An exploratory study of cannabis use pattern and treatment seeking in patients attending an addiction treatment facility

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ABSTRACT

Background and Aims: Although cannabis is the most common illicit substance of use in India, it is often not the presenting complaint of patients with substance use disorders. The present study aimed to understand the profile of cannabis use disorders among patients at a substance abuse treatment facility in an Indian tertiary care center.

Materials and Methods: This was a cross-sectional interview-based study which assessed adult patients with substance use disorders who had a history of cannabis use in the recent past. Participants were evaluated for cannabis use disorder as per the Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5) and cannabis dependence as per the International Classification of Diseases, 10th revision (ICD-10). They were assessed for cannabis withdrawal, and treatment-seeking behavior about cannabis use was explored.

Results: Among the 100 male participants in the study, the use of smoked form (charas, ganja, sulfa) was more common than oral form (bhang). Fifty-eight patients fulfilled the ICD-10 criteria of dependence, whereas 74 patients fulfilled the DSM-5 criteria of cannabis use disorder. Tolerance, craving, and withdrawal were the most common clinical features. Only 7 patients ever sought help for quitting cannabis, whereas 28 patients thought that generally treatment is required for quitting cannabis.

Conclusion: More cannabis users seem to fulfill a diagnosis of cannabis use disorder as per DSM5 than cannabis dependence as per ICD-10. Treatment seeking for cannabis use disorders seems to be low among the substance using patients. Clinicians need to focus on cannabis use as well when they treat patients with substance use disorders.

Key words: Cannabis, diagnosis, treatment seeking

INTRODUCTION

The World Drug Report suggests that worldwide cannabis is the most commonly abused illicit drug. Estimates from the 2010 Global Burden of Diseases suggest that cannabis dependence affects more than 10 million individuals globally and contributes to more than 2 million disability-adjusted life years. Cannabis use disorders can lead to increased incidence of schizophrenia, lung cancer, and road traffic injuries. The burden of diseases attributed to cannabis seems to be highest among young people, and prevalence is greater among males than females.

Cannabis, a plant that grows wildly in India, remains the most commonly used illicit substance in the country as well. The recent national survey suggests that there...
are more than 30 million cannabis users in India, and many of them have cannabis use disorders.\cite{5} However, the rate of cannabis use among the treatment-seeking population is about 11.6%, somewhat lower than that of opioids.\cite{5} This suggests that though the use of cannabis remains a significant problem in the community and society, it is under-represented or under-detected in the treatment-seeking population.

In this context, the assessment of cannabis use and cannabis use disorders is of relevance. Cannabis use pattern has been generally reported to be sporadic in the community sample with a minor proportion becoming regular, heavy, or dependent users of cannabis.\cite{6,7} However, treatment contact for cannabis abuse or dependence often occurs in the presence of comorbid psychiatric disorders. Indian literature suggests that cannabis use disorder remains a problem among street children who are substance users,\cite{8} and those with dual diagnosis.\cite{9} In fact, cannabis-induced psychosis is a clinical diagnosis, wherein psychotic symptoms are consequent to initiation or increase in cannabis use, and which resolve rapidly with cannabis cessation.\cite{10} Such psychotic symptoms often require patients to be brought to clinical attention. In the Indian setting, it has been difficult to use standard measures of estimating cannabis consumption due to the varied forms of cannabis being used. Detailed descriptions of the forms and amounts of cannabis being used by the clinic attending population are useful for further comparisons.

Withdrawal symptoms of cannabis use disorder is another aspect that has received attention in the past.\cite{11} The International Classification of Diseases, 10th revision (ICD-10) did not endorse a withdrawal syndrome for cannabis, probably due to nonspecific withdrawal symptoms associated with cannabis cessation. However, growing literature has suggested a consistent withdrawal syndrome for cannabis use disorder, and such a withdrawal syndrome has been described in the Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5). Interestingly, the pattern of withdrawal symptoms has not been uniform across all heavy users who quit cannabis.\cite{12} Studies in treatment-seeking and nontreatment-seeking cannabis users have found considerable heterogeneity in the symptoms of cannabis withdrawal.\cite{13} This leaves scope for further research into the characteristics of those who experience cannabis withdrawal and what the common withdrawal symptoms are. This would be beneficial for better characterization of cannabis use disorder in the therapeutic setting so that appropriate symptomatic treatment may be offered.

Another unique aspect of cannabis use disorder is that patients do not perceive the need to seek treatment for this problem.\cite{14} Several strategies are used for quitting cannabis and these include the change in environment, seeking organized/professional help, and social support.\cite{15} There are many barriers which impede the treatment of cannabis use disorders, and some of them in the context of service delivery.\cite{16} Such treatment barriers would need to be addressed to provide adequate help to people using cannabis.

In recent decades, there has been a move toward decriminalization and legalization of cannabis.\cite{17-19} Initially, cannabis was placed with narcotics and its possession and use entailed severe punishment in keeping with the Single Convention on Narcotic Drugs of 1961. This brought cannabis, a plant product with limited dependence producing properties and which had been ethnically used in India for a long time, into the ambit of Narcotic Drugs and Psychotropic Substances Act of 1985 (except the cannabis form of bhang). However, several American states and Western European countries have started to decriminalize the use of cannabis, citing various reasons. Thus, there is a change in societal outlook toward cannabis in some places, which has brought about changes in legislative statutes favoring controlled recreational use of cannabis. Data from India are particularly sparse on how substance users perceive the legal status of cannabis and this needs further exploration.

Given the above-mentioned gaps in literature, the objective of this study was to explore the kind of cannabis preparations being used, the presence of features fulfilling the diagnostic criteria of substance use disorder, and the features of withdrawal and treatment-seeking characteristics in a sample of treatment-seeking substance users at an addiction treatment facility in north India.

**MATERIALS AND METHODS**

**Setting and participants**

This observational questionnaire-based study was done in the outpatient setting of an addiction treatment facility at a tertiary center in north India. At this treatment facility, medically oriented care is provided by a team of doctors, nurses, psychologists, and social workers. The clientele primarily comprises patients with opioid dependence and/or alcohol dependence. Treatment is provided in both outpatient and inpatient settings as appropriate, and treatment is subsidized. Treatment is provided in the form of medications, psychotherapy, and rehabilitation services.

For the present study, adult participants who were registered at the treatment facility and had used cannabis at least once in the past 6 months were recruited through purposive sampling. Those who refused to consent or had symptomatic medical or psychiatric illness which precluded participation in the study were excluded. The study had institutional ethics committee approval (IEC/56/1/2018).
Procedure of the study
Patients were screened from the outpatient services and were assessed by trained psychiatrists using a structured questionnaire. The questions pertained to demographic characteristics such as gender, age, education, occupation, marital status, residence, family type, and per-capita income. Details of substances of use were collected and diagnostic criteria of DSM-5 and ICD-10 were applied. The DSM-5 criteria for cannabis withdrawal were utilized and the 8-item cannabis use disorder identification test-revised (CUDIT-R) was also used. The CUDIT-R is an 8-item measure for the identification of problematic cannabis use. The questionnaire is self-reported and is in the public domain. Two questions each pertain to aspects of consumption, cannabis problems, dependence, and psychological features. The questionnaire has been reported to have good psychometric properties. The types and forms of cannabis being used were assessed. Information about abstinence to cannabis and seeking help for quitting cannabis was recorded. Opinion about the need for help or treatment for quitting cannabis was ascertained. Participants were questioned whether cannabis (and some forms of it) was illegal and their opinion was sought regarding whether it should be made legal. Data were collected from the participants in a single sitting.

Analysis
Since this was an exploratory study, descriptive statistics were primarily used. Mean, standard deviation, frequencies, and percentages were used for the representation of the data. Missing value imputation was not done for the study. The analysis was performed using Microsoft Excel 2013.

RESULTS
A total of 100 male participants were recruited in the study, of a total of 106 who were screened (six did not consent due to unwillingness or time constraints). The characteristics of the recruited participants are shown in Table 1. The mean age of the sample was 28.4 years. The majority of participants were unmarried, belonged to a nuclear family and had an urban background. The majority had primarily sought treatment for opioid use disorders. Only three patients had sought treatment primarily for cannabis use disorders. Almost all participants had tobacco use disorder. Among the participants, 3 had a comorbid diagnosis of psychosis NOS, 2 had dissoial personality disorder, and 1 had bipolar disorder as per clinical evaluation.

The characteristics of cannabis use and cannabis use disorder are presented in Table 2. While about three-fourths of the participants used cannabis exclusively in the smoked forms, oral forms were being consumed by 27 participants. Of them, 26 had used both oral and smoked forms, and only one participant had used the oral form of cannabis exclusively. An overwhelming majority (96 participants) preferred the smoked forms of cannabis, while only 4 participants preferred the oral form. Fifty-eight participants (58%) fulfilled the ICD-10 criteria for cannabis dependence, with tolerance, craving, and withdrawal being the most commonly endorsed items. Use despite harmful consequences was found in only 4 participants. On the other hand, 74 participants (74%) fulfilled the criteria of cannabis use disorder (21 had mild, 21 had moderate, and 32 had severe cannabis use disorder, respectively). The most commonly endorsed items were tolerance, craving, and withdrawal. The items least frequently endorsed were stopping or reducing important social, occupational, or recreational activities due to substance use, and use despite persistent or recurrent physical or psychological difficulties.

The cannabis withdrawal features as per the DSM-5 criteria are presented in Table 3. As per the criteria “B,” the most common withdrawal symptoms reported were sleep difficulty, decreased appetite or weight loss, and irritability, anger, or aggression. The impairment/distress criteria were met in 29 participants, and hence, only 29 participants...
could be labeled as having cannabis withdrawal according to this assessment.

### Table 2: Cannabis use disorder and characteristics (n=100)

| Variable | Percentage |
|----------|------------|
| Form of cannabis being taken | |
| Smoked | 73 |
| Oral | 1 |
| Both oral and smoked | 26 |
| Preferred form of cannabis | |
| Smoked | 96 |
| Oral | 4 |
| ICD-10 criteria fulfilled | |
| Craving | 70 |
| Difficulty in control | 46 |
| Withdrawal | 57 |
| Tolerance | 75 |
| Progressive neglect of alternative pleasures | 13 |
| Persisting despite harmful consequences | 4 |
| ICD-10 diagnosis of dependence | 58 |
| DSM-5 criteria | |
| Repeatedly unable to carry out major obligations at work, school, or home due to substance use | 15 |
| Recurrent use of substances in physically hazardous situations | 47 |
| Continued use despite persistent or recurring social or interpersonal problems caused or made worse by substance use | 19 |
| Tolerance | 76 |
| Withdrawal | 55 |
| Using greater amounts or using over a longer time period than intended | 30 |
| Persistent desire or unsuccessful efforts to cut down or control substance use | 40 |
| Spending a lot of time obtaining, using, or recovering from using substances | 21 |
| Stopping or reducing important social, occupational, or recreational activities due to substance use | 10 |
| Consistent use despite persistent or recurrent physical or psychological difficulties | 10 |
| Craving or a strong desire to use substances | 71 |
| Cannabis use disorder | |
| Mild | 21 |
| Moderate | 21 |
| Severe | 32 |

The questions dealing with behaviors and attitudes related to cannabis are presented in Table 5. Sixty-nine participants reported quitting cannabis for a month, the most common reasons being starting the use of other substances (opioids), or being admitted in a treatment facility. Twenty-eight participants reported that quitting cannabis was associated with an increase in the use of other substances. The most common reasons for reuse of cannabis after quitting were craving and peer influence. Twenty-seven participants believed that the use of cannabis is some forms was legal, and of them, 22 correctly identified bhang (leaves) being the legal form. Of the 69 participants who thought cannabis was illegal, only 7 were in favor of the legalization of cannabis. As a comparison, all but one patient were aware that heroin was illegal, and only 2 of the 99 other participants favored legalization of heroin.

The treatment-related responses of the participants are shown in Table 6. Only 7 participants had ever sought help for quitting cannabis, and 6 of them reckoned that treatment providers helped them (in the form of medicines and counseling). Twenty-eight participants were of the view that generally treatment is required for quitting cannabis, largely in the form of medicines. Sixty participants were of the view that cannabis use is associated with harm. While craving was reported as the most important treatment...
DISCUSSION

This article presents the profile of patients with substance use disorders who also report cannabis use. The sample comprised patients who were seeking treatment primarily for opioid use disorder as their primary complaint. Yet, a considerable proportion fulfilled the additional diagnosis of cannabis dependence and cannabis use disorder. This suggests that cannabis use disorder may merit attention and treatment on its own, though it may not be the focus of attention during the consultation process. In a study among psychiatric inpatients, cannabis was the most frequently under-diagnosed substance use disorder.\[21\] Thus, psychiatrists and mental health professionals need to be sensitized about the diagnosis and treatment of cannabis use disorders when it is present along with other psychiatric or substance use disorders.

In the present sample, smoked form was the most commonly used method of cannabis intake. However, the use of oral cannabis was also common, and one patient was taking only the oral form. Among the diagnostic criteria of cannabis use disorder, tolerance, craving, and withdrawal were the most common. However, a nationally representative study comparing the diagnostic features of DSM IV and DSM-5 found that hazardous use was the most common feature of cannabis use disorder and craving ranked third.\[22\] The differences could be explained by the population characteristics of the present study where the primary substance of use was not cannabis in many. Among the features of withdrawal, sleep difficulty and decreased appetite or weight loss were the most commonly reported symptoms. However, cannabis withdrawal could be established for only 29 of 72 patients (40.3%) who had reported cessation after heavy and prolonged use of cannabis. This means that diagnosable withdrawal state could be established in only a subset of regular cannabis users, mainly because the withdrawals did not produce much dysfunction. The CUDIT-R items throw some light on the pattern of cannabis use. A slight majority reported that they were able to stop cannabis when they wanted to, implying that cannabis seldom led to loss of control. Furthermore, individuals largely reported that cannabis did not impair their activities, or cause problems in memory or concentration.

Among the respondents, 69 reported quitting cannabis for a period of more than 1 month. The most common reasons were starting opioids. This lends further credence to the gateway hypothesis suggesting that cannabis use may precede initiation of more “harmful” illicit substances.\[23\] Cessation of cannabis was associated with increase in the use of other substances, suggesting some form of substitution. This has therapeutic implications, and emergence of other problematic substance use should be evaluated while cannabis cessation is attempted. Craving and peer influence were the most common reasons of resumption of cannabis use, and sometimes, both occurred together.

Among these substance users, 27 were aware that cannabis use was legal in some form, though of them, five incorrectly believed that ganja or charas were legal. This suggests that a substantial proportion of cannabis users were unaware of the legal status of cannabis forms. On the other hand,

### Table 4: Cannabis use disorder identification test items (n=100)

| Item                                                                 | Percentage |
|---------------------------------------------------------------------|------------|
| How often do you take cannabis                                       |            |
| Monthly or less                                                     | 10         |
| 2-4 times a month                                                   | 12         |
| 2-3 times a week                                                    | 7          |
| 4 or more times a week                                              | 71         |
| How many hours of effect                                            |            |
| <1                                                                  | 28         |
| 1 or 2                                                              | 34         |
| 3 or 4                                                              | 17         |
| 5 or 6                                                              | 4          |
| 7 or more                                                           | 17         |
| Not able to stop when started (in the past 6 months)                |            |
| Never                                                               | 53         |
| Less than monthly                                                   | 14         |
| Monthly                                                             | 5          |
| Weekly                                                              | 15         |
| Daily or almost daily                                               | 13         |
| Failed to do what you normally do due to cannabis (in the past 6 months) | 73       |
| Never                                                               | 7          |
| Less than monthly                                                   | 7          |
| Monthly                                                             | 1          |
| Weekly                                                              | 13         |
| Daily or almost daily                                               | 6          |
| Devoted a great deal of time getting, using, or recovering from cannabis (in the past 6 months) | 51       |
| Never                                                               | 13         |
| Less than monthly                                                   | 4          |
| Monthly                                                             | 13         |
| Weekly                                                              | 19         |
| Daily or almost daily                                               |            |
| Problem with memory or concentration with cannabis (in the past 6 months) |        |
| Never                                                               | 60         |
| Less than monthly                                                   | 13         |
| Monthly                                                             | 3          |
| Weekly                                                              | 11         |
| Daily or almost daily                                               | 13         |
| Use in physically hazardous situations                              |            |
| Never                                                               | 21         |
| Less than monthly                                                   | 10         |
| Monthly                                                             | 11         |
| Weekly                                                              | 10         |
| Daily or almost daily                                               | 48         |
| Ever thought of cutting down or stopping cannabis use                |            |
| Never                                                               | 47         |
| Yes but not in 6 months                                             | 20         |
| Yes in 6 months                                                     | 33         |
almost all participants knew that heroin was illegal in the country. Of 69 participants who responded that cannabis use was illegal, seven favored legalization, while the vast majority did not favor legalization of cannabis. This low endorsement for legalization of cannabis among substance users may imply either that they believed cannabis may not be suitable for the society, or that they conformed to the current legal-social mores of the community, or that the legalization debate has not yet gathered momentum in the country as compared to elsewhere.\[24,25\] However, decriminalization and legalization as options may be considered in the future, with greater awareness about the laws in the times to come.

Of the patients (including those with cannabis use disorder), a minority sought help for quitting cannabis, though considerable numbers had quit for more than a month sometime in the past. Medicines were the mainstay of treatment where some treatment was provided, though the exact medications were not enquired into. According to the patients, about a fourth endorsed that some treatment is required, primarily medications. This may be due to implicit expectations of “medicines” being the remedy available from the doctors, and hints toward the need for greater awareness and acceptance for psychotherapy for substance use disorders in the Indian population. Craving and peer influence were the greatest barriers for quitting cannabis in this population, while family support was the greatest facilitator for cannabis cessation. These were different from the barriers and facilitators obtained from Australian treatment facilities and community, and among US veterans.\[16,26\] This probably reflects the systemic differences in access to care and the methodological differences in assessment.

The findings of the study should be considered in the context of its strengths and limitations. The strengths include the assessment of various domains related to cannabis use disorder, diagnoses according to two nosological systems

### Table 5: Cannabis-related behaviors and attitudes (n=100)

| Question                                                                 | Percentage |
|--------------------------------------------------------------------------|------------|
| Ever left cannabis for >1 month                                          | 69.0       |
| Reasons of leaving cannabis                                              |            |
| Started using heroin/opioids                                             | 26.1       |
| Admitted in rehabilitation/treatment center                              | 21.7       |
| Attempt to quit by self                                                 | 7.2        |
| Do not like the effects                                                 | 7.2        |
| Family pressure/influence                                                | 7.2        |
| Change of place/residence                                                | 5.8        |
| Religious reasons                                                        | 4.3        |
| Got ill/homebound                                                        | 2.9        |
| Fed up                                                                   | 2.9        |
| Marriage, objection at workplace, increased heroin use, treatment for heroin use, switched to alcohol use, not primary substance, unavailability, no need for cannabis, friend’s advice, not reported | 1.4 each  |
| Leaving cannabis associated with increase in other substances           | 28.0       |
| Reason(s) of starting again cannabis if left (out of 69 participants)   |            |
| Craving                                                                  | 53.6       |
| Peer influence                                                           | 34.8       |
| Get better high of other substance                                       | 4.3        |
| Stress                                                                   | 2.9        |
| Cheaper alternative to heroin                                           | 2.9        |
| Change of residence                                                      | 1.4        |
| Do you think cannabis use (in some forms) is legal?                      |            |
| Yes                                                                      | 27.0       |
| No                                                                       | 69.0       |
| Unsure                                                                   | 4.0        |
| If yes, which forms are legal (out of 27 participants)                   |            |
| Bhang                                                                    | 81.5       |
| Ganja/Chars                                                             | 18.5       |
| If cannabis is illegal, then should it be legalized? (out of 69 participants) |           |
| Yes (reasons given: No harms/complications [2], to be made available easily [2], to relieve anxiety as medication [1], because alcohol is legal [2], and ‘good’ psychoactive substance [1]) | 10.1       |
| No                                                                       | 89.9       |
| Do you think heroin use (smack/brown sugar) is legal?                    |            |
| Yes                                                                      | 1.0        |
| No                                                                       | 99.0       |
| If heroin use is illegal, then should be made legal?                     |            |
| Yes (reasons: To decrease harms [1], to make easily available [1])      | 2.0        |
| No                                                                       | 98.0       |

### Table 6: Treatment-related responses

| Question                                                                 | Percentage |
|--------------------------------------------------------------------------|------------|
| Did you ever seek help for leaving cannabis                             | 7.0        |
| Type of help sought (out of 7 participants)                             |            |
| Consulted doctor/health-care provider                                   | 85.7       |
| Admitted in treatment facility                                          | 14.3       |
| Did treatment providers provide help                                    | 6.0        |
| Type of help provided (out of 6 participants)                           |            |
| Medicines                                                                | 66.7       |
| Counseling                                                              | 16.7       |
| Both medicines and counseling                                           | 16.7       |
| Do you think generally treatment is required for quitting cannabis      | 28.0       |
| What kind of treatment is required? (out of 28 participants)            |            |
| Medicines                                                                | 82.1       |
| Counseling                                                              | 10.7       |
| Unsure/no response                                                      | 10.7       |
| Do you think there is any harm associated with cannabis use             | 60.0       |
| Any barriers to quitting cannabis                                       | 18.0       |
| Type of barriers (out of 18 participants)                                |            |
| Craving                                                                  | 83.3       |
| Peer influence                                                          | 16.7       |
| Stress                                                                  | 5.6        |
| Any facilitators for quitting cannabis                                  | 25.0       |
| Type of facilitators for quitting cannabis (out of 25 participants)     |            |
| Family support                                                          | 40.0       |
| Medicines                                                               | 16.0       |
| No withdrawals                                                          | 16.0       |
| Abstaining from heroin                                                 | 8.0        |
| Exercise                                                                | 8.0        |
| Avoiding cues                                                           | 4.0        |
| Tobacco use                                                             | 4.0        |
| Managing stress                                                         | 4.0        |

*One participant endorsed two reasons*
and gathering opinion about treatment seeking in the same set of patients. The limitations include constrained sample size, occurrence of other substance use disorders, inclusion of a treatment seeking sample at a single center which limits generalizability and possible bias resulting from the tendency to give socially desirable answers. No females were a part of this study, reflecting the general profile of the treatment-seeking population in the region.27

CONCLUSION

To conclude, the study finds that many treatment-seeking substance users with cannabis use fulfill the diagnosis of cannabis use disorders. Very few of the participants had ever sought treatment only for cannabis use disorder. For clinicians, the implications are addressing concurrent cannabis use disorders in patients presenting for other reasons and paying attention to barriers like peer influence. Future studies can look at a multi-center assessment of cannabis use disorder, and can focus on patients who come with cannabis use disorders as the presenting complaint. Furthermore, studies can look at a community sample addressing the facilitators and barriers of treatment for cannabis use disorder.

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Conflicts of interest

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