Section: Pediatrics

Original Research Article

STUDY OF PHYSICAL AND PSYCHOSOCIAL HEALTH PROBLEMS IN SCHOOL GOING ADOLESCENTS AT AHMEDABAD

Preeti P Vazirani[1], Kavya Menon[2], Shrut Rajnikant Chaniyara[3], Twisha Dharmilbhai Mehta[4]

[1,2]*Assistant Professor, Department of Pediatrics, GCS Medical College, Hospital and Research Centre, Ahmedabad, Gujarat, India.*
[3,4]*Intern, GCS Medical College, Hospital and Research Centre, Ahmedabad, Gujarat, India.*

Received *: 12/09/2024*
Received in revised form *: 30/10/2024*
Accepted *: 14/11/2024*

Corresponding Author:
Dr. Preeti P Vazirani,
Department of Pediatrics, GCS Medical College, Hospital and Research Centre, Ahmedabad, Gujarat, India.
Email: krits7171122@gmail.com

DOI: 10.70034/ijmedph.2024.4.150

Source of Support: Nil,
Conflict of Interest: None declared

Int J Med Pub Health
2024; 14 (4); 808-811

ABSTRACT

Background: Depression and anxiety are the two most common mental health problems during childhood and adolescence. The present study was carried out to study the physical and psychosocial problems of school going adolescents along with predisposing factors for the same.

Material and Methods: The study was conducted amongst 569 students (278 boys and 291 girls) of the adolescent age group (10-19 years) attending 3 schools in urban and rural Ahmedabad during the time period of January-February 2024. Using pre-tested, pre-designed questionnaire, students were personally interviewed regarding the mental and psychosocial health problems faced by them. General information like weight and height was taken and blood pressure was measured.

Results: Out of 569 study subjects, 48.86% were males and 51.14% were female. Out of the total study subjects, 12.31% were falling in the category of overweight/obesity and 15.49% children were underweight. 77.69% of subjects were physically active for at least 1 or more than 1 hour per day. Majority of the normal weight children (68%) had better physical activity as compared of obese and overweight children. Pain in abdomen was found in 30% of children and constipation was seen in 33% children with junk food intake of more than 4 days.

Conclusion: The physical and psychosocial health of the school going adolescents depend on the multitude of factors including the socio-cultural mileu. The importance of healthy diet, physical exercise, limitation of screen time and building emotional resilience should be incorporated during adolescents age group by parents and teachers.

Key Words: Adolescents, BMI, Height, Psychosocial Health.

INTRODUCTION

Adolescence is a period of life between childhood and adulthood. WHO has defined adolescent as a person between 10-19 years of age. Adolescence is an important developmental transition period between childhood and adulthood that includes multiple physical, cognitive and psychosocial changes.[1] In some cases, these changes have lasting direct and indirect negative effects on mental and physical health, academic performance, and subsequent life opportunities.[2-4]

This period is associated with rapid physical growth, sexual development along with psychological changes. Adolescents are predisposed to a lot of physical and psychosocial problems. when they suffer from physical injuries, psychological trauma, or major changes in their environments especially in the absent of strong support system. Depression and anxiety are the two most common mental health problems during childhood and adolescence.[5,6] Between 20% and 50% of adolescents' self-report depressive symptoms with significant and regular co-occurrence of the anxiety symptoms.[7] Poor awareness about the symptoms of psychiatric disorders, myths, and stigma related to it, the lack of knowledge of treatment availability and benefits from treatment compound the problem.

So, periodic health supervision of adolescents is necessary for early identification of the health problems faced by them. The present study was carried out to study the physical and psychosocial problems of school going adolescents along with predisposing factors for the same.

MATERIALS AND METHODS

Study Population

A cross-sectional study was designed to enroll the students of adolescent age group who attended 3 schools in Ahmedabad. The study was conducted amongst 569 students (278 boys and 291 girls) of the adolescent age group (10-19 years) attending 3 schools in urban and rural Ahmedabad during the time period of January- February 2024. The schools were selected on the basis of simple random sampling technique. After taking permission from the school authority, teachers were explained the purpose of the study. All the students of the adolescent age group from the selected school were interviewed and examined with the predesigned proforma. By using pre-tested, pre-designed questionnaire, students were personally interviewed regarding the mental and psychosocial health problems faced by them. General information like weight and height was taken and blood pressure was measured. Data was analysed using SPSS software and 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 569 study subjects, 48.86% were males and 51.14% were female. Mean weight and height of the students were 36.5 kg and 144 cm respectively. (Table 1) Mean BMI was found to be 17.39 kg/m2. It was found that 87% of the students were of normal stature and 11% had short stature. Out of the total study subjects, 12.31% were falling in the category of overweight/obesity and 15.49% children were underweight. (Table 2) Obesity was more common in males (55%) as compared to females (44%). The prevalence of hypertension was significantly high (25.48%) in our study population. A statistically significant correlation between BMI and hypertension was seen as 55% of obese and 41% of overweight children were hypertensive. Oral hygiene was good in 69.07% subjects, however 21.9% had dental caries. A large number of students i.e. 75.75% were found to have pallor on physical examination. Pallor was found to be more common in females (28.8%) than males (19.42%). As far as personal hygiene and etiquette was concerned, it was found that 98.59% were washing hands before eating and going to the washroom, but only 85.24% were using soap. Majority of the students (96.84%) were bathing daily. 65.91% subjects were brushing once daily and only 34% were brushing twice daily. On enquiring about the physical activity, it was found that more than 71.35% of the students were physically active for >/= 4 days and remaining were active for less than 4 days per week. 77.69% of subjects were physically active for atleast 1 or more than 1 hour per day. However, 22.32% subjects were either physically inactive or did activity for less than 1 hour per day. Majority of the normal weight children (68%) had better physical activity as compared of obese and overweight children. Dietary habits were evaluated and it was found that 30.23% were taking junk food for more than 4 days per week. Out of total of 27 obese children, 33% had junk food intake of more than 4 days per week and out of 43 overweight children, 27% had junk food intake of more than 4 days per week. Pain in abdomen was found in 30% of children and constipation was seen in 33% children with junk food intake of more than 4 days.

Majority of the children i.e. 78.38% were having a screen time of less than 1-2 hours per day. 16.5% of children had no screentime and 5.10% had screentime of more than 3 hours per day. We also questioned them regarding common health problems faced by them, and it was found that 37.79% were suffering from easy fatigability, 30.4% children were suffering from leg pain, 21.79% were suffering from abdominal pain, 5.8% were suffering from constipation, 24% had headache and 16% had skin problems like acne, infective lesions etc. 79.96% were getting adequate sleep of more than 8 hours per day, but remaining 20.04% were having inadequate sleep. 77.14% of children who have an adequate sleep of more than 8 hours do not have complaints of headache. It was also found that 55% of students have some or the other type of psychosocial problems. Out of those, 62% of children have more than 4 hours of screen time and 59% have inadequate sleep.

We observed that out of 291 female study subjects 36% of the females have achieved menarche. The mean age of achieving menarche was 14.1 years. Out of those who achieved menarche 88 % were using sanitary pads and 11.3 % were using clothes.

Table 1: Gender wise Distribution of study participants

Gender	Number	Percentage (%)
Male	278	48.85
Female	291	51.14
Total	569	100

Table 2: Distribution of study Participants according to BMI

BMI	Number	Percentage (%)
Underweight	88	15.46
Normal	411	72.23
Overweight/Obesity	70	12.31

DISCUSSION

Adolescence is a phase of rapid growth and development during which physical, sexual and emotional changes occur. During this period, they suffer from serious health and safety issues and are predisposed to various high-risk behaviours.[7-11] Nearly half of our study population (51.6%) were girls. Similar female preponderance was also seen in an observational study done by Patel N et al,[7] at government schools of urban Ahmedabad. However, a study by Gupta MK et al,[12] showed a significant male preponderance in schools. This observation in our study is a reassuring sign that females are continuing to pursue education through adolescence and more gender equality and access to education in our state. About 11% of the study subjects were having short stature and were advised further workup. This proportion was higher as compared to another prospective observational study in school children in Bangalore conducted by Kandagal J etal,[11] where prevalence of short stature was found to be 5%. Another study from South India by Velayutham K et al,[6] showed that overall prevalence of short stature was 2.86%. The combined prevalence of overweight and obesity was 12.3% and that of underweight was 15.19%. This was comparable to the study done by Christian DS et al,[3] in which 9% of school going adolescents were found to be overweight/ obese. Similarly Aggarwal et al,[5] showed a combined prevalence of overweight and obesity to be 16.1%. This rising trend of overweight and obesity reflects an increase in junk food intake, excessive screen time, lack of physical activity and more of a sedentary life style. Our study showed that 15.19%of study subjects were wasted or thin. This was significantly lower as compared to a study done by et al in which Gupta MK et al,[12] about 24% of the adolescents were wasted and thin. Thus, we have observed a comparatively similar prevalence of overweight/obesity and underweight in our study. This depicts that with rapid urbanization and changing life styles, we are now facing an emergence of double burden of undernutrition and overnutrition in the society which needs to be addressed in our policy making.

In our study we found that 25% of the adolescents were hypertensive. This was relatively high as compared to other studies involved in a metanalysis by Daniel RA et al,[2] in which the prevalence of hypertension ranged from 2-20.5% and the pooled prevalence was 7.6%. All those who were hypertensive were advised follow up visit to the hospital as single high readings were not enough to diagnose hypertension (as this high reading may be fallacious due to anxiety or other factors).

Majority of the adolescents in our study i.e. 75% were found to be clinically pale and were advised hematological investigations. This high prevalence may be because of the subjective variation and overestimation of the pallor. The prevalence of anemia in a study by Gupta MK et al,[12] was 28 %. Similarly, Chauhan S et al,[4] reported 20 % prevalence of anemia in girls and 8.7% in boys.

IAP guidelines 2020-2021,[14] recommends at least 1 hour of moderate intensity physical activity including muscle strengthening exercise at least 3 days per week. Our study revealed that 22% subjects were physically inactive or active for less than 1 hour per day. This level of physical inactivity may manifest later in life as a high burden of noncommunicable disease in the society. It was also found that 30% of the study subjects were consuming junk food for 4-7days per week. This was comparatively high as compared to the data from Global schools-based health survey by Li L et al,[9] in which 8.3 -12.4 % of the school going adolescents were consuming junk food for >4 days per week. This also corelates with the high prevalence of pain abdomen (30%) and constipation (33%) in children taking junk food intake for more than 4 days per week. As per IAP guidelines 2019,[15] Junk food intake should not be more than 1 serving per week and not exceeding 50% of the Total daily energy intake. This necessitates the implementation of healthy diet promoting programs from an earlier age group in the community. It was also noted that a good proportion i.e. 33.3 % were taking junk food within acceptable range.

Another challenge in the period of adolescents is a limitation in screen time. We found that 24% of them were having a screen time of >2 hours in a day in the form of TV, mobile phones, laptops and computers. Nearly half of the adolescents who had a screen time of >2 hours per day have a complaint of headache. Similar association was also seen in the metanlysis by Langdon RL,[13] et al in which more frequent headaches are seen in adolescents with excess screen times. Apart from headache this excessive screen time also predisposes the child to more of a sedentary life style, poor sleep patterns, increased mental health problems, obesity and metabolic syndrome. IAP 2024 guidelines,[16] on screen time recommends not more than than 2 hours of screen time for 5-18 years of age group.

A large percentage 55% of the study subjects were facing some or the other type of psychosocial problems like loneliness, academic stress, harming self, anger, excessive worries, not happy with one's own body, having frequent fights with other etc.

This was relatively high as as compared to a study done by Nimje A B et al,[17] in which 33 % of the adolescents were suffering from psychosocial problems. Adolescents with such problems are particularly more vulnerable to social exclusion, discrimination, stigma, educational difficulties, risk taking behaviors and physical ill health. So we should aim at interventions to strengthen an individual's capacity to regulate emotions, build resilience for managing difficult situation and adversity and promote supportive social environment.

Mean age of attainment of menarche in our study population was 14.1 years. This was comparable to the study done by Omidvar et al which also showed the mean age of onset of menarche was 13 years.

Limitation of the study

As this was a cross-sectional study, we were unable to follow up the students with reference to various problems faced by them. Another limitation of the study is a small sample size. Similar studies with large sample size would be better in estimating a lot of problems in the adolescents.

CONCLUSION

The physical and psychosocial health of the school going adolescents depend on the multitude of factors including the socio-cultural mileu. The importance of healthy diet, physical exercise, limitation of screentime and building emotional resilience should be incorporated during adolescents age group by parents and teachers. Awareness should be created at all levels including school, society and nation as a whole for the wholesome physical and psychosocial development of the adolescents.

REFERENCES

1. Dubey M, Nongkynrih B, Gupta S, Kalaivani M, Goswami A, Salve H. Screen-based media use and screen time assessment among adolescents residing in an Urban Resettlement Colony in New Delhi, India. J Family Med Prim Care. 2018;7(6):1236.
2. Daniel RA, Haldar P, Prasad M, Kant S, Krishnan A, Gupta SK, et al. Prevalence of hypertension among adolescents (10-19 years) in India: A systematic review and meta-analysis of cross-sectional studies. Choukem SP, editor. PLoS ONE. 2020 Oct 6;15(10):e0239929.
3. Christian DS, Patel M, Solanki AK. An Epidemiological study of health behavioral and protective factors among school going adolescents (aged 13-17 years) of Ahmedabad, Gujarat using the Global School-based Student Health Survey (GSHS) questionnaire. Indian J Community Health. 2020 Mar 31;32(1):25–30.
4. Chauhan S, Kumar P, Marbaniang SP, Srivastava S, Patel R. Prevalence and predictors of anaemia among adolescents in Bihar and Uttar Pradesh, India. Sci Rep. 2022 May 17;12(1):8197.
5. Aggarwal T, Bhatia R, Singh D, Sobti PC. Prevalence of Obesity and Overweight inAffluentAdolescents from Ludhiana, Punjab.
6. Velayutham K, Selvan SsA, Jeyabalaji R, Balaji S. Prevalence and etiological profile of short stature among school children in a South Indian population. Indian J Endocr Metab. 2017;21(6):820.
7. Patel N, Gunjana G, Patel S, Thanvi R, Sathvara P, Joshi R. Nutrition and health status of school children in urban area of Ahmedabad, India: Comparison with Indian Council of Medical Research and body mass index standards. J Nat Sc Biol Med. 2015;6(2):372.
8. Omidvar S, Amiri F, Bakhtiari A, Begum K. A study on menstruation of Indian adolescent girls in an urban area of South India. J Family Med Prim Care. 2018;7(4):698.
9. Li L, Sun N, Zhang L, Xu G, Liu J, Hu J, et al. Fast food consumption among young adolescents aged 12–15 years in 54 low- and middle-income countries. Global Health Action. 2020 Dec 31;13(1):1795438.
10. Kumar M, Mohanty PC. Undernutrition and anaemia among Indian adolescents: role of dietary diversity and hygiene practices. J Nutr Sci. 2023;12:e33.
11. 11. Kandagal J, Rath S, Maganti M, George CE. Prevalence and Aetiological Profile of Short Stature in School Children between 6-11 Years of Age- A Community Based Prospective Observational Study. JCDR [Internet]. 2023 [cited 2024 Nov 10]; Available from: https://www.jcdr.net//article_fulltext.asp?issn=0973-709x&year=2023&month=May&volume=17&issue=5&page=SC11-SC16&id=17826
12. Gupta MK, Mohapatra A, Shivalli S, Mishra CP. NUTRITIONAL ESTIMATES OF SCHOOL GOING CHILDREN BASED ON ANTHROPOMETRIC MEASUREMENTS: STUDY FROM A RURAL AREA OF VARANASi authored-by/Strelzik/Jeffrey+A.
13. Langdon RL, DiSabella MT, Strelzik JA. Screen time and pediatric headache: A scoping review of the literature. Headache. 2024 Feb;64(2):211-225. doi: 10.1111/head.14674. Epub 2024 Feb 1. PMID: 38299747.
14. IAP guidelines for normal sleep and physical activity 2020-2021
15. IAP guidelines on Fast and junk foods, sugar sweetened beverages, fruit juices and energy drinks
16. IAP recommendation for permissible daily screen time exposure for children.
17. Nimje AT, Gawande AV, Narlawar UW. Prevalence of psychosocial problemsin adolescents of central India: a descriptive crosssectional study. Int J Community Med Public Health2023; 10:3271-5.