Gateway drugs and risk behaviour among adolescents:
A comparison across gender

[1] K.C. Lalchhandami,   [2] Grace Lalhlupuii Sailo
[1] Research Scholar,   [2](Corresponding author), Assistant Professor,
[1, 2]Department of Social Work, Mizoram University, Tanhril, Aizawl, Mizoram, India.
Email – [1]chhan2307@gmail.com,   [2]gracesailo@gmail.com

Abstract: *Adolescence has always been a challenging period for every individual. This is the time when most physical as well as mental changes take place. It is also a period of search for identity and belonging where young people often experiment with substances. All substance use, even experimental use, puts adolescents at risk of underachievement in school, severe substance use disorders and mental health disorders. This study seeks to understand the experience of gateway drugs and related risk behaviours among school going adolescents. A survey was conducted in Aizawl among 160 students between the age group of 13 to 18 years identified through multi-stage cluster sampling. Gender comparison shows that more female adolescents are exposed to use of gateway drugs such as kuhva, smoking cigarettes, other tobacco products, alcohol and marijuana. Highly significant correlation was found between age and gutkha products (.264), marijuana (.206), smoking (.196), use of pills (.160). It was also found that Class is positively significant to risk behaviours such as smoking, use of gutkha products, kuhva and marijuana. The study suggests the vital need for adequate targeted school mental health intervention programmes and systematic awareness of drugs and risk behaviours to be included in the school curriculum.*

Key Words: *Adolescence, Substance use, Gateway drugs, Risk behaviour, school, gender.*

1. INTRODUCTION:

Adolescence has been considered as a period of vulnerability as well as opportunity. As a person undergoes significant changes, s/he is vulnerable to all forms of positive and negative experiences, while given numerous opportunities to exposure. Adolescents today are constantly challenged with a constant battle between the privileges and enjoyments of youth, and the responsibilities of adulthood (1).

Today's adolescents are being exposed to a complex choice of lifestyle opportunities by the media as they are offered fewer unwavering environments compared to those in the previous era. Thus, the risk of their exposure to gateway drugs increases as the external influences such as peer pressure, academic stress, family affairs and inspirations from social media increase. This is also a period where a person wants to be accepted in a society and blend in (2). The Gateway Hypothesis is one of the most important contexts in the research of drug use and it theorize that addiction is learned or cultured in the brain on experimentation and using cigarettes, marijuana and alcohol during the period of adolescence may result in severe level usage or advancement to more detrimental drugs (3). Alcohol use at 17 years of age has projected higher levels of cannabis use when that very person reaches 22 years, which in turn was connected with large possibility of illicit drug dependence between 22 and 27 years (4).

Early onset on the experimentation of drugs has been explained and categorized in diverse ways in the literature of substance abuse and dependence. Tobacco, marijuana, any illegal drugs use in the period of adolescence was significantly associated with the use of illegal drugs in late adolescence as well as young adulthood as compared with non-users. The recreational use of marijuana in adolescence must be specifically discouraged at the earliest age (5). The internal tensions and social expectations lead to moments of uncertainty, self-doubts and frustration in the adolescent. It is at these conditions that the young person takes risks and includes in risk taking actions (6). A number of other studies [(7), (8), (9), (10)] have found the correlation between different substances. Alcohol use is found to be significant for use of marijuana where adolescents are less likely to use marijuana unless they have used alcohol first. Similarly, the use of marijuana is interrelated with the use of other drugs such like cocaine or heroin. Avoidance of numerous reasons for death among adolescents especially school going adolescents can be promoted by identifying the part that cigarette plays as a gateway for other drug use. This is one important responsibility of school authorities, teachers, parents, school social workers as well as health care professionals. Prevention of alcohol, tobacco, and other drug use is a vital health advancement strategy for adolescents. This can be evidenced by different studies [(11), (12), (13)] where increased rates of illicit drug use are associated to incidence of cigarette smoking by high school students,

and indirectly stated that cigarette smoking by adolescents can act as a 'gateway drug', use of which enlarged the possibility of using illegal drugs [(14), (15), (16)].

2. METHOD and MATERIALS:

An exploratory research design was adopted for the study and a multi stage cluster sampling technique was used for identification of respondents. In the first stage, secondary schools in Aizawl are divided into 2 (two) stratus. Government and Private Schools comprise Strata I and Strata II respectively. In the second stage, 8 (eight) classes are selected from each strata comprising of 2 (two) High schools and two higher secondary schools each, based on school enrolment. In the third stage, cluster size is randomly determined as 10 from each class resulting in a sample size of 160. Survey was conducted using pre-tested structured questionnaire. The tool was constructed based on Strengths and Difficulties Questionnaire (17) and Risk Behaviour index (18).

The questionnaire includes socio-demographic details, and focused on adolescents' exposure to gateway drugs and risk behaviours. Both male and female school going adolescents who are staying with their parents/caregivers and those who gave consent to participate in the study are the respondents for the study. Findings were processed through SPSS and analyzed using Cochran's Q and Pearson's Correlation.

3. RESULTS:

Majority of the respondents in the study were in the age group of 16-18 years of age, less than half (43.13%) are 13-15 years of age and very few (0.63%) are below 13 years. A little more than half (51.9%) of the respondents were female while the rest (48.1%) were male.

Table 1 shows the correlation between Gender and Gateway Drugs & Risk Behaviours. Data was analyzed using Cochran's Q, a non-parametric test used to determine if there are differences between three or more related groups on a dichotomous dependent variable. The test was found to be significant (df 9, asymptic sig level 0.000). The frequency of males and females indulging in gateway drugs and risk behaviours are found to be both statistically significantly different at 0.0005 p-value.

Table 1: Correlation between Gender and Gateway Drugs & Risk Behaviours (Cochran's Q)

Sl. No.	Gateway Drug & Risk Behaviour	Gender				Total N=160	
		Male n=77		Female n=83			
		F	%	F	%	F	%
1	Kuhva	60	78	70	84	130	81
2	Smoking	47	61	48	58	95	59
3	Shikhar	40	52	44	53	84	53
4	Alcohol	25	32	25	30	50	31
5	Mari	18	23	18	22	36	23
6	Pills	3	4	6	7	9	6
7	Sex	5	6	4	5	9	6
8	Others	5	6	4	5	9	6
9	Injecting	0	0	0	0	0	0
Cochran's Q		261.202**		299.669**		559.408**	

Source: Computed

Adolescence is a time of vulnerability to different influences when they initiate various behaviours such as substance use. The association of age, Class, Type of School and Risk Behaviours (Gateway Drugs and Sex) was analyzed using Pearson's correlation coefficient and presented in Table 2. Age, Class of respondent and type of school were correlated with gateway drugs such as Smoking, use of Gutkha Products and *kuhva*. The same was correlated with risk behaviours such as alcohol use, pills, marijuana, pre- marital sex and inhalants.

Table 2: Correlation of Age, Level of Education, Type of School and Risk Behaviours (Pearson's Correlation)

Variables	School			Gate Way Drugs			Risk Behaviour				
	Age	Class	Type of School	Smoking	Gutkha Products	Kuhva	Alcohol	Pills	Marijuana	Pre-marital Sex	Inhalants
Age	1	.730**	.307**	.196*	.264**	0.136	.260**	.160*	.206**	0.054	0.054
Class	.730**	1	.447**	.199*	.190*	.201*	.241**	0.133	.201*	0.085	0.061
Type of School	.307**	.447**	1	-0.115	-0.1	.160*	0.081	-0.136	0	-0.027	0.081
Smoking	.196*	.199*	-0.115	1	.207**	0.026	.475**	.202*	.446**	0.036	0.036
Gutkha Products	.264**	.190*	-0.1	.207**	1	.184*	.344**	0.124	.393**	-0.039	0.015
Kuhva	0.136	.201*	.160*	0.026	.184*	1	.324**	0.048	.259**	-0.091	-0.091
Alcohol	.260**	.241**	0.081	.475**	.344**	.324**	1	.245**	.702**	0.069	0.128
Pills	.160*	0.133	-0.136	.202*	0.124	0.048	.245**	1	.388**	.176*	.294**
Marijuana	.206**	.201*	0	.446**	.393**	.259**	.702**	.388**	1	0.063	0.128
Sex	0.054	0.085	-0.027	0.036	-0.039	-0.091	0.069	.176*	0.063	1	.294**
Inhalants	0.054	0.061	0.081	0.036	0.015	-0.091	0.128	.294**	0.128	.294**	1

*P<0.05   **P<0.01   Source: Computed
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Table 2 shows that age is highly significant to the use of gutkha products (p=.264**), alcohol (p=.260**), marijuana (p=.206**), smoking (p=.196*) and use of pills (p=.160*). Class is a significant factor for alcohol (p=.241**), *kuhva* (p= .201*), marijuana (p=.201*), smoking (p=.199*), and use of gutkha products (p=.190*). Smoking is found to be highly associated with alcohol (p= .475**), marijuana (p= .446**), use of gutkha products (p= .207**), and use of pills (p= .202* *). Gutkha use among adolescents is highly associated with smoking (p= .207**), alcohol (p=.344**), marijuana (p=.393**) and *kuhva* (p= .184*).

Eating *kuhva (*the local version of *paan* or dry betelnut and leaf with lime*)* is highly associated with use of alcohol (p=.324**), marijuana (p= .259**) and use of gutkha products (p=.184*). There is also a high degree of correlation between pre-marital sex and use of inhalants (p= .294**). Alcohol and marijuana have highest significance (p=.702**) for all other gateway drugs and risk behaviours among the respondents.

4. DISCUSSIONS:

Adolescents in the high and higher secondary stages are highly susceptible to gateway drugs and risk behaviours as it is a time of vulnerability to different influences when they initiate various behaviours (19). Statistical analyses on correlation reveal that age and class are found to be highly significant for alcohol use by respondents. Age is highly significant to the use of gutkha products, marijuana, smoking and use of pills. Higher the class, higher the risk behaviours such as smoking, use of gutkha products, *kuhva* and marijuana. Age of onset of substance use has been used as a determinant of future drug use and dependence in adulthood [(4), (12)]. The type of school was found to be significant for use of *kuhva* only. This correspond with the several findings [(20), (21)] where the prevalence rate of chewing betelnut (*kuhva*) among urban students was higher than rural areas.

While injecting drug use was not found among the respondents, use of gutkha products, alcohol and marijuana is very common across both genders. These findings are consistent with results from other studies [(22), (23), (24), (25), (26)].

The findings of this study suggest that the habit of smoking is found to be highly associated with use of gutkha products, alcohol, marijuana and use of pills as well. This provides the support for several studies [(12), (13), (27)] which finds a strong association between smoking and alcohol use.

Eating *kuhva* is highly associated with risk behaviours such as use of alcohol and marijuana and use of gutkha products as well. Other studies (28) states that teenagers in India chew gutkha habitually and are becoming more addicted, which is one of the reasons why the Central Committee of Food Safety of India wants to ban the manufacturing as well as marketing of these products. The current study finds that alcohol and marijuana have the highest significance with each other among all the other gateway drugs and risk behaviours of the respondents. Marijuana as the most common substance used after tobacco and alcohol has been found by several studies due to the easy availability, coupled with perceptions of low risk of harm [(29), (30), (27), (23), (31)].

While several studies found that age, sex, emotion, peer relationship, alcohol uses, love and affair as important factors for having premarital sex [(32), (33), (34)] this current study found that pre-marital sex as a risk behaviour among adolescents is highly significant to use of inhalants and use of pills. The use of pills further was found to be highly associated with use of alcohol, marijuana and inhalants, it was significant to smoking and pre-marital sex. This corroborates with the several studies [(35), (5), (36), (30)] where the use of pills was found to have association with alcohol, marijuana and other gateway drugs.

4. CONCLUSION:

The United Nations Office on Drug and Crime reports that lack of a good education and poor classroom management is attributed to lower levels of cognitive functioning, high levels of stress, poor social skills and perceptions of inadequacy and failure, which in turn increases the risk of substance use. Unqualified teachers or ineffective teaching practices and low-quality curricula present considerable additional risks leading to academic failure. The absence of sufficient support, targeted school programmes, learning disabilities and mental health issues further intricate the risk of substance use and abuse. Poor-quality education may also result in an inability to compete in the workforce and obtain good jobs which are factors associated with substance use in life (29). The study advocates the vital need for adequate targeted school programmes by school social workers and systematic awareness of drugs and risk behaviours and life skill education to be included in the school curriculum stressing on drug abuse and its long term effect as well as positive coping behaviours right from middle school level.

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