

Effect of Drug Abuse Among Adolescents: A Narrative Review Article

Hadeel Osman Abdalla ¹, Reem Ahmed Hussein ¹, Youusra Abdelhafiz Mohamed ¹, Maab Saifaldin Mohammed ¹, Rawan Mubarak Abdalla ², Mohamed Eltayieb Elawad ³, Abrar Bakry Malik ^{4*}

¹ Faculty of medicine, AAU. Sudan.

² Faculty of medicine, AU. Sudan.

³ Faculty of medicine, National Ribat University. Sudan.

⁴ Faculty of medicine, Omdurman Islamic University. Sudan.

***Corresponding Author:** Abrar Bakry Malik, Faculty of medicine, Omdurman Islamic University. Sudan.

Received date: June 12, 2023; **Accepted date:** June 30, 2023; **Published date:** July 10, 2023.

Citation: Hadeel O. Abdalla, Reem A. Hussein, Youusra A. Mohamed, Maab S. Mohammed, Abrar B. Malik, et al, (2023), Effect of Drug Abuse Among Adolescents: A Narrative Review Article, *J. Addiction Research and Adolescent Behaviour*, 6(3) DOI:10.31579/2688-7517/074

Copyright: © 2023, Abrar Bakry Malik. This is an open-access article distributed under the terms of The Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Abstract:

Drug abuse is the use of a substance that affects a normal state or even medical drugs but uses in the wrong doses or method that affects a person or others in dangerous ways. It impacts all aspects of a person's life; mental, physical, emotional, and social. Drug addiction is responsible for more deaths, illnesses, and disabilities than any other avoidable health problem. In the last century, most people decrease their use of smoking tobacco, and alcohol abuse but there are significantly elevated rates of using drugs. In some countries, they found that the use of the drug is more in males, and in other countries found more in females than males, it differs from one culture to other probably depend on many factors. Adolescents there are curious to deviate in ways even the competent of them and increase overtime with prevalence of newer drugs. They start using it at youth age, and most of them are university students. They think that it improves their life and academic performance, and they are easily influenced by their bad friends. In Sudan nowadays, we notice that drug abuse becomes a national issue because drug dealers and drugs user become at a higher rate than in the past, also the number of deaths from overdose is increasing, so we need more research about it. The Drug Enforcement Administration in every country spends a lot of money to catch drug dealers, stop cannabis delivery, and ended it to save their nation. It affects individual lives and then affects the community which leads to delays in the development of our country. In this Review, we discuss the effect of drugs on the most important aspects of adolescents' life.

Key Words: drug abuse; adolescent; substance drug disorder; addiction; young

Introduction

Drugs are materials or substances that could alter personal thoughts, mood or even behaviour. This could be the case when they are ingested orally, inhaled, injected or introduced to the human body in any other form. In addition, drugs usage could also result in both physical or mental addiction. [1] Furthermore, after a certain period of continuous usage, a subgroup of people could develop severe addiction to the drugs. This comes in the form of compulsive usage which could become the norm despite the adverse effects on the human body.[2] The definition of an adolescent as a person who is transitioning from being a child to becoming an adult. [3] One major health issue which is increasing rapidly is the abuse of drugs amongst students worldwide. It could be argued

that drug abuse is the primary cause of human self-destruction. In addition, drug abusing students do not perform very well academically. They tend to achieve less and also participate on a lower scale in extracurricular activities.[4] Nevertheless numerous factors have made students more likely to abuse drugs. Those factors could include feeling exhausted emotionally and physically, feeling aerobic, stress or even the lack of participation in spiritual activities. In addition, poor or lack of parent control are also key factors which promote the abuse of drugs amongst adolescent. [5] And must not forget that in near future this individual will be neglected socially and unresected and will find so many difficulties in searching a job or attending the university, ending the situation having no family no friends no work, Severe depression and become violence and sexual assault. [6]I would like

never to the commonly abused drug substances including Tramadol, Opiates, Cannabis, Amphetamines and Premazepam. [7]

In this Review, we discuss the effect of drugs on the most important aspects of adolescents' life

Central nervous system (CNS)

Modification in chemical substance that release at end of nerve to transfer impulse outside of dopaminergic systems have also been linked to drug addiction in frontal areas like the orbitofrontal cortex, anterior cingulate cortex, and prefrontal cortex. Despite being aware of the negative effects, drug addiction causes a person to engage in repetitive actions and habits that are difficult to control. The stimulation of mesolimbic dopamine (DA) pathways contributes to the pleasurable nature of eating. Some meals, especially those heavy in fat and sugar, operate similarly to drugs in that they cause compulsive eating and a lack of control over food intake leading to obesity.[8] Mental Stroke is also linked to drug addiction, especially in younger people. Drug users between the age of 15 and 44 it was discovered to be 6.5 more probable than non-users to get a stroke.

Cannabis, the newest synthetic cannabinoids, heroin, morphine, cocaine, amphetamines, and androgenic anabolic steroids, are the main drug classes associated with stroke. [9] The use of numerous medicines and substances has been linked to endophthalmitis, glaucoma, and other visual neuropathies, as well as damage to the cornea and eye tissues.[10]

Cardiac system

There is association of drug abuse with heart cause cardiac dysfunction and takotsubo cardiomyopathy (broken heart syndrome) which the most common appear in adolescent males.[11] Patient hospitalization rate are on the rise because the infection endocarditis and this is being linked more to the injection drug use (IDU). [12,13] We must not forget smoking and tobacco intaking are consider as risk factor that led to atrial fibrillation among younger age people.[14]

Respiratory system

The most hazardous sign of acute opioid intoxication is respiratory depression, which result in brain hypoxia and mortality. When highly effective opioid medications like heroin and fentanyl are used recreationally, respiratory depression seems to be a very serious side effect. [15] Death associated with opioid use is primarily caused by opioid induced respiratory depression (OIRD). Although risk of death linked to opioid usage rises dose dependently, no amount of opioid is risk free. [16] Fentanyls also can cause diaphragm and intercostal muscle stiffness, which known as (Wooden chest) which makes breathing more difficult. [17] Opium use has just been recognized as a risk factor for cancer by the International Agency for Research on Cancer. The cumulative amount of the use of opium was strongly correlated with the likelihood of developing lung cancer. Compared to other histologist, small cell carcinoma had a higher odd ratio (OR) for regular opium usage. [18]

Gastrointestinal system

Drug abuse has a bad effect on oral health. Opiate dependents suffer from dental condition and gum disease, which affects their oral health. [19] It has been demonstrating that opioid addicts on patients receiving opioid replacement therapy are more likely to get HCV infection specially if their psychological illness. [20] Illegal drug use could result in fulminant hepatic failure; alcoholic fatty liver and it is believed that the effect on adipose tissue's metabolic and innate immunological activities increases the liver damage caused by ethanol. A lot of Health problems include esophageal cancer, liver cancer, and increased susceptibility to infection. Other effect such as abdominal pain, vomiting, hyperthermia, dysuria and bladder dysfunction depend on the type of which substances use. [21]

Mental health

The most frequent mental health concerned where linked to difficulty concentrating, which is followed by insomnia, stress, traumatic events, depression, and problems with controlling rage and aggressive reaction. [22] The use of alcohol, marijuana, and suicide ideation among teenagers involved in child welfare was predicted by a number of personal, familial, and peer characteristics, according to longitudinal research. [23] The negative characteristics of narcissism, which can develop in adolescence alongside drug use, might support a person's continued dependence on drugs, especially if narcissism and drug use continue into adulthood. [24] Cannabis usage at age 16 and a history of substance abuse disorder in the family were strongly linked to paranoid and schizotypal symptoms at age of 19. [25]

Academic performance

Substance abuse has adverse effect on academic performance by reducing motivation, memory fatigue, and concentration or by damaging the brain cells.[26] It has a substantial impact on student bullying and attendance at school. [27] Problematic drug usage and its effects on one's personal and social life are closely associated with a high prevalence of poor sleep quality among college students. Lack of sleep is associated with poor academic performance; it's also can lead to. exacerbation of a serious mood disorders like depression and anxiety. Chronic cannabis usage same as like alcohol effect adversely the sleep quality. [28] Alcohol and tobacco have a negative effect on academic achievement, with class skipping being the main mechanism. Reduced resting eye movement (REM) sleep caused by excessive drinking can affect memory and focus for up to 72 hours. Short term effect of Alcohol intoxication includes first reduces (REM) sleep, a period of sleep linked with learning and memory activities. learning impairment has been connected to REM deprivation, second affects memory by preventing the consolidation and transmission of information into long-term memory. Third concentration: Probably most critically, attention span becomes shorter for up to three days after drinking, which makes it difficult to take good notes, slows down your reading comprehension and speed, makes studying less effective, and impairs your ability to think abstractly.[29]

Social

Some individuals have emotional traits and coping styles that can be a major risk factor for them. These traits include a lack of self-assertion, lack of problem-solving skills, frustration and uncontrollable excitement, and a lack of appropriate communication with others. These characteristics may make a person unable to find appropriate solutions to his problems and conclude that suicide, escape and addiction are the most appropriate solutions to these problems. [30] Abusing psychoactive substances frequently coexists with an unhealthy obsession with the Internet. Adolescents who use the Internet continuously on a daily basis have statistically significantly higher levels of involvement in the use of drugs and toxicomania substances than do adolescents who do not use the Internet continuously on a daily basis. [31] People with mental health and substance use disorders are stigmatized more than others. Socioeconomic inequality may make drug use more harmful and make people more vulnerable to social determinants of health inequality. Poverty, violence, and wealth inequality are three significant communal repercussions of substance use. People from these underprivileged communities may have lower levels of education, less stability in their jobs, and more exposure to traumatic life events and pressures including child abuse and interpersonal violence. Additionally, up to 10% of drivers claim to drive while intoxicated every year. Cannabis usage increases the risk of car accidents by 9.5 times, and amphetamine use or the use of numerous drugs can increase the risk by 5 to 30 times. A person is 20 to 200 times more likely to die or suffer a major injury when alcohol is combined with other drugs. Drug misuse is thought to cost the US economy \$193 billion each year, 22 50% of the 4.6 billion drug-related ER visits in 2009 can be attributable to adverse drug responses, half of which are brought on by drug

use and have risen over time. [32] People who take narcotics experience cognitive impairment as a result, which encourages them to commit crimes. As a result, drug abuse plays a big role in encouraging impulsive behavior, which in turn fuels drug addiction. [33]

Discussion

In this chapter, we focus on the most important system that had been affected by drug use, affected vital signs, social and personal behavior. Drug use is relatively high in the adolescent and effective group of the society, which requires particular attention and prompt and immediate intervention. [26] Our review Enlighted that addiction is one of the major health issues worldwide affecting mainly students and teenagers and it is one of the human self-destruction tools [4], as a study in united states (2013) addressed that teenage years are a time of growth that are marked by comparatively high rates of substance abuse and substance use disorders. Accurate assessment and classification of teenage drug use behaviors are crucial for determining the kind and level of adolescent drug use as well as any potential treatment or intervention needs. [27] Mostly socioeconomic factors are the one related to drug abuse such as poverty ... etc. neglection is what will be facing the addict when he tries to integrate in the society. [6] Conceptual model of the three-stage cycle (binge/intoxication, withdrawal/negative affect, and preoccupation/anticipation) underlying the neurological basis of substance use disorders. These three stages entail dysregulations in three functional areas (negative emotional states, executive function, incentive salience/pathological habits), which are controlled by three important neurocircuitry components (prefrontal cortex, basal ganglia, extended amygdala). [28] In the Gastrointestinal system from oral to anus, there are numerous impacts referred from drug abuse, starting from the mouth becoming edentulous, shallow pockets, calculus, deep pocket, and bleeding. [19] Cocaine showed that can convert cytochrome P450 to toxic metabolites that cause liver injury such as hepatic ischemia. The serum of liver enzymes like transaminases, lactic dehydrogenases, alkaline phosphatase, and prothrombin times increase. In this study, the author documented a case of ruminant hepatic failure and acute rhabdomyolysis referred from cocaine abuse. Some opioid adductors with HCV infections had personality illnesses. They take a long period of treatment comprise with people who don't have HCV infection.

Unfortunately, these people are associated with low self-esteem and low capability to create relationship. They demonstrated significant level of dangerous attitude. Concentration difficulties, difficulties controlling anger and violent behavior, sleep issues, anxiety, sadness, and traumatic experiences are the most common mental health problem at Maria clinic for drug and alcohol issues. The girls reported a high rate than boys. [22] Marijuana and alcohol abuser noted a marked difference about Suicidal ideation (Alcohol 3 waves and marijuana 1 waves). [23] Some people know the danger of drug but still take it known as One of criteria of substance use disorder like narcissistic personality disorder. [24] A Family history of substance use disorder and cannabis use at early age contribute with development of paranoid and schizoid-typal personality traits. [25] In urban areas in China, they found that alcohol and tobacco use affect the academic performance of students at different levels of education. the astonishment of that female more than the male again. [26] Also in Loga's state in Nigeria, they noticed that there is a significant association between drug abuse, school attendance, and bullying among senior secondary school. [27] sleep disorders common in university students referred to a strong relationship between it and illicit drug use. [28] Drug dealers easily deceive college students they said that this drug will help with their studies and make good academic performance if take it but the reality is different because the academic performance becomes worst. [29] The modification of adulthood lifestyles like emotional regulation and coping therapy programs had a good impact on their life. [30] With the development of the world and the spread use of the internet, we discover a lot of negative points in using the internet. In Russia, they found a considerable higher rate of a drug abuse in adolescent

with using internet more than not using Internet. [31] The rate use of smoking tobacco and alcohol abuse decreased while the use of cannabis increased in adulthood. [32] In Nigeria, they use social media as an intervention for a decline in drug abuse among youth and it was an effective method. [33] Drug abuse among homeless people is about 10%-15%. Homeless people require a special contribution of alcoholism and drug abuse programs for all types of publics in society. [34] In New Haven city, they reported that among homeless cocaine is the most frequent drug use. Some of them said that the main reason of being homelessness. drug abuse more in the homeless for 6 months to three years, but had a lower rate at newly homeless and homeless for four years and more. [35] In this study they documented drug use in race and gender among undergraduate students at a Midwestern University. Male more than female. Asian and African American student less than Hispanic and white students before and during collage. [36] In Nigeria, Edo state in Benin city among 800 students young aged between 20-25 years most of the participants are male. 46.6% had taken drugs but alcohol was the most common. they reported the cause of drug use as the result of the teacher-student relationship being weak and influences of peer pressure. they recommended public health to increase awareness about the side effects of a drug user. [37] There are five phases of drug use: initiation, escalation of use, addiction, and relapse following abstinence.

Among these phases, sex differences occur. Ordinary self-administering licit and illicit drugs of abuse at lower doses in females comprise males who register higher doses. females get addicted more quickly and had an extraordinary risk for relapse following abstinence. This discusses neuroendocrine mechanisms interceding these sex dissimilarities. [38] Among 511 patients from a drug treatment program after face-to-face interviews for 1 year, they noted that men had higher drug use, and criminal involvement but women had more usage of multiple drugs and willingness for drug treatment. In the end the similarities and dissimilarities in the diviner of therapy outcomes for women and men. [39] In this review, they explore the gender difference in who uses drugs. They committed males more to drinking alcohol while females were more addicted to using cocaine every day. Females documented more mental and physical health issues. But both had an equal interest in drug therapy for the care of their children. [40] In laboratory animal models they reported that both females and males were equal in drug sensitivity and self-administration but females showed more powerlessness than males regarding the residents of psychostimulants, opiates, and nicotine side effects during many phases of the addiction process. They agree about sex differences perhaps to the estrogen hormone, which plays an important role, but the mechanism is unclear. [41] During substance abuse treatment programs some of them ignore the patients who smoke tobacco that led often die from tobacco use causes. [42] The effect of the drug user not only on their health but also impact on people around them like children in this study they measure the effect on boys 10 to 12 years from drug abuser fathers. they reported that these boys had experienced physical abuse. Also found in these boys had lower mean concentrations for dihydrotestosterone, salivary cortisol, and testosterone comprise to the control group of boys without fathers using drugs. These parents who physically abuse potential their sons are plausible to affect their sons' behavioral dysregulation and homeostatic stress reactivity. [43] Pregnant women had a big influence on their infants but if these pregnant women use the drug during the pregnancy period, of course, it affects the health of the infant like low birth weight, prematurity, and impaired physical development. In this review, there is a comparison between drug-use women on treatment with drug abuse women without treatment. Children of women on the treatment of drug use reported greatly less pre-term birth than another groups. [44] Some programs use music and art therapy for the drug user. In this study, they found that in 299 US substance abuse programs 36.8% of drug programs submitted art therapy, and 14.7% of them submitted music therapy. Women were more likely to employ both therapies. [45] According to research participants at Zambia University some students' academic performance suffered as a result of their irregular attendance at school or possible drug usage that led to school abandonment. It was shown that drug

use was frequently accompanied by emotional issues including stress, which had a negative impact on academic performance as a result of absence. Their results concurred with those of another research that had been conducted.

[46] Drug addiction has engulfed not only young people but even influential members of society. It has been discovered that a large population, particularly young people, is required to kick the drug habit. Unfortunately, they seem to be stuck with no escape route. The drugs control, law enforcement, military, and other departments are either nonexistent or have some connection to the drug trade. According to this study, the following recommendations should be made in order to rid Bangladesh of drugs. First, leaders of social institutions such as schools, colleges, universities, clubs, etc. should step forward in order to foster a drug-resistance culture. Second, while speaking with the investigators, the drug users sought treatment to reverse the effects of the drugs. [47] Actually, a young person's self-esteem is a sign of and a factor in their drug usage. So, some young people who used drugs recreationally also utilized them as a coping method. As a result, this study's findings indicated that low self-esteem was the most powerful and specific predictor of teen drug use. As a result, teenagers who lack self-esteem are more likely to experience depression and drug usage. [48] Repeated drug use, as opposed to episodic usage, may put a person at a particularly high risk for risky sex. Several researchers have discovered that there is a correlation between drug usage and sexual risk-taking behavior and sensation-seeking. [49] Pre-adolescent initiation of alcohol consumption, drug usage, and multi-substance use, was strongly linked to psychological distress levels between medium and high. Late initiation of drug and cigarette usage was not linked to medium to high levels of psychological discomfort. [50] Many illicit drugs can lead to hearing loss, like amphetamines and cocaine which cause sudden, bilateral and temporary hearing loss. Whereas opioids hearing loss is sudden, bilateral and mostly permanent. [51] There are 4 cases of sudden death due to the rupture of the pseudoaneurysm. Repeated injection of drugs and infection lead to traumatic damage that causes pseudoaneurysms. It mainly occurs in the femoral artery and it needs fast and dense care because serious complications like severe bleeding and neglect to seek medical care led to sudden death. [52] There is a relationship between cocaine use and myocardial ischemia or infarction that led to sudden death. also, cocaine induces coronary artery spasms with or without atherosclerotic disease that causes myocardial infarction. Marijuana had minor side effects. In this paper, they documented cases of sudden death from myocardial infarction. Finally, sudden death is different from one drug to another, from cocaine to Marijuana but the importance of it medical care must know that possible events from drug use to survive the drug abuser. [53] The Review recommended that the community and government need to work together to fight this public issue in Sudan to protect the youth age. The government must put new restrictive laws toward drug dealers, and raise Drug rehabilitation centers with new drug treatment programs, techniques, and focus to expand studies on drug users to solve this problem.

We need more research about neurochemical pathways to understand the unclear point about hormonal effects, especially estrogen hormone. The community needs to increase awareness about the side effect of the drug with more attention on university students, help all drug users, and put them in the right way to save their life.

Conclusion

There are a lot of negative adverse effects from the long use of illicit drugs or cannabis. Starting with the central nervous system that occurs mental stroke, endophthalmitis, glaucoma, and other visual neuropathies. In the cardiovascular system, there linked between drug use and cardiac dysfunction, infective endocarditis, and broken heart syndrome in adult men. Tobacco use and smoking are more reliable in causing atrial fibrillation. Regarding the respiratory system opioid abuse lead to respiratory depression, wooden chest, and lung cancer. In the Gastrointestinal system, the visual effect occurs in the oral on dental condition and gum health, interact with

increasing the risk with the HCV patient, fulminant hepatic failure, alcoholic fatty liver, liver injury, esophageal cancer, liver cancer, increased susceptibility to infection, abdominal pain, vomiting, hyperthermia, dysuria, and bladder dysfunction. Also, most effects occur in mental health as difficulty concentrating, reduce sleeping, affect memory, and suicidal ideation, and have been linked with paranoid and schizotypal symptoms in some families. The effect attains social aspects like a lack of self-confidence, lack of problem-solving skills, frustration, uncontrollable excitement, and a lack of appropriate communication with others. Also, the community has been influenced by illicit drugs as poverty, violence, car accident, crime, and income inequality. Eventually, cannabis usage, tobacco use, alcohol abuse, and the wrong use of medical drugs are significantly increasing abuses in Sudan which make them top public issues that need emergency motions to stop and save our people's life.

Acknowledgement

Elmalik Academy of Research

References

1. Saratian Et, Risman A, Ali Aj, Rohman F, Ramli Y, et al. (2021). Creating character building against drugs abuse on Youth Organization. *ICCD*. 3(1):241–245.
2. Nestler EJ, Lüscher C. (2019). The molecular basis of drug addiction: Linking epigenetic to synaptic and circuit mechanisms. *Neuron*. 102(1):48–59.
3. Sedibe M, Hendricks NG. (2020). Drug abuse amongst adolescent learners in townships. *Interchange*. 52(1):17–39.
4. Sujan MS, Tasnim R, Hossain S, Sikder MT, Hasan MT. (2021). Impact of drug abuse on academic performance and Physical Health: A cross-sectional comparative study among university students in Bangladesh. *Journal of Public Health*. 31(1):65–71.
5. Mbuthia G. (2020). A qualitative study on alcohol and drug abuse among undergraduate ... [Internet]. A Qualitative Study on Alcohol and Drug Abuse among Undergraduate (University Students) in The Coastal Region of Kenya.
6. Kanga BM. (2022). Factors influencing alcohol and drug abuse among Chuka University students, Kenya. *European Journal of Education and Pedagogy*. 3(3):147–151.
7. Ikoh MU, Smah SO, Okwanya I, Clement UA, Aposhi ZA. (2019). Factors affecting entry into drug abuse among youths in Lafia Metropolis: Implications on security. *SAGE Open*. 9(1):215824401882342.
8. Lindgren E, Gray K, Miller G, Tyler R, Wiers CE, et al. (2018). Food addiction: A common neurobiological mechanism with drug abuse. *Front Biosci (Landmark Ed)*. 23(5):811–836.
9. Tsatsakis, Docea, Calina, Tsarouhas, Zamfira, Mitrut, et al. (2019). A Mechanistic and Pathophysiological Approach for Stroke Associated with Drugs of Abuse. *Journal of Clinical Medicine [Internet]*. 8(9):1295.
10. Proulx V, Tousignant B. (2021). Drugs of abuse and ocular effects. *Clinical and Experimental Optometry*. 104(5):567–78.00:13.
11. Sendi P, Martinez P, Chegondi M, Totapally BR. (2020). Takotsubo cardiomyopathy in children. *Cardiol Young*. 30(11):1711–1715.
12. Rudasill SE, Sanaiha Y, Mardock AL, Khoury H, Xing H, et al. (2019). Clinical Outcomes of Infective Endocarditis in Injection Drug Users. *J Am Coll Cardiol*. 73(5):559–570.
13. Bates MC, Annie F, Jha A, Kerns F. (2019). Increasing incidence of IV-drug use associated endocarditis in

- southern West Virginia and potential economic impact. *Clin Cardiol.* 42(4):432-437.04:03.
14. Doshi R, Dave M, Majmundar M, Kumar A, Adalja D, et al. (2021). National rates and trends of tobacco and substance use disorders among atrial fibrillation hospitalizations. *Heart Lung.* 50(2):244-251.
 15. Kiyatkin EA. (2019). Respiratory depression and brain hypoxia induced by opioid drugs: Morphine, oxycodone, heroin, and Fentanyl. *Neuropharmacology.* 151:219– 226.
 16. Ramirez J-M, Burgraff NJ, Wei AD, Baertsch NA, Varga AG, et al. (2021). Neuronal mechanisms underlying opioid-induced respiratory depression: Our current understanding. *Journal of Neurophysiology.* 125(5):1899–1919.
 17. Hill R, Santhakumar R, Dewey W, Kelly E, Henderson G. (2019). Fentanyl depression of respiration: Comparison with heroin and morphine.
 18. Rashidian, H, Hadji, M, Gholipour, M, et al. (2023). Opium use and risk of lung cancer: A multicenter case-control study in Iran. *Int J Cancer.* 152(2): 203- 213.
 19. Shekarchizadeh H, Khami MR, Mohebbi SZ, Ekhtiari H, Virtanen JI. (2019). Oral health status and its determinants among opiate dependents: a cross-sectional study. *BMC Oral Health.* 19(1):5.
 20. Skočibušić S, Zivlak-Radulović N, Hasanović M, Awad H, Karan-Križanac D, et al. (2022). Personality dysfunction in opiate addicts on opioid substitution treatment and the risk of HCV infection. *Front Public Health.* 10:1009413.
 21. Tarantino G, Cataldi M, Citro V. (2022). Could Alcohol Abuse and Dependence on Junk Foods Inducing Obesity and/or Illicit Drug Use Represent Danger to Liver in Young People with Altered Psychological/Relational Spheres or Emotional Problems? *Int J Mol Sci.* 23(18):10406.
 22. Richert T, Anderberg M, Dahlberg M. (2020). Mental health problems among young people in substance abuse treatment in Sweden. *Substance Abuse Treatment, Prevention, and Policy.* 15(1):23:31.
 23. Sellers CM, McRoy RG, O'Brien KH. (2019). Substance use and suicidal ideation among child welfare involved adolescents: A longitudinal examination. *Addictive Behaviors.* 93:39–45.
 24. Salazar J, Page B, Ripoll C. (2020). Features, state and context of narcissism in Drug Misuse. *Substance Use & Misuse.* 56(1):11–24.
 25. Sharma P, Riehm KE, Young AS, Reynolds MD, Tarter RE, et al. (2021). Do the transmissible liability index (TLI) and adolescent cannabis use predict paranoid and schizotypal symptoms at young adulthood? *Substance Use & Misuse.* 56(13):2026–2034.
 26. Chai L, Xue J, Han Z. (2020). The effects of alcohol and tobacco use on academic performance among Chinese children and adolescents: Assessing the mediating effect of skipping class. *Children and Youth Services Review.* 119:105646.
 27. Osarenren, Ngozi & Kienka, Rita & Ikechukwu, Nwadinigwe. (2020). Influence of Drug Abuse on School Attendance and Bullying among Students of Secondary Schools in Education District III, Lagos, Nigeria.
 28. Navarro-Martínez R, Chover-Sierra E, Colomer-Pérez N, Vlachou E, Andriuseviciene V, et al. (2020). Sleep quality and its association with Substance Abuse Among University students. *Clinical Neurology and Neurosurgery.* 188:105591.
 29. Gunjan M. (2020). Effect of the drug abuse on the academic performance of the students/adolescents. *Biomedical Journal of Scientific & Technical Research.* 28(3).
 30. bahrebar, S., ahadi, H., aghayousefi, A. (2019). The Effectiveness of Emotional Regulation and Coping Therapy Training on life style in Adolescent at Risk of Drug Abuse. *Iranian Journal of Health Psychology,* 2(1): 79-94.
 31. Skvortsova ES, Lushkina NP. (2021). [The adolescents, Internet and drug abuse]. *Probl Sotsialnoi Gig Zdravookhranennii Istor Med.* 29(6):1475-1482.
 32. Ignaszewski MJ. (2021). The epidemiology of drug abuse. *The Journal of Clinical Pharmacology.* 61(S2).
 33. Ahmad J, Joel UC, Talabi FO, Bibian ON, Aiyesimoju AB, et al. (2022). Impact of social media-based intervention in reducing youths' propensity to engage in drug abuse in Nigeria. *Evaluation and Program Planning.* 94:102122.
 34. McCarty D, Argeriou M, Huebner RB, Lubran B. (1991). Alcoholism, drug abuse, and the homeless. *American Psychologist.* 46(11):1139.
 35. Spinner GF, Leaf PJ. (1992). Homelessness and drug abuse in New Haven. *Psychiatric Services.* 43(2):166-168.
 36. McCabe SE, Morales M, Cranford JA, Delva J, McPherson MD, et al. (2007). Race/ethnicity and gender differences in drug use and abuse among college students. *Journal of ethnicity in substance abuse.* 6(2):75-95.
 37. Adeyemo Florence O, Beatrice O, Okpala PU, Oghale O. (2016). Prevalence of drug abuse amongst university students in Benin City, Nigeria. *Public Health Research.* 6(2):31-37.
 38. Becker JB, Hu M. (2008). Sex differences in drug abuse. *Frontiers in neuroendocrinology.* 29(1):36-47.
 39. Hser YI, Huang D, Teruya C, Anglin MD. (2003). Gender comparisons of drug abuse treatment outcomes and predictors. *Drug and alcohol dependence.* 72(3):255-264.
 40. Wechsberg WM, Craddock SG, Hubbard RL. (1998). How are women who enter substance abuse treatment different than men? A gender comparison from the Drug Abuse Treatment Outcome Study (DATOS). *Drugs & Society.* 13(1-2):97- 115.
 41. Lynch WJ, Roth ME, Carroll ME. (2002). Biological basis of sex differences in drug abuse: preclinical and clinical studies. *Psychopharmacology.* 164:121-37.
 42. Baca, Catherine Theresa, and Carolina E. Yahne. (2009). Smoking cessation during substance abuse treatment: What you need to know. *Journal of substance abuse treatment,* 36.2: 205-219.
 43. Dawes MA, Dorn LD, Moss HB, Yao JK, Kirisci L, et al. (1999). Hormonal and behavioral homeostasis in boys at risk for substance abuse. *Drug and alcohol dependence.* 55(1-2):165-76.
 44. Baca, Catherine Theresa, and Carolina E. Yahne. (2009). Smoking cessation during substance abuse treatment: What you need to know. *Journal of substance abuse treatment,* 36.2: 205-219.
 45. Aletraris, Lydia, et al. (2014). The use of art and music therapy in substance abuse treatment programs. *Journal of addictions nursing,* 25.4: 190.
 46. Shibalika MV. (1970). Causes and effects of drug abuse among primary school learners in Shibuyunji District, Zambia / Misheck Victor Shibalika. [Internet]. *UNZA Repository Home. The University of Zambia.*
 47. Durud MS, Bhattacharya R. (2022). Effects of Drug Addiction on Young Generation: A Sociological

- Investigation in Dinajpur District, Bangladesh. *Asian Research Journal of Arts & Social Sciences*. 18(3):12-20.
48. Yahaya JU. (2019). The effect of drug abuse among youth in Nasarawa Local Government, Kano State, Nigeria (2014-2017). *Journal of International Politics*. 1(3):42-54.
49. Stanton B, Li X, Cottrell L, Kaljee L. (2001). Early initiation of sex, drug-related risk behaviors, and sensation-seeking among urban, low-income African-American adolescents. *J Natl Med Assoc*. 93(4):129-38.
50. Pengpid S, Peltzer K. (2019). early substance use initiation and psychological distress among adolescents in five ASEAN countries: A cross-sectional study. *Psychology Research and Behavior Management*. Volume 12:1003–8.
51. K; HMLRAIHJZ. (2023). Hearing and vestibular loss with misuse of opioids and illicit drugs: A review of the literature [Internet]. *Audiology & neuro-otology*. U.S. National Library of Medicine.
52. Behera C, Naagar S, Krishna K, Taraporewalla DR, Garudadhri GV, et al. (2014). Sudden death due to ruptured pseudoaneurysm of femoral artery in injected drug abusers – report of four cases at autopsy and review of literature. *Journal of Forensic and Legal Medicine*. 22:107–111.
53. Fischbach P. (2017). The role of illicit drug use in sudden death in the young. *Cardiology in the Young*. Cambridge University Press; 27(S1): S75–S79.



This work is licensed under Creative Commons Attribution 4.0 License

To Submit Your Article Click Here:

Submit Manuscript

DOI: [10.31579/2688-7517/074](https://doi.org/10.31579/2688-7517/074)

Ready to submit your research? Choose Auctores and benefit from:

- fast, convenient online submission
- rigorous peer review by experienced research in your field
- rapid publication on acceptance
- authors retain copyrights
- unique DOI for all articles
- immediate, unrestricted online access

At Auctores, research is always in progress.

Learn more <https://www.auctoresonline.org/journals/addiction-research-and-adolescent-behaviour>