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# Exploring the Prevalence and Correlates of Substance Abuse Amongst the Adolescents of Dharan, Eastern Nepal

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## ABSTRACT

**Background:** The burden of substance abuse amongst the youths has increased worldwide including Nepal. There is limited data on prevalence of substance abuse among the adolescents. Hence this study aims to determine the prevalence of substance abuse amongst the adolescents of Dharan, Eastern Nepal.

**Methods:** A cross-sectional study was conducted from July 2018 to December 2018. Self-administered structured questionnaire adapted from National Youth Survey sponsored by the Centre for Substance Abuse Prevention was used for data collection from 1125 higher secondary school students. Data was cleaned in Microsoft Excel and analysed using SPSS version 11.5.

**Results:** Prevalence of ever users of tobacco were 46.04% of which the current users were 20.46%, ever users of alcohol were 37.58% of which 15.20% were current users and ever users of drug was 18.19% of which 18.13% were current users. The average age of initiating tobacco, alcohol and drugs were  $14.21 \pm 3.51$ ,  $15.13 \pm 7.43$  and  $14.32 \pm 4.41$  years respectively. More than half of the drug users (50.71%) used cannabis and the most common reason for using any substance was peer pressure (91.64%). More than one-third (39.5%) purchased any of these substance from local shops.

**Conclusions:** The study reported significant proportion of adolescents involved in substance abuse. The findings of this study may be beneficial for revising/ updating action plans on prevention and control of substance abuse in Nepal.

**Keywords:** Adolescents; alcohol; drug; substance abuse; tobacco.

## INTRODUCTION

Substance abuse has become one of the global health challenges of 21<sup>st</sup> century. Adolescence are the most vulnerable ones, because of the collective social, emotional and educational challenges along with new encounters with peers from diverse background, greater urge of freedom, feeling of adulthood and greater availability of entertainment. Any substance abuse at this age has everlasting impact on one's life. World Health Organization (WHO) estimates globally 25 to 90% of children have ever used at least one substance of abuse.<sup>1</sup> In Nepal, more than 32% of drug users started taking drugs at the age of 15 years.<sup>2,3</sup> Highest number of the drug users were found in Kathmandu valley (36,998) followed by Sunsari (7,407) in a national survey and the annual growth rate is 11.36%.<sup>2</sup> In this context, the

present research study was conducted to explore the prevalence and the correlates of substance use amongst the adolescents of Eastern Nepal.

## METHODS

This was a cross-sectional study conducted in Dharan municipality of Sunsari district of Nepal from July 2018 to December 2018. Ethical approval was obtained from Nepal Health Research Council (NHRC) and B P Koirala Institute of Health Sciences (BPKIHS), Dharan. Formal permission was taken from Dharan municipality office and the concerned authorities of all the schools selected for the study. The sample size was calculated by considering the prevalence of substance abuse of 0.5, for conservative estimate. Taking Z value of 1.96 at 95% confidence level and margin of error (d) of 3% for p, an

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initial sample size of 1068 was calculated. Adding a non-response rate of 5%, an optimum sample size of 1122 was obtained. The number was then rounded off to a total of 1125. A two stage systematic random sampling was applied. The first stage included random selection of 10 higher secondary schools of Dharan. In order to select these 10 schools, a list of all government and private higher secondary school located in Dharan were obtained from Dharan municipality Office. In the second stage, two sections from each class (class 11 and 12) were selected randomly from each sampled school. The number of students in the class ranged from 40 to 55. Since all the schools were co-educational, all males and females students present on the day of the interview in the sampled classes were requested to participate in the study. A self-administered structured questionnaire in Nepali language was used to obtain information from the students. The questionnaire was adapted from National Youth Survey sponsored by the Centre for Substance Abuse Prevention, US Department of Health and Human Services.<sup>4</sup> The questionnaires were pre-tested among the students of non- selected school and later modified as required. None of the approached student refused to participate in the study.

Verbal permissions were obtained from respective school authorities. The study purpose and procedures were explained to the participants and informed written consent and written assent was obtained from the participants before enrollment in the study. Confidentiality of information was ensured by asking the participants to enclose the filled questionnaire and seal it inside the provided envelope.

**Substance abuse-** Use of any psychoactive substance other than when medically prescribed. Tobacco (smoking/chewing), alcohol (beer, wine, hard liquor, desi alcohol), cannabis (bhanga, charas, ganja, sulpha), tranquilizers (diazepam - valium, clonazepam, nitrazepam -nitravet, alprazolam - alprax), inhalants (ink eraser fluid, petrol, glue,ilodexetc), opiates (heroin- brown sugar, smack, cough syrup propoxifen, buprenorphine, pethidine, morphine, pentazocine, tidigesic, fortwin, codeine containing cough syrups etc.), inhalants (dendrite, paint thinner, petrol) etc.

Microsoft excel was used for data entry and SPSS version 11.5 was used for analysis of data. Descriptive statistical analysis was done.

## RESULTS

In the present study, majority (58.22%) of participants were female. The age of the participants range between 16-25 years (mean age 17.34±1.30) (Table 1). Majority

(75.11%) of the participants were Hindu. More than half (55.55%) of the participants lived with both their parents and majority (64.29%) had recreational activity (internet facility, television etc.) at home.

**Table 1. Different characteristics of participants.**

| Characteristics (N = 1125)                        | Frequency | Percentage |
|---|-----------|------------|
| <b>Age</b>  |           |            |
| 16-19   | 1064      | 94.57      |
| 20-25   | 61        | 5.42       |
| <b>Gender</b>                                     |           |            |
| Male  | 470       | 41.77      |
| Female  | 655       | 58.22      |
| <b>Relationship with family</b>                   |           |            |
| Very good   | 778       | 69.15      |
| Good  | 227       | 20.17      |
| Bad   | 8         | 0.71       |
| Very bad  | 112       | 9.95       |
| <b>Difficult situation in life (n=1069)</b>       |           |            |
| Mental/physical stress                            | 417       | 39         |
| Near to death experience                          | 185       | 17.30      |
| Faced natural disaster                            | 467       | 43.68      |
| <b>Substance abuse by family members (n=1123)</b> |           |            |
| Yes   | 551       | 49.06      |
| No  | 572       | 50.93      |
| <b>Substance abuse by friends (n=1031)</b>        |           |            |
| Tobacco   | 470       | 45.58      |
| Alcohol   | 363       | 35.20      |
| Drugs   | 198       | 19.20      |

Two-third of the participants reported using a variety of substances "ever" in their life. Almost half (46.04%) of the participants were ever user of tobacco, 37.58 % were ever user of alcohol and 18.19% ever user of drugs (Figure 1). The mean age of initiating tobacco use was 14.21 ± 3.51 years, alcohol was 15.13 ± 7.43 years and drug was 14.32 ± 4.41 years. Among the ever users, the current drug users were 18.13%, current tobacco users were 20.46% and the current alcohol consumers were 15.20%. In the past month, tobacco was the substance most frequently used (7.41 ± 10.77), followed by drugs (3.89 ± 6.54) and alcohol (3.15 ± 5.31).

However, among 204 (18.13%) who agreed on being an ever drug users, only 140 (68.62%) responded on the name of drug they consume. Majority of the ever users replied as using cannabis more frequently followed by opiates (Table 2).

The most common reason for any substance abuse was peer pressure (91.64%), mental and physical stress (30%) and bad relationship with family (10.66%). More than

one third (39.5%) of the participants responded they could manage getting tobacco and 10.95% stated they could manage buying alcohol, while only 4.08% said they could manage getting drugs. Majority (37.95%) replied local vendors (Paanpasal / tambakhu pasal) as the source from where they could get/ purchase these substances. (Table 3)

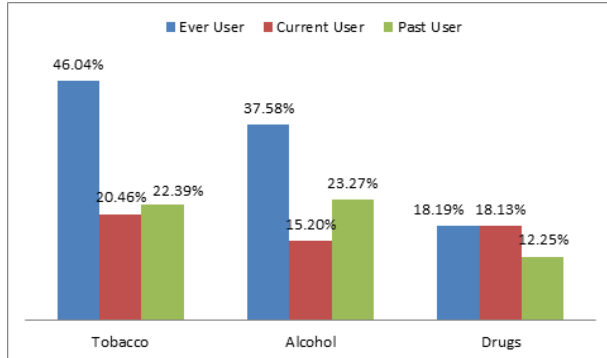


Figure 1. Prevalence of substance abuse.

Table 2. Drugs used by ever users (n=140, multiple response).

| Drugs                        | Frequency | Percentage |
|------------------------------|-----------|------------|
| Cannabis                     | 71        | 50.71      |
| Tranquilizers                | 27        | 19.28      |
| Opiates                      | 42        | 30         |
| Stimulants                   | 8         | 5.71       |
| Injectable heroine / cocaine | 13        | 9.28       |
| Inhalants                    | 15        | 10.71      |
| Any other I/V drugs          | 21        | 15         |

Table 3. Source of different substances (multiple response, n = 1125).

| Source        | Frequency | Percentage |
|---------------|-----------|------------|
| Local vendors | 427       | 37.95      |
| Liqor shop    | 174       | 15.46      |
| Cosmetics     | 62        | 5.51       |
| Mediators     | 112       | 9.96       |
| Drug dealer   | 139       | 12.35      |
| Friends       | 214       | 19.02      |
| Others        | 60        | 5.33       |

However, were asked about their level of agreement with regard to their attitude towards substance use, majority stated these to be very harmful. There were 10 items related to their attitude towards the use of these substances (Table 4).

Table 4. Respondents opinion and attitudes regarding substance use (n = 1125).

| Statement                                    | Level of Agreement |              |              |              |
|--|--------------------|--------------|--------------|--------------|
|  | Harmless           | Some Harm    | Very Harmful | Don't Know   |
| Occasional smoking                           | 130 (11.55%)       | 457 (40.62%) | 343 (30.48%) | 195 (17.33%) |
| 1-2 cigarette per day                        | 64 (5.68%)         | 84 (7.46%)   | 774 (68.8%)  | 203 (18.04%) |
| Alcohol 1-2 glass/ day                       | 51 (4.53%)         | 189 (16.8%)  | 659 (58.57%) | 226 (20.08%) |
| Alcohol 5 or > glass per week                | 26 (2.311%)        | 69 (6.13%)   | 797 (70.84%) | 233 (20.71%) |
| Cannabis or hasish once or twice in lifetime | 48 (4.26%)         | 128 (11.37%) | 650 (57.77%) | 299 (26.57%) |
| Cannabis/ hasish daily                       | 33 (2.93%)         | 44 (3.91%)   | 770 (68.44%) | 278 (24.71%) |
| Ever use of LSD                              | 19 (1.68%)         | 26 (2.31%)   | 555 (49.33%) | 525 (46.66%) |
| Ever use of Amphetamine                      | 24 (2.13%)         | 26 (2.31%)   | 527 (46.73%) | 548 (48.71%) |
| Ever use of Cocaine                          | 19 (1.68%)         | 30 (2.66%)   | 611 (54.31%) | 465 (41.33%) |
| Ever use of Inhalants or I/V drug use        | 19 (1.68%)         | 26 (2.31%)   | 525 (46.66%) | 555 (49.33%) |

When asked about the consequences faced by the respondents in being involved in use of different substances, majority of the respondents involved in drugs use reported being involved in physical fights when drugged and those involved in alcohol use replied having lost money when drunk (Figure 2).

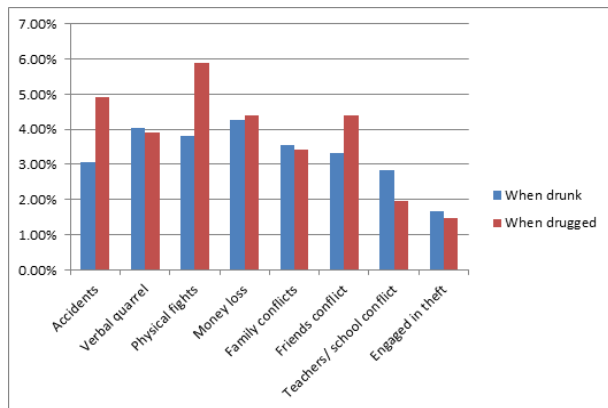


Figure 2. Consequences faced by the respondents when drunk and drugged.

## DISCUSSION

This comprehensive cross sectional study on the prevalence of substance abuse amongst the high school adolescents show high prevalence. Our study demonstrates substance abuse as emerging adolescent problem in Nepal.

This study found that the overall prevalence rate of tobacco, alcohol and drug abusers were 46.04%, 37.58% and 18.13% respectively. The prevalence rate of tobacco users (46.04%) in this study is within the range found in other studies.<sup>5,6</sup> The reported prevalence of alcohol abusers in our present study is higher than the prevalence (13.6%) reported by a study conducted in India<sup>5</sup> but is in line with the other studies across Nepal which reported a prevalence between 15% and 57%.<sup>7,8</sup> This variation might be because Dharan is primarily inhabitant of people of mangoloid origin who use alcohol for the purpose of rituals and celebrations. The prevalence of drug users was higher (18.19%) in this study as compared to other studies.<sup>2,9</sup> This may be because Dharan is more prone area for substance abuse besides Kathmandu and Pokhara,<sup>2</sup> probably because it is also more inclined towards rapid urbanization. Adolescent age is well-established risk factor for initiating substance abuse.<sup>10-12</sup> The mean age of initiating tobacco use in this study was 14.21±3.51 years, alcohol was 15.13 ± 7.43 years and drug was 14.32±4.41 years which is consistent with the findings of other studies.<sup>12,13</sup>

Cannabis and opiates were the most commonly used illegal drugs (50.71% and 30% respectively) which is consistent with the findings of other studies.<sup>3,14</sup> Peer influence, family relationship and easy availability were the significant predictors of substance abuse amongst the adolescents. A national survey among drug abusers in Nepal also reported the reasons of substance abuse as peer pressure.<sup>10</sup>

This study revealed good awareness and optimum attitudes towards substance abuse, as in other studies.<sup>15-17</sup> However, the high prevalence of substance abuse suggests vulnerability of the adolescents.

This study was comprehensive study on prevalence of substance abuse among the adolescents in Dharan using larger samples, however, the cross-sectional nature of the study did not allow in establishing a causal relationship between the risk factors. The association between prevalence of substance abuse and related risk factor is not carried out in the present article.

## CONCLUSIONS

The prevalence of substance abuse amongst the adolescents of Dharan is found to be high. Urgent

tackling of substance abuse by the adolescents should be high priority of Government of Nepal to prevent youths from not only worsening their health condition but also preventing from national misfortunes. There is an urgent need to develop effective programs on prevention and control of the availability of these substances in Nepal. Hence, the findings may be useful for updating/revising multi-sectorial action plan as well as to develop annual work plan and budget for prevention and control of substance abuse in Nepal.

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