

## Review Article

# Oral manifestations found among illicit drugs users

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## ABSTRACT

Illicit drug use is an intricate challenge that currently affects an individual's health and overall well-being. This review study provides insight into the availability of information regarding the examination of the signs, treatment approaches, and broader consequences related to health problems among individuals who use drugs. The clinical indicators of drug consumption on oral health encompass issues such as dry mouth (xerostomia), gum problems, teeth grinding (bruxism), and dental cavities. These manifestations contribute to immediate discomfort and elevate the risk of long-term dental complications, underscoring the pressing need for intervention and care. Effective management strategies involve a comprehensive approach, incorporating preventive measures, timely treatment, and a compassionate understanding of the unique challenges faced by drug users. Preventive efforts, such as education and regular dental check-ups, serve as critical components in mitigating the clinical manifestations. Treatment strategies, including restorative procedures and periodontal therapy, play a pivotal role in addressing immediate oral health concerns. However, the management of oral health issues extends beyond the dental chair. Acknowledging the hurdles faced by individuals who use drugs, including economic factors and social prejudice, underscores the significance of adopting a comprehensive approach to providing support and assistance. Integrating oral health services with substance abuse treatment presents a promising avenue for comprehensive healthcare. This collaborative approach addresses oral health issues and acknowledges the bidirectional relationship between substance abuse and oral health. In summary, it is essential to comprehend the relationship between illicit drug use and oral health. By implementing management strategies, we can potentially reduce suffering, improve quality of life, and enhance health for individuals affected by substance abuse. This holistic approach emphasizes the significance of acknowledging and addressing these population's health requirements within a broader healthcare framework.

**Keywords:** Clinical impact, Dental health, Illicit drugs, Oral manifestations, Xerostomia

## INTRODUCTION

The connection between the use of drugs and oral health is a diverse issue that has gained more attention in the past few years. People who use drugs come from backgrounds and have different patterns of substance abuse, making it difficult to come to concrete conclusions about the oral effects of drug use.<sup>1</sup> However, several studies and clinical observations have offered insights into how illicit drugs can affect health. One of illicit drug

user's most widely recognized oral manifestations is xerostomia or dry mouth. Some drugs, such as methamphetamine and cocaine, are notorious for causing a decrease in saliva production leading to a mouth.<sup>2,3</sup> This lack of saliva does not bring discomfort. Also raises the likelihood of dental problems like tooth decay and gum disease; as per research conducted in 2015, individuals who use methamphetamine have a chance of experiencing symptoms of mouth, with approximately 78% reporting such issues.<sup>4</sup> Moreover, using illicit drugs shows the

association between several problems, including gum inflammation, bleeding gums, and advanced periodontal disease. The constriction of blood vessels caused by drugs like cocaine and crack cocaine can further worsen inflammation and damage to the tissues surrounding the teeth.<sup>5,6</sup> The national institute on drug abuse states that individuals who use drugs are more prone to gum problems, with 34% of those in substance abuse treatment displaying signs of gum disease. Additionally, the habitual grinding of teeth, known as bruxism, is often seen among drug users. Bruxism can lead to tooth erosion, fractures, and joint (TMJ) disorders. A study by Hussain et al showed a significant prevalence of bruxism among individuals with a history of methamphetamine use, with 62% exhibiting signs of teeth grinding. Dental caries is another primary concern in the context of illicit drug use.<sup>7</sup> The sugary or acidic nature of certain drugs, such as ecstasy (MDMA) and opioids, can erode tooth enamel and promote cavity formation. The research highlighted a notably higher incidence of dental caries in opioid-dependent individuals compared to non-users, with a mean decayed, missing, and filled teeth (DMFT) score of 11.7 in the drug-using group. In addition, people who use drugs often encounter difficulties when trying to get dental treatment because of various socioeconomic factors such as poverty, homelessness, and social stigma. These obstacles to receiving care can make oral health problems worse by causing delays in diagnosis and treatment. In a study found by the substance abuse and mental health services administration (SAMHSA), nearly half of the individuals who actively seek support and intervention for substance abuse issues have articulated that their imperative dental care needs remain unaddressed and unmet.<sup>8</sup> The background of oral manifestations among illicit drug users underscores the multifaceted nature of this issue. The negative impacts of using drugs on health have been extensive and documented. They include problems like mouth issues with gums, teeth grinding, dental decay, and difficulty accessing care.<sup>9,10</sup> These oral health challenges do not affect the well-being of drug users. Also emphasizes the need for comprehensive healthcare that addresses both substance abuse and oral health concerns together. Understanding the signs and effects associated with drug use is crucial in developing strategies to prevent and intervene in this population. This review aims to find current information regarding oral manifestations found among illicit drug users.

## LITERATURE SEARCH

This research is based on an examination of existing literature conducted on September 17, 2023, using the Medline and PubMed databases. We utilized medical subject headings and a combination of keywords per the database requirements to find information. Our search terms included "manifestations," "drugs," and "drug users." We focused exclusively on studies involving subjects published in English, excluding any studies other than 2008. After screening articles, we selected those that

were pertinent to our research and aligned with our inclusion criteria. The chosen articles were thoroughly read. We also manually searched through their reference lists to identify relevant studies. From these articles, we extracted data discussing the types of manifestations observed among illicit drug users as well as their causes and effects.

## DISCUSSION

The use of illicit drugs have harmful impact towards an individual dental health which can poses negative impact to a person's dental condition, leading to various oral health problems such as dry mouth, tooth decay, gum diseases, teeth grinding, mouth sores, and, in severe cases, oral cancer.<sup>11</sup> These dental issues go beyond discomfort. Also has psychological and social consequences for individuals involved in illicit drug use. It is very crucial to understand that oral health is vulnerable to the effects of drug abuse when substances are used illegally or recreationally rather than for medical purposes. Therefore, it becomes essential to establish a connection between drug misuse and oral health and ensure that individuals engaging in drug consumption receive proper dental care and comprehensive education on the matter. In this discussion, we will explore research findings that highlight the impact of using substances on health. Additionally, we will provide insights into approaches for addressing this problem and consider its wide-ranging implications.

### *Clinical manifestation*

The clinical manifestations of illicit drug use on oral health are wide-ranging and often profound. A prominent oral manifestation among drug users is xerostomia or dry mouth. Xerostomia, a condition that occurs when the mouth doesn't produce saliva to keep it moist and lubricated, is crucial for maintaining health.<sup>12</sup> Saliva, with its multifaceted functions including acid neutralization, removal of food debris and bacteria, and teeth remineralization, is indispensable in preserving oral well-being.<sup>13</sup> Many illegal drugs, such as methamphetamine and cocaine, are known to cause mouth by narrowing the blood vessels that supply saliva glands. This can lead to problems, including tooth decay, gum diseases, oral infections, bad breath, difficulties in chewing and swallowing, and changes in taste perception. This not only engenders discomfort but also significantly amplifies the susceptibility to dental caries and gingival ailments. Concurrently, the prevalence of periodontal complications is conspicuously elevated among drug users, presenting as gingival inflammation, gum bleeding, and advanced periodontal disease. The cause of diseases is the buildup of plaque on teeth, which triggers an immune response that harms the tissues around the teeth.<sup>14,15</sup> The use of drugs increases the risk and severity of diseases due to factors such as reduced blood flow to the gums, weakened immune function, dry mouth, and poor oral hygiene practices among drug users.

Periodontal diseases can appear in ways including gingivitis, identified by gum inflammation, and it involves damage to the tissues surrounding the teeth, necrotizing gingivitis, and it infects the gum tissue. Drugs like cocaine that constrict blood flow to the gum tissues worsen inflammation and tissue damage. According to a study that focused on care found that any form of maltreatment could lead to a prevalence of lifetime cannabis use reaching, up to 85.7%.<sup>16</sup> Additionally, the study revealed that within the three months the prevalence of cannabis use could be as high as 31.7%. This study also identified factors contributing to drug abuse outcomes. These factors were identified as maltreatment (with a factor loading of 0.858). Chronic psychological maltreatment (with a factor loading of 0.825).<sup>17</sup> These factors collectively explained the outcome 73.6% and 68.1% respectively. This also shed light on individuals, in child welfare service (CWS) settings. So, it is clearly visible that, illicit drug abuse increasing oral manifestation among individual which is totally harmful.

### **Management**

Oral health problems, among individuals who engage in drug use pose a public health challenge that demands a comprehensive and interdisciplinary strategy to tackle effectively. The management of these issues should involve prevention, treatment, and social support strategies tailored to this population's specific needs and challenges. Prevention of oral health issues among illicit drug users is the first and most crucial step in management. To tackle the effects of drugs on health, it is crucial to prioritize measures that not only minimize their impact but also encourage proper dental hygiene practices among individuals who engage in drug use.<sup>1,18</sup> These preventive measures should involve educating people about the health risks linked to types of illicit drugs, including issues like dry mouth, tooth decay, gum diseases, teeth grinding, mouth sores, and oral cancer. The educational programs should also emphasize ways to prevent or minimize these risks by encouraging habits such as drinking water, chewing sugar gum, maintaining brushing and flossing routines, avoiding acidic and sugary foods and drinks, and using fluoride-based products. Encouraging drug users to schedule checkups and screenings is crucial for early detection and intervention of oral health problems. Dentists and other dental professionals have a role in identifying signs and symptoms of issues, delivering preventive and therapeutic treatments, as well as referring drug users to the appropriate medical and psychological support.<sup>19</sup> Dental professionals must undergo training to effectively handle the difficulties that may arise when treating drug users, such as anxiety, fear, pain, withdrawal symptoms, and relapse. Dental professionals need to approach drug users with empathy and without judgment, building a relationship based on trust and respect. To effectively address drug use and dependency among individuals, we can incorporate evidence-based approaches such as utilizing treatments like methadone, buprenorphine, and

naltrexone. Psychosocial therapies like therapy, motivational interviewing, and contingency management can also play a vital role.<sup>20</sup> Implementing harm reduction programs like needle exchange initiatives and safe injection sites, along with the establishment of peer support groups, are strategies that contribute to reducing drug use and dependency among drug users. This reduction in drug use can greatly improve these individuals' health and overall quality of life by mitigating the impact that drugs have on their oral cavity while also increasing their motivation and ability to maintain good oral hygiene. Treatment of oral health issues among illicit drug users is the second step in management. Treatment strategies should aim to address the immediate and long-term clinical manifestations of illicit drugs on the oral cavity and restore the function, appearance, and sensation of the oral tissues. Treatment options should encompass approaches to address prevalent oral health problems in individuals who use drugs. These concerns typically involve decay, gum diseases, and grinding of teeth. Dental interventions may consist of treatments such as fillings, crowns, bridges, or implants well as periodontal therapy like scaling, root planning, or surgery.<sup>21</sup> Additionally, occlusal therapy involving splints or night guards and endodontic therapy, like root canal treatment, can be considered. In some cases, extraction may also be necessary. Dental interventions should be performed with adequate anesthesia and analgesia to ensure patient comfort and compliance. Medical interventions for more severe or complex oral health issues among drug users, such as mucosal lesions and oral cancer. Medical procedures can include biopsy, examining tissue samples under a microscope using antibodies to identify proteins in tissues, performing tests, surgical interventions, treatment with drugs, radiation therapy, or immunotherapy. To achieve outcomes, it is crucial to collaborate with professionals and other healthcare practitioners in coordinating interventions. Oral hygiene instructions and maintenance for drug users after dental or medical interventions to prevent recurrence or complications of oral health issues. To ensure hygiene, it's important to follow proper techniques for brushing and flossing using fluoride products and rinsing with antiseptic mouthwashes or saline solutions. Additionally, it's advisable to avoid tobacco and alcohol use while maintaining a diet. Regular visits to professionals are also recommended for monitoring healing progress and receiving any additional care.<sup>22</sup> Social support for illicit drug users is the third step in management. Strategies focused on support should aim to enhance drug user's access to and utilization of health services as well as improve their psychological and social well-being. It is crucial to collaborate with professionals and healthcare in order to reduce this illicit drug abuse as also provides insights who have involvement with substance abuse. Some specialist including, addiction specialists, psychiatrists, psychologists, social workers, nurses, pharmacists, and peer workers, is extremely important in order to monitor the condition and provide necessary

health benefit towards the abuser. Through the collaboration with the healthcare specialist this may provide positive impact and also will contribute significant result towards social support strategies. The strategy may need to involve sharing information, referrals, case management, and coordinated care plans to address drug users' multiple and complex needs. This should also involve advocacy and policy-making to improve the availability and quality of oral health services for drug users. Incorporating health services into programs that help individuals with substance abuse, like methadone clinics, detoxification centers, rehabilitation facilities, and harm reduction sites. There should be more integrated program need to added which will involve providing on-site or mobile dental care, screening, education, and referral services to drug users who attend these programs. While focusing on integration it should be keep in mind that several challenges and factors may affect drug user's ability to access health services. These may include issues including affordability, transportation, insurance coverage, societal judgments, awareness levels, motivation, and trust. So, it's important to empower drug users to take responsibility of their own health and overall well-being by encouraging self-care practices, fostering peer support networks, and involving them in community initiatives. Empowerment entails equipping drug users with information, skills, resources, and opportunities to maintain their health and seek assistance when necessary. Additionally, it involves engaging drug users in peer support groups, recovery programs, and community activities that contribute to building their self-esteem and confidence levels while expanding their connections.

## CONCLUSION

The nexus between illicit drug use and oral health presents a multifaceted challenge with profound clinical manifestations and management imperatives. Drug users often experience health problems, including dry mouth, gum issues, teeth grinding, and tooth decay. These issues highlight the impact of substance abuse on well-being. These manifestations not only lead to discomfort and compromised oral function but also elevate the risk of long-term dental complications, emphasizing the pressing need for intervention and care. The management of oral health issues in this population necessitates a comprehensive and compassionate approach. Preventive measures, including education and regular dental check-ups, serve as vital components to mitigate the clinical manifestations. Treatment strategies, encompassing restorative procedures and periodontal therapy, play a crucial role in addressing immediate oral health concerns. Equally important is recognizing the systemic challenges drug users face, including barriers to accessing dental care due to socioeconomic factors and stigma. Integrating oral health services with substance abuse treatment is a promising holistic care avenue. This collaborative approach not only addresses oral health issues but also acknowledges the bidirectional relationship between substance abuse and oral health. It recognizes that

improving oral health can contribute to more successful substance abuse treatment outcomes and overall well-being among individuals grappling with drug addiction.

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