

## Research Report

# PEER-REPORTED PREVALENCE OF SUBSTANCE AND INTERNET USE AMONG SCHOOL-GOING ADOLESCENTS

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### ABSTRACT

**Background:** Adolescent substance use is an important public health problem because of its potential consequences on the growing brain. Problematic internet use is also a related phenomenon. The validity of self-report of substance and internet use is questionable in this population because of social desirability bias.

**Objective:** To estimate the extent of gender-specific substance use and internet use among students of eighth to twelfth classes in an urban area in Ernakulam, Kerala based on the report of peers.

**Materials and methods:** A school-based cross-sectional study was conducted over one month in Kalamassery, Ernakulam District, Kerala. Information on the extent of substance and internet use among the students was obtained by a peer-reported, anonymous, self-administered questionnaire from all the students of classes eighth to twelfth of three randomly selected schools.

**Results:** Data were collected from 278 school students (133 boys and 145 girls). Excessive Internet use was reported among 20% boys and 14% girls. Substances with high use among boys were nicotine (11.54%), cannabis (6.67%), solvent (5.88%) and alcohol (5.88%). Solvent use was reported among 2.77% of girls.

**Conclusion:** Although the peer report survey has certain limitations, it can give early indications of student behaviours. The estimates obtained are nearer to self-reported substance use. The reported solvent use in the study is worth exploring.

**Keywords:** peer-report, school-going adolescents, substance use, excessive internet use

### INTRODUCTION

World Health Organization defines adolescence as the period between the ages of 10 and 19 years.<sup>1</sup> Adolescence is a critical period characterised by physical maturation,

including neurodevelopment. It is also a crucial period for the beginning and experimentation with new things which also puts the adolescent at risk for developing an addiction.<sup>1</sup> Any substance abuse at this age is

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likely to interfere with normal child development and may have an impact on the adult life.<sup>3,4</sup>

Many studies have been conducted on the prevalence of psychoactive substance abuse among adolescents.<sup>5,6,7</sup> Self-reported, anonymous, questionnaires were used in most of the studies to assess the prevalence of addiction among students. But social taboos and fear of parental and societal rejection may prevent them from disclosing their substance use unless the problem is manifested as a severe physical or mental problem. In fact, one review concluded that 'respondents are likely to over-report socially desirable behaviours and to under-report socially undesirable ones'.<sup>8</sup> Hence one can assume that survey data on substance use tend to be biased downwards.

A related concern is an increase in problematic internet use among adolescents. The prevalence of internet addiction, described in the literature as 'problematic internet use', among high school students of Jaipur, was found to be 28.57%.<sup>9</sup> A study conducted among school students of Vadodara had internet addiction rate of 8.7%, and in another study done in Ahmedabad, the rate was 11.8%.<sup>10,11</sup>

Taking into consideration of the above observations and considering the dearth of studies of substance and internet use in Kerala, the study was done to find the extent of substance and internet use based on peer report among high school students from eighth to twelfth grade in schools of Kalamassery municipality, an urban area in Ernakulam district, Kerala.

## MATERIALS AND METHODS

This study was done as the pilot phase of a large school-based survey of substance use and

heavy internet use. A cross-sectional study was conducted on 278 students in classes 8<sup>th</sup> to 12<sup>th</sup> grade in three schools selected randomly (two Government and one Government aided) in Kalamassery, Kerala. All the students of the above schools were included in the study. The study was approved by the Institutional Ethics Committee (IEC), Government Medical College, Ernakulam and was conducted during the period of one month in September 2017. Consent was obtained from concerned parents through the school principal before conducting the study. An anonymous, self-administered, peer-reported questionnaire was administered. The questionnaire was prepared based on substance use pattern among the adolescent population attending the psychiatry outpatient department of Govt. Medical College, Ernakulam. The purpose of the study was explained to the students and confidentiality was assured. Students who assented to participate were only included.

The closed-ended, peer reported questionnaire contained questions related to excessive internet use and substance use among peers, belonging to the same school class. Students were asked the number of girls and boys using substances separately. Excessive internet use was considered as spending more than an hour daily on the internet for leisure for more than a month. Students were asked about the use of various psychoactive substances at least once among peers, as per their knowledge.

Each student was asked to fill the questions regarding the total number of students and the number of boys and girls in his/her class division. The participants were to give, as per his/her knowledge, the number of girls and number of boys in his/her class division who

has used the listed substances at least once, excluding self. Similarly, the question on number of girls/boys in his/her class division, as per one's knowledge, having excessive internet use (more than one hour per day for leisure) was also given. Positive responses of participants were converted into a percentage based on the number of students in each division (percentage of students with substance/ heavy internet use = number of

students using the substance in his/her class\*100/strength of the class). The median and range of responses were calculated for both genders. The data were summarised using R-statistical software. The main outcome measures were gender-specific, peer-reported ranges of heavy internet use and use of nicotine, alcohol, cannabis, solvents, prescription drugs and others, among students.

Table 1. Age distribution of participants

Age in years	Number of boys (n1=150)	Number of girls (n2=101)	Total (%) (N=251)
12	7	11	18 (7)
13	41	11	52 (21)
14	33	11	44 (18)
15	24	21	45 (18)
16	40	41	81(32)
17	4	5	9 (4)
18	1	1	2 (-)

Table2. Reported substance use among girls and boys

Substance	Boys (n1=150)		Girls (n2=101)	
	% Median	Range (%)	% Median	Range (%)
Internet	20	3.3-40	14	2.5-45
Nicotine	11.54	3.3- 26.6	-	-
Alcohol	5.88	3.3- 20	-	-
Cannabis	6.67	3.3- 15	-	-
Solvents	5.88	3.5- 20	2.77	2.5- 2.7

## RESULTS

The study was conducted among 278 students of classes eighth to twelfth from three schools. Of them, 27 were omitted due to incomplete response or non-response, the final sample size was 251 (150 boys and 101 girls). and the response rate was 90.29%.

It was found based on peer-report that excessive internet use was reported among both genders, i.e., 20% among boys (range; 3.3- 40) and 14% among girls (range; 2.5-45). Among boys, the psychoactive substance of highest use reported was nicotine, i.e., 11.54% ranging from 3.3% to 26.6%. The extent of use of other substances among boys was 5.88% for alcohol and solvents and cannabis 6.67%. None reported the use of any psychoactive prescription drugs. No girls were reported to have used nicotine, alcohol, cannabis, injectables or prescription drugs, but volatile substances use among girls were reported to be 2.77% (Table 2).

## DISCUSSION

In the study, regular use of the internet more than one hour per day for leisure was high with 20% in boys and 14% in girls. This was found to be higher than the study using Young's Internet Addiction Test by Yadav P. et al., where the prevalence of internet addiction was 11.8% among high school students in Ahmedabad.<sup>11</sup> However another study done in Jaipur, using the same instrument, had shown the prevalence of internet addiction to be 28.57%.<sup>9</sup> Not using a structured scale, the estimate of range and using the construct of excessive internet use than addiction per se may be the reason for the high estimate in the current study. The gender difference reported

in our study has been replicated in other studies also.<sup>12</sup>

The extent of alcohol use in the current study is only 5.88% and is less than tobacco use. This is comparable with the study by Jayakrishnan et al. using self-reported questionnaire, where the prevalence of tobacco was 7.4% and alcohol 5.6% among high school students in Thiruvananthapuram, Kerala.<sup>13</sup> The Global Youth Tobacco Survey in 2006 showed that 3.8% of students smoke and 11.9% currently used smokeless tobacco.<sup>14</sup> But most of the studies from northern India have reported higher alcohol than tobacco use among boys.<sup>6</sup> A study done in Kerala has also found a higher estimate of 23.2% alcohol use in school going adolescent boys in Kerala.<sup>15</sup> Reddy and Biswas in a study in Bangalore had also found that the most common substance of use among adolescents was alcohol 28% and smoking was found only in 3%.<sup>16</sup> The differences observed may be due to the pattern of use of the substance. Use of tobacco is observable because it is often used during daytime and usually in public, while alcohol use is usually restricted to later hours of the day and is less public.

The extent of cannabis use in our study was 6.67% which is higher than the prevalence reported in a nation-wide data, which is 3%.<sup>17</sup> Whether the study sample hailed from an urban area with a higher prevalence of substance use had contributed to such a finding is to be seen.

The extent of solvent use in India is reported to be less than 1% in the treatment-seeking population. In this context, the estimate of 5.88 among males and 2.77 of solvent use noted in the study is worth examining, especially its use

among girls. Probably this is the first report of the extent of use of solvents in adolescents.

## CONCLUSION

Proxy-based information is often used for triangulation of information in epidemiological surveys and qualitative research. Such an approach may be important in assessing behaviours like substance use, where social desirability is a key issue. The current report is the results of a pilot phase of a large school-based survey of substance use where the investigators are planning to estimate the prevalence of substance use based on both self-report and peer report. Peer report has its own limitations; while relying on peer report one cannot get an in-depth assessment of problem behaviour. Moreover, standardised instruments cannot be used in peer-reported estimates. There are obvious difficulties in the right types of estimates in peer reports, as in the current study. There are also reports of an exaggerated report by peers.<sup>18</sup> Another major argument could be substance use, and internet use is mostly done outside school hours, so information from peers could be inaccurate about the hours, substances etc. Despite the above limitations, the study throws light into the extent of solvent use among school students of adolescent age. The extent of uses of other substances as well as the internet could also be discerned.

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