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Parental factors associated with the morbidity among the adolescent girls: A study from the Pune city

Dr. Neha Joshi[1], Dr. Manoj Kumar[2*], Dr. Kunal Chatterjee[3]
[1] MD, DNB, Department of Community Medicine, Meerut, Uttar Pradesh, India
[2] DGO, DNB, Department of Obstetrics and Gynaecology, Meerut, Uttar Pradesh, India
[3] MD, DNB, Professor, Department of Community Medicine, AFMC, Pune, Maharashtra, India

Abstract
Background: Parental awareness regarding the importance of personal hygiene in disease prevention is very important. Adolescent girls of urban slum area do not have sufficient interaction with their parent.
Aims and Objectives: To study the parental factors associated with morbidity among adolescent girls.
Materials and Methods: Two hundred and twenty-four adolescent girls who were the permanent residents of an urban slum area of Pune were studied having age between 10-19 years. Data were collected using personal interviews of the subjects and their parents with the help of the nearest Anganwadi/urban health center. Socio-demographic profile (age and education), parental details including education, occupation and clinical examination of the girls were recorded.
Results: Mean age of adolescent girls was *14.29 ±1.86 years.* Majority of the parents were educated till high school and it was found that education was more in fathers than mothers. No association was found between parent education and occupation with the presence of common morbidities.
Conclusion: We did not find any association between parental factors such as education, and occupation with the morbidity status of the adolescent girls.

Keywords: nutritional deficiency, parent education, slum area, parent occupation

Introduction

As per the recent Census of India 2011, there are a total of 243 million adolescents living in India [1] Out of that, about 15% of the population is living in the slum area [1, 2].

Syed *et al*. defined slum as the place where "dwellings are in any respect unfit for human habitation by reasons of dilapidation, overcrowding, faulty arrangements and designs of such buildings, narrowness or faulty arrangement of streets, lack of ventilation, light, sanitation facilities or any combination of these factors which are detrimental to safety, health and morals [3].

Previous studies have found that quality relationship with the parent is a determining factor for the physical and psychological wellbeing in adolescents [3]. Slum population is economically week and is positioned low in the society. Patent education and occupation determine the health status of the adolescent living in the slum area. In the present study, we tried to evaluate the parental factors such as education and occupation and to find out its association with the health status of the adolescent girls.

Materials and Methods

The present prospective cross-sectional study was performed on 224 adolescent girls at Urban Health Training Centre. Girls having age between 10-19 years from the urban slum area and who gave the written informed consent were included.

Adolescent girls who were not the permanent residents (Permanent residents were those who lived in the slum for the period of 6 months or more) were excluded from the present study.

Data was collected based on Global school-based student health survey [4]. Before the survey, familiarization visits were made to the houses along with medico-social workers, and active women of the community. Following that, interviews with adolescent girls and physical examinations after informed consent were carried out in the nearest Anganwadi /urban health center.

In this study socio-demographic profile (age and education), parental details including education, occupation and clinical examination to assess the signs of nutritional deficiencies were assessed. A routine examination of hemoglobin was carried out on subjects studied. After an initial examination, adolescent girls were advised about treatment where necessary.

Definitions of the variable studied

Age: Age was recorded as a continuous variable in completed years as on the date of interview.

Education: According to the manual of the socioeconomic scale, the study subjects into seven categories as illiterates, primary, middle, high school, intermediate, graduate, postgraduate. Illiterate: A person who could not read or write. This category also included those who could only sign or reproduce some writing mechanically without meaning. Primary: Those who had studied up to 4th standard. Middle school: Those who had studied from 5th to 8th standard. Higher school: Those who studied 9th and 10th standard and had obtained higher secondary school certificate from any educational board. Intermediate/Diploma: Those who had studied 11th and 12th standard or any equivalent certificate course. Graduate: A person who had obtained a graduate degree from any university (B.A./B.Sc./B.Com Degree). Postgraduate: A person who had obtained post graduate degree from any university

Anaemia: All Adolescent girls having hemoglobin less than 12 gm% were considered anaemic. Grading of anaemia was done according to WHO criteria as Mild (10-11.99 gm/dL),

Moderate (7-9.99 gm/dL) and Severe (<7 gm/dL).
All the data analysis was performed using IBM SPSS ver. 20 software. Frequency distribution and cross-tabulation was used to prepare the tables. Age and hemoglobin levels are expressed as mean ± standard deviation whereas as categorical data like education status and SES are expressed as a percentage.

Results

Mean age of study cohort was *14.29 ±1.86 years.* Majority of the *adolescent girls were in the age group of 14-16 years (54.02%) followed by 11-13 years (33.03%) age group.* In the majority of study subjects parents were educated till high school and it was found that education was more in fathers than mothers.

Table 1: Distribution of study subjects as per parents education and occupation

Parameters		Father	Mother
Education	Illiterate	8 (3.57)	34 (15.18)
	Primary School Certificate	63 (28.13)	76 (33.93)
	Middle School Certificate	51 (22.77)	67 (29.91)
	High School Certificate	72 (32.14)	41 (18.30)
	Intermediate or Post School diploma	19 (8.48)	6 (2.68)
	Graduate or Post Graduate	9 (4.02)	0 (0)
	Profession or Honor's	2 (0.89)	0 (0)
Occupation	Profession	3 (1.35)	0 (0)
	Semi Profession	23 (10.27)	6 (2.68)
	Clerical, Shop owner, Farmer	72 (31.14)	7 (3.12)
	Skilled worker	72 (32.14)	45 (20.09)
	Semi Skilled worker	30 (13.39)	85 (37.95)
	Un-Skilled worker	24 (10.71	0 (0)
	Unemployed	0 (0)	81 (36.16)

Data are expressed as no of subjects (percentage)

Association between mother's education and prevalence of common morbidities among study subjects

For statistical convenience, on the basis mother's education two groups were formed one that is having less than or equal to middle school education and another with higher than middle school education. Association between mother's education and the presence of common morbidities was found to be not statistically significant for any of them.

Table 2: Association between mother's education and prevalence of common morbidities among study subjects

Morbidity		Mothers Education		X^2	p-value	Odds Ratio 95% C.I
		≤ Middle School	> Middle School			
Anaemia	Yes	138	37	0.012	0.911	0.956 0.437-2.094
	No	39	10			
Underweight	Yes	72	20	0.054	0.816	0.926 0.483-1.776
	No	105	27			
Pediculosis	Yes	138	39	0.563	0.453	0.726 0.313-1.681
	No	39	8			
Dental caries	Yes	109	28	0.063	0.802	1.088 0.564-2.097
	No	68	19			
H/o passing worms in stool	Yes	122	34	0.205	0.651	0.848 0.415-1.732
	No	55	13			
Skin disorders	Yes	63	12	1.688	0.194	1.612 0.781-3.326
	No	114	35			
Vaginal discharge	Yes	47	11	0.192	0.661	0.845 0.398-1.795
	No	130	36			

Association between overcrowding and prevalence of pediculosis

In the present study, 177girls had pediculosis and majority of the 137(77.4%) lived in houses where overcrowding was present. Association between overcrowding and presence of pediculosis was found to be not statistically significant p>0.05.

Discussion

UNICEF report has found malnutrition as the killer. This crisis is real and tenacity of this has dreadful consequences on the health of children, society and future mankind [5]. One of the reasons for the malnutrition among the adolescent girls of urban slum area is parental factors such as education and occupation. In the present study we tried to evaluate the factors and tried to find out the relationship between parental factors and occurrence of morbidities among the adolescent girls.

In the present study, a *maximum number of individuals belonged to a family comprising of 4-6 (77.68%) members followed by more than 6 (17.86) members. Only 4.5% of individuals belong to a family composed of less than 4 members. The mean of the total number of members in a household was 5.47± 1.56 (95% C.I. 5.34-5.59).* This is similar to the mean household size of the urban area reported in DLHS-3 (2007-08) i.e.5.2 [6].

In the present study, in the majority of study subjects, the fathers were educated until high school (32.14%) followed by primary (28.13%) and middle school education (22.7%). Only 13.39% were educated until intermediate and above. Only 3.57% were illiterate. In 33.93% of study subjects the mothers were educated till primary school followed by

middle school (28.13%) and high school (18.3%). Only 2.68 % were educated until intermediate. 15.18% were illiterate. With regards to the parents educational status, 3.57% of fathers and 15.18% of mothers were illiterates. A study from Indore by Majumdar *et al.* [7], reported 16.52% fathers and 33.4% mothers were illiterates. Another study from Meerut by Rawat *et al.* [8] reported that 32.93% of mothers were illiterate. Whereas a study conducted by Senapati *et al.* at Calcutta [9] reported 60% illiteracy status among parents. So in the present study literacy rate was found to be high in comparison to other studies. The reason may be due to increased in overall literacy rate as per Census reports, the overall literacy rate was 64.8% in Census 2001 which increased to 74.04% in Census 2011report [1].

In the present study, the prevalence of anaemia was maximum in adolescent girls whose mothers had primary education 56(32%) and prevalence progressively decreased with increase in the educational status of the mother. Association between mother's education and prevalence of anaemia was found to be not statistically significant whereas the results of a cross-sectional study by Rawat *et al.* did in 504 adolescent girls in rural Meerut, showed that 174(34.5%) were anaemic subjects, a significant association of anaemia was found to be with mother's education [8]. The reason for the difference may be due to different settings of studies with the present study being an urban area. A similarly cross-sectional sample survey of 556 adolescent girls (10-18 years) was conducted by Singh in an urban area of Meerut, and the results showed a significant difference in prevalence of anaemia in adolescent girls in relation to mother's education. Prevalence of anaemia decreased with an increase in the educational status of mothers who were graduates and above (25.2%) [10]. Reason for the difference with our study could not be explained. Another cross-sectional study by Kaur S *et al.* to assess the epidemiological correlates of nutritional anemia was carried out in 2006 on adolescent girls of four villages of Kasturba Rural Health Training Centre, Anji, and rural Wardha. The results showed that the prevalence of anemia was 59.8%. Association between age, education, socioeconomic status, BMI, the status of menarche and anaemia was found to be not significantly significant [11]. Similar findings are present in our study that is the association between age, mother's education and the presence of anaemia were found to be not statistically significant.

Similarly in a study by Verma *et al.* carried out among 1295 girls of school going age (6-18years) residing in 15 randomly selected slums of the north Ahmedabad city, 81.8% of girls were anaemic, out of which 55.2 % were mildly anaemic, 0.6% severely anaemic and the rest were moderately anaemic. No significant relationship of anaemia was observed with parent's education [12].

In a study by Rawat *et al.* among 504 adolescent Girls in rural Areas of District Meerut, 174 (34.5%) adolescent girls were anaemic. The prevalence of mild, moderate and severe anaemia among adolescent girls was 19%, 14.1%, and 1.4%, respectively. A significant association of anaemia with the type of family, father's occupation, mother's education, and family size stressed the need to develop strategies for intensive adult education, nutrition education and dietary supplementation, including anaemia prophylaxis [8].

Conclusion

Adolescence girls are in a transition phase to adulthood. For the majority of the young people, adolescence is a healthy conversion during which they find out the values and skills of life which will benefit them in the future. Parent plays a vital role in learning these values during the transition to adulthood. In the present study, we found that fathers were more educated as compared to the girl's mother. However, we did not find any relation between parent education and the morbidity among adolescent girls. However, there is a need to educate parents about the nutritional needs of adolescents so that there can be an appropriate redistribution of the resources spend on food. The intervention should also include education for parents, especially mothers, in the nutritional needs of adolescents.

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