

# An Overview: Prevalence of Cannabis Abuse in India

Susrut Dube<sup>1</sup>, Neha Dhingra<sup>2</sup>

## ABSTRACT

**Introduction:** Substance abuse refers to the harmful or hazardous use of psychoactive substances. It is one of the top problems confronting the world today especially among the youth. Abuse of Cannabis is also a big problem faced by India. In India, Cannabis is used as Bhang which is legal in many states and as Charas and Ganja which are illegal as per the International drug conventions as well as the Indian law (NDPS Act, 1985). Cannabis users are at high risk of developing cannabis use disorder which is a problematic pattern of cannabis use leading to clinically significant impairment or distress.

**Material and Methods:** This systematic review was conducted according to the guidelines. The systematic search of electronic databases PubMed and Google Scholar were searched from 15 September to 15 November 2019. In total 25 articles were found meeting the search title, further hospital and de-addiction center based studies were not taken under consideration. After applying the inclusion and exclusion criteria total 5 studies were selected for the systematic review.

**Results:** The pooled prevalence of overall substance use and Cannabis use among the study population of included studies came out to be 35.77% and 6.76% respectively. The participants were from less than 10 years to greater than to 65 years in their age groups.

**Conclusion:** India has a huge “at risk” population vulnerable to cannabis abuse. Various surveys conducted from time to time regarding cannabis use among population can provide useful information about the extent and pattern of cannabis use.

**Keywords:** Prevalence of Cannabis

## INTRODUCTION

Cannabis, also known as Marijuana has a long history of human use. The common terms for preparation include Charas (resin) Ganja (flower) and Bhang (seeds and leaves). In Sanskrit the plant is called Vijaya and in Hindi known as Bhang. Bhang has been used in food and drink as early as 1000 BC in India.<sup>1</sup> Sushruta Samhita mentioned bhang, a medicinal plant and recommends it for treating catarrh, phlegm and diarrhea.<sup>2</sup>

The earliest users in the history of Cannabis were the Indians. It also grows naturally in Persia, Southern Siberia, and China.<sup>3</sup> Since its discovery it has been used by millions of people for both inducing pleasure and for pain alleviation. It can be said that Cannabis is associated with many cultural, behavioral and psychological variables. Marijuana has a long history of legislation for and against its use.

However, despite of its benefits cannabis remain as a substance abuse problem worldwide. Gateway hypothesis

which was developed by Kandel explained that the sequence of drug use occurring starts with legal drug and proceeds to illegal drugs.<sup>4</sup>

Substance abuse refers to the harmful or hazardous use of psychoactive substances. It is one of the top problems confronting the world today especially among the youth. Incidences of drug abuse and related anti-social behavior have tremendously increased. Cannabis is a psychoactive drug that alters perception. There has also been harmful use and dependence among the users of cannabis. It contains tetrahydrocannabinol (THC), which is the chemical component causing the effects. Charas and ganja are mostly smoked, while bhang in India is always taken by mouth either in the form of beverage or a confection. The effects include: Feeling of happiness, mild hallucinations, increased appetite, and reduced anxiety.

It is estimated that 275 million people used illicit drugs such as cannabis, amphetamines, opioids and cocaine in 2016 which translates into an annual prevalence of 5.6%. Cannabis is most used with 192 million users worldwide.<sup>5</sup> Globally 2% cause-specific disability-adjusted life years (DALY'S) for young people are attributed to illicit drug including cannabis.<sup>6</sup> There are estimated 31 million users of Cannabis in India.<sup>5</sup> According to National Drug Dependence Treatment Center, AIIMS, New Delhi, the prevalence of current cannabis use among total population (10-75 years), all males, all females, children's (10-17 years), adults (>18 years) is 2.8%, 5.0%, 0.6%, 0.9% and 3.3% respectively. Overall, 0.25% Indians use cannabis in a dependent pattern.<sup>5</sup>

In India, Cannabis is used as Bhang which is legal in many states and as Charas and Ganja which are illegal as per the International drug conventions as well as the Indian law (NDPS Act, 1985). Among states Sikkim (7.3%) has highest usage rate and lowest is seen in Puducherry (0.0%).<sup>5</sup> These days most drug users are young adults and adolescents.<sup>6</sup>

Recently, India was considered as a country for transit of the drugs from Golden Triangle and Golden Crescent. As the Golden Crescent has a much longer history of opium production than Southeast Asia's Golden Triangle.<sup>6</sup>

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Today, there is no part of the world that is free from the curse of drug trafficking and drug addiction. This causes a vast loss of productivity in the country as well as detrimental impact on the society. It is also responsible for increase in the crime rate. Individuals with addiction resort to crime to pay for their drugs. Cannabis belongs to recreational drugs, majority of individuals start taking it as experiment drugs. It is also common to use it in order to cope with peer pressure, stressful jobs, and rejections in life as well as easy availability.<sup>7</sup>

Cannabis users are at high risk of developing cannabis use disorder which is a problematic pattern of cannabis use leading to clinically significant impairment or distress. It also affects brain development and removes inhibition and impair judgment engaging one to commit offenses.<sup>7</sup> The incidence of eve-teasing, group clashes, assault, and impulsive murders increases with abuse rate. When people begin using cannabis as teenagers, the drug impairs thinking, memory, and learning functions. A study from New Zealand conducted at Duke University showed that people who started smoking marijuana heavily in their teens and had an ongoing marijuana use disorder lost an average of 8 IQ points between ages 13 and 38. The lost mental ability did not return in those who quit marijuana as adults.<sup>8</sup>

The impact of substance dependence is devastating irrespective of age, race, gender but the prevalence of substance abuse varies across age and gender groups. A significantly higher proportion of substance users is usually associated with predisposing factors such as parental abuse status, working status, illiteracy/school-drop out etc.<sup>9</sup> In this context, the present study was taken up to find the prevalence of cannabis abuse in India.

## MATERIAL AND METHODS

This systematic review was conducted according to the guidelines. The systematic search of electronic databases PubMed and Google Scholar were searched from 15 September to 15 November 2019. The search strategy included the different combinations of headings and terms like "Prevalence of Cannabis use in India", "Prevalence of Cannabis abuse in different states of India", and "Prevalence of substance abuse in India". All searched articles were the full text articles only.

In total 25 articles were found meeting the

search title, further hospital and de-addiction center based studies were not taken under consideration. After applying the inclusion and exclusion criteria total 5 studies were selected for the systematic review.

**Study Selection:** Studies that fulfilled defined inclusion and exclusion criteria were included in the study. The studies were selected across India among different states.

### Inclusion Criteria

Studies showing the precise prevalence of cannabis.

Studies presenting specific data on both males and females.

Full text articles with English language only.

Articles published within 10 years.

Community based studies

### Exclusion Criteria

Limited access articles.

Articles published as editorials, letters.

Articles giving prevalence of cannabis outside India.

**Data Extraction:** From each study, data including first author name, publication year, location, study design, sample size, their age groups, overall prevalence of substance use and prevalence of cannabis use was extracted. The pooled prevalence of substance use and cannabis use was taken.

Among pooled studies, total sample for analysis was taken as a sum of all participants in included studies. The pooled prevalence of cannabis was calculated from the total substance users in the included studies from different places of India.

## RESULTS

We found a total of 25 studies, of which 5 studies met our inclusion and exclusion criteria. The total sample size from selected studies came out to be 6985. All community based studies were included in the systematic review.

The studies selected for systematic review were from different places including Karnataka (Bangalore), Gujarat, Chandigarh, Uttar Pradesh (Lucknow) and Punjab.<sup>10-14</sup> The characteristics of included studies are mentioned in Table 1.

The important finding noted in this study that out of 2499 participants taking substance abuse only 169 were taking cannabis as shown in Table 2.

The pooled prevalence of overall substance use and Cannabis use among the study population of included studies came out to

First Author	Study publication year	Study Location	Type of Study	Area	Screening measure	Sample size	M	F	Age group in years	Prevalence of cannabis
Gaurav Uppal	2018	Bangalore	Cross sectional	Rural	WHO ASSIST 3.0	175	152	23	13-30	2.9%
Roma S Dadwani	2016	Gujarat	Cross Sectional	Urban	Structured questionnaire	1341	202	51	10->60	1%
Ajit Avasthi	2017	Chandigarh	Survey	Urban	WHO ASSIST 3, ICD 10	300	290	10	11-60	29.33%
Sumit Kumar	2015	Lucknow	Cross Sectional	Urban/Rural	Structured questionnaires	3437	2848	589	<25->65	1.20%
Salil Dube	2017	Punjab	Cross Sectional	Rural	WHO ASSISTV 3	1732	923	809	>15	12.39

Table-1: Characteristics of Included Studies 10-14

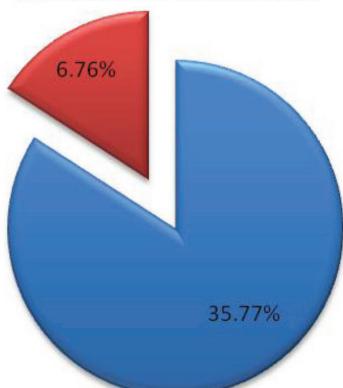
First Author	Total Study Participants (n)	Overall Substance Abuse (n)	Cannabis Abuse (n)
Gaurav Uppal	175	110	5
Roma S Dadwani	1341	253	2
AjitAvasthi	300	300	87
Sumit Kumar	3437	1352	15
Salil Dube	1732	484	60
Total	6985	2499	169

**Table-2:** Substance and cannabis abuse among study participants from included studies.

City	Prevalence of Cannabis according to study	Prevalence of cannabis according to NDDTC
Chandigarh	29.33%	0.4%
Punjab	12.39%	1.3%
Karnataka	2.90%	0.4%
Uttar Pradesh	1.20%	3.2%
Gujarat	1%	0.1%

**Table-3:** Comparison of prevalence of cannabis

- Overall substance abuse
- Prevalence of cannabis abuse



**Figure-1:** Pooled prevalence of cannabis use.

be 35.77% and 6.76% respectively, after calculating the total prevalence from all included studies and taking out the cannabis use population from overall substance use population (Figure 1).

In terms of characteristics of the participants, most of the study population i.e. 4897 participants were males and 2088 participants were females. The participants were from less than 10 years to greater than 65 years in their age groups.

## DISCUSSION

This is an attempt to systematically review the published literature to examine cannabis use among population of India. The recent spurt in substance use has emerged as an extraordinary threat to quality of life.

After alcohol, Cannabis and Opioids are the next commonly used substances in India. As per NDDTC about 2.8% of Indians aged 10-75 years (31 million individuals) are current users of any cannabis product and about 0.66% (7.2 million individuals) are problem users and 0.25% (2.5 million individuals) are dependent users.<sup>7</sup>

A meta-analysis by Reddy and Chandrashekhar<sup>15</sup> in 1998 revealed the overall prevalence of substance use in India to be 6.9/1000 population which is in contrast to this study showing the overall prevalence to be 357.7/1000 where as in percentage 35.77%. This also indicates that there is an increasing trend in last 2 decades. In this overview maximum prevalence of cannabis use is found in Chandigarh (29.33%), followed by Punjab (12.39%), Bangalore / Karnataka (2.90%), Lucknow / Uttar Pradesh (1.20%) and Gujarat (1%).

There was significant difference seen among the studies done at different states and according to National Drug Dependence Treatment Center (NDDTC) data 2019. This wide variation could be due to selection of participants in studies and also due to limited sample size. The further reason for this wide variation and overall low prevalence according to NDDTC could be due to prohibition acts passed by states for legality of cannabis use and certain social norms for the usage of cannabis.

However, there are many limitations to this analysis like heterogeneity of the studies and sample size, geographical variations and state variations.

## CONCLUSION

India has a huge “at risk” population vulnerable to cannabis use. The epidemic of substance use in young generation has also assumed alarming dimensions. Our review indicates that despite of having strict legislation regarding cannabis, people are still addicted and more number is getting addicted for cannabis use in India. The Central law that deals with cannabis in India is the Narcotic Drugs and Psychotropic Substances Act, 1985. However different states have their own laws relating to consumption, possession, sale or purchase of weed or marijuana. There is a need to change either in a law or to change the behavior of people at large. Various surveys conducted from time to time regarding cannabis use among population can provide useful information about the extent and pattern of cannabis use. At present there is a need of time for conducting the studies to know about the use, effect and demand of Cannabis in India so the appropriate actions and legislations can be formed by Government.

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