

# Marijuana use experiences and expectancies of urban youth in India

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## ABSTRACT

**Objective:** To gain information on the marijuana experiences and expectancies of youth in an urban Indian area, which may be used for forming the framework for the development of effective primary prevention strategies in the future. **Method:** This was a cross-sectional study conducted in various colleges of Mumbai; 260 students from three colleges who were above 18 years were selected by systematic random sampling. The participant had to fill a sociodemographic questionnaire and marijuana effect expectancy questionnaire (MEEQ-B) and it was analyzed by using the SPSS software. **Results:** A significant association was found between negative marijuana expectancies and type of family, with cannabis users and non-users, who want to try cannabis and those who are aware of the legal issues and harmful effects of cannabis. **Conclusion:** Preventive drug education should begin in early adolescence and should deter or delay drug use through changes in knowledge, attitude, behavior, and expectation. Adolescent drug education must meet the needs of those naive to drugs as well as those experiencing initial drug exposure. This is the first study which highlights the youth experiences and expectancies about marijuana in India.

**Keywords:** Expectancies, experiences, Marijuana, youth

## Introduction

Marijuana is one of the most used illicit psychoactive substances in India and the world.<sup>[1]</sup> The current trends indicate rising prevalence rates of marijuana use and marijuana-related hospitalizations, especially in young adults.<sup>[2]</sup> The increase in the use is further substantiated by the legalization of marijuana use in many countries.<sup>[3]</sup>

It becomes quintessential to devise preventive strategies among the youth as they form the majority of the population in the

Indian subcontinent and Southeast Asian countries. Unless tackled, marijuana use will engulf the youth, both the poor and the rich, the urban and the rural, men and women from all classes of the society. The preventive strategies begin with exploring the experiences and expectancies of people consuming a particular substance.<sup>[4]</sup> These expectancies and experiences can be used in developing the primary prevention strategies, which may be effective in reducing substance use behavior. A framework for the prevention of cannabis use should strategically involve the primary health care workers and family physicians who can be involved in assessing the high-risk behavior for substance use, dependence, and early signs of relapse. Family physicians can help cannabis users to stay in remission by acting as the most powerful motivators as they are well known to the family members.<sup>[5]</sup>

This study was designed as the first step to gain information on the marijuana use experiences and expectancies of the youth in an

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Received: 01-09-2021

Revised: 11-12-2021

Accepted: 16-12-2021

Published: 16-02-2022

### Access this article online

#### Quick Response Code:



Website:  
www.jfmpc.com

DOI:  
10.4103/jfmpc.jfmpc\_1752\_21

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**How to cite this article:** Ali E, Sachdeva A, Gupta S, Kumar M, Singh JM, Kardam L. Marijuana use experiences and expectancies of urban youth in India. J Family Med Prim Care 2022;11:685-90.

urban Indian area. A previous study followed a similar approach for alcohol use expectancy research which was successful in forming the framework for a promising primary prevention program focusing on children's alcohol use.<sup>6]</sup> To our knowledge, very few similar studies have been conducted focusing on primary prevention strategies derived from expectancies related to substance use problems in the youth across the world. We could not find any Indian study for marijuana use experiences and expectancies despite the magnitude of the problem. Hence, we sought to evaluate the experiences and expectancies of marijuana use and the factors associated with these expectancies among the youth in India.

## Methodology

The present study was conducted among college students aged 18 years and above across the city of Mumbai, India. The students from National College (Bandra), Akbar Peerbhoy College (Md Ali Road), KDA Nursing College (Andheri) were considered for recruitment for the study. The ethics committee and scientific committee approval were taken before the study.

The study was a cross-sectional study where all the college students above 18 years were considered for enrolment. Systematic random sampling was done where every third consenting individual was selected. Both male and female students from 18 to 35 years, consenting for inclusion were selected. They were informed of the research objectives and assured of confidentiality. Initially, around 900 participants were approached for participation in the study, out of which 120 did not consent for inclusion citing reasons such as lack of interest in the subject and shortage of time. Out of the 780 consenting students, 260 students were included for participation in the study as per systematic random sampling.

The participants filled up a sociodemographic questionnaire and marijuana use information sheet. Experiences and expectancies of marijuana use among the participants were assessed by Marijuana Effect Expectancy Questionnaire-Brief (MEEQ-B). MEEQB comprises six questions describing the effects of marijuana on the respondents. The respondents are asked to rate their experiences on a five-point Likert scale to indicate agreement or disagreement irrespective of whether they have tried marijuana or not.<sup>[7,8]</sup>

MEEQB has two components—Component 1 is MEEQ-Bp (positive scale) which has three items (items 2, 3, 4) and Component 2 is MEEQ-Bn (negative scale) which has three items (items 1, 5, 6). MEEQ-Bn scores are significantly associated with less reported marijuana use and greater motivation for reducing marijuana use. MEEQ-Bp generally does not correlate significantly with marijuana consumption; however, it does correlate negatively with the motivation to reduce the use.<sup>[7,8]</sup>

The data were entered and analyzed by using SPSS software version 14. Quantitative data have been presented with the help

of the mean values, while an unpaired t-test was used to compare the variables and find an association. A *P* value less than 0.05 was taken as statistically significant.

## Result

The study included 260 consenting participants out of which there was almost equal representation of the male and female students. The mean age of the participants was found to be 20.35 years. Over 98% of the participants were unmarried and unemployed [Table 1].

Table 2 highlights various responses of the participants for the questions on the MEEQB scale. We found that an almost equal number of participants agreed and disagreed with the statement that marijuana causes cognitive and behavioral impairment (question 1). Around 37% of the participants expect marijuana to ease tension/help in relaxation, however, around half of the participants disagree with the same. Around half (50%) of the participants disagree that marijuana enhances social and sexual behavior (question 3). Similarly, around 50% disagree that marijuana results in creative and perceptual enhancement (question 4). More than half (56.6%) of the participants agree to the fact that marijuana use causes global negative effects, that is, has a bad effect on the person (question 5) and causes physical/psychological dependence (question 6).

**Table 1: Sociodemographic parameters of the participants**

Parameter (n=260)	Frequency (n)	Percentage
Age (Mean age: 20.35 years)		
<21 year	161	61.9
>21 year	99	38.1
Sex		
Male	122	46.9
Female	138	53.1
Residence		
Rural	28	10.8
Urban	232	89.2
Religion		
Hindu	103	39.6
Muslim	143	55
Others	14	5.4
Total	260	100
Occupation		
Unemployed	257	98.8
Employed	3	1.2
Total	260	100
Marital status		
Married	4	1.54
Single	256	98.46
Family		
Joint	121	46.5
Nuclear	139	53.5
Socioeconomic status		
>10,000	219	84.2
<10,000	41	15.8

Table 3 describes the average values of MEEQ-Bp and MEEQ-Bn, along with their correlation with various sociodemographic parameters and parameters related to cannabis use. We found that the mean MEEQ-Bn value was 3.1 (intermediate value) and the mean MEEQ-Bp value was 2.612, which suggests the ambivalent attitude of the youth toward marijuana.

A significant correlation was found between MEEQ-Bn and the type of family. The study did not find any significant correlation between the MEEQ-Bp scores and any sociodemographic parameter. A greater motivation to reduce marijuana (higher

MEEQ-Bn value) was found among those who have tried marijuana, who were aware of its harmful effects, and legal issues. The higher MEEQ-Bn scores also correlated positively with the lesser intent of using marijuana in the future [Table 3].

### Discussion

The present study was conducted among college students of an urban area in India to assess marijuana-related experiences and expectancies, which may further assist us in developing interventions for attitude and behavior change in users as well as non-users.

**Table 2: Responses of the participants for questions in the MEEQB Scale (n=260)**

Questions	Strongly disagree	Somewhat disagree	Somewhat uncertain	Agree	Strongly agree
Scores	1	2	3	4	5
Marijuana makes it harder to think and do things (harder to concentrate or understand; slows people down when they move)	32.3%	13.1%	11.9%	24.6%	18.1%
Marijuana helps a person relax and feel less tense (helps a person unwind and feel calm)	32.3%	12.3%	17.7%	24.6%	13.1%
Marijuana helps people get along better with others and it can help a person feel more sexual (talk more; feel more romantic).	32.3%	17.7%	28.1%	15.8%	6.2%
Marijuana makes people feel more creative and perceive things differently (music sounds different; things seem more interesting).	31.9%	17.7%	19.2%	16.5%	14.6%
Marijuana generally has bad effects on a person (people become angry or careless; after feeling high, a person feels down)	23.8%	7.7%	11.9%	25.4%	31.2%
Marijuana has effects on a person's body and gives people cravings (get the munchies/hungry; have a dry mouth; hard to stop laughing)	25.0%	11.9%	11.2%	24.6%	27.3%

**Table 3: MEEQ-Bp and MEEQ-Bn correlation with sociodemographic parameters and parameters related to cannabis use**

Parameter	MEEQ-Bp score	P (MEEQ-Bp)	MEEQ-Bn Score	P (MEEQ-Bn)
Total	2.612	-	3.109	-
	STD - 1.16		STD - 1.2	
Age				
<21 (161)	2.627	0.798	3.124	0.805
>21 (99)	2.589		3.084	
Sex				
Male (122)	2.592	0.796	3.120	0.895
Female (138)	2.6304		3.099	
Socioeconomic status				
<10000 (41)	2.406	0.217	2.861	0.175
>10000 (219)	2.651		3.155	
Family				
Nuclear (139)	2.705	0.171	3.271	0.002*
Joint (121)	2.506		3.716	
Have you ever tried cannabis?				
Yes (29)	2.827	0.292	3.574	0.036*
No (231)	2.585		3.050	
Will you try cannabis in the future?				
Yes (46)	2.608	0.979	2.615	0.004*
No (214)	2.613		3.215	
Are you aware of legal issues related to cannabis?				
Yes (55)	2.769	0.261	3.424	0.038*
No (205)	2.570		3.024	
Are you aware of the harmful effects of cannabis?				
Yes (37)	3.027	0.019*	3.428	0.036*
No (223)	2.544		3.059	

STD - Standard deviation. \*Significant at P<0.05

We found that the participants were greatly ambivalent about the harms caused by marijuana use. Almost half of the participants disagreed with the statement that marijuana causes cognitive and behavioral impairment. Marijuana use has been associated with disturbances in working memory, attention, and learning.<sup>[9]</sup> Around 37% of the participants expect marijuana to help in relaxation, while half (56.6%) of the participants agree that marijuana use causes global negative effects including anger/irritability and physical/psychological dependence. An Australian study found that people consume cannabis predominantly for relaxation and to feel good.<sup>[10]</sup> The most common negative effects reported in this study were feelings of anxiety, paranoia, depression, and lack of motivation.<sup>[10]</sup> It is known that a small amount of cannabis eases stress, however, larger doses cause anxiety, mood symptoms, and lead to dependence.<sup>[11]</sup> This suggests significant ignorance among the youth regarding the effects of marijuana on health, which prompts the use of extensive and elaborate awareness/educative programs.

We observed that a significant number of participants were misinformed regarding the beneficial effects of marijuana. Around one-third of the participants believed that cannabis helps in increasing creativity, socialization, and sexual desires. The World Health Organization's annual report on drugs in 2007 states that marijuana abuse among the students can be linked to reasons like peer acceptance, wanting to appear mature or "cool," experimentation, social pressures, and following societal role models.<sup>[12]</sup> Y.H. Affinih stated that the youth are attracted to cannabis because they erroneously believe that cannabis enhanced their learning capacity.<sup>[13]</sup>

We found that the mean MEEQ-Bn value was 3.1 (intermediate value) which suggests the ambivalent attitude of the youth toward marijuana use. Higher negative expectancies relate to less reported marijuana use and greater motivation to reduce marijuana.<sup>[14]</sup> The MEEQ-Bp mean value was 2.612 which is an intermediate value, however, the MEEQ-Bp scores do not significantly correlate with marijuana use. This ambivalent attitude may be attributed to poor knowledge about the benefits and harmful effects of cannabis, lack of awareness programs, peer pressure, promotion of substance use by social media, and poor coping strategies.

We tried to evaluate the factors associated with greater motivation for reducing/refraining from marijuana use. Strong family support (joint family) was associated with higher MEEQ-Bn values and greater motivation for refraining from marijuana use. It is well-established that family members are better supported in a joint family than a nuclear family. Young people often use the substance as a way to cope with interpersonal family stressors.<sup>[15]</sup> Inconsistencies in the attitudes of the family members toward young people, extreme rigidity or extreme comfort, failure to provide proper supervision, and monitoring are important risk factors for drug use.<sup>[16,17]</sup>

We did not find any significant correlation between the MEEQ-Bn values and age, sex, and socioeconomic status. This

agrees with many other studies.<sup>[8,18]</sup> However, a study from the USA suggested that the women feared the negative effects of cannabis like cognitive impairment and negative behavioral effects more than the men.<sup>[19]</sup>

Greater motivation to reduce marijuana was found among those who have actually tried marijuana in the past and who were aware of the harmful effects and legal issues related to cannabis. Calabria *et al.*<sup>[20]</sup> reported that the rates of remission among dependent cannabis users (almost all of whom were self-quitters) were greater than for those with other drug dependencies. In contrast, Galen *et al.*<sup>[21]</sup> reported that the non-users of cannabis present with higher negative expectancies than the users. Further studies are needed to establish this association. In the current study, higher MEEQ-Bn scores positively correlated with lesser intent of using marijuana in the future which is similar to the study done by Schafer *et al.*<sup>[22]</sup> This emphasizes the need to educate our youth regarding the harmful effects and legal issues related to marijuana use.

Expectations and experiences regarding the use of a specific drug can help us identify specific areas required for intervention. The expectancy theory shows that individuals develop beliefs or expectations about a drug's effects over the life course. The individuals can even have multiple combinations of expectations for drug use. Some may be positive, which motivates the individuals to initiate and maintain drug use based on the desire to attain positive outcomes. Negative expectations for use, on the other hand, are posited to inhibit use initiation and continuation of drug use behaviors.<sup>[23]</sup>

Adolescent drug education must meet the needs of those naive to drugs as well as those experiencing the initial drug exposure.<sup>[24]</sup> Screening of high-risk individuals can be done at school, colleges, or workplaces by primary care physicians which can help to identify, prevent, and treat the increased cannabis use.<sup>[25]</sup> Family physicians can address queries and offer preventive interventions to youth through various talks. They can identify problematic and high-risk users through various interview tools.<sup>[26]</sup> Adequate funding for workforce development, healthcare infrastructure, and quality improvement is required to improve the health outcomes and life quality of high-risk individuals and problematic users.<sup>[27]</sup>

Although we tried to assess for marijuana use expectancies among the youth and its associated factors, the study had certain limitations. Relatively small sample size, restricted area, and profile of sample population (urban, literate youth from college between 18 and 25 years) were the main limitations. As with most drug-use-related studies, there might be underreporting of responses to various questions. The cross-sectional nature of the study does not allow us to assess the change in attitude over time. Only the respondents who understood English were selected. Further studies should focus on the change in expectancies regarding drug use over a period among the youth from the general population.

## Conclusion

Preventive drug education should begin in early adolescence and aim to deter or delay drug use through changes in knowledge, attitude, behavior, and expectations. Adolescent drug education must meet the needs of those naive to drugs as well as those experiencing the initial drug exposure. We found that participants were greatly ambivalent about the harms caused by marijuana use. The participants had permissive views about cannabis use and considered it to be relaxing and helping in reducing stress and anxiety. This suggests significant ignorance among the youth regarding the effects of marijuana on health, which prompts the use of extensive and elaborate awareness/educative programs and preventive programs.

## Declaration of patient consent

Informed consent was obtained from all individual participants included in the study.

## Ethics approval statement

The study has been approved by Institutional Ethical Committee. The study have been performed in accordance with ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

## Financial support and sponsorship

Nil.

## Conflicts of interest

There are no conflicts of interest.

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