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CANNABIS USE DISORDER: A REVIEW ON CLINICAL MANAGEMENT

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Abstract: Cannabis Use Disorder (CUD) has become a growing concern in global public health, especially in the face of increasing social permissiveness and changes in cannabis legalization policies. Despite the perception of low risk, chronic use of the substance is associated with cognitive impairment, behavioral changes and the development of dependence, especially withdrawal syndrome, which hinders adherence to treatment and contributes to relapses. This literature review, based on publications from the last five years, aimed to analyze the main therapeutic strategies available for the clinical management of SUD. The results indicate the absence of approved pharmacotherapies, despite studies with drugs such as dronabinol, gabapentin and nabilone. On the other hand, non-pharmacological interventions - such as cognitive-behavioral therapy, motivational counseling and psychosocial support - show greater acceptance among users. Digital technologies, such as mobile applications and real-time monitoring tools, are showing promise, but still face implementation barriers. In addition, nutritional counseling has emerged as a relevant complementary strategy, helping to regulate mood, sleep and appetite during abstinence.= It is concluded that the management of SUD should be multifactorial, individualized and integrative, considering clinical, psychosocial, nutritional and technological aspects. Increased access to treatment, professional training and the development of clinical guidelines based on

INTRODUCTION

Cannabis use disorder (CUD) has been consolidated as a relevant clinical condition in the global public health scenario, following the progressive increase in the consumption of *Cannabis sativa* derivatives in recent decades. It is estimated that the prevalence of substance use, as well as the conditions associated

with dependence, has been growing steadily, especially among young adults, driven by increasing social permissiveness and changes in regulatory policies (Brezing; Levin, 2022).

Despite the increasingly bland public perception of the risks of cannabis, its adverse effects on physical and mental health are well documented. Regular users are subject to a spectrum of complications, including cognitive impairment, mood swings and behavioral dysfunctions. In many cases, persistent use leads to the development of a dependence syndrome characterized by compulsive patterns of consumption, tolerance, functional impairment and withdrawal symptoms (Bahji et al., 2021).

Cannabis withdrawal is an important clinical component of UCD, mainly affecting frequent users after abrupt cessation or significant reduction in use, especially in products with a high Δ9-tetrahydrocannabinol (THC) content. Symptoms, which typically emerge between 24 and 48 hours after cessation and peak between the second and sixth day, include anxiety, irritability, sleep disturbances, loss of appetite, mood changes and nonspecific somatic symptoms, and can persist for weeks in more severe cases (Connor et al., 2022). In a comprehensive review, Connor et al. (2022) estimated that 35% to 47% of regular cannabis users develop withdrawal symptoms after abrupt cessation, the most prevalent being: irritability (70%), insomnia (65%), anxiety (58%) and reduced appetite (50%). These manifestations have a direct impact on adherence to treatment and the risk of relapse.

Despite the growing clinical recognition of the disorder, substantial therapeutic gaps remain, especially in the treatment of the associated withdrawal syndrome, considered a central diagnostic criterion of SUD according to the DSM-5. It is estimated that up to 47% of regular users experience clinically significant withdrawal symptoms when they stop using, which contributes to the cycle of relapses and perpetuation of the condition (Connor et al., 2022).

The management of TUC still faces significant therapeutic challenges. To date, there are no drugs approved for its treatment, and the psychotherapeutic approaches available remain underused, in part due to the shortage of trained professionals and limited accessibility to specialized services. (Lile et al., 2023) In this context, technological alternatives are being explored as promising strategies to broaden the scope of prevention, screening and therapeutic intervention.

In addition, users' own preferences regarding treatment are little considered, even though recent studies indicate that non-pharmacological interventions, such as motivational counseling and psychosocial support, are significantly more accepted than drug approaches alone (Lile et al., 2023).

It is essential to highlight the role of a balanced diet as an ally in the management of Cannabis Use Disorder (CUD), contributing to the improvement of symptoms, promotion of mental health and adherence to treatment. Mobile apps, digital therapies and the use of ecological momentary assessments (EMAs) have proven useful as monitoring tools in real time, with the potential to personalize clinical approaches and increase patient adherence to treatment (Brezing; Levin, 2022).

The impacts of TCU go far beyond individual health; instead, they impose significant burdens on public health and social well-being. Individuals exhibiting TCU are at increased risk of psychosis, cognitive impairment, poorer mental health outcomes; and declines in educational and work functioning (PATEL et al., 2025; GHAFOURI et al., 2025). In addition, individuals with TCU are associated with increased violence, more frequent crime and self-harm, meaning that effective interventions are urgently needed (GHAFOURI et al., 2025). Due to trends towards the legalization of cannabis use, a large proportion of individuals with TCU go untreated (GRAVES

et al., 2025). Barriers to treatment include ignorance of the availability of services, lack of readiness to stop using, financial constraints and perceived stigma; therefore, critical gaps in access to and use of health care are pointed out (GRAVES et al., 2025). Furthermore, this reality suggests the need for comprehensive care models for services that address both TCU and its common comorbidities; as well as greater public campaigns to reduce stigma and improve treatment-seeking behaviors (LE FOLL et al., 2025; GRAVES et al., 2025).

Thus, given the high prevalence, chronic and recurrent nature of TUC and the scarcity of effective interventions, it is essential to deepen our understanding of its clinical management, seeking to integrate current evidence, technological innovations and more accessible and effective therapeutic strategies.

METHODOLOGY

This work is characterized as a bibliographic review whose objective is to gather and discuss the most recent evidence on the clinical management of cannabis use disorder, based on current contributions from scientific literature. The research was conducted through a structured search in the PubMed database, covering publications from the last five years. The following descriptors were used to select the studies: "Cannabis use Disorder", "Treatment" and "Diagnosis", combined to ensure the scope and specificity of the topic.

Articles available in full that addressed diagnostic and therapeutic aspects related to cannabis use disorder were included, regardless of language, as long as they presented methodological clarity, thematic pertinence and scientific relevance. Publications such as original studies, narrative reviews and update articles were accepted. We excluded duplicate publications, studies outside the scope of the research and articles not accessible in the database used.

RESULTS AND DISCUSSION

Analysis of the data extracted from the studies reviewed revealed a significant gap in the proven efficacy of pharmacological interventions for the treatment of cannabis use withdrawal syndrome (MAW), as well as in the adoption of digital and technological therapies in clinical practice. Although multiple clinical studies have explored the efficacy of different medications - such as dronabinol, quetiapine, nabiximols, gabapentin and nabilone - most randomized trials have failed to demonstrate statistically significant superiority over placebo in the management of cannabis withdrawal. (Brezing; Levin, 2022) Additionally, participant loss rates have been substantially high, often exceeding one third of the sample, which limits the generalizability of the findings.

Understanding treatment preferences among cannabis users is key to developing more acceptable and effective approaches. Lile et al. (2023) highlighted that the majority of users prefer interventions based on counseling, psychosocial support and accessible digital tools, while the exclusive use of medication is often rejected, mainly due to the associated stigma and fear of side effects. In addition, the involvement of family members and the use of interventions based on family participation have been shown to increase adherence to treatment and reduce relapse rates, especially among adolescents and young adults (Winters et al., 2021).

In the field of non-pharmacological interventions, cognitive-behavioral therapy (CBT) has shown promise, although existing studies are scarce and small-scale. No statistically significant differences were observed between the groups that received CBT associated or not with SSRIs, nor between those with or without relapses, in terms of CIWA scores adapted for cannabis. (Brezing; Levin, 2022) Despite this, strategies such as psychoeducation, motivational approaches, sleep hygiene,

physical activity and coping skills training have been cited as common practices, although they have been little investigated in terms of isolated effectiveness.

According to Brezing and Levin (2022), the effectiveness of mobile apps in the treatment of SUD depends directly on factors such as personalization of content, use of interactive elements (e.g. gamification) and integration with conventional health systems. In addition, tools such as ecological momentary assessments (EMA) allow continuous monitoring of use patterns and withdrawal symptoms, representing a promising advance for individualized clinical management . However, data point to a still limited adoption by both patients and health professionals, due to barriers such as unequal internet access, clinicians' lack of familiarity with therapeutic technologies and structural limitations in reimbursement and training. (Brezing; Levin, 2022) Apps and other digital tools, despite being commercially available, have not yet demonstrated a significant impact on adherence and clinical outcomes in the treatment of cannabis use disorder (CUD).

The clinical case analyzed (Connor et al., 2022) reinforces the complexity of managing CUD in practice. The patient evaluated had a high level of cannabis dependence, as well as psychiatric comorbidities and concomitant use of other substances (nicotine, alcohol and opioids), in addition to poor adherence to medication and prescribed non-pharmacological treatment. The clinical profile, including high scores on the SDS and FTND scales, highlights the severity of the condition and the need for multimodal interventions adapted to the individual's history and motivation.

The findings of this review show that the clinical management of cannabis use disorder (CUD) remains a substantial challenge, due to the scarcity of effective pharmacological treatments, limited robust evidence on behavioral interventions and structural barriers to the implementation of digital therapies. The absence of a drug approved specifically for cannabis abstinence syndrome (MAW) and the heterogeneous results of randomized trials - even those that have demonstrated isolated symptomatic benefits, such as improved sleep or reduced cravings - point to the need for more controlled studies with larger samples and well-defined clinical outcomes (Brezing; Levin, 2022; Connor et al., 2022).

In the clinical context, the use of medication is often aimed at symptomatic relief of manifestations such as insomnia, anxiety, nausea and changes in appetite. However, the absence of clear guidelines and the lack of specific training among professionals contribute to inconsistent and sometimes suboptimal approaches. This is even more evident when looking at the profile of the patient reported by CONNOR, whose severity of condition and multiplicity of biopsychosocial factors indicate the importance of a personalized therapeutic plan, based on the integration of pharmacological and psychotherapeutic strategies, with ongoing educational and motivational support.

Non-pharmacological interventions, especially CBT and its coping skills training components, represent an alternative with reasonable clinical acceptance, although the literature lacks direct comparisons between different behavioral approaches. The use of resources such as physical exercise, sleep hygiene and relaxation techniques has shown therapeutic potential, but is still limited by the methodological weakness of existing studies (Brezing; Levin, 2022). A recent meta-analysis study demonstrated that integrated CBT programs with automated SMS messaging support resulted in significantly higher rates of abstinence maintenance after 12 weeks compared to CBT alone, reducing problematic cannabis use outside of clinical settings. This

combination has been used especially in contexts where face-to-face access to treatment is limited (Hoch et al., 2022).

While psychosocial interventions are essential, in part, the search for effective pharmacotherapies for TCU remains an area of ongoing research, as there are no FDA-approved drugs to treat this specific disorder (CONNOR et al., 2025; GHAFOURI et al., 2025). However, new classes of drugs have shown promising evidence, including cannabinoid receptor 1 (CB1) agonists, gabapentin and an N-acetylcysteine, which have shown potential in clinical trials in reducing withdrawal symptoms as well as the urge to consume cannabis (Patel et al., 2025; GHAFOURI et al., 2025). The development of pharmacological interventions is vital, especially for those with severe TCU or often comorbid mental health conditions, as medication will provide additional support for sustained recovery (LE FOLL et al, 2025; GHAFOURI et al., 2025). In addition, innovative interventions, such as programs that send treatments via text messages or even intensive outpatient programs, have recently been formed with a focus on accessibility and engagement, specifically in younger populations (Patel et al., 2025; GRAVES et al., 2025).

Adequate nutritional therapy plays a key role in optimizing the response to pharmacological treatments, especially due to its positive impact on liver metabolism and the body's antioxidant defense (Calder, 2013; De Oliveira Otto et al., 2018). Evidence in the literature suggests that diets rich in nutrients with anti-inflammatory action, such as omega-3 fatty acids, vitamins C and E, and phenolic compounds, can modulate the oxidative stress associated with chronic cannabis use and withdrawal symptoms (Volkow et al., 2014; Das et al., 2015). Understanding the physiological and behavioral changes during the withdrawal process, such as disturbances in appetite, sleep and mood, is essential for more efficient clinical management. Realistic and individualized dietary strategies can help in this process. Foods rich in tryptophan, such as nuts, eggs and dairy products, combined with complex carbohydrates, favor the production of serotonin, contributing to the regulation of mood and sleep (Richard et al., 2009). In addition, the consumption of teas with calming properties (e.g. chamomile, passionflower), magnesium and vitamin B6 can alleviate symptoms such as irritability, anxiety and mood swings, often observed during withdrawal (Boyle et al., 2017; Eby & Eby, 2006). Finally, it is important to consider that, in some cases, less invasive, more natural approaches with a focus on prevention, such as the inclusion of nutritional guidance, can favor adherence to treatment by patients, especially those who show resistance to the use of medication (Lile et al., 2023; Brezing & Levin, 2022).

In addition, the use of digital technologies applied to TCU has emerged as a promising but still incipient field. Low patient adherence and the reluctance of healthcare professionals to adopt these tools reflect both gaps in technical training and systemic limitations, such as lack of regulation, lack of reimbursement codes and ethical concerns involving data privacy and consent. (Brezing; Levin, 2022) Improving usability, personalizing content for specific age groups and integrating elements such as social media and games may represent future strategies to increase engagement, especially among adolescents and young adults.

Therefore, it is clear that there is a need for coordinated progress between clinical research, professional training and technological infrastructure so that interventions for TCU can achieve greater efficacy and penetration. The development of evidence-based guidelines and educational programs aimed at the use of digital tools in the therapeutic context are fundamental steps towards improving mental health care for cannabis use. With this, it is

hoped not only to expand access, but also to improve adherence and clinical outcomes in diverse populations, including those in contexts of socioeconomic vulnerability.

CONCLUSION

The management of cannabis use disorder remains challenging, given the lack of approved pharmacological therapies, the high prevalence of withdrawal symptoms and the barriers to adopting digital therapies. Individualized strategies that consider users' preferences and integrate personalized technological approaches represent the most promising way to increase treatment efficacy and adherence. It is recommended that future guidelines consider integrated therapeutic plans in order to combine face-to-face interventions, digital strategies, nutritional support and family engagement, taking into account the individual cultural and socioeconomic contexts of each patient (Kroon et al., 2022).

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