Cannabis use and associated psychiatric morbidities among psychiatric outpatients of a teaching institute in Eastern Nepal

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Abstract

Background

Cannabis is one of the most widely used psychoactive substances worldwide and has been linked to various psychiatric disorders. Despite its traditional use in Nepal, data on cannabis use among psychiatric outpatients are limited. This study aimed to find out the patterns of cannabis use and to determine its associated socio-demographic factors and comorbid psychiatric disorders among psychiatric outpatients attending a tertiary care teaching hospital in Eastern Nepal.

Methods and materials

A hospital-based cross-sectional study was conducted among 500 psychiatric outpatients at BPKIHS, Dharan. Socio-demographic data were collected using a semi-structured proforma. Cannabis use was assessed with the Cannabis Use Disorders Identification Test–Revised (CUDIT-R), and psychiatric diagnoses were made using ICD-10 criteria. Associations between cannabis use and socio-demographic and psychiatric variables were analyzed using Chi-square and Fisher's exact tests.

Results

Ever cannabis use was reported by 38(7.6%) patients and 25(5%) patients were current users. Hazardous use and possible cannabis use disorder were observed in 8 patients (1.6%), and 15 patients (3%) respectively. Lifetime cannabis dependence was present in 16 (3.2%) patients. Cannabis use was significantly associated with young age 16–25 years (p<0.01), male gender (p=0.01), unmarried status (p=0.01), and occupation (p=0.01). Most common comorbidities among cannabis users included nicotine dependence (p=0.001), alcohol use (p=0.001), opioid use (p=0.001), mania (p=0.001) and obsessive-compulsive disorder (OCD) (p=0.043).

Conclusion

Routine screening for cannabis uses in psychiatric outpatient settings is recommended for holistic management of psychiatric patients with high-risk socio-demographic profile.

Keywords

Cannabis use, CUDIT-R, Psychiatric comorbidities, Outpatient psychiatry, Nepal

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INTRODUCTION

Cannabis is one of the most widely used psychoactive substances worldwide, second only to alcohol and nicotine in prevalence. [1] According to the United Nations Office on Drugs and Crime (UNODC) World Drug Report 2017, an estimated 183 million individuals reported using cannabis in the preceding year, reflecting its widespread availability and social acceptance in certain regions. [1] Although often perceived as a relatively benign recreational drug, mounting evidence indicates a strong association between cannabis use and psychiatric disorders, including mood disorders, psychotic disorders, anxiety disorders, and substance use disorders. [2,3] In South Asia, cannabis has a long history of cultural and religious use. In Nepal, cannabis consumption is traditionally linked to religious rituals and festivals such as Maha Shivaratri and has historically been intertwined with social practices, especially in rural communities. [4] Despite this cultural tolerance, cannabis

remains a controlled substance under Nepalese law, creating a complex interplay between socio-cultural acceptance, legal restrictions, and public health concerns. [5] Globally, early and chronic cannabis use has been consistently associated with an increased risk of psychosis, particularly among genetically or environmentally vulnerable individuals. [6,7] Studies have also demonstrated higher prevalence of mood disorders, including depression and mania, among cannabis users, often alongside significant comorbidity with alcohol and nicotine dependence. [8,9] However, data from low-and middle-income countries, including Nepal, remain scarce, limiting the understanding of cannabis-related psychiatric morbidity in these contexts.

Hospital-based studies in Nepal have highlighted substance use as a frequent reason for psychiatric consultations, with alcohol misuse extensively documented.[10,11] Cannabis use, however, has received comparatively little systematic attention. Existing inpatient studies suggest cannabis use among psychiatric populations, yet comprehensive outpatient-based data are lacking.[12] Psychiatric outpatient clinics represent a critical site for research because they capture a broad spectrum of patients with chronic, relapsing, and comorbid conditions who may not require inpatient admission.

Understanding the association between cannabis use and psychiatric comorbidities is particularly relevant in Nepal, given the increasing burden of mental health disorders and limited mental health resources.[13] Cannabis use among younger populations is concerning, as it coincides with key developmental years for education, employment, and psychosocial functioning.[14,15] Under-recognition of cannabis use in psychiatric settings can lead to missed opportunities for early intervention, misdiagnosis, and suboptimal treatment planning.[14] Therefore, our study aimed to find out the patterns of cannabis use and to determine its associated socio-demographic factors and comorbid psychiatric disorders among psychiatric outpatients attending a tertiary care teaching hospital in Eastern Nepal.

MATERIALS AND METHODS

It was a hospital-based analytical cross-sectional study conducted over the duration of one year from March 2020 to February 2021 at the Department of Psychiatry, B.P. Koirala Institute of Health Sciences (BPKIHS), Dharan, Nepal. The institute is a tertiary care teaching hospital serving patients from diverse socio-demographic backgrounds across the Terai, Hill, and Mountain regions of Eastern Nepal. The psychiatric outpatient department operates six days a week, with an average daily patient volume of 60–80 individuals.

Study Population

All consecutive patients aged 16 years and above who attended the psychiatric OPD during the study period and provided written informed consent were included. However, those with severe cognitive impairment, acute confusion, or florid psychosis hampering participation and those unwilling or unable to provide informed consent were excluded.

Sample Size and Sampling Technique

A total of 500 psychiatric outpatients were recruited using consecutive non- probability sampling. The sample size was considered sufficient based on outpatient flow, feasibility, and statistical power for descriptive and analytical comparisons between cannabis users and non-users.

Data Collection Procedure

Eligible participants were approached in the OPD waiting area and provided with information regarding the study. After obtaining written informed consent, trained interviewers administered the semi-structured proforma and CUDIT-R through face- to-face interviews. Psychiatric diagnoses were confirmed by consultant psychiatrists using ICD-10 criteria during routine clinical assessment. The instruments used were as follows:

1. Semi-structured proforma:

It included socio-demographic data (age, sex, marital status, education, occupation, residence, religion, caste/ethnicity, family type, socio-economic status) and relevant clinical history. Patients who have used cannabis

even once in their lifetime were defined as ever users and those using cannabis in the last 6 months were defined as current users of cannabis.

2. Cannabis Use Disorder Identification Test – Revised (CUDIT-R): It was applied to current users of cannabis. It is an 8-item standardized questionnaire used to screen for hazardous and problematic cannabis use. Scores are interpreted as: low risk (score 0-7), hazardous use (score 8-12) and possible cannabis use disorder (≥13). [7]

3. ICD-10 Diagnostic Criteria for Research (DCR): It was used to diagnose cannabis dependence and other psychiatric comorbidities.

Statistical Analysis

Data was entered into SPSS version 20. Descriptive statistics (mean, standard deviation, frequencies, and percentage) summarized socio-demographic variables. Prevalence estimates were reported with 95% confidence intervals. Associations between cannabis use and socio-demographic/psychiatric variables were assessed using Chi-square tests or Fisher's exact test as appropriate. A p-value <0.05 was considered statistically significant.

Ethical Considerations

The study protocol was approved by the Institutional Review Committee (IRC) of BPKIHS, Dharan, Nepal (Code No: IRC/1961/020). Written informed consent was obtained from all participants. Confidentiality was maintained, and data were anonymized. Participants identified with hazardous or dependent cannabis use were counseled and referred for appropriate management.

RESULTS

Socio-Demographic Characteristics

A total of 500 psychiatric outpatients participated in the study. The mean age distribution was as follows: 16–25 years (28.0%, n=140), 26–35 years (29.2%, n=146), 36–45 years (19.2%, n=96), and ≥46 years (23.6%, n=118). Gender distribution was 264(52.8%) males and 236(47.2%) were females. Most participants resided in the Terai region (84.8%), while the remainder(15.2%) lived in hilly regions. Regarding marital status, 187(37.4%) were unmarried, 300 were (60%) married and 13(2.6%) were separated or widowed (n=13).

Religion distribution included Hindus 399(79.8%), Buddhists 48 (9.6%), Kirats 42(8.4%), and Christians/Muslims/Others 11(2.2%). Caste/ethnicity comprised Brahmin/Chhetri 187(37.4%), Janajati 195(39%), and Madhesi/Dalit/Others 118(23.6%). The education status showed that 222(44.4%) were below SLC and 278(55.6%) were SLC or above. Occupation distribution included housewives 166(33.2%), business/service 88(17.6%), farmers 60(12%), unemployed 70(14%), and students/laborers/others 116(23.2%). Most participants belonged to nuclear families (73.6%) and were from middle socioeconomic status (72.8%) (Table 1).

Table 1. Socio-demographic characteristics of psychiatric outpatients (n=500)

Characteristic	Category	n (%)
Age (years)	16–25	140 (28.0)
	26–35	146 (29.2)
	36–45	96 (19.2)
	≥46	118 (23.6)
Gender	Male	264 (52.8)
	Female	236 (47.2)
Residence	Terai	424 (84.8)
	Hilly	76 (15.2)
Marital status	Unmarried	187 (37.4)
	Married	300 (60.0)
	Separated/Widow	13 (2.6)
Religion	Hindu	399 (79.8)
	Buddhist	48 (9.6)
	Kirat	42 (8.4)
	Christian/Muslim/Others	11 (2.2)
Caste	Brahmin/Chhetri	187 (37.4)
	Janajati	195 (39.0)
	Madhesi/Dalit/Others	118 (23.6)
Education	Below SLC	222 (44.4)
	SLC & above	278 (55.6)
Occupation	Housewife	166 (33.2)
	Business/Service	88 (17.6)
	Farmer	60 (12.0)
	Unemployed	70 (14.0)
	Student/Laborer/Others	116 (23.2)
Family type	Nuclear	368 (73.6)
	Joint	132 (26.4)
Socioeconomic status	Low	136 (27.2)
	Middle	364 (72.8)

Patterns of Cannabis Use

Cannabis ever use was reported in 38 out of 500 patients (7.6%), while 25 patients (5%) reported current use within the past six months. Hazardous cannabis use (CUDIT-R score 8–12) was present in 8 patients (1.6%), and 15 patients (3%) had possible cannabis use disorder (CUDIT-R score ≥13). Lifetime cannabis dependence was identified in 16 patients (3.2%). Cannabis use was significantly associated with younger age (16–25 years, p=0.001), male gender (p=0.001), marital status (p=0.001), and occupation (p=0.001) (Table 2).

Table 2. Association of socio-demographic factors with ever cannabis use (n=38)

Characteristic	Category	Ever cannabis user n (%)	p-value
Age (years)	16–25	21 (55.3%)	0.001*
	26–35	12 (31.6%)	
	36–45	2 (5.3%)	
	≥46	3 (7.9%6)	
Gender	Male	34 (89.5%)	0.001*
	Female	3 (10.5%)	
Marital status	Unmarried	31 (81.6%)	0.001*
	Married	6 (15.8%)	
	Separated/Widow	1 (2.6%)	
Occupation	Housewife	0 (0%)	0.001*
	Business/Service	7 (18.4%)	
	Farmer	3 (7.9%)	
	Unemployed	13 (34.2%)	
	Student/Laborer/Others	115(39.5%)	

* p < 0.05

Psychiatric Comorbidities

Cannabis users had various psychiatric comorbidities. Alcohol use was significantly higher among cannabis users (p<0.001), as was nicotine dependence (p<0.001) and opioid use (p<0.001). Mood disorders were prevalent among cannabis users, with depression in 21.1%, mania in 10.5%, and bipolar affective disorder (BPAD) in 5.3%.

Obsessive-compulsive disorder was also more frequent in cannabis users (p=0.043) (Table 3).

Table 3. Association of psychiatric comorbidities with ever cannabis use (n= 38)

ICD-10 Code	Diagnosis	Ever Cannabis User n (%)	p-value
F10–F19	Alcohol use	27 (71.1)	<0.001 †*
	Alcohol dependence	2 (5.3)	0.824
	Nicotine dependence	28 (73.6)	<0.001 †*
	Opioid use	8 (21.1)	<0.001 †*
F20–F29	Schizophrenia	2 (5.3)	0.676
	Psychosis NOS	1 (2.6)	0.161
F30–F39	Mania	4 (10.5)	0.001 †*
	BPAD	2 (5.3)	0.866
	Depression	8 (21.1)	0.876
F40–F49	Anxiety NOS	2 (5.3)	0.206
	Panic disorder	3 (7.9)	0.983
	OCD	2 (5.3)	0.043 †*
	Somatoform disorder	1 (2.6)	0.745

† Fisher's exact test

* <0.05

DISCUSSION

This hospital-based study assessed the patterns of cannabis use and its associated socio-demographic factors and psychiatric comorbidities in an outpatient psychiatric population in Eastern Nepal.

Patterns of Cannabis Use

The overall pattern of cannabis use among psychiatric outpatients was 7.6%, with 5% reporting current use within the last six months Hazardous use was observed in 1.6% of participants, and 3% met criteria for possible cannabis use disorder, while lifetime cannabis dependence was noted in 3.2%.

The prevalence of cannabis use in our study is lower than reported in studies from Jamaica (48%) and Saudi Arabia (27.6%) among psychiatric populations,[15] but aligns with hospital-based findings from Nepal, which suggest lower outpatient prevalence than inpatient populations.[16] These findings indicate that while cannabis use is less prevalent in Nepalese psychiatric outpatients compared to international studies, it still warrants routine screening. The relatively lower prevalence may reflect cultural, legal, and social restrictions on cannabis use in Nepal, as well as differences in sampling methods and study methodologies.

Socio-demographic characteristics of cannabis users

Cannabis use was the most common in younger adults (16–25 years), males, unmarried individuals, and those who were unemployed or students/laborers. These findings are consistent with prior studies from Nepal and other regions, which demonstrate higher prevalence among young males and unmarried individuals.[17,18,19] The predominance of use among younger adults highlights the vulnerability of this age group, as cannabis consumption during formative years may interfere with education, employment, and psychosocial development. Our study highlights that it is important to explore cannabis use in such high-risk group during psychiatry evaluation.

Psychiatric Comorbidities

Cannabis users exhibited higher rates of comorbid psychiatric conditions, particularly other substance use disorders. Alcohol use was present in 71.1% of cannabis users, nicotine dependence in 73.6%, and opioid use in 21.1%. These findings reinforce the well-documented co-occurrence of cannabis use with other substance use disorders (SUD) evident in landmark studies,[20,21] highlighting the need for integrated assessment and intervention strategies in individuals with SUD.

Mood disorders, especially mania (10.5%), were significantly associated with cannabis use, whereas depression and bipolar affective disorder were not. Obsessive-compulsive disorder was also more prevalent among cannabis users (5.3%).

Schizophrenia and other psychotic disorders did not show significant associations. This is in contrast with well-established literature. [22,23,24] The discrepancy in our result may potentially reflect the outpatient study setting, which may capture a broader, less acutely psychotic population compared to inpatient or first-episode psychosis studies. Further, the relationship between cannabis use and psychosis may be causal, including time order, and dose–response relationship. [24] However, we have not explored these factors that could have affected the relationship between cannabis use and psychosis in our study.

The patterns of comorbidity are in line with international literature demonstrating associations of cannabis use with mood disorders, substance use, and anxiety disorders. [25,26] The findings underscore the importance of holistic approach in management of psychiatry patients with comprehensive psychiatric evaluation of both cannabis use and other psychiatric illness and treatment of both co-occurring disorders.

Strengths and Limitations

This study has several strengths, including a sizeable outpatient sample, use of standardized screening (CUDIT-R) and diagnostic (ICD-10) tools, and comprehensive assessment of socio-demographic and clinical variables. However, certain limitations should be noted. The hospital-based, cross-sectional design limits generalizability to community populations and precludes causal inference. The use of self-reported measures for cannabis use may be subject to underreporting due to stigma or legal concerns. Also, the study was conducted in a single tertiary care center, which may limit broader applicability.

CONCLUSION

This study highlights that cannabis use among psychiatric outpatients in Eastern Nepal is common among younger adults, males, unmarried individuals, and those who were unemployed or are engaged as students and laborers. Cannabis use is frequently associated with comorbid substance use disorders and psychiatric conditions, such as mania, depression and obsessive-compulsive disorder in an outpatient setting. These findings underscore the importance of routine screening of cannabis use for holistic management of psychiatric patients in psychiatric outpatient settings targeting the high- risk socio-demographic profile.

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