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PREVALENCE OF ANAEMIA AND VISUAL IMPAIRMENT AMONG SCHOOL GOING ADOLESCENTS OF PATAN CITY, GUJARAT: A CROSS SECTIONAL STUDY

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ABSTRACT

Background: Adolescence and young adulthood are periods of critical development and transition. Adolescent constitutes over 23% of the population in India. Nutrition and health needs of the adolescent are more because of more requirements for growth spurt and increase in physical activity.

Objective: To study prevalence of anemia and visual impairment among school going adolescents of Patan city, Gujarat

Methodology: The study was carried by Community Medicine Department, GMERS Medical College, Dharpur-Patan during period from September 2014 to August 2015. After taking the permission of principals of 9 schools and consent of the parents of adolescents, 841 adolescents from 10 schools of Patan city were examined for anemia and visual impairment. The data was collected by predesign, pretested proforma and analyzed using SPSS 17.0 (Trial Version)

Results: Mean age was 15.8 ± 1.96 years. Out of 841, 432 (51.4%) were boys and 409 (48.6%) were girls. The study revealed that 67.0% girls were suffering from anaemia compare to 58.7% of boys. 117 (13.9%) adolescents had visual impairment.

Conclusion: High prevalence of anemia and visual impairment among these adolescents needs great attention and health education.

Key words: School health, Adolescents health, Anaemia, Visual Impairment

INTRODUCTION

Adolescence and young adulthood are periods of critical development and transition. In terms of age, It is period of life that is extended from 10-19 years which includes pubertal development also. These young people undergo major physical, cognitive, and psychosocial changes. These changes have important implications for health. As young people become increasingly independent, they face significant choices in areas such as diet, substance use, sexuality, physical activity and use of health care services. These choices are shaped by individual, family, social environments, and other contextual factors. A school is a key location for educating adolescents about health, hygiene and nutrition, and for putting in place interventions to promote the health of ado-

lescents. At the same time, poor health, poor nutrition and disability can be barriers to attending school and to learning. Schools are sacred because they provide an environment, for learning skills, and for development of intelligence that can be utilized by students to achieve their goals in life. It is also observed that "to learn effectively, adolescents need good health." Health is key factor in school entry, as well as continued participation and attainment in school.[1]

The school is also potentially a location for contracting infections or diseases. Finally, childhood health behaviour habits such as diet and physical activity are influenced by the school setting and often track into adulthood[1]. The common morbidities found in school age children are nutritional deficiencies, dental, visual and hearing problems, respiratory infections, skin conditions, loco motor disabilities and congenital heart and other problems. The fact is that the most of these conditions are preventable or avoidable and curable especially in early stages by promotion of hygienic practices among school children through proper health education by teachers, who are the first contacts[2].

Adolescent constitutes over 23% of the population in India. Nutrition and health needs of the adolescent are more because of more requirements for growth spurt and increase in physical activity. Adolescent need more of all nutrient. [3]This study is a humble effort to throw light on prevalence of Anemia and visual impairments among school going adolescents.

METHODOLOGY

The study was carried by Community Medicine Department, GMERS Medical College, Patan during period from September 2014 to August 2015. 9 schools were selected by purposive sampling. After taking the permission of principals of schools and informed written consent of the parents of adolescents, 841 adolescents from these schools of Patan City were examined using Pre-designed, pre-tested, semi-structured WHO standard with ICMR modifications questionnaire for nutritional deficiencies. Performa contained general information, anthropometry and general health check-up of the adolescents. The modification included deletion of columns irrelevant to the present study and addition of some columns to record other health abnormalities specially which are common in adolescents. Data were analysed using SPSS version 17 (trial version). Parameters such as rate, ratio and percentages were calculated. In order to have valid interpretation of rates, 95% confidence intervals (CI) were calculated. To test the significance of the difference among the statistical parameters in different subsets of population, suitable statistical tests were applied.

RESULTS

Out of total 841 adolescents 409 (48.6%) were female. Mean age of the study adolescents was 15.8 ± 1.96 years. Maximum numbers of the adolescents were in the age group of 10-14 years (60.5%). Mean age of female and male adolescents was 15.3 ± 1.89 years and 15.9 ± 2.02 years respectively.

Table 1: Gender wise distribution of adolescents according age groups

Age Groups	Female	Male	Total
10-14	261 (31.0)	246 (29.5)	508(60.5)
15-19	148 (17.6)	185 (22.0)	333 (39.5)
Total	409 (48.6)	432 (51.4)	841 (100)

(Figures given in parentheses are percentages)

The prevalence of anaemia in adolescents in present study was 62.7 % (527 adolescents). The prevalence of anaemia in female (274, 67.0%) was significantly higher than males (253,58.7%). Possible reasons for IDA include poor consumption of DGLV, increased demand during adolescence and menstrual loss. (Table 2)

Table 2: Distribution of adolescents according to signs of Iron deficiency

Signs	Gender		Total
	Female 409	Male	
Total Cases (n)	409	432	**841**
Pallor of tongue	274 (67.0)	252 (33.2)	527 (62.6)
Pallor of conjunctiva	249 (60.9)	232 (30.6)	482 (57.2)
Pallor of nail	274 (67.0)	253 (33.2)	527 (62.7)

Moderate to severe visual impairment and blindness was 13.9% in girls and 13.8% in boys respectively and the gender difference was not statistically significant. Though 117 (13.9%) adolescents had moderate visual impairment to blindness only 56 (6.6%) adolescents were wearing spectacles. (Table 3)

Table 3: Gender wise distribution of adolescents according to their vision

Visual impairment	category	Gender		Total
		Female	Male	
Total (n)		409	432	841
Mild or no visual impairment	Category 0	352 (86.1)	372 (86.1)	724 (86.1)
Moderate visual impairment	Category 1	51 (12.5)	53 (12.2)	104 (12.4)
Severe visual impairment	Category 2	5 (1.2)	6 (1.4)	11 (1.3)
Blindness	Category 3	1 (0.2)	1 (0.2)	2 (0.2)

Chi-square: 5.45; degrees of freedom:1; p value =0.014

DISCUSSION

In Thakor N et al age of the study children (total 867) ranged from 5-19 years. Mean age was 13.80 ±1.96 years. Out of 867, 434 (49.9%) were boys and 433 (50.1%) were girls. The study revealed that 46.7% girls were suffering from anaemia compare to 37.3% of boys. 122 (12.9%) adolescents had visual impairment.[1]

In Srinivasan K et al 61.4% adolescents were in the age group of 10-14 years, 84.3% adolescents had one or more morbid conditions, prevalence of anaemia in adolescents was 79.6 and 4.4% adolescents had defective vision.[4]

In Panda P et al 59.5% are boys and 40.5% are girls, prevalence of anaemia in boys was 22.9% and in girls was 30.5%, 5.6% adolescents had refractive errors.[5]

In Soumya Deb et al, prevalence of anaemia in boys was 55.34% and in girls was 51.85%.[6] In Osei A et al 3 6.7% adolescents were found anaemic in primary school age group.[7]

In Chandna S. et al adolescents had night blindness in 35.9%, prevalence of anaemia in adolescents was 34%.[8] In Rema N et al prevalence of anaemia in boys was 44.08% and in girls was 52.2 1%, prevalence of vitamin A deficiency in boys was 5.65% and in girls was 8.64%. [9] As per DLHS (2002-2004), prevalence of anaemia in adolescent girls is 72.6%.[11] In India 6-7% adolescents aged 10-14 years have problem with their eye sight.[10]

CONCLUSION

The available data show a high prevalence of anemia and visual impairment among adolescents. There is definitely a need for well-planned, large-scale studies using standardized methodologies to estimate the prevalence of iron deficiency anemia and visual impairment among adolescents.

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