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Cannabis and Methamphetamine Use Patterns in a Psychiatric Inpatient Setting in Iran

Bahareh Eyvaznejad [1], Mohammad Eslami [1], Anahita Najafi [1], Jaleh Gholami [1], Behrang Shadloo [1,*], Afarin Rahimi-Movaghar [1]

[1] Iranian National Center for Addiction Studies (INCAS), Tehran University of Medical Sciences, Tehran, Iran

[*] ***Corresponding Author:*** Iranian National Center for Addiction Studies (INCAS), Tehran University of Medical Sciences, Tehran, Iran. Email: behrang.shadloo@gmail.com

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Abstract

Background: Substance use is associated with psychiatric disorders, contributing to negative outcomes and exacerbating existing conditions.

Objectives: This study aimed to investigate the prevalence and patterns of illicit drug use, focusing on cannabis and methamphetamine, in a psychiatric inpatient setting in Iran.

Methods: Three hundred adult psychiatric inpatients were included in the study, and data on demographics, substance use patterns, and clinical characteristics were collected. The World Health Organization's alcohol, smoking, and substance involvement screening test (WHO-ASSIST) was used to screen for substance-related patterns and risks among patients who used methamphetamine or cannabis in the past three months.

Results: Among the participants (median age: 35.0 years, 65.3% male), recent substance use was reported by 38.0%, with methamphetamine and cannabis reported by 15.0% and 11.7%, respectively. These were less prevalent compared to alcohol and opioid substances, which were reported by 19.3% and 19%, respectively. Recent cannabis or methamphetamine use was associated with aggression and polysubstance use disorders.

Conclusions: The findings revealed that recent cannabis and methamphetamine use were associated with aggression and polysubstance use disorders among psychiatric inpatients. Opioids were the most prevalent illicit drugs consumed.

Keywords: Cannabis, Methamphetamine, Psychiatric Hospital, Substance Use

1. Background

Substance use has a considerable prevalence worldwide, with approximately 284 million people reporting having used drugs at least once (1). It is estimated that cannabis has been used at least once in the past year by 209 million people, making it the most commonly used drug worldwide, followed by opioids (61 million) and amphetamines (34 million). The prevalence of cannabis and amphetamine use has increased globally in recent years, with a considerable increase in the number of disability-adjusted life years (DALYs), particularly among younger age groups (1, 2).

The increasing prevalence of cannabis use is closely linked to psychiatric disorders, which are significant concerns. Cannabis use increases the risk of developing psychiatric conditions, including but not limited to anxiety disorders, depressive disorders, and psychosis (3, 4). Additionally, cannabis use contributes to the worsening of symptoms and the progression of existing psychiatric disorders (5, 6). Conversely, individuals with psychiatric disorders may also be more susceptible to using cannabis as a form of self-medication or a coping mechanism (7).

The interplay between the use of methamphetamine and psychiatric disorders also demands significant attention. Methamphetamine use plays a substantial role in increasing the risk of experiencing psychotic symptoms, exhibiting a dose-response correlation. Methamphetamine use is also strongly associated with drug-induced psychotic disorders (8). On the other hand, psychiatric patients may be more inclined to

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resort to stimulants such as methamphetamine to experience psychotropic effects that alleviate their current symptoms (9).

2. Objectives

Considering the current trend in stimulant and cannabis use (2), along with evidence showing their strong relationship with psychiatric disorders, it is crucial to investigate patterns of use among psychiatric patient populations. This paper is part of a larger study on cannabis use and cannabis-induced mental disorders among hospitalized psychiatric patients in Iran. In this paper, we aimed to investigate the rate and patterns of lifetime and recent illicit drug use and its related characteristics in a sample of patients in a psychiatric hospital in Tehran, Iran, with a focus on cannabis and methamphetamine. We also compared the demographic and clinical characteristics of psychiatric inpatients with and without cannabis or methamphetamine use during the three months before hospitalization. Furthermore, via standard questionnaires, we aimed to investigate drug use-related risks among participants with recent cannabis or methamphetamine use, as well as their subjective experiences of cannabis intoxication and withdrawal among those with recent cannabis use.

3. Methods

3.1. Study Design

This cross-sectional study was conducted on 300 patients hospitalized in psychiatric wards in 2020 at Roozbeh Hospital, an academic psychiatric hospital in Tehran, Iran. The study protocol was approved by the Research Ethics Committee of Tehran University of Medical Sciences (IR.TUMS.MEDICINE.REC.1398.912).

3.2. Participants

The criteria for inclusion in the study were: (1), Hospitalization in psychiatric wards between January 1 and March 13, 2020; (2), an age range of 18 to 65 years; and 3, symptoms that could not be better explained by a neurological condition. Participants were excluded if they: (1), Were admitted for substance use treatment; (2), had a hospitalization duration of less than a week; and (3), did not provide written informed consent by the patient or their caregiver.

We found 327 patients to be eligible to enter the study, of which 27 cases were excluded: 6 for being admitted for substance use treatment, 6 for being discharged from the hospital in less than a week, and 15 for not signing the informed consent. The final number of participants was 300. Based on previous findings from the IranMHS study, the prevalence of illicit drug use over one year in the Iranian population was 5.5% (10). Since drug use among psychiatric patients is relatively greater than that among the general population, we used 10% as the estimated prevalence. We used the Cochran sample size formula for calculating the study sample size, the formula is:

$$n = \frac{Z^2 \times p \times (1-p)}{d^2}$$

Which n is the required sample size; Z is the Z-score corresponding to the desired confidence level (for 95% confidence, Z = 1.96); P is the estimated prevalence (in our case, 0.10), and d is the desired precision. With a precision of 3.5%, the study sample size was 283.

3.3. Variables

Data collection was performed by trained psychiatry residents. Participants' demographic data, including age, sex, marital status, educational level, and employment status, were collected. A detailed history of recent (defined as use in the past three-month period) and lifetime substance use patterns was obtained from the participants and their close family members. The substances assessed in this study included alcohol, cannabis, opioids (opiates, including opium and heroin, and prescription opioids), and stimulants/hallucinogens (methamphetamine, ecstasy, LSD, and cocaine). The reasons for referral, including aggression, suicidality and suicide attempts, acute psychosis, substance abuse, or other reasons, were recorded.

Additionally, since relying solely on self-reports regarding substance use is subject to various biases such as recall bias, urine toxicology tests for cannabis, morphine, and methamphetamine were conducted for all the patients. Based on the past three months of cannabis or methamphetamine use or a positive urine toxicology result, we divided our sample into those with and without recent cannabis use (CU) and those with and without recent methamphetamine use (MU).

The World Health Organization's alcohol, smoking, and substance involvement screening test (WHO-ASSIST) was completed for patients who reported using cannabis and methamphetamines in the past three months and those who had a positive urine toxicology result for cannabis or methamphetamine. World Health Organization's-ASSIST is a valid tool for screening and identifying health risks related to substance use and substance use disorders (11). Its Persian version has also

demonstrated good psychometric properties (12). Patients' final diagnoses were made after being discussed in psychiatry rounds and finalized by the attending psychiatrist.

3.4. Statistical Analysis

Categorical variables are described as frequencies and percentages. Continuous data were tested for normality using the Shapiro–Wilk test. The ages of the participants in the two subgroups (subsamples with recent cannabis or recent methamphetamine use) that followed a normal distribution in the study sample are presented as means and standard deviations (SDs). The median and interquartile range (IQR) were reported for variables with a non-normal distribution (age of total participants, current number of cigarettes smoked per day, and hospitalization duration).

The following statistical tests were employed in the analysis:

3.4.1. Shapiro–Wilk Test

This test was used to assess the normality of continuous data. If the p-value was less than 0.05, the null hypothesis of normality was rejected, indicating that the data were not normally distributed.

3.4.2. Chi-square Test

This test was used to compare categorical variables between different groups (e.g., participants with and without recent CU, and participants with and without recent MU). The chi-square test evaluates whether there is a significant association between two categorical variables.

3.4.3. Mann–Whitney U Test

For continuous variables that did not follow a normal distribution, the Mann–Whitney U test was used to compare differences between two independent groups. This non-parametric test assesses whether the distributions of two groups are significantly different.

3.4.4. Independent Samples t-Test

For continuous variables that followed a normal distribution, the independent samples *t*-test was used to compare the means of two independent groups. This test determines whether there is a statistically significant difference between the means of the two groups.

All analyses were performed using IBM SPSS Statistics for Windows, version 28.0 (Armonk, NY: IBM Corp.). A P-value of < 0.05 was considered significant, indicating that the results were unlikely to have occurred by chance.

4. Results

Among a total of 300 patients (median age: 35.0 years, IQR: 17; 65.3% male), the most prevalent reason for referral to the psychiatric ward was aggression (49.7%), followed by suicide attempts (31.0%) and acute psychosis (16.7%). Recent use of any type of substance was reported by 38.0% of the participants, with 19.3% and 19.0% reporting recent use of alcohol and opioids, respectively. Among the total cases, 11.7% reported CU in the past three months, and 15.0% reported MU during the same period. Lifetime use of substances was reported by 49.0% of the patients, with opioids being the most commonly used group of substances (35.0%), followed by stimulants (26.7%), alcohol (23.7%), and cannabis (20.3%). Additionally, opioid use disorder was the most commonly diagnosed substance use disorder (SUD) in our sample, second to polysubstance use disorder.

Positive urine tests were detected for morphine in 16.7% of the cases (28.6% of those with recent CU and 40.0% of those with recent MU), methamphetamine in 12.7% (31.4% of those with recent CU and 71.1% of those with recent MU), and tetrahydrocannabinol (THC) in 6.0% (45.7% of those with recent CU and 15.6% of those with recent MU). We found discrepancies between self-reported drug use and urine toxicology results. Among participants who self-reported drug use, 28 tested positive for opioids, 30 for methamphetamine, and 16 for cannabis. However, a significant number of participants who denied using these substances also tested positive: 19 for opioids, 8 for methamphetamine, and 4 for cannabis. Conversely, some participants who reported drug use tested negative: 24 for opioids, 2 for methamphetamine, and 6 for cannabis.

Patients with recent CU were more likely to be male, unemployed, and significantly younger than those without recent CU. Similar patterns were also found in the group with recent MU compared with those without recent MU, except that the age distributions of patients with or without recent MU did not differ. Those with recent MU and CU were more likely to have been referred due to aggression and were also more likely to report recent and lifetime use of other illicit substances, including alcohol, opioids, and stimulants, as well as current tobacco and opioid use, than were patients without recent CU or MU. Recent cannabis users also reported significantly higher rates of recent alcohol use than did those without recent CU.

Among the total participants, recent cannabis users and recent methamphetamine users (23.3%, 62.9%, and 82.2%, respectively) were diagnosed with SUDs, and both recent cannabis and methamphetamine users were significantly more likely to be diagnosed with polysubstance use disorder. In addition to SUDs, the most common diagnosis at discharge was bipolar mood disorder among all patients and those with recent CU, and psychotic/mood disorders due to substance use in the group with recent MU. Recent cannabis users' distribution of psychiatric disorder diagnoses, such as psychotic or mood disorders due to substance use, did not significantly differ from that of patients without recent CU, except for a higher rate of bipolar disorder diagnosis. On the other hand, those with recent MU had significantly higher rates of psychotic/mood disorders due to substance use diagnoses than did those with no recent MU.

The median duration of hospitalization was 27.0 days (IQR: 22) among all participants, and there was no significant difference in hospitalization duration between participants with and without recent CU or between those with and without recent MU. Details regarding patient characteristics and substance use are presented in Table 1.

World Health Organization's alcohol, smoking, and substance involvement screening test data were obtained from participants who reported CU or MU during the past three months and those who had a positive urine toxicology test for methamphetamine or cannabis. While half of the recent cannabis users (50.0%) reported using cannabis on a weekly basis, most of the recent methamphetamine users (69.8%) reported using methamphetamine daily or almost daily. Both groups reported a strong desire to use the substance, with 88.2% of the subgroup with recent CU and 100.0% of the subgroup with recent MU expressing this desire. Those with recent MU were also more likely to fall into the high-risk category than those with recent CU (53.5% versus 23.5%). Higher rates of substance use-related health, social, legal, and financial risks were reported by recent methamphetamine users compared to those with recent CU. Details regarding the WHO-ASSIST findings are presented in Table 2.

5. Discussion

In this study, we investigated the rates and patterns of lifetime and recent substance use, particularly cannabis and methamphetamine, in a sample of psychiatric inpatients in Iran. Our findings revealed that 38.0% of our cases reported recent use of at least one type of substance, whereas one-fifth, one-seventh, and one-ninth of the total cases reported opioid use, methamphetamine use, and CU, respectively, in the past three months. This finding is consistent with a recent study on Iranian psychiatric inpatients, which reported that 37.9% of the participants reported recent substance use (13). Similarly, in another study, 36.7% of psychiatric inpatients reported recent use of illicit substances of any type (14).

The prevalence of recent CU in our sample was notably higher than rates reported in prior studies of psychiatric inpatients. For instance, a 2013 study in Iran found a current CU rate of 2.8% (14), whereas we found a significantly higher rate of 11.7% for recent CU. While this difference could be attributed to potential underdiagnosis in the previous study, the observed increase in rates is concerning. Approximately one-fifth of our patients disclosed a history of lifetime CU. Compared with data from meta-analyses of worldwide studies among psychiatric groups, the prevalence of lifetime CU is 30% among patients with bipolar disorder (15), 11.7% among those diagnosed with major depressive disorder (16), and 26.2% among patients with schizophrenia spectrum disorders (17), suggesting variability across diagnoses.

We also found elevated MU, with 15% and 26% of the patients reporting recent and lifetime MU, respectively. Those suffering from psychiatric conditions have greater odds of MU (18). Similarly, in a study conducted in 2013 among an Iranian psychiatric inpatient population, the prevalence of MU was reported to be 3.3% (14). Findings derived from meta-analyses of global studies involving psychiatric populations demonstrate that the prevalence of stimulant use in the past 12 months and lifetime is 7.2% and 8.9%, respectively, among patients with psychosis (19). Conversely, the estimated prevalence of recent or lifetime stimulant use is 4.8% among individuals with major depressive disorder (16) and 7.3% among patients with schizophrenia spectrum disorders (17).

We found that approximately 40% of the patients had a history of recent substance use. Alcohol was the most commonly used substance, followed by opioids, which accounted for half of the individuals with recent substance use. Moreover, the majority of our participants diagnosed with SUDs were diagnosed with polysubstance use disorder, followed by opioid use disorder. Studies conducted in different regions of Iran have consistently shown that opioids, mainly opium, are the most commonly used illicit substances in psychiatric inpatient settings (20). Opioids are the main drugs used in Iran, suggesting a similar pattern of drug preference. This pattern is in accordance with the

Table 1. Characteristics of Patients Admitted to the Psychiatric Hospital and Patients with Cannabis and Methamphetamine Use During the Past Three Months [a]

Variables	Total Cases (N = 300)	Cannabis Use in the Past Three Months (N = 35)		Methamphetamine Use in the Past Three Months (N = 45)	
	No. (95% CI for Percent)	Value	P-Value [b]	Value	P-Value [c]
Age (median, IQR)	17 (35.0)	27.3 ± 7.0 [d]	< 0.001	34.0 ± 7.9 [b]	0.365
Gender (male)	196 (59.7 - 70.7)	30 (85.7)	0.007	41 (91.1)	< 0.001
Marital status			0.002		0.618
Never married	169 (50.7 - 61.7)	29 (82.9)		26 (57.8)	
Married	82 (22.3 - 32.3)	2 (5.7)		10 (22.2)	
Previously married	49 (12.3 - 20.7)	4 (11.4)		9 (20.0)	
Education			0.171		0.110
Illiterate or elementary	64 (14.7 - 28.3)	6 (17.1)		9 (20.0)	
Middle school	91 (25.3 - 35.7)	15 (42.9)		21 (46.7)	
High school diploma	110 (31.3 - 42.3)	13 (37.1)		13 (28.9)	
Higher education	35 (6.4 - 12.0)	1 (2.9)		2 (4.4)	
Job			0.009		0.044
Employed	66 (17.7 - 27.0)	9 (25.7)		12 (26.7)	
Unemployed	142 (41.7 - 52.7)	23 (65.7)		28 (62.2)	
Not in the labor force [e]	93 (22.1 - 40.4)	3 (8.6)		4 (8.9)	
Reasons for referral					
Aggression	149 (43.7 - 55.7)	23 (65.7)	0.043	29 (64.4)	0.032
Attempted suicide	93 (25.7 - 36.0)	9 (25.7)	0.472	11 (24.4)	0.302
Acute psychosis	50 (12.3 - 21.0)	6 (17.1)	0.936	7 (15.6)	0.828
Substance abuse	12 (2.0 - 6.3)	2 (5.7)	0.582	4 (8.9)	0.069
Other reasons	50 (12.1 - 20.3)	1 (2.9)	0.020	0 (0)	0.020
Lifetime use					
Any substance	147 (39.9 - 54.2)	35 (100)	< 0.001	45 (100)	< 0.001
Alcohol	71 (19.1 - 28.4)	23 (65.7)	< 0.001	22 (48.9)	< 0.001
Cannabis	61 (15.7 - 25.1)	35 (100)	< 0.001	28 (62.2)	< 0.001
Opioids	105 (29.7 - 40.1)	27 (77.1)	< 0.001	58 (74.4)	< 0.001
Opiates	85 (23.9 - 34.3)	19 (54.3)	< 0.001	53 (67.9)	< 0.001
Opium	78 (21.4 - 31.1)	17 (48.6)	0.001	23 (51.1)	< 0.001
Heroin	40 (9.7 - 17.4)	13 (37.1)	< 0.001	27 (60.0)	< 0.001
Prescription opioids	49 (12.4 - 20.7)	17 (48.6)	< 0.001	19 (42.2)	< 0.001
Stimulants/Hallucinogens	80 (21.0 - 31.8)	24 (68.6)	< 0.001	45 (100)	< 0.001
Methamphetamine	78 (20.7 - 31.1)	23 (65.7)	< 0.001	45 (100)	< 0.001
Ecstasy	11 (1.7 - 6.0)	9 (25.7)	< 0.001	7 (15.6)	< 0.001
LSD	13 (2.3 - 6.7)	10 (28.6)	< 0.001	7 (15.6)	< 0.001
Cocaine	2 (0 - 1.7)	1 (2.9)	0.090	1 (2.2)	0.164
Recent use					
Any substance	114 (32.6 - 45.3)	35 (100)	< 0.001	45 (100)	< 0.001
Alcohol	58 (14.6 - 23.4)	20 (57.1)	< 0.001	17 (37.8)	0.967
Opioids	57 (15.3 - 24.6)	14 (40)	0.001	20 (40.4)	0.027
Opiates	42 (9.4 - 18.8)	9 (25.7)	0.034	16 (35.6)	0.079
Opium	28 (6.6 - 13.2)	3 (8.6)	0.869	5 (11.1)	0.634
Heroin	15 (2.1 - 6.9)	6 (17.1)	< 0.001	11 (24.4)	0.008
Prescription opioids	27 (5.8 - 12.3)	9 (25.7)	< 0.001	10 (22.2)	0.112
Current number of cigarettes use per day (median, IQR)	4.0 (20)	20.0 (10)	< 0.001	20.0 (5)	< 0.001
Positive urine test					
Morphine	50 (12.7 - 21.1)	10 (28.6)	0.085	18 (40.0)	< 0.001
Methamphetamine	38 (9.0 - 16.4)	11 (31.4)	0.001	32 (71.1)	< 0.001
THC	18 (3.7 - 8.7)	16 (45.7)	< 0.001	7 (15.6)	0.011
Diagnosis at discharge					
Substance use disorder	70 (19.1 - 27.8)	22 (62.9)	< 0.001	37 (82.2)	< 0.001
Poly substance use disorder	27 (5.5 - 14.8)	14 (41.2)	< 0.001	17 (37.8)	0.024
Cannabis use disorder	4 (0.2 - 2.9)	4 (11.8)	< 0.001	1 (2.2)	0.840
Opioid use disorder	18 (3.3 - 10.1)	2 (5.7)	0.935	3 (6.7)	0.430
Methamphetamine use disorder	17 (3.2 - 9.8)	1 (2.9)	0.442	15 (33.3)	0.003
Other substance use disorder	4 (0.3 - 3.0)	1 (2.9)	0.405	1 (2.2)	0.382
Diagnosis of other mental disorders					
Schizophrenia	54 (13.7 - 22.4)	4 (11.4)	0.282	3 (6.7)	0.032
Schizoaffective	20 (4.0 - 9.1)	0 (0)	0.093	1 (2.2)	0.195
Major depressive disorder	24 (4.7 - 11.0)	0 (0)	0.063	0 (0)	0.032
Bipolar mood disorder	118 (34.1 - 45.2)	19 (54.3)	0.054	10 (22.2)	0.011
Psychotic disorder due to substance use	25 (5.0 - 11.7)	4 (11.4)	0.481	22 (48.9)	< 0.001
Mood disorder due to substance use	24 (5.4 - 11.4)	5 (14.3)	0.145	8 (17.8)	0.009
Others	35 (8.0 - 16.1)	3 (8.6)	0.544	1 (2.2)	0.032
Days of hospitalization before discharge (median, IQR)	22 (27.0)	17 (24.0)	0.849	16 (26.0)	0.466

[a] Values are expressed as No. (95% CI for percent) or No. (% unless otherwise indicated).

[b] Comparisons were made between those who had used cannabis during the three months before assessments and those who had not.

[c] Comparisons were made between those who had used methamphetamine during the three months before assessments and those who had not.

[d] Data with a normal distribution, presented as the mean ± SD.

[e] Individuals who are neither employed nor actively seeking employment, including students, retirees, homemakers, and those with disabilities who are not looking for work.

prominent drug production and transit locations in the region, as well as with cultural factors (1, 21).

In our study, the rate of positive urine tests for morphine, methamphetamine, and cannabis was 16.7%, 12.7%, and 6.0%, respectively. These findings can be compared to a similar study conducted in Iran on patients referred to the emergency psychiatric room, where the positive urine toxicology rates for morphine,

Table 2. The Results of World Health Organization's Alcohol, Smoking, and Substance Involvement Screening Test on Cannabis and Methamphetamine Use in the Past Three Months [a]

Variables	Cannabis (N = 34)	Methamphetamine (N = 43)
The specified substance use frequency		
Once or twice	4 (11.8)	1 (2.3)
Monthly	5 (14.7)	3 (7.0)
Weekly	17 (50.0)	9 (20.9)
Daily or almost daily	8 (23.5)	30 (69.8)
Strong desire or urge to use the specified substance	30 (88.2)	43 (100)
Health, social, legal or financial problems due to use	18 (52.9)	40 (93.0)
Failed to do what was normally expected because of using the specified substance	17 (50.0)	42 (97.7)
Friends or relatives or anyone else ever expressed concern about use of the specified substance	3 (8.8)	35 (81.4)
Failed to control, cut down or stop using the specified substance	6 (17.6)	37 (86.0)
Level of risk [b]		
Low risk (0 - 3)	0 (0)	0 (0)
Moderate risk (4 - 26)	26 (76.5)	20 (46.5)
High risk (> 27)	8 (23.5)	23 (53.5)

[a] Values are expressed as No. (%).

[b] Risk score calculated and grouped into three levels for each substance on the basis of data acquired via WHO-ASSIST, on which the appropriate level of intervention is determined.

methamphetamine, and cannabis were 27.4%, 14.5%, and 3.5%, respectively (22). The differences in these rates could be attributed to the different settings and patient populations.

The discrepancies between self-reported drug use and urine toxicology results highlight potential limitations in relying solely on self-reports for assessing substance use. The presence of opioids, methamphetamine, and cannabis in participants who denied using these substances suggests underreporting, which may stem from social desirability bias, fear of legal or social consequences, or lack of awareness of drug consumption (e.g., through prescription medications or contaminated substances). On the other hand, the negative test results among participants who reported drug use could indicate variability in detection windows, differences in drug metabolism, or potential errors in self-reporting.

In our study, the MU and CU groups were more likely to be referred for aggression. Patients with SUD, particularly those using cannabis and methamphetamine, had an increased likelihood of violence-related admissions compared with those without SUD (23). Neuroimaging studies on cannabis (24) and methamphetamine (25) users revealed impairments in the prefrontal cortex, affecting inhibitory processing. These neural deficits limit the ability to suppress impulsive tendencies, which are significant factors in aggressive behaviors. Overall, our findings contribute to the growing evidence highlighting the association between substance use and aggression in psychiatric inpatients.

Participants with recent MU were more likely to be diagnosed with psychotic/mood disorders due to a substance use diagnosis and were less likely to be diagnosed with primary psychotic or mood disorders. MU has been linked to various psychiatric symptoms and disorders, including symptoms of psychosis, anxiety, and depression (26, 27). Patients with MU are vulnerable to methamphetamine-induced mental disorders, which can be challenging to distinguish from primary mental disorders (28). However, it is crucial to differentiate between the two in clinical practice since the treatment planning and management strategies for these conditions may differ (28, 29).

We did not find a significant relationship between recent CU and psychotic or mood disorders due to a substance use diagnosis, which may be attributed to the small sample of recent cannabis users in our study. However, the relationship between heavy CU and psychotic disorders has been demonstrated in previous research (30, 31). Additionally, previous findings have linked CU to bipolar disorder (6, 31), which is compatible with the relationship observed between recent CU and bipolar disorder diagnosis in our study.

Recent cannabis or methamphetamine use has led to health, social, legal, and financial consequences for participants. Moreover, individuals with recent MU have experienced these issues to a greater extent. In line with our findings, previous research has highlighted the consequences of CU, which can include impaired cognition, mental health issues, and potential long-term negative effects on motivation and academic or occupational performance (32-34). Research also shows that individuals who engage in regular MU experience a wide range of health and social consequences, including but not limited to weight loss, depression, hallucinations, paranoia, violence, and seizures (35).

Our study has several limitations that should be considered when interpreting the findings. First, relying on self-reports is associated with recall bias or social desirability bias, leading to possible underreporting or

misclassification of substance use. Urine tests enhanced the reliability of our findings; however, they were limited to just three substances (THC, morphine, and methamphetamine) and could only measure recent substance use. Second, the cross-sectional design restricts our ability to determine the possible causal relationships and direction of the observed associations. Third, the study was conducted in a single tertiary psychiatric hospital in Tehran, Iran, which limits the generalizability of the findings to other settings or populations. Despite these limitations, this study provides valuable insights into the prevalence and characteristics of recent CU or MU among psychiatric inpatient settings in Iran.

5.1. Conclusions

Our study provides insights into the prevalence and characteristics of recent cannabis and MU among psychiatric inpatients. We found variations in the prevalence rates of recent cannabis and MU compared with those reported in previous studies. The findings highlight the importance of thorough assessments of substance use in psychiatric patients, especially those who are referred for aggression. Future research with diverse settings and longitudinal designs is warranted to further assess CU and MU in inpatient settings and explore the two-way relationship between psychoactive drug use and psychiatric disorders.

Footnotes

Authors' Contribution: A. R. and J. G. involved in the study's conception and supervision. B. E. and B. S. contributed to the initial study design and analyzed the data. M. E. and A. N. participated in writing the article and assessing the publishing readiness of the final edition.

Conflict of Interests Statement: The authors have no conflicts of interest to disclose.

Data Availability: Data and materials for this study will be available by reasonable request from the corresponding author.

Ethical Approval: This study was conducted in accordance with the principles expressed in the World Medical Association Declaration of Helsinki, as revised in 2013. This study was approved by the ethics committee of Tehran University of Medical Sciences. (Approval ID: IR.TUMS.MEDICINE.REC.1398.912).

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