERIAL AND METHODS

Study Setting: The present study was conducted in an urban slum area among 1867 families which were registered at Urban Health Training Centre of LLRM Medical College, Meerut.

Study Subjects: 5-14 years (School aged) children of the registered families.

Study Period : February 2011 to June 2011.

Study Design: Cross-sectional study. **Sample Size:** Sample size was calculated using the formula:

$$n=Z_{1-\alpha/2}^{2}pq/d^{2}$$

By taking prevalence of malnutrition in school aged children ,
p=50%
d=10% of p
α=5%, $Z_{1-\alpha/2}$=11.96
n=384

Assuming a non response rate of 5%, the total sample size is estimated as 400.

Sampling Technique: Simple random sampling technique

Data Collection: By House to house visit. **Informed Consent** was taken from the parents of the children. A Predesigned & pretested questionnaire was used to collect all the relevant data supplemented by physical examination.The US Center for Disease Control and Prevention (CDC) 2000 Growth Charts which provide gender specific BMI for age for school aged children were used to assess the nutritional status of the children. In order to calculate BMI, weight and height of the children were measured.The weight was recorded with the help of weighing machine to the nearest 100 grams. The height was measured from head to heels by an ordinary measuring tape to the nearest centimeter.

Data Analysis: Data was analyzed using SPSS software version 16. Qualitative variables were expressed in percentages. Chi square test was used to test the association between two attributes. P- value less than 0.05 was considered significant.

RESULTS

We managed to collect data from 400 children in the age group of 5-14 years who fully cooperated with us for the study.

Table 1 shows the nutritional status of children in relation to educational status of parents.The nutritional status of children was found to be significantly associated with both the father's and mother's educational status (P <0.0001 for both)

Table 1:Nutritional Status of Children in relation to educational status of parents

Father's education	Total Population		Underweight		Healthy Weight		Overweight		Obese	
	No.	%	No.	%	No.	%	No.	%	No.	%
Illiterate	28	7.0	28	100.0	0	0.0	0	0.0	0	0.0
Primary School	46	11.5	37	80.4	9	19.6	0	0.0	0	0.0
Middle School	27	6.7	16	59.3	9	33.3	2	7.4	0	0.0
High School	46	11.5	24	52.2	18	39.1	4	8.7	0	0.0
Intermediate	93	23.3	38	40.9	42	45.2	10	10.7	3	3.2
Graduate	138	34.5	47	34.1	64	46.4	19	13.8	8	5.7
Post Graduate	17	4.2	2	11.8	9	52.9	3	17.6	3	17.6
Professional	5	1.3	0	0.0	3	60.0	1	20.0	1	20.0

Total	400	100.0	192	48.0	154	38.5	39	9.8	15	3.7
χ^2=91.26; P<0.0001										
Mother's education	**Total Population**		**Underweight**		**Healthy Weight**		**Overweight**		**Obese**	
	No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
Illiterate	92	23.0	59	64.1	33	35.9	0	0.0	0	0.0
Primary School	43	10.7	26	60.5	16	37.2	1	2.3	0	0.0
Middle School	56	14.0	32	57.1	21	37.5	3	5.4	0	0.0
High School	39	9.8	19	48.7	15	38.5	4	10.3	1	2.5
Intermediate	68	17.0	26	38.2	27	39.7	11	16.2	4	5.9
Graduate	98	24.5	30	30.6	40	40.8	19	19.4	9	9.2
Post Graduate	4	1.0	0	0.0	2	50.0	1	25.0	1	25.0
Total	400	100.0	192	48.0	154	38.5	39	9.8	15	3.7
χ^2=63.65; P<0.0001										

Table 2 shows that the nutritional status of children was found to be significantly associated with father's occupation (P <0.0001) but not found to be significantly associated with mother's occupation (P = 0.228)

Table 2:Nutritional Status of Children in relation to occupational status of parents

Father's occupation	**Total Population**		**Underweight**		**Healthy Weight**		**Overweight**		**Obese**	
	No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
Unemployed	12	3.0	7	58.3	5	41.7	0	0.0	0	0.0
Non skilled Worker	64	16.0	56	87.5	8	12.5	0	0.0	0	0.0
Semi Skilled Worker	58	14.5	48	82.8	9	15.5	1	1.7	0	0.0
Skilled Worker	8	2.0	3	37.5	5	62.5	0	0.0	0	0.0
Businessman	94	23.5	32	34.0	45	47.9	12	12.8	5	5.3
Service	161	40.2	46	28.6	82	50.9	25	15.5	8	5.0
Professional	3	0.8	0	0.0	0	0.0	1	33.3	2	66.7
Total	400	100.0	192	48.0	154	38.5	39	9.8	15	3.7
χ^2=142.32; P<0.0001										
Mother's occupation	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
Housewife	350	87.5	170	48.6	131	37.4	36	10.3	13	3.7
Business	17	4.3	12	70.6	5	29.4	0	0.0	0	0.0
Skilled Worker	12	3.0	5	41.7	6	50.0	1	8.3	0	0.0
Service	9	2.2	1	11.1	5	55.6	2	22.2	1	11.1
Semiprofessional	12	3.0	4	33.3	7	58.3	0	0.0	1	8.3
Total	400	100.0	192	48.0	154	38.5	39	9.8	15	3.7
χ^2=15.26; P=0.228										

Table 3 shows that the nutritional status of children was not found to be significantly associated with social class of family (P = 0.107)

Table 3:Nutritional Status of Children in relation to Social Class of Family

			Nutritional Status							
Social Class	**Total Population**		**Underweight**		**Healthy Weight**		**Overweight**		**Obese**	
	No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
Upper	8	2	2	25.0	6	75.0	0	0	0	0
Upper Middle	224	56	101	45.1	91	40.6	24	10.7	8	3.6
Lower Middle	74	18.5	43	58.1	25	33.8	6	8.1	0	0.0
Upper Lower	94	23.5	46	48.9	32	34.0	9	9.6	7	7.5
Total	400	100.0	192	48.0	154	38.5	39	9.8	15	3.7
χ^2=10.45; P=0.107										

DISCUSSION

In the present study, the nutritional status of children was found to be significantly associated with Father's educational status (P <0.0001).This is similar to the findings of Galgamuwa et al (2017) [7], Choudhary et al(2009)[8] and Bharati et al (2008)[9] who observed a similar significant betterment in nutritional status of children with increasing levels of father's education.

In the present study, the nutritional status of children was found to be significantly associated with mother's educational status (P <0.0001). This is in accordance with the findings of Galgamuwa et al (2017) [7] , Bharati et al (2008)[9]and Mukherjee et al (2008)[10] who observed a similar significant betterment in nutritional status of children with increasing levels of mother's education.

In the present study the nutritional status of children was found to be significantly associated with father's occupation (P <0.0001).This is similar to the findings of Galgamuwa et al (2017) [7] , Bharati et al (2008)[9] and Vohra et al (2011) [11]

In the present study, the nutritional status of children was not found to be significantly associated with mother's occupation (P = 0.228).These findings are similar to the findings of Shah et al(2008)[12]but different from the findings of Kwabla et al (2018) [13] , Galgamuwa et al (2017) [7] and Bharati et al (2008)[9].

In the present study ,the nutritional status of children was not found to be significantly associated with social class (P = 0.107) . This is not consistent with the findings of Galgamuwa et al (2017), [7]Arora et al (2014) [14] , Vohra et al (2011) [11] and Choudhary et al(2009)[8].

CONCLUSION:

Socioeconomic factors have an impact on the nutritional status in school aged children.

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