



# **Study on Marijuana Abuse among Male Nepalese College Students in Bangalore**

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### **Authors' contributions**

*This work was carried out in collaboration among all authors. Author SR designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors AP and PC managed the analyses of the study. Author AA managed the literature searches. All authors read and approved the final manuscript.*

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## **ABSTRACT**

Over the past few years, the topic of marijuana is featured in the media. Students have an ambiguous information on the medical benefits and the torment of marijuana use. Students under minimum supervision from their guardians are among high risk groups of its abuse. The abuse of marijuana among students is associated with the cognitive impairment, adverse academic performance and the low-level satisfaction of life.

**Aims:** To find out the prevalence of marijuana abuse among college students staying away from their parents.

**Place and Duration of Study:** Sample: 10 colleges from 5 wards of BBMP between February 2014 to February 2015.

**Methods:** This was a descriptive cross-sectional survey (n=250). Qualitative (interview) and quantitative (structured questionnaire) were used to collect the data about the current use of marijuana, smoking habit, perceived effect and source of supply among Nepalese students studying in Bangalore. The Current user is defined according to the CDC guideline (An adult who has smoked 100 times in his lifetime and who currently smokes marijuana).

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**Findings:** The current prevalence of marijuana abuse among male Nepalese students in Bangalore is 36%. At least one-time usage of marijuana is 51%. Among current users, 38% are using marijuana daily. Similarly, 37% of the participants reported that local friends are the source of supply for them and 32% reported that they get marijuana from college friends. Among current users, about 58% of the users said that they don't want to quit using marijuana.

**Conclusion:** It is evident from the study that marijuana use is widespread amongst Nepalese students in Bangalore. The parents whose children are away from home town should maintain a very close relationship with them, their academic supervisors, and their friends. A significant number of current users (41%) wish to quit the addiction of marijuana use, this demand an immediate need for the mental health counselor in the colleges in Bangalore.

*Keywords: Marijuana addiction; Nepalese students; addiction of student; student away from parents.*

## 1. INTRODUCTION

Marijuana is having a long historical recognition in India and Nepal [1]. Marijuana produces euphoria and helps people to overcome fatigue [2]. People use marijuana to overcome stress and as a recreation among friends. In recent years, marijuana uses has increased all over the world [3]. International news and communication media have featured debates, discussions, and articles on medical marijuana. At the same time, the hazards of marijuana have been pointed out and debated by many persons [3].

Marijuana also known as cannabis is a psychoactive agent, primarily used to produce euphoria [2,4]. Cannabis is classed with hard drugs by the Single Convention on Narcotic Drugs 1961 [5]. This drug is illegal in India and Nepal, [6] yet students are on easy street to abuse it. Marijuana have different names and codes in different cohorts. Cannabis, Po, Ganja, pot, grass, reefer, weed, herb, or Mary Jane are few examples [7]. most individuals smoke marijuana in hand-rolled cigarettes called joints while others may use pipes or water pipes called bongos. Marijuana is also used in brewed tea and is often mixed into the foods [8]. The effect of the plant depends on the quality and potency. It is stated that the effect of the drug may produce relaxation after the euphoria, loss of coordination, impaired memory, concentration, knowledge retention, and loss of appetite [9].

College is a transitional period for students where they begin to develop a sense of self [10]. This process usually involves analyzing values that may contradict the current relationships and the academic success [11]. Without functional coping skills, many college students use drugs to self-medicate and relieve feelings of failure, hopelessness and inadequacy [12]. In addition, lax supervision from parents provides a foundation for the development of aggressive,

antisocial behavior and make a student vulnerable to substance abuse [13,14].

One study in a medical college in Nepal shows that 66% participants use marijuana whereas 55% use tobacco-based products [15]. peer norms provide a subgroup to engage in and to access marijuana for adolescents. For the students studying away from their parents, parental surveillance is at an all-time low and young adults experiment with high-risk behaviors [16]. Bangalore is 2,347 Km away from the capital city Nepal. The distance keeps the Nepalese student in Bangalore under minimum Supervision from their parents. All these reasons amalgamate to make these students vulnerable to abuse Marijuana.

## 2. METHODS

In 2015, a cross-sectional survey of undergraduate Nepalese students selected from the 10 colleges in Bangalore was carried out. The list of 25 colleges was prepared where there were predominant of Nepali students. The list was categorized into 5 divisions according to the 5 wards of the Bangalore city corporation. From each division, 2 colleges were selected randomly. A total of 10 colleges were selected randomly from 5 wards of Bangalore city corporation.

From each selected college, 25 students from different faculty studying Pharmacy, management, allied health science, and engineering were selected randomly.

**Inclusion criteria:** Nepali male students who were staying in Bangalore for at least 6 months and admitted in the university courses.

**Exclusion criteria:** College dropouts, Students who are in Vacation, absentees at the time of data collection and students staying with their parents in the city.

The sample size of the study is 250 students. The sample size was calculated using the standard formula for a finite population with 25% proportion population and 95% confidence interval. Questionnaire and interview methods were adopted for data collection in two rounds. In first round, the questionnaire was distributed to the random 25 students in each college gathered in a class. In second round, only the marijuana users were interviewed, and the habit of addiction was tested based on the Diagnostic and Statistical Manual of Mental Disorders (DSM) criteria. The data were collected in the absence of the professor to increase validity. The descriptive and analytical calculation was done on sources of marijuana use, the percentage of marijuana abusers and the association of marijuana use. The definition of term Current user is defined according to the CDC guideline (An adult who has smoked 100 times in his lifetime and who currently smokes marijuana).

### 3. RESULTS

The section presents the analysis and interpretation of the data collected from 250 Nepalese college students to assess the prevalence of marijuana use. The study was conducted in Bangalore (i.e. 10 colleges), where 250 students were interviewed.

It was found that majority of the participants, about 61% were between the age group of 21-24 years, 25% were in the age group of 25-29 years and rest were 20 years and below. Majority of the participants, about 93% were Hindus. Family size of most of the participants was 4 and 5 members constituting of 47% and 22% respectively. Majority of the participants didn't know about their total family income per year whereas, about 20% reported that their family income per year was NRs. 200001 – 400000 (Table 1).

About 70% of the participants were current users in college located in Bangalore West, 40% in the college located at the Central Bangalore. Chi-square test is 37.3 which shows there is not statistically significant of current users with the location (Table 2).

The P-Value is < .00001. The result is significant at  $p < .05$ .

The prevalence of Marijuana use was highest with the management faculty (56%), followed by 41% in allied health. Statistically there was a significant difference in the use of marijuana use

among different courses of the students. The P-Value is < .00001. The result is significant at  $p < .05$  (Table 3).

**Table 1. Socio demographic characteristics of participants (n=250)**

Age in years	Frequency	Percent
Below 20	35	14
20-24	152	60.8
25-29	63	25.2
Religion	Frequency	Percent
Hindu	234	93.6
Buddhist	8	3.2
Muslim	5	2
Christian	3	1.2
Family Size in number	Frequency	Percent
2	1	4
3	8	3.2
4	118	47.2
5	56	22.4
6	40	16
The total Family income per year in NRs	Frequency	Percent
Below 2 lakhs	46	18.4
2 lakhs -4 lakhs	51	20.4
4 lakhs- 6 lakhs	40	16.0
6 lakhs- 8 lakhs	20	8.0
8 lakhs-10 lakhs	10	4
Above 10 lakhs	15	6
Don't know	68	27.2

About 36% said that they are using marijuana currently. About 51% of the participants said that they have tried marijuana. The Majority of about 85% were aware that the use of marijuana is prohibited. About 58% of the users said that they don't want to quit using marijuana, 34% said that they wanted to quit whereas 8% reported that they want to quit later (Table 4).

About 38% of the current users said that they use marijuana daily while 31% said that they use it a few times a week and month. It was seen that most of the marijuana users smoked marijuana from cigarette pipes (78.9%), 51.1% from water pot, 38.9% from rolling paper, 8.9% from others like *hukka* or chillum and 3.3% smoked marijuana from all the above ways. Thirty-seven percent of the participants reported that they get marijuana from their local friends, 32% reported that they get from college friends and 14% get from the peddlers (Table 4).

A significantly higher percentage of ever use of marijuana are there in the age group of 21-24

years, i.e 53.3%. 50.8% were in the age group of 25-29 years and 42.9% in the age group of below 20 years. The prevalence of ever use of marijuana was not statistically significant with age. The P-Value is .764525. The result is not significant at  $p < .05$  (Table 5).

About 58% of the users said that they don't want to quit using marijuana, 34% said that they

wanted to quit whereas 8% reported that they want to quit later (Table 6).

39% of marijuana users reported that marijuana usage causes weight loss, 26% reported cough, 23% reported it causes loss of memory. Others few reported Asthma, change in blood pressure (Table 7).

**Table 2. Distribution of current use of marijuana according to the location of the college**

Location of college	Current usage status (n=250)		Chi Square	p-value
	Yes n(%)	No n(%)		
Bangalore north	15(30)	35 (70)	37.3	< .00001
Bangalore west	35(70)	15(30)		
Bangalore east	10(20)	40(80)		
Bangalore south	10(20)	40(80)		
Bangalore central	20(40)	30(60)		
Total	90(36)	160(64)		

**Table 3. Distribution of current users according to courses**

Course of Study	Current usage status (n=250)		Chi Square	p-value
	Yes n(%)	No n(%)		
Pharmacy	12(13.5)	77(86.5)	35.3	< .00001
Management	50(55.6)	40(44.4)		
Allied health	15(41.7)	21(58.3)		
Engineering	12(38.7)	19(61.3)		
Others	1(25)	3(75)		
Total	90(36)	160(64)		

**Table 4. Prevalence of current use of marijuana (n=250)**

Prevalence	Frequency	Percent
Current use	90	36.0
Ever use	128	51.2
Awareness of prohibition	109	85.2
Desire to quit	31	34.4
<b>Frequency of Marijuana consumption among users</b>		
Daily	34	37.8
Few times a week	28	31.1
Few times a month	28	31.1
<b>Ways of smoking marijuana</b>		
Odet Cascadet Bolloré (Ocb paper)	35	38.9
Water pot	46	51.1
Cigarette stick/pipes	71	78.9
Others (chillum, hukka)	8	8.9
All of the above	3	3.3
<b>Source of taking marijuana</b>		
College friends	29	32.2
Local friends	33	36.7
Foreign peddler	13	14.4
I with my friend go out of city	7	7.8
No answer	8	8.9

**Table 5. Prevalence of ever use of marijuana according to age (n=250)**

Age group in years	Ever tried marijuana			Chi Square	p-value
	Yes n (%)	No n (%)	Total n (%)		
Below 20	15(42.9)	20(51.1)	35(100)	0.537	.764
21- 24	81(53.3)	71(46.7)	152(100)		
25-29	32(50.8)	31(49.2)	63(100)		

**Table 6. Desire to quit marijuana**

Desire to quit (n=90)	Frequency	Percent
Yes	31	34.4
No	52	57.8
Later	7	7.8

**Table 7. Perceived effects of marijuana among marijuana users (n=250)**

Perceived marijuana effects	Frequency	Percent
Weight loss	35	38.9
Change in blood pressure	8	8.9
Loss of memory	21	23.3
Asthma /Bronchitis	4	4.4
Cough	23	25.6

#### 4. DISCUSSION

Some adolescents choose risky behavior for fun at the expense of their own health risk. Drug is a dangerous activity for students. The addiction of drug inundates the intelligence of the person. Students away from their home have the freedom to decide their lifestyles independently.

The objective of this study was to find the depth of marijuana addiction by estimating the prevalence of marijuana abuse among Nepalese students in Bangalore.

This study found that the prevalence of current cannabis users among Male Nepalese students in Bangalore was 36% and ever used marijuana was about 51%. One study in the medical college of Nepal on substance use shows that, the total of 78 (35%) students used cannabis [15]. Result synchronized with the context of Nepal. In both studies, students were away from their parents. The study among healthcare students [17] shows moderately less marijuana abuse whereas high substance abuse among medical students studying in their own hometown. Although, Nepalese students in the both places, have a similar prevalence of marijuana abuse, the case is serious for the student who are away from the home, in terms of

the frequency of marijuana abuse. Some of the students in the interview reported using 10 plus dosage in a single day. Increased occupancy of students in rehabilitation care of Bangalore and Nepal suggests the increasing use of substance use among students. In one study the prevalence of substance use in India among medical students is 20 percent [18]. This data includes both males and females so it cannot be compared, but we can infer that the problem is serious among Nepalese students' community.

Most of the students were from Hindu religion. Among Hindus, 50% have used Marijuana once in a lifetime. In the interviews, students reported that they are free to use marijuana from society during Shivaratri-Hindu festival. some of them reported using marijuana only during the festival with their families.

37% students reported to purchase marijuana from local friends and 32% purchase it from their college friends. The role of local friends seems crucial to abridge the addict students and the suppliers. In an interview, A student cited "peddler gives *Puria* only to the recognized face". 42% students told that they had less than 5 options and more than 2 options to purchase marijuana, 38% told to have more than 5 options to purchase marijuana. The herb being illegal yet common in the city is skeptical. Moreover, most users were dubious about the authenticity of the packet. Few studies suggest the 8-14% of the student use fake cannabis [19]. This increases the risk of the unknown effects of the chemical to students. The legalization of marijuana could prevent people from consuming unknown chemicals.

The study shows the association of marijuana use with the age of the students, the area of the student and the enrolled courses of the students. These evidence shows, the students in the company of marijuana users, are at high risk of marijuana abuse.

Among user students, most of them were addicted to its use, the daily users of marijuana were 38%. Marijuana use is easily escapable from anybody as it does not produce distinct symptoms as compared to other drugs and

alcohol, so daily use is high among its addicts. some students even reported that they can do work responsibly after marijuana use. The study by the National Institute of Drug has shown the negative effects of marijuana on attention, memory, and learning This effect can last for days or weeks after the acute effects of the drug wear off. Consequently, someone who smokes marijuana daily may be functioning at a reduced intellectual level [20].

50% users reported that marijuana is harmful. The results of research on psychoactive substances in two last classes of high school pupils in Nowy Sacz showed that, 89% perceive marijuana abuse as an existing problem, whereas 36% as a very serious one [21]. There is a difference of perception among students towards marijuana. The recent trending discussions on the benefits of medical marijuana are expected to reduce the number of students who perceive marijuana as a harmful substance. There is a need for longitudinal research to show the direct association of Marijuana and its lucid outcomes.

42% of ever tried marijuana users told that they first tried it for curiosity. A study of fake pot use was conducted among 300 college students of Ohio. It was reported that of those who had tried THC, 19.2 percent reported curiosity as the top reason for trying the substance [19]. The curiosity of the drug could be higher in the place where it has religious and social significance. The proverb curiosity kills the cat exactly fits on the issue of drug and its abuse. Mostly unaware of its ill effects, young students take drugs merely out of curiosity. The problem starts with the habituation and results in the addiction, at last, embarking an individual toward serious consequences.

## 5. CONCLUSION

It is evident from the study that marijuana use is widespread amongst students in Bangalore. Only half of the users reported it as harmful, whereas 10% were in dilemma. Thus, there is a need for the longitudinal study to show its effects on adolescents. A significant number of current users (41%) wish to quit the use of marijuana habit, shows the need for mental health counselor in the colleges to help them. In addition, Parents should be sensitive and responsive to the emotional need of their adolescent children, whereas the adolescent students should realize their obligation to sustain the right choices for a healthy living.

## CONSENT

All authors declare that 'written informed consent was obtained from the respondent for publication of this case report. A copy of the written consent is available for review by the Editorial office/Chief Editor/Editorial Board members of this journal.

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## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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