



## Assessment of health complaints and use of medicines among adolescents in Tamil Nadu.

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### ABSTRACT

The period of adolescence is a period that is marked by anxiety associated with physical growth significant psychological development and changes in personal relationships. The stresses that adolescents experience may manifest themselves in psychosomatic health complaints. So we investigate self-reported health complaints and the use of medicines among adolescents in Komarapalayam, Tamil Nadu. A self-administered questionnaire was used to survey self-reported health complaints, the use and the sources of medicines that had been accessed, during the preceding 4 months. A stratified random sample design generated a sample size of 640 adolescents (aged 14-16 years). The health complaints and use of medicines that were investigated included hay fever, cold/cough, headache, skin problems, injuries, indigestion diarrhoea/constipation, eye and ear problems. Who formed the analytical sample, of which 57.2% were boys and 42.8 girls. The adolescents reported a total of 8 health complaints and 92.2% reported using at least 1 medicine during the preceding 4 months. The community pharmacy was cited as the most commonly accessed source for most of the medicines that were investigated. A proportion of 32.6% of the adolescents had taken at least 1 medicine without adult guidance during the preceding 4 months. Almost 32 % of those who had taken antibiotics had accessed them from the home medicine cabinet. A high proportion of adolescents reported the use of medicines to symptoms of common health complaints. A considerable proportion of adolescents in this study had obtained medicines without adult guidance. This highlights the importance of carefully designed education programs for adolescents about the proper use of medicines.

**Keywords:** Adolescent. Drug Utilization and health complaints

### INTRODUCTION

The period of adolescence is a period that is marked by anxiety associated with physical growth, significant psychological development and changes in personal relationships.<sup>1</sup> The stresses that adolescents experience may manifest themselves in psychosomatic health complaints. It is clear that the use of medicines, in particular that which takes place without adult guidance, is considerable during adolescence<sup>2-15</sup>. Medicine consumption patterns vary across different age groups. Studies have shown that the consumption of medicines is highest among infants (0-1 year) and decreases until the beginning of adolescence from where it starts to increase again.<sup>6</sup> However, school-based education about the proper use of medicines is rarely given any importance<sup>16</sup> This study was thus aimed at investigating adolescents health complaints and medicine consumption patterns. This research investigated: (1) the prevalence of self-reported health complaints, (2) the consumption of commonly used medicines, including that which had taken place autonomously, and (3) the sources of medicines that had been accessed among adolescents during the preceding 4 months.

### METHODS

A self-administered questionnaire was used to survey health complaints and the use of medicines by 14-16 year-old adolescents attending community pharmacy in Komarapalayam, Namakkal Dist., Tamil Nadu, India during the period from Jan. to April 2010. In order to estimate the number of adolescents required to answer the questionnaire that would ensure statistical validity, the most sensitive question in the questionnaire was determined by a pilot study, assuming 95% confidence and 80% power. This was taken to have an expected sample size of 640 adolescents was calculated using statically. In order to obtain a representative sample. The population size generated by stratified random sampling was 640 adolescents. Data collection was carried out during their visit community pharmacy to under the investigator's supervision. Informed consent was obtained before distributing the questionnaires to the adolescents. The self-administered questionnaires were answered anonymously by the adolescents and returned. The adolescents took approximately 20 minutes to complete the questionnaire. Sociodemographic in-

formation was collected on gender, month and year of birth and area of residence. Social class variation was measured by means of a family affluence scale that had been established by the World Health Organization (WHO).<sup>17,18</sup>

The data presented in this specific study is restricted to the descriptive analysis of the following items: subjective health complaints, use of medicines and sources of medicines. The adolescents were asked to fill in a questionnaire about the health complaints they had experienced during the preceding 3-month period from a checklist. This list was compiled by the authors after consulting published research that investigated health complaints among adolescents.

The health complaints that were included in this study were those of most relevance to the local scenario and for which over-the-counter medicines were available. The health complaints and use of medicines that were investigated included hay fever, cold/cough, headache, skin problems, injuries, indigestion diarrhoea/constipation, eye problems and ear problems. The adolescents were asked about the related use of medicines for the health complaints they had experienced and also about their use of vitamins during the same preceding 4 months. Since we wished to investigate the sources from which antibiotics were obtained among the study population, a question was included about the use of these prescription medicines during the preceding 4 months the adolescents who marked the last option were in addition asked whether they had obtained the medicine with or without help from adult relatives.

The answers about sources of medicines were further subdivided into 2 categories: those adolescents who had obtained at least 1 medicine with adult guidance and those who had obtained at least 1 medicine without adult guidance, during the preceding 4 months. In order to check for congruency of meaning, the questionnaire that had been originally drafted in English was translated to Tamil and back translated to English. The data was processed using PC90 (BMDP Statistical Software, 1990). Percentages were calculated for all the nominal categories of the replies given. The sum and mean scores for health complaints and use of medicines were also calculated. When calculating the scores, a value of 1 was awarded for each health complaint and type of medicine. Means in the data provided are presented together with the standard deviation about the mean. The Pearson correlation coefficient was used to report the association between the degree of medication and number of health complaints

### RESULTS

A total of 640 adolescents were including in the data collection and all of them returned the questionnaire. The age of the adolescents ranged from 14 to 16 years

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**Table 1. Prevalence of self-reported health complaints and use of medicines during the 4 months preceding the study**

Health complaint	Prevalence of health complaint, No. (%) of adolescents (n = 640)	Prevalence of use of medicine for the corresponding health complaint, No. (%) of adolescents(n = 640)
Hay Fever	542 (84.7)	522 (81.6)
Headache	528 (82.5)	502 (78.4)
cold/cough	475 (74.2)	457 (70.6)
Ear	152 (23.7)	139 (21.7)
Skin	176 (27.5)	161 (25.2)
Indigestion/diarrhoea/constipation	224 (30.0)	214 (33.4)
Injuries	96 (15.0)	90 (14.9)
Eye	86 (13.4)	72 (11.3)

As adolescents could choose more than 1 option, the sum of the columns exceeds total numbers.

**Table 2. Reported sources of medicines**

Type of medicine taken	Pharmacy	Parent/ adult relative	Home medicine cabinet	Friend or young relative
Hay Fever (n=522)	375 (71.8%)	167 (31.9%)	97 (18.6%)	9 (1.7%)
Headache (n=502)	101 (20.1%)	205 (40.8%)	329 (65.5%)	12 (2.3%)
cold/cough (n=451)	281 (62.3%)	136 (30.2%)	88 (19.5%)	6 (1.3%)
For Ear (n=139)	96 (69.0%)	41 (29.5%)	23 (16.5%)	2 (1.4%)
For Skin (n=161)	123 (76.4%)	55 (34.2%)	32 (19.9%)	0 (0.0%)
For Indigestion/diarrhoea/constipation (n=214)	128(59.8%)	57 (26.6%)	69 (32.2%)	3 (1.4%)
For Injuries (n=90)	51 (56.7%)	28 (31.1%)	20 (22.2%)	2 (2.2%)
Eye (n=72)	43 (59.7%)	23 (31.1%)	12 (16.6%)	0 (0.0%)
Vitamins (n = 246)	158 (64.2%)	99 (40.2%)	30 (12.2%)	4 (1.6%)
Antibiotics (n = 368)	295 (80.1%)	68 (18.5%)	40 (10.9%)	15 (4.2%)

Cell percentages reported by row. As participants could choose as many options as applied, the sum of the rows may exceed the total numbers

(mean=15.32 years, SD=0.42). A total of 274 adolescents (42.8%) were girls. From a total of 640 respondents, 192(30%), 386 (60.3%) and 62 (9.7%) adolescents ranked low, medium and high respectively the prevalence of self-reported health complaints during the preceding 4 months for the subjects is given in Table 1. A total of 618 adolescents (96.5%, n=640) had experienced at least 1 health complaint out of a total of 8 health complaints.

The most prevalent health complaints experienced by the study population were ear problems, hay fever, cold/cough, headache and skin complaints. The prevalence of the intake of medicines for the corresponding health complaints is also illustrated in Table 1. In addition, 246 adolescents (38.5%, n=640) had taken vitamins, 368 adolescents (57.5%) had taken antibiotics. With regard to the overall use of medicines, a total of 598 adolescents (93.4%) had used between 1 to 6 types of medicines during the preceding 4 months. The most prevalent use of medicines had been that for ear problems, hay fever, cold/cough, headache and skin complaints. There was a statistically significant positive correlation between the number of physical health complaints and number of medicines used.

The pharmacy was cited as being the most common source from which all medicines had been accessed during the preceding 4 months except for medicines for headache and fever, which were mostly obtained from the home medicine cabinet. The least common sources for all medicines were friends or young relatives (Table 2). A total of 283 adolescents had obtained their medicine from the home medicine cabinet during the preceding 4 months. Of these, 183 (64.7%) adolescents had asked for help from adults before getting the medicine. Further analysis showed that of those who had taken medicine 598 adolescents had obtained at least 1 medicine from the community pharmacy, parents/adult relatives or home medicine cabinet under adult supervision during the preceding 4 months. On the other hand, a total of 110 adolescents had taken at least 1 medicine from friends/young relatives or from the home medicine cabinet without guidance during the same period of time.

## DISCUSSION

The study showed that the prevalence of self reported health complaints during the 4 months prior to the study had been quite high in adolescents. This is consistent with previous research carried out in Slovakia<sup>4</sup>, although direct comparisons are difficult to make due to differences in the methodologies used.

The psychological stresses associated with the changes that occur during adolescence, often take the form of headaches and gastrointestinal problems.<sup>1, 20</sup> This could explain the high prevalence of these 2 health complaints in this study (Table 1). This data is also consistent with previous research where the prevalence of headaches and digestive disorders during a 3-month period had been reported to be 90.9% among Canadian adolescents and 34.6% among Chinese adolescents respectively. The high prevalence of ear problems, hay fever, cold/cough that was reported in this study could be related to the winter and spring months for which the adolescents were asked to record their health complaints.

The great majority of the adolescents obtained their medicines from a community pharmacy (Table 2). However, the source that was mostly accessed by adolescents who had complained of headache and fever was the home medicine cabinet (65.5% and 18.6% respectively). These values are concordant with research carried out in Canada.<sup>3</sup> These results indicate the widespread use of analgesics in households. A substantial proportion (18.6%) of adolescents who had taken antibiotics during the preceding 4 months had obtained them from parents/ adult relatives. In addition, 10.9% of the adolescents who had taken antibiotics had obtained them from the home medicine cabinet.

In this study, for each medicine studied, less than 5.0% of the adolescents had obtained it from a friend or young relative. In most cases, the participants had obtained medicines with adult guidance. Nevertheless, a substantial 26.3% of those who had used medicines during the preceding 4 months reported that, at some time during this period they had taken medicines without adult guidance. This high prevalence of autonomously administered medication by adolescents had been previously reported by other researchers.

This study has both its strengths and weaknesses. A major strength of the study is that since self reported health complaints are based on perceptions of health, they may be more appropriate in relation to medicine seeking behavior during adolescence than health indicators based on medical records or medical statistics. The study also had its limitations. First, the use of self-administered questionnaires relies on retrospective information to be given honestly and accurately by the respondents.

## CONCLUSIONS

The results of this study show a high prevalence of self-reported health complaints and widespread use of medicines among adolescents. In most cases, the participants had obtained medicines with adult guidance. However, a substantial proportion of adolescents had obtained medicines autonomously. These findings highlight the need for educating adolescents about the proper use of medicines. The School-based education about the proper use of medicines is given more importance.

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