

Original Research Article

Health and wellbeing of adolescent girls in a hilly district of Himachal Pradesh: a cross sectional study using low cost interventions

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ABSTRACT

Background: Adolescence is a phase when major physical, psychological, emotional and psychosocial changes take place and it is imperative to meet the unmet needs of this age group especially the girls for optimizing their future contribution during adulthood. The objective of this study was to assess the indicators of the well being and health of school going adolescent girls in District Shimla of Himachal Pradesh and evaluating the effectiveness of a local developed questionnaire for assessment.

Methods: A symptomatology based questionnaire was employed for screening the adolescent girls for anaemia, calcium and vitamin D deficiency, worm infestation, menstrual problems, reproductive tract problems and BMI was used for their overall nourishment status. The questionnaire was administered by trained health care workers.

Results: The prevalence of anaemia came out to be 21.54% while 12.37% and 7.51% girls had signs of calcium deficiency and worm infestation respectively. 9.38% girls had menstrual problems while 1.9% had sexual health problems. 15.32% girls came out to be malnourished in the survey.

Conclusions: Appropriate interventions need to be formulated properly taking into consideration the problem statements and executed well for improvement of health concerns of adolescent girls. If the resources are constrained, low cost interventions can be deployed locally in the communities depending upon the problems encountered to achieve optimum results.

Keywords: Adolescent girls, Adolescent health, Anaemia, Low cost interventions, Menstrual health

INTRODUCTION

Adolescence is a crucial and vulnerable phase of life. According to WHO, adolescence is defined as the period between 10 and 19 years of age.¹ It is the time when major physical, psychological, emotional and psychosocial changes take place in one's life and is a crucial part of preparation for undertaking great responsibilities including social, cultural and economic ones in adulthood. India has the largest population of adolescents in the world, constituting 20% of the Indian

population. Out of these, forty seven percent are females.²

Studies have shown that prevalence of certain health problems like anemia, calcium deficiencies, malnutrition and menstrual problems is high in this age group.^{3,4} One third of the adolescent girls in India are underweight and as per the NFHS-4 data 54.1% of the girls between 15 and 19 years of age are anaemic.⁵ Vitamin D and calcium deficiency in diet is another problem in this age group predisposing to a risk of osteoporosis in later life.⁶

Menstrual disorders are the commonest gynecological problem in teenage affecting the future reproductive health if ignored.⁷ India, therefore, carries a huge burden to meet unmet needs of this group.

Keeping in view the importance of addressing the health care needs of this segment of population, the Government of India has been implementing strategic interventions. Some of these like the Kishori Shakti Yojana are targeted towards adolescent girls in particular while the others like the weekly iron folic acid supplementation, Rashtriya Bal Swasthya Karyakram and the Rashtriya Kishor Swasthya Karyakram aim at addressing the health concerns of the adolescents in general. However, the key to successful implementation of these interventions is availability of an appropriate workforce, its competencies and level of effort in trying to perform the tasks assigned to it.⁸ As per the Rural Health Statistics, as high as 18608 positions of Multi Purpose Health Worker (Female), one of the frontline workers tasked with addressing the problems in adolescent girls especially management of anaemia, distribution of sanitary napkins and other necessary counselling, were vacant in 2018-19 all over India.⁹

Such shortcomings at the cutting edge level make it even more imperative to utilize the existing capacities in the most efficient and effective manner, to bring out optimum results. This study is a cross sectional observational study done in government and public schools to attempt the screening of adolescent girls for various health problems like anemia, calcium deficiency, worm infestation, various sexual health problems, malnourishment and menstrual problems through the development of a simple and easily administrable questionnaire tool and evaluate the effectiveness thereof.

METHODS

The study was conducted at government and public schools in three educational blocks in Sub Division Rampur in District Shimla over a period of six months. The study was a cross-sectional prospective one where study was done over a period of six months from June 2017 to December 2017.

The study population included school enrolled adolescent girls between the ages of 11 and 18 years. A symptomatology-based questionnaire was employed for screening the adolescent girls for the health problems (Annexure) including anaemia, calcium and vitamin D deficiency, worm infestation, menstrual problems and reproductive tract problems.

The adolescent girl was presumed to be having the problem if at least one of the symptoms listed for a particular condition in the questionnaire was found to be present in that girl. Apart from this symptomatology based presumptive diagnosis, the nutritional assessment was carried out employing the tool of body mass index.

A combined team of Anganwadi Worker (grass root functionary of the Women and Child Development Department) and Multi Purpose Health Worker Female (front line functionary of Health Department) screened the adolescent girls after a one day orientation cum training session on the use of questionnaire tool.

Inclusion criteria

Population of age between 11-18 years, unmarried and school going girls were included in the study.

Exclusion criteria

Any diagnosed medical disorder causing anemia or calcium deficiency, school drop outs and married girls were excluded.

RESULTS

A total of 2943 adolescent girls were screened using the questionnaire. The girls covered under the program were school goers with 66.8% of the study population studying in Government run schools and 33.2% studying in privately run educational institutions. A total of 21.5% of the adolescent girls were found presumptively suffering from anaemia as per the questionnaire. 12.4% and 7.5% girls were found to be having calcium/vitamin D deficiency and worm infestation respectively. Menstrual and sexual problems were found to have incidence to the tune of 9.3% and 1.9% respectively. 15.3% of the girls were found to be undernourished as per the survey.

Table 1: Details of the adolescent girls diagnosed with various conditions.

	Screening in government schools	Screening in private schools	Total
Number of adolescent girls screened	1966	977	2943
Anaemia	458	176	634
Calcium/Vit D deficiency	275	89	364
Worm infestation	196	25	221
Menstrual problems	225	51	276
Sexual health problems	47	9	56
Malnourished	383	68	451

The detailed break-up of the conditions presumptively diagnosed in the Government and private institutions can be seen at Table 1.

The incidence of various health problems in adolescent girls and their relative difference can be seen at Figure 1.

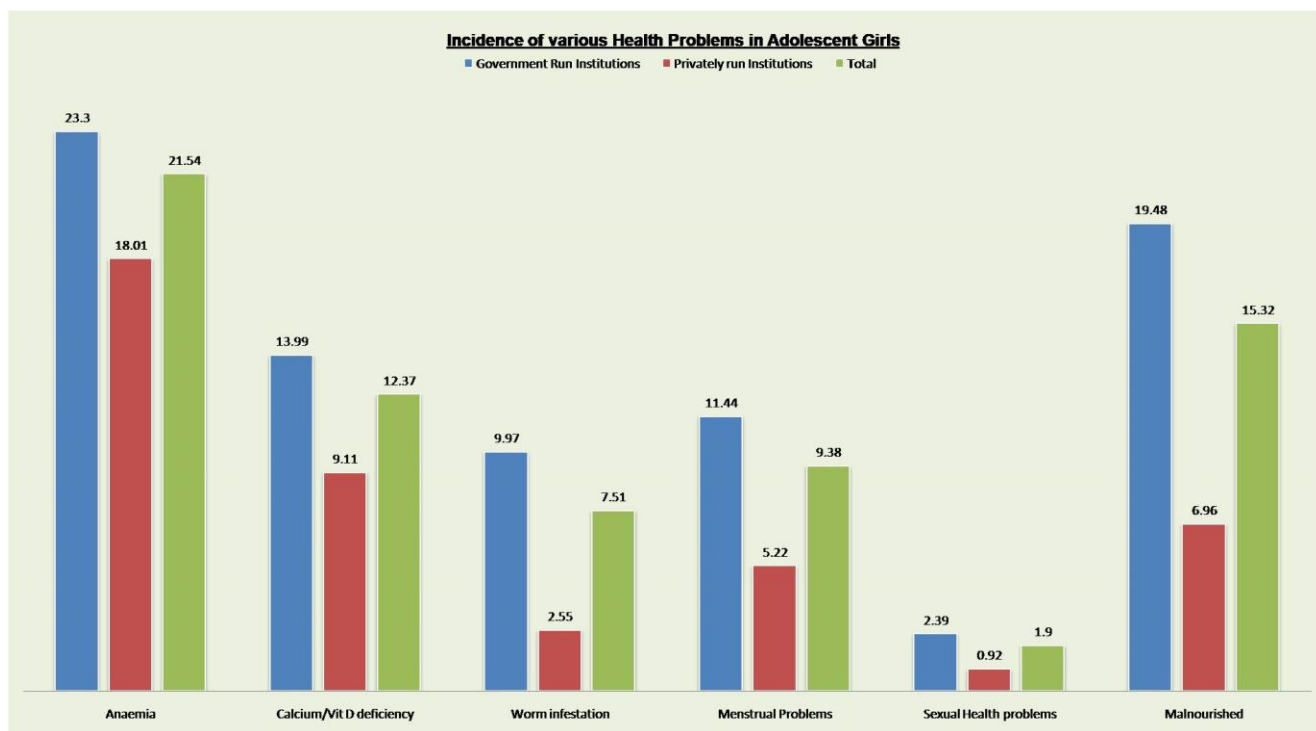


Figure 1: Incidence of various health problems in adolescent girls.

DISCUSSION

Adolescence is a crucial phase of one’s life. The period becomes more important for a girl as she has to face turmoil of adolescence because of conservative and ignorant attitude of the society towards a girl child especially in rural and backward areas of country. Due to lack of proper guidance and education, they are at risk of various physical and mental health problems with anemia and malnourishment being major health concerns. Furthermore, because of stigmas associated with menstruation, these girls are at risk of catching many diseases due to poor sanitation practices, lack of hygiene and menorrhagia. Adolescence is a crucial part of preparation for undertaking great responsibilities like social, cultural and economic issues in adulthood.

Investment in young people at this stage yields dividends in terms of healthy nation through delay in age of marriage, reduction in incidence of unwanted pregnancies, meeting unmet needs of contraception and reduction in incidence of sexually transmitted diseases like HIV/AIDS. Reproductive health issues at this age need to be addressed; since various myths prevalent in society, lack of education and ignorance for the girl child, adolescent girls are at risk of catching genital infections and sexually transmitted diseases. As per NFHS-4 data, 11% girls reported sexual debut before the age of 15 years as compared to corresponding 1% figure for boys.⁵ Such an early of start of sexual activity put them to the risk of unwanted pregnancies, abortions, menstrual

disorders, risk of STI’s and HIV, school dropouts. Adolescent health education builds knowledge and attitude and motivates this group to improve and maintain their health, prevent various diseases and reduce risky behavior.

The present study was carried out in a remote area in the greater Himalayas and the resources in terms of men and material were in short supply. The supply of iron folic acid tablets, calcium supplementation, albendazole was erratic. Many of the Multi Purpose Health Worker (female) posts were lying vacant. The haemoglobin was being measured through conventional methods like Sahli’s method which were not only time consuming but prone to subjective errors as well. The authors in implementation roles, felt the need to devise strategies for the better and effective utilization of the already limited resources. A survey instrument was developed for easy administration and a school based approach was agreed upon for better targeting rather than a community based approach.

In the present study, the overall prevalence of anemia in adolescent school going girls came out to be 21.54 percent. The problem of anemia was more prevalent in the girls of government schools i.e. around 23.54%. According to National Family Health Survey 4, 54.1% of adolescent girls aged 15-19 years suffer from some form of anemia.⁵ Although different studies carried out in various parts of the country have estimated the prevalence of anaemia in adolescent girls between the range of 21%

to as high as 60%, the study on the population most resembling the cohort in the current study has been conducted by Anmol et al.¹⁰⁻¹⁵ The study was conducted in Shimla District of Himachal Pradesh and the estimation of haemoglobin was done by cyanmethemoglobin method at biochemistry laboratory of a tertiary level hospital. The incidence of anaemia in adolescent girls of 10-19 years of age came out to be 21.5%, which is almost similar to the figure of 21.54% detected in the present study by the questionnaire method. It can be inferred from this similarity that in rural and remote areas where technical methods of estimation are not readily available due to lack of manpower or non availability of equipment or both, the questionnaire based screening is an effective tool for screening the adolescent girls for anaemia and initiating targeted treatment. Such a modality is a low cost intervention for such screening in high risk groups like adolescents and pregnant women.

Similarly based on questionnaire, other problems like calcium deficiency, worm infestation, menstrual problems and sexual health problems were studied in the present cohort. The prevalence of calcium deficiency came out to be 12.37% as per the questionnaire while symptoms of worm infestation were found in 7.51% of the adolescent girls. A similar study by Bashar et al was conducted in a rural block of North India and was similarly based on a structured performa filled up by trained community physicians.¹⁶ They had found the prevalence of worm infestation in adolescents to be 9.7% and in adolescent girls in particular to be 7.5%. Menstrual problems in the instant study were found to be present in 9.38% of the adolescent girls and sexual health problems in 1.9%. The prevalence of malnourishment came out to be around 15.32%.

Globally, iron-deficiency anaemia is responsible for maximum contribution to disability adjusted life years (DALYs) among adolescents.¹⁷ Appropriate interventions need not only to be formulated properly taking into consideration the problem statements but executed properly for the real changes to happen. The results of this study indicate that although rapid and big strides may have been made in laying down the correct policies and ensuring their implementation, the grass root level realization of the goals and objectives is constrained by several factors including the scarcity of manpower and non availability of newer easy to use equipment like haemoglobinometers. The translation of interventions into results is further compounded by the fact that most of these interventions require cognitive based and behaviour change therapy, and our health care workers are found inadequately trained for bringing out such changes.

CONCLUSION

Nevertheless, the importance of addressing the problems of this segment of population cannot be underestimated. Focused approach is required for the setting up of more adolescent friendly health clinics providing proper

counselling and education. The workforce development and capacity building at all levels should be ensured through well planned capacity development initiatives. However, if the resources are constrained, low cost interventions like the one employed in the current study can be deployed locally in the communities depending upon the problems encountered to achieve optimum results.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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ANNEXURE

The questionnaire tool employed in the study (vernacular language).

Name of girl

Age

Father's name

Address

School going/dropout

Name of school

Questionnaire		
Anemia	Pallor	? cards
	Breathlessness	
	Loss of appetite	
	Fatigue	
	Irritability	
Calcium & Vit D deficiency	Whitish spots on nails/face	
	Generalised weakness	
	Non specific pain	
	Muscle cramps	
	Joint pains	
Worm infestation	Abdominal bloating/Pain	
	Perianal itching	
	Night itching	
	Generalised itching	
Menstrual details	Days	
	Interval	
	Amount	
	Pain	
	Absenteeism	
	Any other finding	
Sexual health	Itching in genital area	
	Burning Micturition	
Other deficiencies	Bald tongue	
	Cheliosis	
Physical Well Being	Weight	
	Height	
	Body Mass Index	