DRUGS AND ALCOHOL USE BY SECONDARY SCHOOL STUDENTS IN THIMPHU, BHUTAN

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ABSTRACT: The problem of substance abuse is one of the most prevalent issues that people face and has afflicted millions of people around the world. Though, substance abuse is a fairly new phenomenon in Thimphu, Bhutan, its use has been escalating over the years. Only few studies, to find out the prevalence of substance use and alcohol use among students, have been conducted in the recent past in Bhutan. As a step towards establishing the current trend of alcohol, smoking and drug use among adolescents in secondary schools, Thimphu, Bhutan, 423 students from various schools within the city were surveyed using a self administered questionnaire. Multistage sampling method was used to determine sample size. Selective variables such as demography and environment factors were computed using chi square statistics to find out the association. As a result of this cross sectional study, the data revealed that drug abuse is common among school children, and age of the student, academic performance, education and occupation of parents, peer pressure and curiosity are found to be significantly associated with alcohol, smoking and drug use (*p-value* α<0.05) among school children. This study found out the current trend of drugs and alcohol use and will provide a basis for further research in the field of substance and alcohol use in Bhutan.

Keyword: Drugs, Alcohol, Students, Secondary school, Bhutan

INTRODUCTION

Substance abuse has afflicted millions of people around the world which has escalated into one of the worst social ills [1]. United Nations Office on Drugs and Crime [2] estimates that between 155 and 250 million people (3.5 to 5.7% of the population aged 15-64) used illicit substances such as cannabis, amphetamines, cocaine, opioids, and nonprescription drugs. The report says that the abuse of illicit drugs has spread far and wide at an alarming rate and has seeped into every part of the world. Besides substance abuse, the harmful use of alcohol is another major global contributing factor to death, disease and injury. The "Global Status Report on Alcohol and Health 2011" released by World Health Organization [3] shows that alcohol is the third leading cause of death and disability in the world. The report points out that 2.5 million people die from alcohol-related causes every year around the

world. Out of this figure, 320,000 are young people between the age of 15 and 29 who dies from harmful use of alcohol, resulting in 9% of all deaths in that particular age group.

Surveys of school students in 2009, in Bhutan, revealed that the percentages of school students involved with experimenting with illicit substance use seemed to be increasing over the years [4]. A report of the national baseline assessment conducted by the Bhutan Narcotic Control Agency (BNCA) shows that the largest cohort of drug users is concentrated in Thimphu [4]. These studies have also found out that large number of students across all age groups has been exposed to alcohol, tobacco, and other drugs [4].

This study was conducted to find out alcohol and drug abuse among adolescents in secondary schools in Thimphu, Bhutan. It also explored the association between independent and dependent variables.

METHODOLOGY

Multistage sampling was used to create more

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representative sample of the population. First, the secondary schools (primary units) were selected using a simple random sampling method. This was followed by sampling of the classrooms (secondary units), and finally students (tertiary units) from the identified classrooms were selected as respondents for the survey. There were about 22,529 students in 30 schools (both government and private) in 2011 in Thimphu city [5]. A total of 423 participants from among secondary schools were recruited for the study. The sample size was calculated based on the "one sample problem" formula since it gives the largest sample size. The researcher has no idea what the level of p was in the population and therefore

p = 0.5 was considered for sample size calculation that provided enough observation in the survey. Those who were in class level between 7 and 12 were included in the study.

A validated structured self administered questionnaire by three experts was used to collect the data. Data were collected in June 2011.

RESULTS

As shown in Table 1a-b, the age of respondents varied between 11 and 25 years with a mean age of (± SD) 15.33 ± 2.275 years. The median was 15 years old. Majority of the students fall between the age of 15-19 years (55.6%), followed closely by 10-14 years (41.6%), 20 – 24 years (2.6%) and age above 25 years is (0.2%). Respondents acquiring academic marks less than 50 percent in the final exam was 15.4 %, 46.6% have acquired between 50 – 59, 19.4% got between 60 – 60, 13.2% have managed between 70 – 79 and above 80 was 5.4 %. Respondents who received less than Nu.,[1] 500 per month as pocket money from their parents were 70.4%. 1.7% received between Nu. 500-999, 0.90 % has been provided between Nu.100-1499 and 1.2 % has received more than Nu. 1500. Those who did not get any pocket money from the parents were 25.8%. Respondents who stay with their parents was 78.0%, 12.3% resides with relatives and 9.7% lived with either friends or on their own by renting apartments. Variable for education level of parents shows fathers are more educated in comparison to mothers. Fathers completing secondary schooling were 25.5% compared to mothers at 19.4%. Primary education of fathers was (18.2%) where as mothers was 16.8%. Bachelor's degree and above for fathers was (21.5%), while mothers was 8.7%. Mothers were mostly uneducated (45.4%) compared to fathers (27.4%). Parents' occupation was compared wherein fathers who are in civil

service were 35.7% while mothers were comparatively low (13.9%). Fathers running business was 21.7% whereas mothers was 18.4%, Fathers who are farmers consisted 23.4% which is lower than mothers (27.2 %). Family relationship was measured based on how good or bad a relationship among the family members, and good relationship topped the list at 78.3%, not good 4.0%, parents separated 1.7%, parents divorced 6.9%, father died 5.9%, mother died 2.4%, both parents died 0.7% and others (care of NGOs) 0.2%. Frequency and percentage to smoke cigarettes, drink alcohol or take drugs due to influence by friends showed that 'forced by friends to smoke' at 15.4%, forced to drink alcohol 11.8% and forced to take drugs 8.7%. Availability of cigarettes, alcohol and drugs were assessed using how easy it would be for them to get or acquire. Majority of the respondents (59.8%) have reported that it was very hard to get cigarettes. Little less than half (40.2%) have said that it was very easy to get alcohol closely followed by marijuana (23.4%). Majority have felt that acquiring other prescription drugs was very hard; SP (87.2%), N10[2] (86.8%), Cocaine (86.8%), Opium (88.9%), Amphetamine (88.7%), Cough Syrup (55.8%) and Inhalants (44.2%). Measurement of use of alcohol or drugs by family members indicated that among father, mother and siblings, siblings tended to use more drugs both occasionally and regularly; marijuana (4.0%), SP (0.7%), N10 (0.7%), Cocaine (0.2%), Opium (0.5%), Dendrite (1.2%), cough syrup (1.9%) and solvents (1.4%). Fathers used alcohol and cigarettes more than the mothers both occasionally and regularly. Fathers who smoked cigarettes occasionally was 8.5%, regular was 4.7% and fathers who drank alcohol occasionally was 34.8% and regular was 4.3%. Fathers who smoked marijuana occasionally were 1.7% and regular was 0.2%. Use of alcohol and drugs by friends in school, class and close friends was compared. Results show friends in school used drugs more both occasionally and regularly.

The response frequency of current smoker is 14.6% followed by Alcohol 13.0%, Marijuana 7.8%, Dendrite 2.8%, Nitrosun[3] (N10) 2.6%, Spasmo-Proxyvon[4] (SP) 2.1%, Solvents 2.1%, Cough syrup 0.7% and Amphetamine (1.8%). Opium has never been used as per the data gathered from the survey. Majority of the alcohol users' fall

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[1] One US dollar equals roughly 45 Nu.
[2] Nitrazepam
[3] brand name
[4] SP contains three drugs: paracetamol, propoxyphene and dicyclomine

Table 1a Alcohol and drugs use

Variables	Alcohol n(%)	Marijuana n(%)	SP n(%)	N10 n(%)	Dendrite n(%)	Smoking n(%)
Ever use						
Never	318(75.2)	383(90.5)	408(96.5)	409(96.7)	399(94.3)	326(77.1)
Ever	105(24.8)	40(9.5)	15(3.6)	14(3.3)	24(5.7)	97(22.9)
Total	423(100.0)	423(100.0)	423(100.0)	423(100.0)	423(100.0)	423(100.0)
Age at first use (yrs)						
5-9	2(1.9)	-	-	-	-	1(1.0)
10-14	6(5.7)	21(52.5)	9(60.0)	9(64.3)	12(50.0)	2(2.1)
15-19	74(70.5)	19(47.5)	6(40.0)	5(35.7)	12(50.0)	60(61.9)
20-24	23(21.9)	-	-	-	-	34(35.0)
Total	105(100.0)	40(100.0)	15(100.0)	14(100.0)	24(100.0)	97(100.0)
Reason for first use						
Curiosity	41(39.1)	22(55.0)	10(66.7)	9(64.3)	12(50.0)	41(42.3)
Peer pressure	14(13.3)	3(7.5)	3(20.0)	2(14.3)	1(4.2)	26(26.8)
Family coercion	8(7.6)	1(2.5)	-	-	-	4(4.1)
Physical/mental illness	4(3.8)	3(7.5)	-	-	3(12.5)	4(4.1)
Availability	19(18.1)	8(20.0)	2(13.3)	2(14.3)	5(20.8)	15(15.5)
Others (during special occasions)	19(18.1)	3(7.5)	-	1(7.1)	3(12.5)	7(7.2)
Total	105(100.0)	40(100.0)	15(100.0)	14(100.0)	24(100.0)	97(100.0)
Obtaining at first use						
Friends	48(45.7)	25(62.5)	12(80.0)	13(92.9)	19(79.2)	66(68.0)
Neighbor	7(6.7)	9(22.5)	-	1(7.1)	-	-
Family	19(18.1)	2(5.0)	-	-	1(4.2)	2(2.1)
Seller/dealer	28(26.7)	-	1(6.7)	-	3(12.5)	26(26.8)
Others	3(2.9)	4(10.0)	2(13.3)	-	1(4.2)	3(3.1)
Total	105(100.0)	40(100.0)	15(100.0)	14(100.0)	24(100.0)	97(100.0)
Availability						
No idea	40(38.1)	-	-	-	-	28(28.9)
Bar/shops	60(57.1)	-	-	-	-	49(50.5)
Family	1(1.0)	-	-	-	-	-
Dealer	-	10(25.0)	8(53.3)	7(50.0)	10(83.3)	10(10.3)
Self made	-	7(17.5)	-	-	-	-
Friends	3(2.9)	22(55.0)	5(33.3)	7(50.0)	1(8.3)	10(10.3)
Neighbor	-	-	1(13.3)	-	-	-
Others	1(1.0)	1(2.5)	1(13.3)	-	1(8.3)	-
Total	105(100.0)	40(100.0)	15(100.0)	14(100.0)	12(100.0)	97(100.0)
Place of taking						
Bar	41(39.1)	-	-	-	-	-
Bush/secret place	-	10(25.0)	-	-	-	28(28.9)
At school	5(4.8)	4(10.0)	1(6.7)	3(21.4)	3(25.0)	6(6.2)
At home	14(13.3)	4(10.0)	5(33.3)	2(14.3)	3(25.0)	8(8.2)
At friend's house	20(19.0)	13(32.5)	5(66.7)	6(42.9)	3(25.0)	16(16.5)
Others (during special occasions)	25(23.8)	9(22.5)	4(26.7)	3(25.0)	3(25.0)	39(40.2)
Total	105(100.0)	40(100.0)	15(100.0)	14(100.0)	12(100.0)	97(100.0)
Use in the last 12 months						
No	38(36.2)	7(17.5)	4(26.7)	2(14.3)	7(29.2)	24(24.7)
Yes	67(63.8)	33(82.5)	11(73.3)	12(85.7)	17(70.8)	73(75.3)
Total (ever used)	105(100.0)	40(100.0)	15(100.0)	14(100.0)	24(100.0)	97(100.0)
Total (last 12 months)	67	33	11	12	17	73
Use in the last 30 days						
No	11(16.7)	5(15.2)	2(18.2)	-	5(29.4)	35(36.1)
Yes	55(83.3)	28(84.8)	9(81.8)	11(100.0)	12(70.6)	62(63.9)
Total (last 12 months)	66(100.0)*	33(100.0)	11(100.0)	11(100.0)	17(100.0)	97(100.0)
Total (last 30 days)	55	28	9	11	12	62

*No response 1 case

Table 1a Alcohol and drugs use (cont.)

Variables	Alcohol n(%)	Marijuana n(%)	SP n(%)	N10 n(%)	Dendrite n(%)	Smoking n(%)
Number of days of using in 30 days						
1-5 days	40(72.7)	21(75.0)	5(55.6)	1(9.1)	7(58.3)	41(66.1)
6-20 days	9(16.4)	7(25.0)	4(44.4)	4(36.4)	5(41.7)	14(22.6)
More than 20 days	6(10.9)	-	-	6(54.5)	-	7(11.3)
Total(last 30 days)	55(100.0)	28(100.0)	9(100.0)	11(100.0)	12(100.0)	62(100.0)
Types of alcohol						
Wine	17(30.9)	-	-	-	-	-
Beer	25(45.5)	-	-	-	-	-
Whisky	1(1.8)	-	-	-	-	-
Homemade alcohol	12(21.8)	-	-	-	-	-
Total	55(100.0)	-	-	-	-	-
Times per day						
1-2 time	-	21(75.0)	5(55.6)	6(54.5)	5(41.7)	-
3-5 times	-	7(25.0)	3(33.3)	5(45.5)	7(58.3)	-
5+ times	-	-	1(11.1)	-	-	-
Total	-	28 (100.0)	9(100.0)	11(100)	12(100.0)	-
Number of sticks per day						
1-2 time	-	-	-	-	-	44(71.0)
3-5 times	-	-	-	-	-	16(25.8)
5+ times	-	-	-	-	-	2(3.2)
Total	-	-	-	-	-	62(100.0)

Table 1b Alcohol and drugs use

Variables	Dendrite n(%)	Solvents n(%)	Cocaine n(%)	Amphetamine n(%)	Cough syrup n(%)
Ever use					
Never	399(94.3)	400(94.6)	422(99.8)	419(99.1)	415(98.1)
Ever	24(5.7)	23(5.4)	1(0.2)	4(0.9)	8(1.9)
Total	423(100.0)	423(100.0)	423(100.0)	423(100)	423(100.0)
Age at first use (yrs)					
5-9	-	-	-	-	-
10-14	12(50.0)	18(78.3)	-	-	6(75.0)
15-19	12(50.0)	5(21.7)	1(n.a.)	4(n.a.)	2(25.0)
20-24	-	-	-	-	-
Total	24(100.0)	23(100.0)	1(n.a.)	4(n.a.)	8(100.0)
Reason for first use					
Curiosity	12(50.0)	10(43.5)	1(n.a.)	2(n.a.)	3(37.5)
Peer pressure	1(4.2)	7(30.4)	-	2(n.a.)	3(37.5)
Family coercion	-	-	-	-	-
Physical/mental illness	3(12.5)	-	-	-	-
Availability	5(20.8)	4(17.4)	-	-	2(25.0)
Others (during special occasions)	3(12.5)	2(8.7)	-	-	-
Total	24(100.0)	23(100.0)	1(n.a.)	4(n.a.)	8(100.0)
Obtaining at first use					
Friends	19(79.2)	21(91.3)	1(n.a.)	4(n.a.)	6(75.0)
Neighbor	-	1(4.4)	-	-	-
Family	1(4.2)	-	-	-	-
Seller/dealer	3(12.5)	-	-	-	2(25.0)
Others	1(4.2)	1(4.4)	-	-	-
Total	24(100.0)	23(100.0)	1(n.a.)	4(n.a.)	8(100.0)
Availability					
No idea	-	-	-	-	-
Bar	-	-	-	-	-
Family	-	-	-	-	-

Table 1b Alcohol and drugs use (cont.)

Variables	Dendrite n(%)	Solvents n(%)	Cocaine n(%)	Ampheta-mine n(%)	Cough syrup n(%)
Dealer	10(83.3)	19 (82.6)	-	-	6(75.0)
Self made	-	-	-	-	-
Friends	1(8.3)	4(17.4)	1(n.a.)	3(n.a.)	2(25.0)
Neighbor	-	-	-	-	-
Other	1(8.3)	-	-	1(n.a.)	-
Total	12(100.0)	23(100.0)	1(n.a.)	4(n.a.)	8(100.0)
Place of taking					
Bar	-	-	-	-	-
Marijuana bush	-	13(56.5)	-	-	-
At school	3(25.0)	6(26.1)	-	-	3(37.5)
At home	3(25.0)	-	-	-	-
At friend's house	3(25.0)	-	-	1(n.a.)	2(25.0)
Others (during special occasions/secret place)	3(25.0)	4(17.4)	1(n.a.)	3(n.a.)	3(37.5)
Total	12(100.0)	23(100)	1(n.a.)	4(n.a.)	8(100.0)
Use in the last 12 months					
No	7(29.2)	13(47.8)	1(n.a.)	4(n.a.)	5(62.5)
Yes	17(70.8)	12(52.2)	-	-	3(37.5)
Total (ever used)	24(100.0)	23(100.0)	1(n.a.)	4(n.a.)	8(100.0)
Total (last 12 mo)	17	12	-	-	3
Use in the last 30 days					
No	5(29.4)	3(25.0)	-	-	-
Yes	12(70.6)	9(75.0)	-	-	3(n.a.)
Total (last 12 months)	17(100.0)	12(100.0)	-	-	3(n.a.)
Total (last 30 days)	12	9	-	-	3
Number of days of using in 30 days					
1-5 days	7(58.3)	5(55.5)	-	-	3(n.a.)
6-20 days	5(41.7)	4(44.5)	-	-	-
More than 20 days	-	-	-	-	-
Total	12(100.0)	9 (100.0)	-	-	3(n.a.)
Times per day					
1-2 time	5(41.7)	7(77.8)	-	-	3(n.a.)
3-5 times	3(58.3)	2(22.2)	-	-	-
5+ times	-	-	-	-	-
Total	12(100.0)	9 (100.0)	-	-	3(n.a.)

n.a. not available if total cases less than 5

between the ages of 15-19 years. The age of first use of alcohol and smoking is as early as between five and nine years. In general, most drug and alcohol users fall between the age of 10 and 19 years. At least 22.9% of the respondents have smoked once in their lifetime and out of which 63.92% are current smokers.

Out of 423 respondents 24.8% have ever drunk alcohol. The number of current user is 83.3% among those who have ever drunk alcohol. The type that students preferred most is beer followed by wine and home brewed alcohol. Curiosity (39.1%) is the major reason for initiation of their alcohol drinking. Availability (18.1%) and drinking during special occasions (18.1%) are the second reason followed by peer pressure (13.3%). Respondents say that alcohol is mostly available in the bars (39.1%).

Most students have initiated smoking marijuana between the ages of 10-14 years which indicates that age for initiation is very early which concurs with the study conducted by BNCA, 2009. Again curiosity (55.0%) tops the list for reasons for first use. Availability (20.0%) as second reason for use concurs that marijuana is available to them. Marijuana bush (25.0%) and friend's place (32.5%) are the place of choice for smoking marijuana. Data revealed that at least a minimum of 1-2 times (75.0%) per day was being used by the students. Age for initiation of SP is as early as 10 years. The main reason for initiation is curiosity (66.7%). The data found out that students get SP from the dealers (53.3%) mainly. Data shows the pattern of N10 use is very similar to use of SP.

Table 2 Association between factors and drugs use

Socio-demographic characteristics and smoking	Count n=423	n (%) no	n (%) yes	χ^2	$\rho\text{-value}$
Age					
10-14years	176	163(92.6)	13(7.4)		
15-19 years	235	189(80.4)	46(19.6)	16.063	0.001
20-24 years	11	7(63.6)	4(36.4)		
Academic performance					
< 50	65	41(63.1)	24(36.9)		
51-60	197	166(84.3)	31(15.7)		
61-70	82	75(91.5)	7(8.5)	39.227	0.001
71-80	56	55(98.2)	1(1.8)		
>80	23	23(100.0)	-		
Association between environmental factors and smoking					
Forced by friends to smoke cigarettes					
No	358	326(91.1)	32(8.9)	65.181	0.001
Yes	65	34(52.3)	31(47.7)		
Forced by friends to drink alcohol					
No	373	335(89.8)	38(10.2)	55.133	0.001
Yes	50	25(50.0)	25(50.0)		
Forced by friends to take drugs					
No	386	342(88.6)	44(11.4)	42.518	0.001
Yes	37	18(48.6)	19(51.4)		
Education of father					
Primary school	77	58(75.3)	19(24.7)		
Secondary school	108	88(81.5)	20(18.5)		
Bachelor's degree and above	91	82(90.1)	9(9.9)	13.411	0.001
Vocational training	9	8(88.9)	1(11.1)		
Uneducated	116	102(87.9)	14(12.1)		
Others	22	22(100.0)	0(0.0)		
Occupation of father					
Civil servant	151	121(80.1)	30(19.9)		
Businessman	92	73(79.3)	19(20.7)	12.631	0.006
Farmer	99	92(92.9)	7(7.1)		
Others	81	74(91.4)	7(8.6)		
Association between age, academic performance and alcohol					
Academic performance					
< 50	65	44(67.7)	21(32.3)		
51-60	197	169(85.8)	28(14.2)		
61-70	82	78(95.1)	4(4.9)	34.208	0.001
71-80	56	55(98.2)	1(1.8)		
>80	23	22(95.7)	1(4.3)		
Age					
10-14 years	176	163(92.6)	13(7.4)	22.954	0.001
15-19 years	235	199(84.7)	36(15.3)		
20-24 years	11	5(45.5)	6(54.5)		
Association between environmental factors and alcohol					
Gang participation					
No	378	338(89.4)	40(10.6)	18.401	0.001
Yes	45	30(66.7)	15(33.3)		
Education of father					
Primary	77	62(80.5)	15(19.5)		
Secondary school	108	89(82.4)	19(17.6)		
Bachelor's degree and above	91	83(91.2)	8(8.8)	11.530	0.042
Vocational training	9	7(77.8)	2(22.2)		
Uneducated	116	105(90.5)	11(9.5)		

Table 2 Association between factors and drugs use (cont.)

Socio-demographic characteristics and smoking	Count n=423	n (%) no	n (%) yes	χ^2	p-value
Occupation of father					
Civil Servant	151	127(84.1)	24(15.9)		
Businessman	92	75(81.5)	17(18.5)		
Farmer	99	91(91.9)	8(8.1)		
Others	81	76(93.8)	5(6.2)		
Association between the age and marijuana					
Age					
10-14years	18	15(83.3)	3(16.7)		
15-19 years	5	1(20.0)	4(80.0)	7.413	0.006
20-24 years	-	-	-		
Association between environmental factors and marijuana					
Gang participation					
No	378	359(95.0)	19(5.0)	14.586	0.001*
Yes	45	36(80.0)	9(20.0)		
Forced by friends to smoke cigarettes					
No	358	345(96.4)	13(3.6)	33.653	0.001*
Yes	65	50(76.9)	15(23.1)		
Forced by friends to drink alcohol					
No	373	360(96.5)	13(3.5)	50.146	0.001*
Yes	50	35(70.0)	15(30.0)		
Forced by friends to take drugs					
No	386	371(96.1)	15(3.9)	53.340	0.001*
Yes	37	24(64.9)	13(35.1)		
Education of Mother					
Others	34	34(100.0)	-		
Primary	71	61(85.9)	10(14.1)		
Secondary	82	75(91.5)	7(8.5)	11.332	0.045
Bachelor's degree and above	37	36(97.3)	1(2.7)		
Vocational Training	7	7(100.0)	-		
Uneducated	192	182(94.8)	10(5.2		
Association between environmental factors and Spasmoproxyvon (SP)					
Gang participation					
No	378	375(99.2)	3(0.8)	30.365	0.001*
Yes	45	39(86.7)	6(13.3)		
Living with					
Parents	330	314(95.2)	16(4.8)		
Relatives	52	45(86.5)	7(13.5)	7.675	0.022
Others(friends/rent room)	41	36(87.8)	5(12.2)		
Forced by friends to smoke cigarettes					
No	358	354(98.9)	4(1.1)	11.420	0.006*
Yes	65	60(92.3)	5(7.7)		
Forced by friends to drink alcohol					
No	373	368(98.7)	5(1.3)	10.235	0.002*
Yes	50	46(92.0)	4(8.0)		
Association between environmental factors and dendrite					
Forced by friends to smoke cigarettes					
No	358	353(98.6)	5(1.4)		0.001*
Yes	65	58(89.2)	7(10.8)		
Forced by friends to drink alcohol					
No	373	366(98.1)	7(1.9)	10.555	0.008*
Yes	50	45(90.0)	5(10.0)		

* Fisher's Exact Test

The number of ever cocaine user is only one case (0.2%). However the use has been discontinued for unknown reasons. There were (5.7%) ever dendrite users among the entire respondents. Curiosity (50.0%) prevails over other reasons of use. Age of initiation is as early as 10 years. There are (5.4%)

ever correction fluid users and (2.1%) current users.

The association between factors and substance abuse or alcohol is shown in Table 2. The study found that the association between demographic factors such as age, gender and academic marks and smoking use was analyzed using Chi Square test with the significance level of ≤ 0.05. All the demographic factors are significantly associated with smoking. There is significant association between the age and smoking (*p-value*=0.001). There is also a significant association between student's academic performance and smoking (*p-value*=0.001).

The relationship between environment factors and smoking was analyzed using Chi Square test and was found to be statistically significant. Forced by friends to smoke cigarettes (*p-value*=0.001), forced to drink alcohol (*p-value*=0.001) and forced to take drugs (*p-value*=0.001). There is also relationship between belonging to a gang and smoking at (*p-value*=0.001). Education of the parents is another variable strongly associated to smoking with a *p-value*=0.001 for father and *p-value*=0.012 for mother. On the father's occupation front a *p-value* =0.006 is significantly associated with smoking.

The computed *p-value* of 0.001 for academic marks and a *p-value*=0.001 for age suggests a significant association. The result of the chi square test implies that there is significant association between gang participation (*p-value*=0.001), occupation of the father (*p-value*=0.028) and education (*p-value*=0.042) of the father. Other variables were not showing any significance. The relationship between age and smoking marijuana is statistically significant. A *p-value*=0.006 for age strongly shows an association.

The relationship between environmental factors and smoking marijuana is statistically significant. Forced by friends to smoke cigarettes (*p-value*=0.001), forced to drink alcohol (*p-value*=0.001) and forced to take drugs (*p-value*= 0.001). Relationship between belonging to a gang and smoking marijuana with a (*p-value*=0.001) shows significance.

Significant association was found between environmental factors and smoking marijuana with a (*p-value*=0.006) for forced by friends to smoke cigarettes, forced to drink alcohol (*p-value*=0.002). Belonging to a gang and taking SP is statistically significant with a (*p-value*=0.001).

A strong association was found between environment factors and use of dendrite; forced by friends to smoke cigarette (*p-value*=0,001) and

forced by friends to drink alcohol (*p-value*=0,008).

DISCUSSION

The data reveals that there is more number of students in the age group between 15-19 years followed by age group between 10-14 years. This is consistent with the objective of the study wherein classes from 7-12 will normally have students with age ranging from 10-19 years. There is evidence that youths start using psychoactive substances at earlier ages than in the past [6]. The youngest age in this study was 11 years. The greatest proportion of drug abusers was concentrated between age 15 and 19 years. A chi-square test at 5% level of significance further showed that drug abuse was strongly dependent on age of respondents and thus a significant relationship exists between the two variables.

Out of 423 respondents, 24.8% who have ever drank alcohol and used drugs, male students used more drugs and drank alcohol than females do. Several studies have found that males have a higher rate of alcohol and/or illicit drugs use than females [7]. Although more males take drugs and drink alcohol than females, this does not mean that there is no drugs or alcohol problem among females. It could mean that females know that society does not accept drug abuse as healthy or as part of the social acceptance, so the females are likely to deny that they engage in doing drugs.

There is an association between academic performance with alcohol and drug use in this study. This shows most of the students with average grade (50-59%) have been or are using drugs and alcohol. It is not clear whether the drugs abuse cause poor grades or students who get poor grades fall into the trap of drug abuse. Poor academic achievement has been found to influence alcohol and/or other drug use [8]. Poor academic achievement significantly influence substance use onset among adolescents [9].

Be it alcohol, cigarette or other drug abuse, curiosity variable is the most responded reason cited for drugs and alcohol use by adolescents in this study. Studies have found out that curiosity to use alcohol and drugs during adolescence is very common [10]. It is seen as part of growing up with friends or being part of the gang to "fit in".

Research found adolescents from single parent families reported higher substance use than did adolescents from intact nuclear families [11]. The data in this study revealed only12.2 % of respondents either stay with friends or rent rooms on their own. Most stay with their parents and relatives. Interestingly living with was found only

to be significantly associated with Spasmoproxyvon (SP) use. Parents' use of SP is very low. There is no explanation why there is an association between these two. It needs to be explored more.

Association with the education level and occupation of the father with smoking and alcohol was statistically significant. Also there is an association with the mother's education level with use of marijuana. Most of the fathers are educated and are either in the civil service or running private businesses. This implies higher income for the family which in turn suggests that children of these families are financially well off and fall into the trap of drug abuse. But there are other conflicting studies that show children from rich families do not do drugs [6].

The data suggest that drugs are mostly taken in secretive places where users may never be found by authorities, parents or others who are mindful of their addictive behaviours. Their choice of secluded areas for drug use could have been necessitated by the law of the country where discovery of their behaviour would lead them to serious consequences, sometimes even putting behind bars.

Having family members including siblings and friends who abuses drugs could be a cause of drug abuse among school students. They are necessary agents of socialization who shape and mould the individuals' attitudes towards various social structures, including attitudes towards drugs use and alcohol drinking. Data shows that alcohol has been used most by parents (34.8%) as well as friends (35.2%). Cigarette is the second common drug smoked by the parents and friends, both regularly and occasionally. Marijuana consumption is common among children because it is available all over the country which grows wild and is easily accessible to marijuana users.

Availability of drugs was a variable included in this study to examine the assumption that easy access to drugs triggers drug abuse. Trafficking and availability of drugs in an area contributes to abuse due to easy accessibility [12]. According to her, easy availability of drugs determines the probability of high drug use. In this study it was found out that alcohol and drugs are easily available to school adolescents. The other available drug is marijuana which grows wild in most parts of Bhutan and which is why school children abuse it at their whims. Though the sale of tobacco is banned in Bhutan, people still manage to find the 'cancer stick'. Prescription drugs are easily available across the porous borders of national and international boundaries [4]. Such multiple factors would complicate the problem of substance use and dependence among the school adolescents.

The respondents were asked to indicate the main sources of commonly used drugs. It is relevant in order to get information of the chain of drug supply. Knowing the source could possibly help relevant agencies like the Bhutan Narcotic Control Agency (BNCA), police and customs officials in jointly developing appropriate intervention measures and formulation of surveillance and monitoring strategies which will help to mitigate supply and demand. Cutting down on supply would possibly lead to unavailability and therefore reduction in use of drugs.

The data suggest that drugs are mostly taken in secretive places where users may never be found by authorities, parents or others who are mindful of their addictive behaviours. Their choice of the secluded areas for drug use could have been necessitated by the law of the country where discovery of their behaviour would lead them to serious consequences.

Research findings strongly point out that an adolescent whose peer group uses alcohol and other drugs is more likely to become involved in drugs and alcohol use [8]. A total of 15.4% respondents have reported that they have been forced by friends to smoke cigarettes, 11.8% have been forced to drink alcohol and 8.7% have been forced by friends to take drugs at least once in their lifetime. A chi-square test regarding the relationship between coercion by friends and drug use revealed a significant relationship between drug use by students and influence by friends to take drugs.

Association with gang is highly significant in this study. It is very common to see that gang members use drugs and alcohol and one of the reasons they form gangs is to gain easy access to drugs. Children learn to behave outside the home by identifying with a group of others they perceive to be close to them [13]. Studies have shown that youth who use cigarettes, alcohol and marijuana are more likely to have friends who also use substances, which some researchers suggest is due to selection and socialization effects [13].

There was no association between the drug use by family members and friends with drug use by students. However, studies suggest that in families where the use of alcohol and other drugs is high, the adolescent is also more likely to become involved [14, 15]. Since parents serve as models for their children's behavior in so many ways, it is not surprising that children whose parents smoke, drink heavily or use illegal drugs are more likely to do so than children whose parents do not. The fact that there is no association in this study cannot

dispel the fact that family would have no influence on the use of drugs by their children.

Similarly there is no association between the friend's uses of drugs. Although there is no association in this study, research has shown that when substance use is examined, many studies demonstrate a link between adolescents' friends' substance use and their own use. Adolescents who use drugs typically have friends who are users.

RECOMMENDATIONS

Major efforts will be needed in prevention of substance dependence, focusing on the social risk factors and also on early identification of hazardous use and interventions before moving onto dependency. These tasks cannot be shouldered by schools, parents and health services alone. It needs concerted action of stakeholders, close coordination with social services, self-help groups and politicians. They would better serve by enhancing their strengths; especially school performance, and providing them greater access to meaningful resources. The problem of adolescent drug use can be handled adequately if a variety of strategies are developed that works for the welfare of both the society and the substance dependent school children.

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