1) What is the health and nutritional status of adolescent school children in the rural and urban areas of Puducherry? 2) What are the gynecological problems faced by the adolescent school children in the rural and urban areas of Puducherry?
Study of Adolescent Health Problems among School Students in Urban and Rural Areas of Puducherry

Devi K*, Subash Chandra Bose

*Associate Professor, Department of Community Medicine, Melmaruvathur Adhiparasakthi Institute of Medical Sciences and Research, Melmaruvathur – 603319.

CORRESPONDENCE:
Dr K. Devi
E-mail ID: devi.kittu@rediffmail.com

ABSTRACT:
Research question: 1) What is the health and nutritional status of adolescent school children in the rural and urban areas of Puducherry? 2) What are the gynecological problems faced by the adolescent school children in the rural and urban areas of Puducherry?
Settings: The study was carried out in two schools (K. K Government Girls higher school, Mathagadepet and Annai Sivakami Government Girls higher secondary school). Both the schools in the rural and urban area were government school.
Study design: Descriptive study.
Participants: A total of 247 adolescents from both the rural and urban area participated in the study.
Methodology: Data was collected using a standard Teenage Screening Questionnaire (TSQ) which was pretested.
Results: One-fourth of the rural (27%) and 26.4% of the urban adolescents complained of headache. In the rural area, 31.5% of students had hair fall as one of the major complaints. In the urban area 30.6% students had similar problem. About 15.3% of the adolescents in the rural complained of white discharge. In the urban area 13.6% of the adolescents had dysmennorhoea. The average height recorded by the urban (156.9 ± 6.6) adolescents was significantly higher compared to the average height of the rural (150.93 ± 8.65) students

Key words: Adolescents, Gynecological, Dysmennorhoea, Puducherry, Rural, Urban,
INTRODUCTION: The World Health Organization (WHO) defines adolescents as young people aged 10-19 years.\(^{(1)}\) Globally, there are about 1.2 billion adolescents out of which four out of five (85\%) live in developing countries.\(^{(1)}\) Adolescents constituted 22.8\% of population in India.\(^{(2)}\) According to the 2001 census, India has 225 million adolescents, comprising nearly one fifth of the total population of the country. Investing in the health and development of this population segment is vital for a country’s well-being. The swiftly changing global conditions are placing a great strain on the young people, modifying their behaviour and relationships and exacerbating their health problems. The complex issue of adolescents is worth investigating.

MATERIALS AND METHODS: Descriptive study. A total of 247 adolescents were studied using a standard Teenage Screening Questionnaire (TSQ). Sample size: 250 students (150 in rural and 150 from the urban schools). The study was conducted in K. K Government Girls higher school (KKGHSS) – Mathagadepet (rural) and Annai Sivakami Government Girls higher secondary school (ASGHSS) to represent urban school. Both the schools in the rural and urban area were government school. The study included all the students from IX standard. The parameters which were broadly studied were background details, medical problems, gynecological problems and psychological problems. All the children chosen were given a pre-tested self-administered questionnaire to fill.

Procedure: The principals of the schools selected were contacted and the purpose of the study was explained to them in detail. Permission was then obtained from the Joint Director of Education, Puducherry to conduct the study in selected schools of the rural and urban areas of Pondicherry.

The questionnaire was converted in the local language and field tested among 10 students of another school in Thondamanatham village. After making a few modifications based on the responses obtained, the questionnaire was finalized.

To attain the required sample all the students enrolled in classes of the urban schools were included. In rural schools, lots were used to decide which sections were to be included. Further simple random technique was adopted to select the students to be included in the study by using random number table in the rural school. The total number of students enrolled was 247 (109 urban and 139 rural). This method gave the closest approximation to equal representation from rural and urban students, based on the number of students in each class.

The pre-tested questionnaire and detailed consent form was given individually to all the children in the study. Where the parents were illiterate, the purpose of the study and the contents of the form were explained in person.

There were 250 eligible students in the sections of the selected school and only 247 students could be contacted.

The height and the weight was taken was obtained by measuring the height using the stadiometer and the weight by using standard electronic weighing machine. For summary statistics proportions, means and standard deviation were calculated. Chi-square test and t-test was used to find out the association between the attributes. The data was analysed using Microsoft Excel and spss – version 15.
OBSERVATION: One-fourth of the rural (27%) and 26.4% of the urban adolescents complained of headache. In the rural area, 31.5% of students had hair fall as one of the major complaints. In the urban area 30.6% students had similar problem. About 15.3% of the adolescents in the rural and 10% in the urban area complained of white discharge. Other complaints in the rural area were irregular menses (7.3%), pain during menses (11.7%), scanty flow (4.3%) and excess (2.9%). In the urban area 13.6% of the adolescents had dysmenorrhoea. The average height recorded by the urban (156.9 ± 6.6) adolescents was significantly higher compared to the average height of the rural (150.93 ± 8.65) students.

DISCUSSION:

Eye Problems

One-fourth of the rural (27%) and 26.4% of the urban adolescents had complained of headache. About 12.7% of the adolescents in the urban area had reported impairment of vision. Only three students in the rural area had impaired vision. The present study reported that the proportion of abnormal vision of right eye among the rural and urban adolescents were 5.1% and 10% respectively. The proportions of abnormal vision of left eye and near vision among the rural and urban adolescents were 8.8% and 10% respectively. The National Adolescent Health and Information Center, reported 20-25% has physical health problems, such as asthma, obesity, or severe headaches. (3) Study done in Taiwan observed that migraine, were more common in the female adolescents. (4)

MKC Nair et al in their study done in Trivandrum found that eye problems were reported by 22% girls; The major medical problems were headache-complained by 60% of adolescents. (5) About 22% of adolescents had short sightness. (6)

The largest proportion of students (10.9%) had caries tooth in the rural area. Another 3.6% adolescents said that they suffered malocclusion of the tooth. Three of the students complained of bleeding in the gums and two of them suffered from pain in the rural area. Similarly, in the urban area the largest proportion (10.9%) complained of caries tooth. Another 3.6% had bleeding in the gums. Nair MKC et al in their study done among school students found that dental problems were reported by 44% of the adolescents. (6)

A cross-sectional survey conducted among 13-18-year-old adolescents in Zhejiang Province, China showed few urban/rural differences. Respondents were eager users of health services; 73% were taking regular medication, but 52% had never attended a dentist. (7)

Hair/ Face Problems

The study revealed that in the rural area, 31.5% of students had hair fall as one of the major complaints. In the urban area 30.6% students had similar problem. Pimples were reported by 5.6% and 3.6% of the adolescents in the rural and urban area respectively. Hair fall, pimples and dandruff were reported by 4.2% and 6.3% of the rural and urban adolescents respectively. Lee MC et al in their study in Taiwan observed that acne vulgaris, were more common among the female adolescents (4)
MKC Nair et al in their study done in Trivandrum found that 57.8% faced the problem of falling hair, 38.3% had dandruff, and 22.3% complained of white patches; 10% boys and 26.9% girls complained of lice. Hair fall and lice were reported by 69% of adolescents.

**Menstrual Problems**

The current study observed that about 15.3% of the adolescents in the rural area and 10% in the urban area complained of white discharge. Other complaints in the rural area were irregular menses (7.3%), pain during menses (11.7%), scanty flow (4.3%) and excess discharge (2.9%). In the urban area 13.6% of the adolescents had dysmenorrhea.

The study done in Trivanandapuram by MKC Nair observed that; 67.7% had menstrual problem, and pain during periods. About 48% girls felt pain during menstrual days, 25% had irregular bleeding. Profuse bleeding was reported by 215 adolescent students in Kerala.

**Dysmenorrhea**

The present study found that one- half of the rural (45.3%) and 49.1% of the urban adolescents respectively had lower abdominal pain during menses. About 13.1% of the adolescents in the rural area had abdominal discomfort. Only three students in the urban area had abdominal discomfort. Back pain during menses was reported by 4.4% of rural and 6.4% of urban adolescents respectively. About 3.6% of the students in the rural area had nausea or vomiting during periods. One student in the rural and four in the urban area had pain radiating to the thigh during menses. Nair MKC et al in their study done among school students found that Dysmenorrhea was complained by 48% of adolescent girls.

**Genital Care/ Hygiene**

The current study observed that in the rural area, the proportion of students (35.8%) practiced daily bath. Another 38% adolescents said that they used cloth/cotton in addition to having daily bath. Use of sanitary napkin and having daily bath was said by 21.9% of the adolescents. Two student in the rural area said they use only napkin during menses. In the urban area the largest proportion (41.8%) had used sanitary napkin in addition to taking daily bath. Another 19.1% use cloth or cotton in addition to having daily bath. In the urban area about 16.4% had practiced only daily bath during the menses. Sanitary napkin alone was used by 12.7% of the urban adolescents. Four students in the urban area said that they used only cloth or cotton during menses.

Nair MKC et al in their study done among school students found that 81.5% girls took daily bath during periods.

Hesketh T et al in their study found that girls complained of more minor illness than boys. The health of the Chunan teenagers was affected by level of poverty, poor hygiene or malnutrition.

**Average Height of the Adolescents**

The average height of the rural students was recorded as 150.93 ± 8.65; in the urban area the average height was 156.9 ± 6.6.in the present study. The average height recorded by the urban adolescents was significantly higher compared to the average height of the rural students.

Programs need to reach all adolescents and the approaches need to be suitable to those at highest risk for inadequate consumption, in particular those from low socioeconomic backgrounds.
CONCLUSION: Regular school health camps through the school health program would help to screen many of the diseases at early onset both in the rural and urban schools.

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