

Original Research Article

Morbidity pattern in the school going adolescent girls of rural and urban Prayagraj, Uttar Pradesh

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ABSTRACT

Background: Adolescence is an intermediary phase from childhood to adulthood and is a very delicate phase of life. WHO has defined Adolescence as the period between 10-19 years of life. Among adolescents, girls constitute a more vulnerable group, particularly in developing countries, where they are traditionally married at an early age and are exposed to greater risk of reproductive morbidity and mortality. Nutritional deficiency disorders (stunting, wasting), menstrual disorders, mental health problems etc. appear as serious problem during this stage. The study was done with objective to assess the morbidity pattern in school going adolescent girls in Urban and Rural Prayagraj.

Methods: A school based cross-sectional study was carried out in Prayagraj district. Study participants were 800 adolescent girls, 400 urban and 400 rural of age groups 10–19 years studying in class 6th to 12th. The data was collected by using predesigned, pretested, semi structured questionnaire and analyzed by using SPSS 21.0 version.

Results: It was observed that most prevalent morbidity in rural and urban school going adolescent girls were dysmenorrhoea 381 (47.6%), pallor 296 (37%), psychological problems 325 (40.6%) and ocular diseases 191 (23.8%). Other morbidities were hypertension, dental problems, overweight/obesity, skin diseases, ear diseases, respiratory diseases, gastrointestinal diseases and injury.

Conclusions: Out of 800 study participants, 275 adolescent girls were having morbidity. Significant difference in proportion of morbidities was found among rural and urban adolescent girls with ear diseases, eye diseases, pallor, dysmenorrhoea, overweight/obesity and hypertension.

Keywords: Adolescents, Rural and urban, Morbidities

INTRODUCTION

Adolescence is an intermediary phase from childhood to adulthood and is a very delicate phase of life. WHO has defined Adolescence as the period between 10-19 years of life.¹ The adolescence means “growing to maturity” in Latin. It is a period of rapid growth and development, physiologically, psychologically and socially.

According to United Nations Children’s Fund (UNICEF), there are 1.2 billion adolescents standing at the crossroads between childhood and the adulthood in world

and around 243 million of them live in India comprising 20% of the total population of India which clearly shows that India is truly “young”.² Young people are commonly regarded as healthy and hence only few attempts have been made to systematically measure their health status.³ Health need of this age group is tremendous and need to be addressed in a focused manner.

Among adolescents, girls constitute a more vulnerable group, particularly in developing countries, where they are traditionally married at an early age and are exposed

to greater risk of reproductive morbidity and mortality. Parents perceptions, awareness, attitude and ambition about adolescents in respect of menstruation, ideal age of marriage, health risks associated with early marriage and childbirth and even food distribution within family are critical. Adolescent period is a growth stage of a girl's life, and also is a unique intervention point in the lifecycle for a number of reasons. It is the time when a girl is stepping from child to womanhood, which is accompanied with hormonal and physical changes marked by spurt in growth. Nutritional deficiency disorders (stunting, wasting), menstrual disorders, RTIs/STIs/ HIV/ AIDS appear as serious problem during this stage.⁴

In our country discrimination against girl child continues to be practiced in various parts of the country. Our social and cultural values are such that the young girls are doing all the household work and even deprived of education. There is discrimination in attitude of family members and also in the amount of food given to girls in comparison to boys. Increased demand for growth, excessive menstrual loss and nutritional deprivation conspires to aggravate nutritional deficiency among adolescent girls, the future prospective mothers. Most adolescent girls are underweight and anaemic and giving birth to low birth weight babies.

The major health problems in adolescent age group in India are cited to be nutrient deficiency, macro-nutrient deficiency resulting in underweight (51%) and stunting (34%), micro-nutrient deficiencies especially iron deficiency resulting in anaemia, more common in girls (38.45%).⁶ Important health issues which are more common in school going adolescents are malnutrition (31%), psychological problems (34%) including stress (27.3%), anxiety (38.7%), depression (31.9%), social phobia (27%), eye problem (31%), dental problem (35.34%) and in female menstrual problem accounting for 79.5%. Other health issue are skin diseases, tonsillitis, respiratory diseases and ear diseases.⁶⁻⁸

Adolescent girls are the mothers of tomorrow, and no edifice can be built on a foundation that is weak, and if we could not give a safe and secure today to the mother of tomorrow, it will be futile to expect the future generation to be mentally and physically healthy.⁹

Most of the studies on morbidity pattern of school going adolescent girls available have been conducted in western countries. In India, only a few studies are available and that too of urban area mostly. There is need of community based research studies for better understanding of morbidity pattern among school going adolescent girls of both rural and urban area and also comparison between them to understand the needs, perception and attitude of these girls toward their health. So, based on above facts the present study was carried out with the objective to study the morbidity pattern in rural and urban areas of Prayagraj district.

METHODS

Setting and study design

It was a cross-sectional study carried out on school going adolescent girls of rural and urban areas of Prayagraj district from September 2017 to September 2018. By using multistage random sampling technique, 800 adolescent girls were included in the study. After obtaining the informed consent and assuring full confidentiality to the study participants, a pre-designed and pre-tested self administered questionnaire prepared in both English and Hindi was given to the students according to their medium of instruction. Each question was elaborated one by one by the investigator and simultaneously students were asked to fill their answers in the questionnaire. The ailment for which the girl had to consult a doctor in last one year or with which she was suffering at present is considered as morbidity. Examination of each participant was also done. Similarly information was collected from all the selected students from the selected schools.

The data was analyzed using statistical software, SPSS Version 21. Chi-square tests and Z-test were used to test the associations between the different variables. P value less than 0.05 was considered as significant.

RESULTS

A total 800 school going adolescent girls, 400 rural and 400 urban of both government and private schools were studied.

Table 1: Socio-demographic profile of school going adolescent girls.

		Rural	Urban	Total N (%)
Adolescent girl's age categories (in years)	10-13	185	165	350 (43.8)
	14-16	160	181	341 (42.6)
	17-19	55	54	109 (13.6)
Religion	Hindu	394	282	676 (84.5)
	Muslim	6	118	124 (15.5)
Caste category	General	143	247	390 (48.7)
	Other backward class	184	119	303 (37.9)
	SC/ST	73	34	107 (13.4)

In our study, majority of the students belonged to (10-13 years) age group 43.8%, followed by (14-16 years) 42.6% and (17-19 years) 13.6%. Also, majority of adolescent girls i.e. 394 (98.5%) in rural and 282 (70.5%) in urban belonged to Hindu religion, while very few 06 (1.5%) in rural and 118 (29.5%) in urban belonged to Muslim religion. Most of adolescent girls in rural area belonged to other backward class i.e. 184 (46%),

followed by general category 143 (35.7%) and 73 (18.3%) belonged to schedule caste/ schedule tribe. Meanwhile the population of girls of General category predominated in urban areas i.e. 247 (61.7%) followed by other backward class 119 (29.8%) and schedule caste/ schedule tribe 34 (8.5%).

Table 2: Distribution of school going adolescent girls according to their socio- economic status.

SES	Rural N (%)	Urban N (%)	Total N (%)
Class I (upper)	19 (4.7)	128 (32)	147 (18.4)
Class II (upper middle)	89 (22.3)	149 (37.2)	238 (29.8)
Class III (lower middle)	127 (31.7)	94 (23.5)	221 (27.6)
Class IV (upper lower)	129 (32.3)	26 (6.5)	155 (19.3)
Class V (lower)	36 (9)	3 (0.8)	39 (4.9)
Total	400	400	800

The socioeconomic classification was based on modified B.G. Prasad's scale 2017, which showed that more of

rural adolescent girls belonged to upper lower class [SES IV] (32.3%) and lower middle class [SES III] (31.7%), while among the adolescent girls belonging to urban background, majority (37.2%) belonged to upper middle class [SES II] and upper class [SES I] (32%).

The most prevalent diseases in rural and urban school going adolescent girls were dysmenorrhoea 381 (47.6%), dental problems 341 (42.6%), psychological problems 325 (40.6%), pallor 296 (37%) and ocular diseases 191 (23.8%). Other morbidities were pre-hypertension & hypertension 123 (15.4%), overweight/obesity 66 (8.25%), skin diseases 53 (6.6%), ear diseases 41 (5.1%), respiratory diseases 34 (4.25%), injury 23 (2.9%), disease of cardiovascular system was seen in 2 (0.25%) and of neurological system in only 1 (0.125%) girl. Urban adolescent girls had higher prevalence of dysmenorrhoea, overweight/ obesity, psychological morbidity, hypertension, gastrointestinal problems, dental problems, respiratory disease, cardiovascular and neurological problems compared to rural school going adolescent girls. Significant differences in proportion of morbidities were found among rural and urban adolescent girls with ear diseases, eye diseases, pallor, dysmenorrhoea, overweight/obesity and pre-hypertension/hypertension.

Table 3: The distribution of school going adolescent girls based on morbidity.

Disease	Rural (n=400)		Urban (n=400)		Total (n=800)		P value
	No.	%	No.	%	No.	%	
Dysmenorrhoea*	174	43.5	207	51.7	381	47.6	<0.05
Dental problem	158	39.5	183	45.8	341	42.6	>0.05
Psychological problem	154	38.5	171	42.7	325	40.6	>0.05
Pallor/anaemia*	169	42.2	127	31.7	296	37	<0.05
Eye disease*	108	27	83	20.8	191	23.8	<0.05
Pre-hypertension/hypertension*	51	12.8	72	18	123	15.4	<0.05
Under-weight*	70	17.5	23	5.7	93	11.6	<0.05
Overweight/obesity*	7	1.75	59	14.8	66	8.25	<0.05
Skin disease	32	8	21	5.3	53	6.6	>0.05
Ear disease*	29	7.25	12	3	41	5.1	<0.05
Respiratory disease	16	4	18	4.5	34	4.25	>0.05
Injury	13	3.25	10	2.5	23	2.9	>0.05
Gastro-intestinal disorder	15	3.75	18	4.5	33	4.1	>0.05
Cardiovascular disorder	0	0	2	0.5	2	0.25	>0.05
Neurological disease	0	0	1	0.25	1	0.125	>0.05

(*p<0.05, significant).

DISCUSSION

In the present study more of rural adolescent girls (27%) had ocular problems as compared to (20.8%) urban adolescent girls. The most common ocular morbidity was refractive error, both in rural (22%) and urban area (18%). Similar findings were seen in a study conducted by Singh, et al in school going children in West Uttar Pradesh and found the prevalence of ocular morbidity 29.35%.⁹ Sinha et al in a study conducted on Adolescent girls in Lucknow district found that eye problem was

seen in 31% of adolescent girls.¹⁰ In the present study more of urban school going adolescent girls (3.2%) had Hypertension as compared to (2.5%) of rural area and 12.5% adolescent girls were found to be pre-hypertensive. Similar findings were seen by Mohan et al in school going children of Ludhiana, Punjab found that prevalence of sustained hypertension was 6.69% in urban and in rural area it was 2.56%.¹¹ Beevi et al in a study done in students of Government higher secondary school, Kilimanoor, Trivandrum district observed that prevalence of hypertension was 4.2%, all were males.¹² 24.4%

(30.8% in males and 18.2% in females) were found to be pre hypertensive.

In the present study the prevalence of pallor among adolescent girls of rural area (42.2%) was found to be higher than (31.7%) girls of urban area. Similar findings were seen by Wasnik, et al in a study conducted in girls residing in hostels, Vizianagaram, Andhra Pradesh and found 30% of the girls having pallor.¹³ Singh, et al conducted a study in adolescent girls of slums of Lucknow found the prevalence of pallor to be 22.2%.¹⁴

In the present study prevalence of overweight & obesity among urban girls was found to be 11.3% & 3.5%, whereas in rural area 1.8% were overweight.

Similar findings were seen in the study of Gupta et al who reported the prevalence of overweight 11.7% among urban adolescents in New Delhi.¹⁵

Bharti et al carried out a study in New Delhi and found that 4.4% of boys and 4.3% girls to be overweight, which is lower than the present study.¹⁶

In present study that most prevalent diseases in rural and urban school going adolescent girls was found to be dysmenorrhoea (47.6%).

Similar findings were seen in a study done by Waghachavare et al on students of Sangli, Maharashtra in which menstrual problems were reported by (58.4%) female students among which Dysmenorrhea (47%) was the commonest.¹⁷ Mathiyalagen et al in a study conducted in adolescent school girls of Puducherry, found the prevalence of dysmenorrhea (82.2%) quite higher than our study.¹⁸ Similarly Agarwal et al in a study in adolescent girls of Gwalior found that majority of the adolescent girls under study had experienced dysmenorrhea, (71.96%).¹⁹

In the present study more of rural adolescent girls (7.25%) had ear problem as compared to (3%) of urban girls. In total of (5.1%) adolescent girls were having some of the ear problems. Study by Dambhare, et al in school going adolescents of peri-urban area of Wardha district, found the prevalence of ear problem as (3.45%) which is comparable to our study, whereas Sinha et al conducted a school based study on adolescent girls in Lucknow district and found the prevalence of ear disease (11.5%).^{20,21}

CONCLUSION

The present study highlighted that prevalence of certain diseases such as dysmenorrhoea, obesity, psychological morbidity, hypertension, gastrointestinal problem, dental problem, respiratory disease, cardiovascular and neurological problems were more in urban school going adolescent girls which could be due to sedentary life style, more consumption of fast food and lack of adequate

physical activities whereas the prevalence of eye diseases, pallor, skin diseases, ear diseases, underweight and injury were more in adolescent girls of rural areas which could be attributed to lower socio-economic status, less educated parents, lesser opportunities as most of their parents were labourer or farmer and they had to involve in household work. Gynaecological morbidity was found to be the most common morbidity among adolescent girls and most of them were not aware about the health risk associated with it. Considering the above problems, following recommendations should be implied at school level: Information about menarche & reproductive health should be introduced and strongly reinforced in the school curriculum from 5th class onward along with the involvement of parents especially in rural areas and particularly mothers to wipe out the age old misconceptions. A periodical and regular health check-up with concerted efforts towards their nutrition along with focused health education will improve the health and nutritional status of these school going adolescents. Prevention of obesity in children is easier than the adults. Based on the findings of this study it is recommended that consumption of high fat and high energy (Junk foods) and snacking in between the meals should be avoided by children. Sedentary life style should be discouraged. Increase physical activity like playing outdoor games, walking, cycling should be encouraged in children.

Strength and limitation

Most morbidity was elicited by asking questions, self reporting and simple clinical examination without any further confirmation by other laboratory investigations, because of which morbidity may have been underestimated or missed.

The strength of the study lies in the fact that very few comparative studies have been done on school going adolescent girls to assess the morbidity pattern in Northern India, which will help to specify the need of adolescent girls in these areas which will further contribute in strengthening the on-going preventive and curative aspect of health services and better utilization of them.

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REFERENCES

1. World Health Organization. Programming for adolescent health and development. WHO Technical Report Series No.886; 1996: 2.
2. UNICEF State of Worlds Children-2011 Adolescence: An age of Opportunity Available at: <http://www.unicef.org/sowc2011/pdfs/India.pdf>. Accessed on 3 June 2018.

3. Patton GC, Coffey C, Cappa C, Currie D, Riley LM, Gore FM, et al. Health of the World's Adolescents: a synthesis of internationally comparable data. *Lancet*. 2012;379:1665-75.
4. Shanbhag D, Shilpa R, D'Souza N, Josephine P, Singh J, Goud BR. Perceptions regarding menstruation and Practices during menstrual cycles among high school going adolescent girls in resource limited settings around Bangalore city, Karnataka, India. *Int J Collaborative Res Internal Med Public Health*. 2012;(4)7:1353-62,
5. Dambhare DG, Bharambe MS, Mehendale AM, Garg BS. Nutritional Status and Morbidity among School going Adolescents in Wardha, a Peri-Urban area. *Online J Health Allied Scs*. 2010;9(2):1-3.
6. Sinha S, Gupta P, Sachan B, Kumar S, Kumari S. A study on the morbidity pattern in adolescent school girls. *Int J Community Med Public Health*. 2017;4:1901-5.
7. Waghachavare VB, Chavan MS, Gore AD, Kadam JH, Chavan VM, Dhumale GB. Magnitude of health problems among late adolescents : a cross sectional study. *Int J Community Med Public Health*. 2016;3:1027-32.
8. Sachan B, Idris MZ, Jain S, Kumari R, Singh A. Nutritional status of school going adolescent girls in Lucknow district. *J Med Nutrition Nutraceuticals*. 2012;1:101-5.
9. Singh V, Malik K, Malik V K, Jain K. Prevalence of ocular morbidity in school going children in West Uttar Pradesh. *Indian J Ophthalmol*. 2017;65:500-8.
10. Sinha S, Gupta P, Sachan B, Kumar S, Kumari S. A study on the morbidity pattern in adolescent school girls. *Int J Community Med Public Health*. 2017;4(6):1901-5.
11. Mohan B, Kumar N, Aslam N, Rangbulla A, Kumbkarni S, Sood NK, et al. Prevalence of sustained hypertension and obesity in urban and rural school going children in Ludhiana. *Indian Heart J*. 2004;56:310-4.
12. Beevi NP, Manju L, Bindhu A. A study of adolescent health problems in a rural school in Thiruvanthapuram district, Kerala, India. *Int J Community Med Public Health*. 2017;4:100-3.
13. Wasnik V, Rao BS, Rao D. A Study of the Health Status of Early adolescent girls residing in Social Welfare Hostels in Vizianagaram district of Andhra Pradesh State, India. *Int J Collaborative Res Internal Med Public Health*. 2012;4(1):72-83.
14. Singh J, Singh V, Srivastava AK, Suryakant. Health status of Adolescent girls in slums of Lucknow. *Indian J Community Med*. 2006;31(2):11-5.
15. Gupta DK, Shah P, Misra A, Bharadwaj S, Gulati S, Gupta N, et al. Secular trends in Prevalence of Overweight and Obesity from 2006 to 2009 in Urban Asian Indian Adolescents aged 14-17 years. *PLoS One*. 2011;6(2):e17221.
16. Bharti DR, Deshmukh PR, Garg BS. Correlates of overweight & obesity among school going children of Wardha city, Central India. *Indian J Med Res*. 2008;127:539-543.
17. Waghachavare VB, Chavan MS, Gore AD, Kadam JH, Chavan VM, Dhumale GB. Magnitude of health problems among late adolescents: a cross sectional study. *Int J Community Med Public Health*. 2016;3:1027-32.
18. Mathiyalagen P, Peramasamy B, Vasudevan K, Basu M, Cherian J, Sundar B. A descriptive cross-sectional study on menstrual hygiene and perceived reproductive morbidity among adolescent girls in a union territory, India. *J Family Med Primary Care*. 2017;6(2):360-5.
19. Agarwal K, Agarwal A. A study of dysmenorrhoea during menstruation in adolescent girls. *Indian J Community Med*. 2010;35(1):159-64.
20. Dambhare DG, Bharambe MS, Mehendale AM, Garg BS. Nutritional Status and Morbidity among School going Adolescents in Wardha, a Peri-Urban area. *Online J Health Allied Scs*. 2010;9(2):1-3
21. Sinha S, Gupta P, Sachan B, Kumar S, Kumari S. A study on the morbidity pattern in adolescent school girls. *Int J Community Med Public Health*. 2017;4(6):1901-5.

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