

Exploring Oral Manifestations: Unveiling the Impact of Illicit Drug Abuse

Abstract:

Addiction to illicit drugs is a major global public health issue that has a profound impact on both individual and community well-being. Although the effects of illegal substances on the body have been thoroughly examined, little is known about how they affect dental health. This thorough analysis seeks to clarify the complex interactions between major illegal substances and oral health, including both direct and indirect impacts. The review also addresses the effects of substance usage on treatment results, patterns of dental care utilization, and quality of life related to oral health. It emphasizes how crucial it is for public health authorities, addiction experts, and dentists to work together collaboratively to address the oral health requirements of those with drug use disorders.

Key-words: Illicit drugs, oral health, dental diseases, substance use disorders, interdisciplinary collaboration.

Introduction:

Drug abuse is one of the most serious health concerns in the world.¹ According to estimates, 1 in 17 persons worldwide between the ages of 15 and 64 have taken drugs in the previous year in 2021. From 240 million in 2011 to 296 million in 2021, the anticipated total number of users increased (5.8 per cent of the world's population between the ages of 15 and 64) which showed a 23 per cent increase. In 2021, 13.2 million individuals were projected to be injecting drugs. This prediction represents an 18% increase over the 11.2 million in 2020.^[2]

Drug abuse has a number of direct negative effects, such as heart attacks, respiratory depression, liver cirrhosis, nephropathy, infectious diseases like AIDS, TB, and hepatitis, disability from injuries, mental illnesses like depression, and issues with one's teeth. Part of these issues stem from the disregard of self-care, which is a typical practice among addicts.^[3,4] Addicts typically disregard their health issues and only seek medical attention after their sickness has progressed to a point where they exhibit significant symptoms; which can complicate therapy in a number of ways.^[5] In this sense, throughout the time of drug misuse, these individuals might not place much emphasis on their own dental health and may only seek emergency care.^[6,7]

Drug addiction has a number of indirect effects on society as a whole, as well as direct repercussions on addicts themselves. These effects include decreased working hours, increased health care expenses, crime, violence, and the burden of illnesses. Drug misuse accounted for between 0.8% and 0.4% of all fatalities worldwide in 2000, according to Disability-

¹SWATHY S, ²AKHIL S,
³DAVIS NADAKKAVUKKARAN,
⁴ODIYILPADIKADAN NAVEEN

¹National Health Mission, Kochi, Kerala


²Chief Dental Surgeon, White Petals Dental Clinic, Pampakuda, Ernakulam, Kerala.

³Department of Oral and Maxillofacial Surgery, Sree Anjaneya Institute of Dental Sciences, Atholi, Modakkallur, Calicut, Kerala

⁴Department of Oral and Maxillofacial Surgery, Malabar Dental College and Research Centre, Edappal

Address for Correspondence: Dr. Akhil S
Chief Dental Surgeon
White Petals Dental Clinic
Pampakuda PO Muvattupuzha Taluk
Ernakulam dist., Kerala, India-686667.
E.mail: whitepetalsdentalclinic@gmail.com

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Adjusted Life Years (DALYs).[8] This issue costs more than \$200 billion USD a year and has a median relative risk of two for mortality.[9]

Drug usage is linked to a higher likelihood of social issues, including drug trafficking and theft, as well as prostitution and theft by drug users to support their addiction, among other unintended effects. Drug addicts' health issues have a knock-on impact on society through increased health care expenses, needle-sharing, prostitution, AIDS, and other infectious illnesses that put society at risk for more health problems.[10]

Literature Search:

This study's foundation is a review of the literature that was done till December 2023, utilizing the Medline and PubMed databases. In order to locate information, we used a mix of keywords and medical subject headings as specified by the database. Among our search phrases were "drugs," "oral manifestations," and "drug users." All studies published in English were the only ones considered for our review. We screened the publications and chose those that met our inclusion criteria and were relevant to our study. We read the selected articles in their entirety. To find pertinent research, we also manually went through their reference lists. We took information on the many manifestations seen in users of illegal drugs, as well as their sources and effects, from these articles.

Drugs and Oral Health:

One of the most common health issues linked to drug addiction is oral health issues. Drug misuse affects oral health both directly and indirectly. It can also aggravate oral issues indirectly by negatively influencing the behavior and way of life of those who use it.³

There is a dearth of information in published works about the epidemiology, pathological time course, clinical presentation, and effective treatment and preventative measures for oral health among drug users globally.[11]

Oral pathologies associated with various illicit drugs.

Methamphetamine

Strong psychostimulant methamphetamine is well-known for being linked to "meth mouth," a phrase used to characterize the severe dental issues that are common in long-term users. Abuse of methamphetamine has been associated with severe periodontal disease, substantial tooth attrition, and widespread dental cavities. Methamphetamine's acidic nature, along with xerostomia, bad dental hygiene habits, and

other factors, cause tooth enamel to erode and dental structures to become less mineralized. Moreover, methamphetamine-induced vasoconstriction lowers gingival blood flow, which exacerbates periodontal disease.[12]

Cocaine:

Because of its local anesthetic effects and vasoconstrictive qualities, cocaine misuse presents serious dangers to oral health. Mucosal ulcerations, palate perforations, and gingival necrosis are common symptoms of chronic cocaine users. The medication's capacity to narrow blood vessels causes tissue ischemia, which compromises the integrity of the oral mucosa and makes people more vulnerable to infections. Cocaine's numbing qualities also conceal mouth discomfort, postponing the identification and correction of dental issues.[13]

Heroin:

Heroin addiction is linked to a unique collection of oral symptoms, such as mucosal lesions, dental caries, and xerostomia. Dental caries is facilitated by opioid-induced reductions in salivary flow rates, especially in the cervical and proximal areas of teeth. Furthermore, because of their weakened immune systems and injection-related trauma, heroin addicts are more vulnerable to mouth infections such as candidiasis and bacterial abscesses. In addition, long-term heroin injection raises the risk of necrotizing gingivitis and periodontitis, which exacerbate oral health issues.[12]

Cannabis:

Cannabis can affect dental health even though it is thought to be less hazardous than other illegal substances. Prolonged cannabis usage has been linked to inflammation of the gingiva, xerostomia, and a higher risk of periodontal disease. Delta-9-tetrahydrocannabinol (THC), a psychoactive substance, acts on cannabinoid receptors in the salivary glands to limit saliva production, which contributes to dental caries and dry mouth.[14] Additionally, cannabis smoke exposes oral tissues to carcinogens, which may raise the chance of developing mouth cancer.[15]

Synthetic Cathinones:

A variety of oral symptoms, such as tooth erosion, gingival recession, and oral ulcerations, have been connected to the usage of synthetic cathinones. These medications can cause bruxism that is persistent, which can result in temporomandibular joint problems, tooth fractures, and enamel abrasions. Moreover, leukoplakia, oral candidiasis, and periodontal disease have all been linked to synthetic cannabis. These drugs' psychotropic effects could make it harder to maintain good dental hygiene, which would exacerbate already-existing issues with oral health.[11]

MDMA and LSG:

One prominent oral symptom associated with 3,4-methylenedioxymethamphetamine (MDMA) and Lysergic acid diethylamide (LSD) usage is bruxism, or the grinding of teeth. Studies have shown that MDMA use may increase muscular tension, especially in the jaw muscles, which may cause teeth to grind and clench uncontrollably.[16] Dental problems including tooth wear, enamel erosion, and temporomandibular joint (TMJ) disorders can be brought on by this persistent practice. Additionally, users of MDMA have reported experiencing xerostomia, or dry mouth.[17] The stimulant qualities of MDMA might cause salivation to decrease, creating a dry mouth. The risk of oral infections, gum disease, and dental caries can all rise with a reduction in saliva.³ Moreover, mucosal sores and mouth ulcers have been linked to MDMA and LSD usage. Although the precise causes of these lesions are unknown, it is thought that immune system suppression and decreased blood supply to the oral tissues may have a role in their emergence.[18]

Diagnostic Considerations:

During a clinical examination, dental professionals can identify oral manifestations such mucosal lesions, gingival recession, caries, and tooth erosion in persons affected by substance abuse.[19] A complete patient history and communication are necessary, since these results are vague and may overlap with other oral diseases. Dentists should appropriately identify the risk of drug-related oral disease by asking about the patient's history of substance use, including frequency, duration, and mode of delivery.[20]

Management Strategies:

Addiction experts, public health officials, and dentists working together as an interdisciplinary unit is essential to meet the oral health requirements of people with substance use disorders (SUDs).. Dental practitioners are crucial in recognizing and managing oral symptoms of drug usage because they are skilled in the diagnosis and treatment of oral health issues.[19] Addiction experts, on the other hand, are skilled at comprehending the multifaceted nature of SUDs, including the psychological and behavioral facets that might influence treatment compliance and oral health practices. Together, these specialists may create all-encompassing treatment programs that take into account the underlying drug misuse problems as well as the dental health difficulties. In order to prevent drug misuse, promote oral health education and access to dental care, and include oral health services into settings for substance abuse treatment, public health officials

play a crucial role. Pharmacological treatments, such as antibacterial medicines and saliva replacements, may help alleviate people's oral symptoms and stop the condition from getting worse. By working together, it is possible to address the oral health requirements of people with SUDs holistically, which will eventually improve their general well-being and dental health results.[21]

Conclusion:

Abuse of illicit drugs can lead to a variety of oral pathologies that negatively impact patients' quality of life and have a significant impact on oral health. Dental practitioners can play an essential role in identifying and treating drug-related oral symptoms, which calls for a thorough comprehension of the underlying processes and a patient-centered approach. Dental professionals can help to improve overall health outcomes and lessen the burden of drug-related oral illness by attending to the oral health requirements of substance-abusing persons and treating underlying psychosocial problems.

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