High Morbidity among Urban Adolescent Females: A Cause For Concern

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ABSTRACT

Introduction: In our country, there are an estimated 200 million adolescents, comprising one-fifth of the total population. Adolescent's problems constitute a bulk of morbidities, which are unrecognized and uncared iceberg of disease burden. Aim and objectives of the present study was planned to find out the health profile of urban adolescent girls and the associated social correlates and other contributory factors in a city of Western Uttar Pradesh.

Material and methods: For calculating the sample size, the prevalence of anaemia was considered as the most common health problem in adolescent girls and therefore used for calculating the sample size. With a relative precision of 10%, and prevalence of anaemia as 50% the sample size was 384. In order to have an effective coverage of the sample, the whole area was divided into nine colonies. A house to house survey was done in each colony till 40-45 adolescent girls were covered from that area, so as to cover the desired sample. During home visits, demographic profile of the family was taken along with the interview and examination of adolescent girls aged 10-19 years.

Results: 63.7% girls were found to be having one or the other morbid conditions. Maximum girls (77.3%) were having morbidity related to blood and blood forming organs. Overall prevalence of anaemia was 62.2% in adolescent girls. Significant relation of morbidity in girls with caste, socio-economic status, diet and housing conditions was seen.

Keywords: Adolescent, morbidity, anaemia, socio-demographic factors, health profile

INTRODUCTION

Today, 84% of the world's adolescents live in the developing world. In our country, there are an estimated 200 million adolescents, comprising one-fifth of the total population.[1] There is a lot of upheaval and restructuring during adolescence, both physical and psychological, which make health problems in this period unique. Of the physical illnesses, the most common are recurrent respiratory infections, asthma, obesity, underweight, malnutrition, anaemia, rheumatic heart disease, injuries, poisoning, gynaecological problems, skin diseases etc. Of the psychosocial illnesses so characteristic of this age, school avoidance and failure, depression, substance abuse, juvenile delinquency and suicide are prominent. Adolescent's problems constitute a bulk of morbidities, which are unrecognized and uncared iceberg of disease burden. A large variety of morbidities among adolescents are related with nutritional deficiency disorders (stunting, wasting), menstrual disorders, RTI/STI/HIV/AIDS etc. Moreover, the complex psychosocial morbidities and high risk behaviour of adolescents have been recognized as a threat to survival, growth and development.[2] In general, adolescent girls are the worst sufferers of the ravages of various forms of malnutrition viz. protein energy malnutrition, iron, iodine, calcium, vitamin A and other specific nutrient deficiencies because of their increased nutritional needs and low social power.[3]

Though age at marriage is increasing in India, data from NFHS-3 (National Family Health Survey 3) shows that 27% young women and 3% young men in the age group of 15 -19 year were married at the time of the survey (2005-06). 30% women in the age group of 15 -19 years have had a live birth by the age of 19 years. 7% married and 9% unmarried girls reported current use of modern contraceptive methods. Majority of adolescents still do not have access to information and education on sexuality, reproduction, and sexual and reproductive health and rights, nor do they have access to preventive and curative services.[4]

The present study is an attempt to assess the extent of adolescent health problems especially among urban girls. The present study was planned to find out the health profile of urban adolescent girls and the associated social correlates and other contributory factors in western Uttar Pradesh.

MATERIAL AND METHODS

The present cross sectional study was carried out in an urban population of western Uttar Pradesh with an objective to study the health profile of adolescent girls in relation with the various socio-demographic and other contributory factors. For calculating the sample size, the prevalence of anaemia was considered as the most common health problem in adolescent girls and therefore used for calculating the sample size. With a relative precision of 10%, and prevalence of anaemia as 50% the sample size was 384.

Multi stage sampling technique was used. In order to have an effective coverage of the sample, the whole area was first divided into nine colonies. In the second stage, 40-45 adolescent girls were randomly covered by a house to house survey in each colony, so as to cover the desired sample. During home visits, demographic profile of the family was taken along with the interview and examination of adolescent girls aged 10-19 years. Each adolescent girl of the family was interviewed using oral questionnaire method. If any

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of the adolescent girl in the family was absent or hostile, during the time of study, the girl in the next family was interviewed. For proper response the heads of the families were explained in detail the purpose of the study. A detailed information was collected on a pre-designed and pretested questionnaire about socio-demographic characteristics and other contributory factors responsible for health, supplemented by physical examination. Haemoglobin estimation by Sahli's Haemoglobinometer was done only for those girls who gave their consent for it.

Terms used in the study

Adolescent Girl: Girls between the ages of 10-19 years (WHO)[2]

Morbidity: Different morbidities were classified according to ICD-10 classification.[5]

Haemoglobin Estimation: Haemoglobin estimation was done by Sahli's haemoglobinometer. Cut off level of Hb (g/dl) for anaemia in adolescent girls was taken as follows:[6]

Non Pregnant : Hb <12g/dl
Pregnant : Hb <11g/dl

Grades of anaemia

Anaemia was graded as mild, moderate and severe[7]

Grade	Hb concentration (g/dl)
Mild anaemia	10-below the cut off level
Moderate anaemia	7-<10
Severe anaemia	<7

Social Class: Modified Kuppuswamy classification[8,9] was used.

Dietary Habits: Dietary habits were classified arbitrarily into–

Vegetarian – a person who never ate animal products other than dairy milk products.

Non-vegetarian – a person who ate animal products other than dairy milk products atleast once in a while.

The housing and environmental sanitation criteria was taken as given by Garg et al.[10]

STATISTICAL ANALYSIS

The data thus collected, was descriptively analyzed and statistically evaluated using Epi-info and SPSS software.

RESULTS

In the present study, 63.7% adolescent girls were found to be suffering with one or more morbid conditions accounting for the sickness rate of 63.7% girls as shown in Table-1.

Table-2 shows the distribution of various types of morbidities in adolescent girls. A total of 382 morbidities were found to be present in 256 sick girls accounting for 1.49 morbidities per sick girl. Maximum girls (77.3%) were having morbidity related to blood and blood forming organs followed by psychological morbidities (20.3%) and infective and parasitic (10.9%) diseases.

Out of the total 402 girls, haemoglobin estimation could be done only in 318 girls. In all, 198 (62.2%) girls were found to be anaemic. The proportion of mild and moderate anaemia was 74.7% and 25.3% respectively as shown in Table-3. No girl was found to be having severe anaemia.

Table-4 depicts the relationship of morbidity among female adolescents with various socio-demographic factors like caste, socio-economic status, diet and housing and environ-

Sickness	No.	Percentage
Present	256	63.7
Absent	146	36.3
Total	402	100.0

Table-1: Distribution of girls according to sickness

Code I.C.D.	Diseases	Number	%
A00-B99	Infective and parasitic	28	10.9
D50-D89	Blood forming organs	198	77.3
E00-E90	Endocrine and Nutritional	7	2.7
F00-F99	Mental disorders	5	1.3
G00-G99	Nervous system	10	1.9
H00-H59	Eye	22	8.5
H60-H95	Ear	7	2.7
J00-J99	Respiratory	13	5.1
K00-K93	Digestive	28	10.9
L00-L99	Skin and subcutaneous tissue	9	3.5
Q00-Q99	Congenital	3	1.2
R00-R99	Psychological	52	20.3
Base		256	

Table-2: Distribution of girls according to various morbidities (Multiple response)

Grades (g/dl)	No.	Percentage	Prevalence (%)
Mild Anaemia (10-cut off)	148	74.7	46.5
Moderate anaemia (7- <10)	50	25.3	15.7
Severe anaemia (<7)	0	0.0	0.0
Total	198	100.0	62.2

Table-3: Prevalence of Anaemia in adolescent girls

Socio-demographic characters	No. (n=402)	Morbidity (No.and %)	P value
Caste			
General	265	148(55.8)	
OBC	111	90(81.8)	
SC	26	18(69.2)	P<0.001
SES			
Upper	12	8(66.6)	
Upper Middle	203	105(51.8)	
Lower Middle	110	78(70.9)	P<0.001
Upper Lower	75	63(84.0)	
Lower	2	2(100)	
Diet			
Vegetarian	215	116(53.9)	
Non-vegetarian	187	140(74.8)	P<0.001
Housing and environmental status			
Poor	63	51(80.9)	
Satisfactory	219	142(64.8)	
Good	120	63(52.5)	P<0.001

Table-4: Distribution of morbidity according to different socio-demographic factors

mental status. The morbidity was found to be significantly associated with the caste, being maximum in the OBCs, lower socio-economic status, non-vegetarian diet and poor housing and environmental status.(P<0.001).

DISCUSSION

In the present study, 63.7% girls were found to be having one or the other morbid conditions which is lower than the study conducted by Srinivasan et al (2006)[11] in Tirupati town of Andhra Pradesh which revealed 94.5% of girls having one or more morbid conditions. In another study by Basu et al[12] only 13.6% girls were without any health problems and 86.4% had one or more health problems. In the present study maximum girls (77.3%) were having morbidity related to blood and blood forming organs (nutritional anaemia) followed by psychological morbidities (20.3%), infective and parasitic (10.9%), digestive (10.9%), eye related (8.5%), ear related (2.7%), respiratory (5.1%) and skin related (3.5%) whereas Anita et al (2003)[13] in Rohtak reported anaemia (55.5%), dysmenorrhoea (43%), dental caries (37.2%), pediculosis (31%), menorrhagia (21%), URTI (17.5%), vaginal discharge (16%), refractory errors (13.4%) and acne (11%). In a study by Susmitha KM et al[14] in Nellore the leading causes of morbidity were pediculosis (83.2%), pallor (41%), dysmenorrhoea (43.6%), dental caries (28%), skin diseases (26.4%), vitamin deficiency (21.5%), passing worms in stools (13.2%) and defective vision (12%).

Singh et al (2006)[15] in Lucknow revealed inadequate oral hygiene (55.4%), pediculosis (39.2%), cold and cough (25.8%), lymphadenopathy (22.2%), scabies (16.2%), inflamed tonsils (7.8%), fever (7.5%) and ear discharge (7%) where as Srinivasan et al (2006)[11] reported pediculosis (87.5%), dental caries and skin disorders (50% each), worm infestation (18.3%), ENT disorders (17.5%), clinical anaemia (5.8%) and defective vision (4.7%).

In the present study overall prevalence of anaemia was 62.2% which is comparable to multicentric study recently completed in 3 regions of India (Mumbai, Gujarat and Delhi)[5] which showed anaemia prevalence as 62-65%, 57-65% and 48-50% respectively in adolescent girls but low as compared to 73.7% reported by Misra et al (1995).[16] Majority of anaemic girls in the present study were having mild anaemia 46.5% and 15.7% were having moderate anaemia.

Morbidity in the present study was maximum (81.8%) in OBC followed by Scheduled caste (69.2%) and least in General caste (55.8%) and this relation of morbidity with caste was statistically significant (P<0.001). The reason for high morbidity in lower caste could be due to lack of money, either due to poverty or due to more number of children in the family, lack of knowledge about child care practices, and poor personal hygiene. Similar result was seen in a study conducted in rural and urban schools of Lucknow by Sachan Beena et al[17] where adolescent girls belonging to general caste have less morbidity than other backward classes and scheduled caste, and this difference was statistically significant.

In the present study, the majority of girls belonged to Upper Middle and Lower Middle classes (77.9%) and the morbidity was maximum (84% and 100%) in upper lower and lower class followed by lower middle (70.9%) and upper and upper middle class (66.6% and 51.8% respectively) and this difference in morbidity with social class was found to be significant (P<0.001). This may be because of better availability of high quality and nutritious food with better socio-economic status. Present study showed significant relationship of morbidity (P<0.001) in girls who were non vegetarian (74.8%) as compared to those who were vegetarian (53.9%). As no supportive literature could be traced hence further exploration is needed. In the present study morbidity was maximum (80.9%) with poor housing and environmental conditions and lowest (52.5%) with good housing and environment and this difference in morbidity with housing conditions was significant (P<0.001). Poor housing and environment is also associated with infections and infestations which in turn lead to nutritional deficiencies.

Limitations of the study

Laboratory investigations for the different morbid conditions was not done except for Haemoglobin estimation in the field.

CONCLUSION

Education of females is a driving force for better health. Health education programs on common diseases and hygiene should be carried out on a regular basis in schools in consultation with concern health authorities. Extensive basic health and nutrition education should be included in school curricula and all nutrition programmes. A significant association of morbidity with caste, SES, diet and housing conditions suggests a need to develop strategies for adult education and to improve the living standards of the population. Regular contacts with adolescents through school health programme and teachers training programme can be of much help.

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