A Cross Sectional Study on Health Status of Adolescent Girls in an Urban Community in Howrah, West Bengal

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Abstract:
Introduction: *Adolescence is important and crucial period of transition from child-hood to adulthood identifies by WHO as the period from ages 10-19 years. Adolescence is a crucial period of women's life where socio-cultural factors not only influence her health status but also the health of future generation. Health status is now recognized to be a prime indicator of the health of individuals.*
Objective: *The present study was conducted to develop a database on health status of the adolescents of urban community to enable the government and other non-governmental agencies to formulate policies and initiate strategies for the well-being of adolescent girls.* **Methodology:** *A community based cross sectional study was carried out among 125 adolescent girls aged 10 -19 years in an urban community of Howrah during January 2019 to June 2019. This age group was considered for the study because marked acceleration of physical and emotional development occurs.*   **Result:** *It was observed that 88% had anemia, 57.6% had chronic energy deficiency while 42.40% had other health problems and 36% had menstrual problems*
Conclusion: *The present study shows that many health problems was present among adolescent girlst. Anemia appeared to be a great public health problem which could be addressed through distribution & intake of IFA tablets either in schools or at house hold level*
Key words: *adolescent girls, health status, anemia, BMI*

I.   Introduction

Adolescence is an important stage of growth and development in the lifespan and is a crucial period of transition from child-hood to adulthood in the life of human beings. WHO identifies adolescence as the period from ages 10-19 years. They are no longer children but are not considered adults yet.1 Adolescence is marked as a period of growth spurt and maturation, extent of physical growth not determined by genetic and heredity factors alone but also depend on availability of adequate nutrition, micronutrients in the diet and access to health services.2 Inadequate nutrition during adolescence can have serious consequences throughout the reproductive years and beyond. Extra nutritional requirements include increased intake of calcium, iron, iodine, minerals and proteins. Unmet nutritional needs lead to several public health problems such as stunted and retarded growth, impaired mental development, anaemia, complications during pregnancy and low birth weight babies.3

Recent reports of the WHO suggest that in South East Asian Region a large number of adolescents, who constitute 20% of the population in these countries, suffer from malnutrition and anaemia, which has adverse impact on their health and development. Anthropometry is a good indicator to assess nutritional status and health risks of this group.3 The World Health Organization (WHO) believes that the ultimate objective of nutritional assessments is the improvement of human health.4 Assessing the nutritional status of groups of children is an essential part of monitoring the health of a community.5

Adolescent girls, constituting nearly one tenth of Indian population, form a crucial segment of the society. The girls constitute a more vulnerable group especially in the developing countries where they are traditionally married at an early age and are exposed to greater risk of reproductive morbidity and mortality. In general adolescent girls are the worst sufferers of the ravages of various forms of malnutrition because of their

increased nutritional needs and low social power.[6] Nutritional deficiencies has far reaching consequences, especially in adolescent girls. If their nutritional needs are not met, they are likely to give birth to undernourished children, thus transmitting under nutrition to future generation. Unfortunately assessment of nutritional status of adolescent girls has been the latest explored area of research particularly in rural India.[7]

In view of the above, present study was conducted to assess the health status of the adolescent girls of urban community of Howrah, West Bengal.

The main objectives of the study are to find out the extent of health problems among adolescent girls' and to suggest measures for improvement of health status of adolescent girls.

II. Methodology

The present community based cross-sectional study was carried out among 10-19 years old adolescent girls of an urban community of Shibpur, Howrah. The population of the studied urban community (Shibpur) was 9640. A total of 125 adolescent girls, aged 10-19 yrs, residing permanently in the study area were included as study subjects. Fully privacy was maintained during interview and clinical examination. The families of the adolescents were explained about purpose and the objective of the study. The data was collected in the pre designed and pre-tested semi structured interview schedule. Information on religion, occupation, type of family, literacy status of girls, per capita income of the family age at menarche, age at marriage, age at first pregnancy etc were collected. Repeat visits were also done in some cases as some of the respondents were not available during the first visit. Nutritional status of adolescent girls was assessed by Body Mass Index (BMI) or quetelet index[8] BMI was calculated by dividing the weight (in Kg) by the height (in mtrs)^2 of an individual. A person is regarded nutritionally normal if his quetelet index was found to be between 18.5 -25. Obesity was considered if it was more than 25. Adolescents having BMI value less than 18.5 are considered to be suffering form Chronic Energy Deficiency (CED). Hemoglobin estimation was carried out by Sahli's method as other method was not available. Study subjects with HB< 12gm% was considered as anemic.[8]

III. Results

It was observed that 58 (46.40%) were currently studying while 16 (12.80%) were illiterates, 34 (27.20%) had primary education, 40 (32%) had secondary education and 35 (28%) had higher education or college going. In regard to occupation of the adolescent, girls 52 (41.60%) helping in house hold activities and 15 (12) were working as tailors, laborers, maid servants while 58 (46.40%) were currently studying only. Out of 125 adolescent girls studied, majority 77 (61.60%) belonged to nuclear family and 48 (38.4%) belonged to joint family. Married adolescent girls were 21 (16.80%) of the total study group. It was also observed that 72 (57.60%) were suffering from chronic energy deficiency and 53 (42.40%) were nutritionally normal. Adolescent pregnancies constitute 12 (9.60%) of total study group. The median age at first pregnancy was 17 years. Out of all pregnancy 16.67% experienced pregnancy before the age of 15years, rest 25% were in the age group of 16-17 and 58.33% in the age group of 18-19. (Table-1)

Most common problem faced by adolescent was menstrual problem. Amongst them 66 (52.80%) had normal cycles, 8 (6.4%) did not attain menarche, 2 (1.6%) cycles not yet established or just one or two cycles had taken place and 49 (39.2%) adolescent girls had menstrual problems. Most common menstrual problem was dysmenorrhoea 32 (25.60%) followed by oligomenorrhoea 6 (4.8%), 4 (3.2%) had irregular cycles and 5 (4%) had combined menstrual disorders. (Table 2)

Overall prevalence of anemia was found to be 110 (88%) based on the criteria of HB <12 gm%.[8] The prevalence of anemia was significantly (p<0.05) higher in the age group of 18-19 years (41.60%) followed by 16- 17yrs (20.80%) and 10-15 yrs (25.60%). (Table-3)

Findings of the Nutritional status of adolescent girls revealed that 72 (57.60%) were suffering from chronic energy deficiency (BMI < 18.5) and 53 (42.40) were nutritionally normal (BMI between 18.5-25), while no one was overweight (BMI >25). (Table-4)

Prevalence of skin infections like pimples, dandruff was high 14 (19.44%) followed by upper respiratory infections 8 (11.11%). It was observed that 3 (4.17%), 4 (5.56%), 3 (4.17%) 2 (2.78%) and 3 (4.17%) had lower respiratory infections, GI disorders, vaginal discharge, other problems like deformities, UTI etc and combined problems like general body pains and skin infection respectively. (Table-4)

Over all prevalence of menstrual problems were higher 23 (31.94% of menstrual problems) among adolescent girls suffering from chronic energy deficiency as compared against 22 (41.51%) nutritionally normal (p<0.01). (Table-4)

Out of 72 nutritionally deficient girls, prevalence of morbidity was 34 (47.22%) while among 53 nutritionally normal adolescent girls 19 (35.85%) had some morbidity. Further analysis showed prevalence of chronic diseases like lower respiratory infection (COPD) and vaginal discharge 3 (4.17%) each and deformities were high (significant (p<0.05)) among adolescent girls suffering from chronic energy deficiency as compared to nutritionally normal adolescents. (Table-4)

IV. Discussion

In developing country like India in rural and underdeveloped area a girl is often considered to be an adult at the time when menstruation is established. They tend to marry early and do not go to school. In most part of India approximately 15% of the girls are married before 20 years of age but they are not fully matured sexually and physiologically with hardly any knowledge of family planning.[9]

The findings reveled that out of 125 adolescent girls 16 (12.80%) were illiterates, 34 (27.20%) had primary education 40 (32%) had secondary education and 35 (28%) had higher education; or college going. Saibaba A et al in their study observed that 13.2% were illiterates but 38% had primary education and 44% had high school education.[10] In the present study literacy rate among adolescent was comparable. The study of AK.sharma et al showed a higher illiteracy rate i.e. 41.1% were illiterate, 43.8% were primary and 15.1% had higher education.[11]

Saibaba A et al observed in his study population 57.2% were studying while in the present study comparatively lower rate was observed 46.4% were studying.[10]

Most common problem faced by adolescent was menstrual problem. In the present study 102 (81.60%) attained menarche with the mean age of 13.04 $\pm$1.09. Similar findings were observed in the studies carried out by, M.M .Singh and Sheila.W where, mean age at menarche was 13.6$\pm$.83 and 13.6 years respectively.[12,13]

In the present study 66 (52.8%) had normal cycles, and menstrual problems were faced by 59 (47.2%) adolescent girls. Most common menstrual problem was dysmenorrhoea 32 (25.60%) followed by oligomenorrhoea 6 (4.80%). Singh MM, Devi R, Gupta SS observed in their study that the commonest reported menstrual problem was dysmenorrhoea 40.7%, corroborating with the present study findings.[12]

In the present study 21 (16.80%) girls were married. The median age at marriage was 16 years. Median age at 1st pregnancy was 17. It was observed that there was a very narrow gap between mean age at menarche and marriage as well as age at first pregnancy.

Qumarun Nahahan et al observed that 16% of rural, 25% of the urban slum adolescents were married.[14] These girls were not only married but soon after marriage they become pregnant. The reason for early marriage, as mentioned by elders was: difficulty in finding an eligible bride broom as age advances, preventing premarital affairs and maintains of social prestige. Once the girl gets married she should prove the fertility, hence early pregnancy.

The study revealed that the overall prevalence of anemia was 88%. The prevalence of anemia was significantly ($p<0.05$) higher in the age group of 18-19 years (41.60%). This might be due to dual burden of menstrual loss and adolescent marriages and pregnancies among the 18-19 year girls. More or less similar findings were observed by Shahabuddin. K et al in his study in Bangladesh, which showed 98% of girls were anemic.[15]

Findings of the Nutritional status of adolescent girls revealed that 72 (57.60%) were suffering from chronic energy deficiency (BMI < 18.5) while no one was overweight (BMI >25). Shahabuddin AK et al observed in their study in rural community Bangladesh 59% of the girls were thin, according to WHO standards which corroborated with the present study. [15]

In the present study more i.e. 53 (42.40%) had health problems. Main health problems were skin infections 30 (24%), followed by 20 (18%) upper respiratory infections, 6 (4.8%) GI tract, 5 (4%) vaginal discharge, 3 (2.4%) had other health problems. Geeta Pandy observed in her study that26% had acne 3% had vaginal discharge and 3% had urinary symptoms findings were at par to our study. [16]

V. Conclusion & Recommendations:

It is clear from the study that the health status of the study population has been severely affected. The present study revealed a higher prevalence of chronic energy deficiency 57.60%, Anemia i.e. 88% and menstrual problems 47.2%. IFA prophylaxis program for the adolescent girls, Kishori shakti Yojana, BCC activities, referral and treatment at appropriate health facilities might take care of these identified health problems. Nutrition education to the adolescents should focus on communication for behavioural change based on identified cultural and institutional constraints to good nutrition, detrimental attitudes and practices toward food and eating behaviour.

Table: 1 Distribution of adolescent girls according to socio-demographic factors

Parameters	(N=125)	%
Educational status		
Illiterate	16	12.80
Primary	34	27.20
Secondary	40	32.00
Higher education	35	28.00
Occupational status		
Students	58	46.40
Helping in house hold works Helping in household acstivetes	52	41.60
Working	15	12.00
Type of family		
Nuclear	77	61.60
Joint	48	38.40
Marital status		
Married	21	16.80
Un married	104	83.20
Age at first pregnancy		
<15	2	16.67
15-17	3	25.00
17-19	7	58.33
Nutritional status		
Chronic energy deficient	72	57.60
Nutritionally normal	53	42.40

Table 2: Distribution of adolescent girls as per menstrual status

Menstrual status	Number	Parentage
Dysmenorrhoea	32	25.60
Oligomenorrhoea	6	4.80
Polymenorrhoea	2	1.60
Irregular cycles	4	3.20
Combined problems	5	4.00
Normal cycles	66	52.80
Not established	2	1.60
Not attained	8	6.40
Total	**125**	**100.00**

Table 3: Distribution of prevalence of anemia according to age.

Age in years	Anemic < 12gm%		Non Anemic >12gm%		TOTAL	
	No.	%	No.	%	No.	%
10-15	32	25.60	4	3.20	36	28.80
16-17	26	20.80	6	4.80	32	25.60
18-19	52	41.60	5	4.00	57	45.60
TOTAL	**110**	**88.00**	**15**	**12.00**	**125**	**100.00**

Table 4: Relation between Nutritional status and Health status

Health problems	Nutritionally deficient BMI <18.5 n=72		Nutritionally normal BMI 18.5-25 n=53		TOTAL	
	No.	%	No.	%	No.	%
Skin infections	14	19.44	16	30.19	30	24.00
Upper respiratory	8	11.11	12	22.64	20	16.00
Lower respiratory	3	4.17	1	1.89	4	3.20
GI disorders	4	5.56	2	3.77	6	4.80
white discharge	3	4.17	2	3.77	5	4.00
Other infections	2	2.78	1	1.89	3	2.40
Combined health problems	3	4.17	2	3.77	5	4.00
Morbid adolescent	34	47.22	19	35.85	53	42.40
Dysmenorrhoea	19	26.39	9	16.98	28	22.40
Oligomenorrhoea	7	9.72	4	7.55	11	8.80
Polymenorrhoea	2	2.78	2	3.77	4	3.20
Irregular cycles	3	4.17	1	1.89	4	3.20
Combined menstrual problems	4	5.56	3	5.66	7	5.60
Adolescents with menstrual disorders	23	31.94	22	41.51	45	36.00

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