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Health status of adolescent beneficiaries of anganwadies in Ahmedabad City

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Abstract

WHO proposed that the age limit of 10-19 years be used to identify as the adolescent age. A community based cross sectional study was carried out among 212 adolescent girls in an urban field practice area of B.J. Medical College, Ahmedabad from January 2014 to March 2014. Objectives were to assess nutritional status and morbidity pattern among the adolescent girls and to suggest measures for improvement of health status of adolescent girls. It was observed that 46.22% of the girls were under nourished. Significant association was found between nutritional status and socio-economic class. Pallor was observed in 37.26% of the girls. Around 1/3rd of adolescents had menstrual problems. Under nutrition and pallor appeared to be major health problems, which could be addressed through nutritional interventions and distribution of IFA tablets to the adolescent girls. Periodic Medical examinations of adolescent girls could be promoted.

Keywords: Adolescent, Anganwadi, Beneficiary, BMI, Nutrition.

1. Introduction

Adolescence is defined as period of life ranging from 10 to 19 years of age. Adolescent girls form an important vulnerable sector of population. Adolescence is a crucial period of women's life where socio-cultural factors not only influence her health but also determine the health of future generations. Adolescents are overlooked in most health programmes as they are basically considered healthy population but the scenario varies. Under-nutrition among adolescents is a serious public health problem internationally, especially in developing countries.

❖ Aim

- To find out the extent of health problems among adolescent girls.

❖ Objectives

- To assess the nutritional status of adolescent girls.
- To study the socio-demographic factors affecting the nutritional status.
- To study the morbidity pattern among the adolescent girls.

2. Methodology

The present cross sectional study was carried out in an urban field practice area of B. J. Medical College, Ahmedabad during January 2014 to March 2014. Adolescent girls registered in anganwadies of that field practice area were taken as study population. 10 anganwadies were randomly selected from the study area. All adolescent girls registered in those anganwadies were decided to include in the study after taking verbal consent. House to house visit of those adolescent girls was carried out with the help of anganwadi helpers. Those girls who could not be traced during the visit and those who did not wish/ did not give consent to involve in study were excluded. Thus, we could study 212 adolescent beneficiaries out of 247 registered.

Data was collected in pre-designed proforma by interview technique and clinical examination of the girls in presence of their mothers. Anthropometric measurements were recorded using the standardized methods recommended by WHO. BMI was calculated by using formula wt. in kg/ht. in m².

Collected data was entered in Microsoft Excel and analyzed by using Epi Info-7.

3. Results

Table 1: Age wise distribution of study population

Age (in years)	Frequency	Percentage
10 – 13	54	25.47
13 – 16	82	38.68
16 – 19	76	35.85
Total	212	100

Table 1 shows the age wise distribution of the adolescent girls. Out of 212 adolescent girls, 3/4th of them were above 13 years of age.

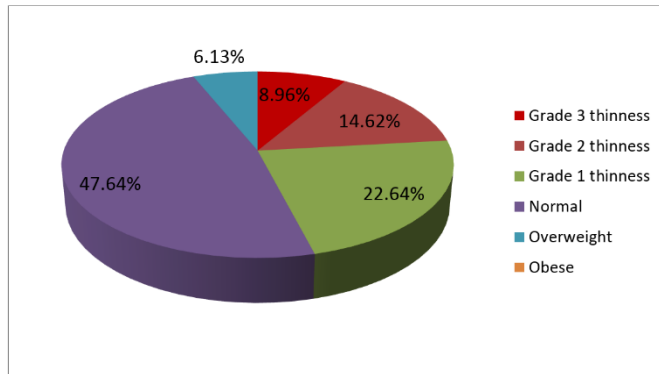


Fig 1: Nutritional status of study population as per WHO reference standard

Figure 1 shows the nutritional status of adolescent girls based on BMI value. WHO reference value of BMI was used to classify the nutritional status. According to this, 47.64% of adolescent girls were found to be in normal range of BMI value. 46.22% of adolescent girls were found under nourished with varying degree of under nutrition. Only 6.13% of the girls were found overweight and none were found obese according to WHO reference BMI value.

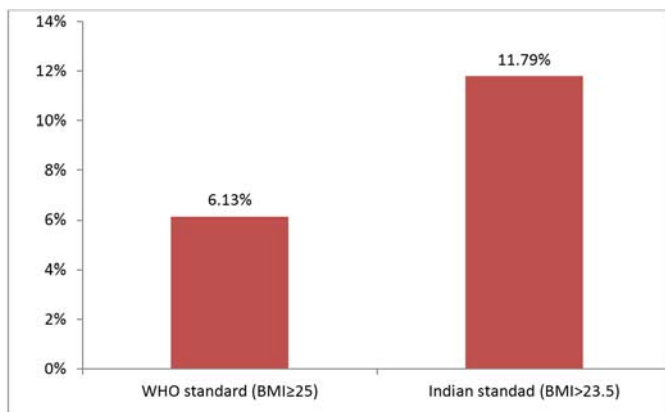


Fig 2: Distribution of Overweight adolescent girls based on WHO standard and Indian standard

Overweight is classified differently by BMI values of WHO standard and Indian standard. Based on WHO classification BMI ≥ 25 is considered as overweight, while as per Indian classification BMI > 23.5 is considered as overweight. So, here Figure 2 shows classification of overweight adolescent girls based on 2 different methods. As per WHO classification only 6.13% of adolescent girls were overweight, but if we

look as per Indian classification 11.79% of the girls were overweight.

Table 2: Age wise nutritional status of adolescent girls

Age (in years)	Nutritional status of adolescents			Total (%)
	Under-Nourished (%)	Normal (%)	Overweight (%)	
10 – 13	23(42.59)	28(51.85)	3(5.55)	54 (25.47)
13 – 16	36(43.90)	42(51.21)	4(4.87)	82 (38.68)
16 – 19	39(51.31)	31(40.78)	6(7.89)	76 (35.85)
Total	98(46.22)	101(47.64)	13(6.13)	212(100)

X² = 1.564; p > 0.05

Tale 2 shows nutritional status of adolescent girls against different age group. Prevalence of malnutrition was found higher in late adolescent age compared to early and mid-adolescent age. But this difference was not found statistically significant.

Table 3: Association of nutritional status with socio-economic status of adolescent girls

Socio-economic status	Nutritional status of adolescents			Total (%)
	Under-nourished (%)	Normal (%)	Overweight (%)	
Middle & Lower class	86 (48.86)	84 (47.73)	6 (3.41)	176 (83.01)
Upper class	12 (33.33)	17 (47.22)	7 (19.44)	36 (16.99)
Total	98 (46.22)	101 (47.64)	13 (6.13)	212 (100)

X² = 14.093; p < 0.001

When nutritional status of adolescent girls compared against the socio-economic status, it was found that under nutrition was more prevalent in middle & lower class compared to the upper class. While prevalence of overweight was much higher in upper class compared to the middle & lower class.

Table 4: Association between Nutritional status of adolescents and Education of their mothers

Education of mothers	Nutritional status of adolescents			Total (%)
	Under-nourished (%)	Normal (%)	Overweight (%)	
< Primary	58(55.76)	42(40.38)	4(3.84)	104 (49.05)
≥ Primary	40(37.03)	59(54.62)	9(8.33)	108 (50.95)
Total	98(46.22)	101(47.64)	13(6.13)	212 (100)

X² = 6.679, p < 0.05

When prevalence of malnutrition among the adolescent girls were compared against the education of their mother, it was found that the nutritional status was better in the adolescent girls whose mother had \geq primary education compared to those whose mother had less than the primary education. This difference was found statistically significant.

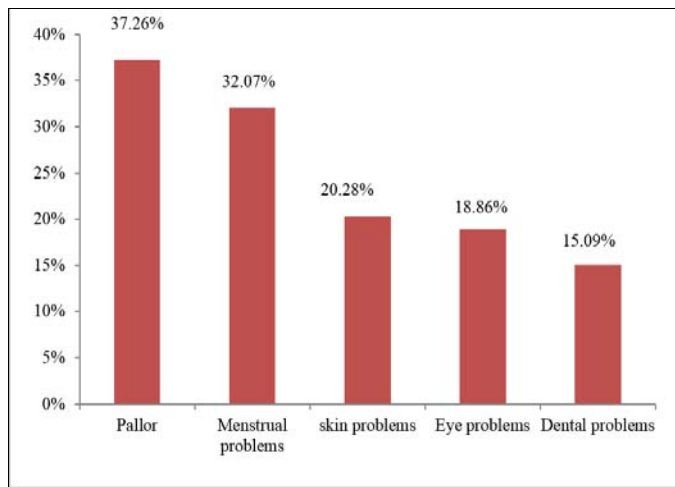


Fig 3: Morbidity Status among adolescent girls

Adolescent girls were clinically examined to assess pallor. Pallor was found in 79 out of 212 adolescent girls. Among the skin problems which were reported by 43 adolescent girls; acne, dandruff were the most common. Eye problems including refractive error were reported by 40 adolescent girls. Among the dental problems which were reported by 32/212 adolescent girls, Dental caries was most common. 68(32.07%) adolescent girls had menstrual problems. Most common menstrual problem was dysmenorrhea followed by irregular cycles.

4. Discussion

4.1 Nutritional Status

The nutritional status of the adolescent girls, the future mothers, contributes significantly the nutritional status of the community. The nutritional requirements increases during the adolescent period. In present study nearly half of the adolescent girls were found under-nourished.

In the study conducted by Nurul Alam *et al.* [1] in Bangladesh prevalence of under nutrition among the adolescent girls was found 26%. Similar studies conducted outside India by X Du *et al.* [2] in China and Renuka Jayatissa *et al.* [3] in Sri Lanka, prevalence of under nutrition were found 32.3% and 22.1% respectively. Studies conducted in India by Saxena Y *et al.* [4] in Dehradun, Shivaramakrisna *et al.* [5] in Bangalore and Vinod Vashik *et al.* [6] in Andhra Pradesh showed prevalence of under nutrition 56.25%, 73.5% and 56.4% respectively. Thus prevalence of under nutrition among the adolescent girls was found higher in India compared to the other countries. In present study also the prevalence was higher compared to other countries. This suggests that malnutrition is a significant problem in our country among the adolescent girls.

4.2 Morbidity Profile

In our study menstrual problems were found in 32.07% of adolescents. Other studies [7, 8] also reported almost similar observations regarding common menstrual problems and findings as observed by us.

In present study dental problems was found in 15.09% of girls. While in study by Srinivasan⁹ dental caries was found in

21.5%. High prevalence of dental caries may be due to poor oral hygiene.

In present study morbidity due to skin disease is 20.28%. In the study by Srinivasan [9] Scabies accounted for 29.9%. In a study by Singh *et al.* [10] Scabies accounted for 16.2%.

5. Conclusion

High prevalence of under-nutrition and pallor was found in adolescent beneficiaries of anganwadies. This will affect their overall health and school performance. Significant association was found between socio-economic status and nutritional status as well as between education status of mothers and nutritional status of adolescent girls. Recognizing the intergenerational effect of malnutrition and high prevalence of adolescent under-nutrition, intervention strategies such as provision of nutritional counseling etc. are needed which will also help to meet out the goals of Reproductive and Child Health Programme. Regular periodic medical examinations at the anganwadi centers should be organized and monitored systematically. Health education programmes on hygiene and common disease have to be carried out regularly in anganwadi centers in consultation with concerned health authorities. Education of the girls should be promoted promptly because these adolescent girls are the future mothers.

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