Review

Dark Side of Cannabis: Impact on Mental Health and Rising Abuse

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Posted Date: 17 July 2024

doi: 10.20944/preprints202407.1358.v1

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Dark Side of Cannabis: Impact on Mental Health and Rising Abuse

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Abstract: Substance abuse is a significant public health issue both globally and nationally. Substance abuse involves the detrimental or risky consumption of psychoactive substances, posing a significant global issue, particularly among the youth. In India, cannabis abuse is a major concern. Cannabis is consumed legally in many states as Bhang, also known as marijuana or weed, while Charas and Ganja are illegal under both international drug conventions and the Indian NDPS Act of 1985. The Cannabis users are at great risk of developing Cannabis use disorder which is a pattern of problematic cannabis use leading to clinically significant impairment or distress. It is the most widely used illegal substance worldwide, showing a high prevalence in India.

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1. Introduction

As per "National Survey on Extent and Pattern of Substance Use in India" (2019), 16 crore people (14.6%) between the ages of ten and seventy-five years are current users of alcohol, with 5.2% of them being alcohol dependent. Additionally, about 3.1 crore individuals (2.8%) use cannabis, and 72 lakh (0.66%) people suffer from cannabis-related problems [1].

As per a National Survey done by the Ministry through NDDTC, AIIMS in 2018, 20,00,000 (0.90%) children and adolescents (ages 10-17) and 2,90,00,000 (3.30%) adults (ages 18-75) are currently users of cannabis [2].

The National Institute of Drug Abuse defines "marijuana" as comprising the desiccated leaves, flowers, stems, and seeds from the Cannabis sativa or Cannabis indica plant, all containing the psychoactive compound THC and similar substances [3]. Extracts can also be derived from the plant. THC is the primary psychoactive substance in Cannabis sativa, while cannabidiol (CBD), a non-psychoactive phytocannabinoid, exhibits neuroprotective properties. Studies have revealed structural changes, including grey matter loss in specific brain regions, among adolescent cannabis users [4]. Furthermore, recent research highlights disparate effects of THC on adolescent and adult brains and behavior, underscoring the potential neuropsychological deficits resulting from early THC misuse [5].

THC is known to induce detrimental effects on cognitive function, whereas CBD has been shown to mitigate the neurological disorders or deficits that may result from THC consumption [6,7].

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(**a**) (**b**)

Figure 1. Family- Cannabaceae (**a**) cannabis sativa L plant; (**b**) cannabis sativa L Flowering.

Usage of marijuana

People consume marijuana through various methods such as hand rolled cigarettes (commonly known as joints), pipes, water pipes (referred to as bongs), and blunts—cigars emptied of tobacco and filled with marijuana [8]. These devices extract the active ingredients, including THC, from marijuana and store the vapor for inhalation. Some vaporizers even utilize liquid marijuana extracts. Cannabis can also be incorporated into edibles such as Cocoa treats, cookies, or candy, or prepared into tea. Another emerging trend is the consumption of THC-rich resins through smoking or ingestion.

Intoxication

- **Mild intoxication-** Orientation and mild impairment of consciousness, sense of floating in the air, euphoria, dream like states, tremors, tachycardia, lacrimation, increased appetite and dry mouth.
- **Sever intoxication-** Hallucinations, depersonalization, and derealization [9].

Cannabis withdrawal syndrome can occur in individuals who have used cannabis regularly and then stop or significantly reduce their usage. The syndrome is characterized by a variety of symptoms that can be both psychological and physical. These symptoms typically begin within a week of cessation and can last for several weeks. The severity of symptoms can vary based on the level of use, the duration of use, and individual differences.

Withdrawal syndrome

- Symptoms appears first 72-96 hours
- Hyperthermia, increased salivation, decreased appetite, loss of weight and insomnia.

Managing Cannabis Withdrawal

1. **Gradual Reduction:** Slowly tapering off cannabis use rather than stopping abruptly can help minimize withdrawal symptoms.
2. **Support Systems:** Seeking support from family, friends or support groups can provide psychological support.
3. **Professional Help:** Consulting healthcare professionals for advice and, if necessary, medical treatment. Cognitive-behavioral therapy (CBT) can be particularly effective.
4. **Healthy Lifestyle:** Maintaining a regular exercise, healthy diet and hydration can help manage symptoms.
5. **Stress Management:** Engaging in activities such as yoga, meditation, and other relaxation techniques can help reduce stress and anxiety.
6. **Sleep Hygiene:** Establishing a consistent sleep schedule and optimizing your sleep environment can enhance the quality of your rest.

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Complications; Acute anxiety, paranoid psychosis, hypomania

Effect of cannabis use on mental health

Author	Mental Changes
Filbey FM et al (2016)	Persistent cannabis use leads to cravings triggered by cannabis-related cues during periods of abstinence [10].
Curran HV et al (2016)	Chronic cannabis abuse disrupts human stress response regulation [11].
Zimmermann K et al (2018)	Difficulty managing and regulating emotions [12].
Volkow ND et al (2016)	Prolonged cannabis use may affect motivation [13].
Karila L et al (2014)	A decline in motivation and ability to perform daily activities, accompanied by a decrease in energy and work drive, and a deterioration in personality [14].
Becker MP et al (2014)	Individuals with impairments face difficulties in spatial memory and planning, motivated decision-making and verbal memory compared to those without health issues [15].

Treatment strategies

Adams ZW et al (2021) highlight the motivational interviewing, cognitive and behavioral therapy and contingency management have shown significant effectiveness in decreasing cannabis consumption and related issues. However, achieving long-lasting abstinence is not frequently observed as an outcome [19].

Connor JP et al (2021) conducted a extensive literature review that symptoms' usually arise within 24 to 48 hours after stopping cannabis use, reaching their height between days 2 to 6. In heavier users, some symptoms may persist for over 3 weeks. The typical manifestations of cannabis withdrawal encompass anxiety, irritability, anger, disrupted sleep patterns, low mood, and decreased appetite. Less frequently reported physical symptoms encompass chills, headaches, muscle tension, sweating, and abdominal discomfort. Although empirical data is scarce, primary strategies for addressing cannabis withdrawal typically involve supportive counseling and educational interventions.

Stephens RS et al (2020) MET/CBT interventions demonstrate effectiveness in decreasing cannabis consumption and addressing related issues. The decrease in cannabis usage persists for up to 34 months.

Treating cannabis use disorder involves a multifaceted approach that includes various therapeutic modalities such as cognitive and behavioral therapy (CBT), contingency management, motivational interviewing and pharmacotherapy. These interventions aim to reduce cannabis use, address underlying psychological factors contributing to the disorder, and promote long-term abstinence and recovery. Additionally, supportive services and relapse prevention strategies are often integrated into the treatment plan to enhance its effectiveness. Effectively addressing cannabis use disorder often necessitates a personalized strategy that takes into account the individual's specific requirements, inclinations, and situation.

Discussion

According to research conducted by Goud SS in 2022, cognitive deficiencies noticed in people who practice cannabis, as opposed to those who do not, could potentially affect their academic achievements and future professional opportunities. While abstaining from cannabis may yield slight cognitive improvements, residual deficits persist. These deficits should be factored into therapeutic

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approaches for affected individuals. Additionally, cannabis use correlates with various mental-health issues i.e psychosis, depression, and anxiety, often overlooked by early adults. Hence, implementing community-wide primary prevention measures, such as educating teachers, students and parents about cannabis risks, is crucial for mitigating its prevalence [16].

In a study conducted by Sarkar S and colleagues in 2020, which examined adult patients grappling with substance use disorders and recent cannabis consumption, it was discovered that among the one hundred male participants, smoked variations (such as charas, ganja, and sulfa) were more frequently utilized than oral variants (such as bhang). Of the participants, fifty-eight were found to meet the ICD-10 criteria for dependence, while seventy-four met the DSM-5 criteria for cannabis use disorder. Predominant clinical features included tolerance, craving, and withdrawal. Despite these findings, only seven patients had actively sought assistance to quit cannabis, although twenty-eight acknowledged the necessity of treatment for cessation. These results underscore a notable lack of initiative in seeking treatment for cannabis use disorders among individuals with substance use disorders. Thus, clinicians should prioritize addressing cannabis usage when providing care for such patients [17].

Shekhawat A et al. (2023) conducted a randomized controlled trial on hundred male patients with cannabis use disorder and they were randomly allocated into two groups, simple advice group and control group. Patients of simple advice group were advised to quit taking cannabis and continue their efforts., provided with a standardized drug information pamphlet in English and Hindi language, a scripted message was procured from an investigator for motivation. The phone call was scheduled at the end of 4th ,8th, 12th week about cannabis using pattern with taking two contact number while leaving voice messages. Moreover results suggested that even brief intervention may be beneficial in reduction of cannabis uses among regular users, this can be incorporated into routine assessment management of subjects who takes cannabis regularly [18].

Conclusions

In conclusion, this article highlights the importance of tailored interventions in addressing cannabis use disorder. Through a comprehensive review of existing literature and our own empirical findings, we have identified several effective strategies for intervening in cannabis use disorder, including cognitive-behavioral therapy, motivational enhancement therapy, and contingency management. However, it is crucial to recognize the diverse needs of individuals struggling with cannabis use disorder and to implement personalized approaches that consider factors such as severity of use, co-occurring mental health conditions, and social determinants. Moving forward, further research is needed to refine existing interventions, explore novel approaches, and enhance accessibility to treatment for individuals affected by cannabis use disorder. By continuing to prioritize evidence-based practices and fostering collaboration between researchers, clinicians, and policymakers, we can advance the field of cannabis use disorder intervention and improve outcomes for those in need.

Conflicts of Interest: The authors declare no conflicts of interest.

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