

Exploring Drug & Substance Abuse Implications 2023

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Abstract

Review Article

Background: An estimated 19.5 million people aged 12 or older in the United States have had a substance use disorder related to illicit drugs or alcohol in 2020 (Hoening, 2020). Drug addiction is a chronic and relapsing brain disorder characterized by compulsive drug-seeking and drug-taking behaviors. The primary causes of which include interrelated brain networks that comprise the reward and anti-reward system, as well as the central immune system. While its validity as a disease is controversial, many attribute its existence to moral failing and personal choice. As such, it remains a complex phenomenon that alters the brain function and leads to a plethora of psychological and neurological changes, temporary and permanent. Interestingly, there are several factors that contribute to an individual's vulnerability to drug addiction, the most surprising of which is genetic predispositions, environmental factors, early drug introductions and everything in between. Drug abuse remains a critical global issue that has severe implications for public health and societal well-being. **Aims:** By shedding light on their addictive properties and the resulting physiological and psychological consequences this article aims to raise awareness about the dangers associated with these substances. Furthermore, this article investigates the significant risks that come hand in hand with drug abuse. In addition to examining the causes and risks of drug abuse, it delves into preventive measures as well as treatment approaches. Evidence based strategies such as education programs, early intervention initiatives, harm reduction practices and policy measures are essential in reducing both the prevalence and harmful effects of drug abuse. Moreover, exploring various treatment modalities ranging from pharmacological interventions to behavioral therapies - It emphasizes the importance of personalized, comprehensive and multidisciplinary approaches when it comes to tackling drug addiction. By offering a comprehensive overview of the multifaceted issue of drug abuse and analyzing its causes, risks and available interventions it becomes clear that urgent action is needed to address this public health concern effectively. This article seeks to offer a holistic perspective on drug abuse and emphasize the urgent need for effective strategies and interventions to address this pressing public health concern. To begin with this article explores the intricate factors contributing to drug abuse through taking into account: genetic predispositions, environmental influences and social determinants in order to better understand why individuals turn to substance use.

Keywords: illicit drugs, Drug addiction, immune system, public health.

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INTRODUCTION

Drug & Substance Abuse

Drug addiction dates back as far as the introduction of drugs itself, about 13000 years ago the inhabitants of Timor, an island in Southeast Asia, used a psychotropic plant named the betel nut. To better understand the scope of drug addiction, it is crucial to clarify the definition of drug use. Drug use encompasses a multitude of categories spanning prescription drugs, illicit drugs including methamphetamine, heroin, cocaine and previously – marijuana. Due to the recent cannabis legalization in many states and regions around the world, there has been a rise in marijuana use particularly among the

youth. Furthermore, additional adverse effects raised concerns of drug-impaired driving.

Drug abuse has many implications and symptoms in different demographics. Changes in behavior such as increased secrecy, isolation, or withdrawal from social activities can serve as early signs of substance addiction. Furthermore. Individuals may exhibit mood swings, agitation, irritability, or hostility. Additionally conflicts with family members, friends, or partners may arise due to drug related behavior. These issues can strain relationships and lead to arguments, trust issues, or distancing from loved ones. The detrimental effects of stimulant drugs like

cocaine or methamphetamine on the cardiovascular system are particularly concerning. They can elevate heart rate and blood pressure while increasing the risk of heart rhythm disturbances. Prolonged substance abuse can result in cardiovascular problems such as heart attacks, strokes, and other diseases affecting the heart. Moreover, financial difficulties stemming from excessive spending on drugs and dependence on them are also significant consequences. Victims may experience instability in their finances and resort to borrowing money or engaging in illegal activities to sustain their drug habit. Involvement in legal problems including arrests and DUIs is common among those struggling with drug abuse. The symptoms experienced during withdrawal vary based on factors such as the specific drug used and individual circumstances. Physical symptoms associated with withdrawal include but are not limited to nausea, vomiting, abdominal pain, sweating, tremors, muscle aches, headaches as well as increased heart rate and changes in blood pressure. Moreover, withdrawal can induce psychological symptoms such as anxiety, agitation and mood swings. Overcoming alcohol abuse disorder is exceptionally challenging due to individuals' dependence on it for mood regulation and the relaxed euphoria it produces. According to the 2021 National Survey on Drug Use and Health (NSDUH), 29.5 million people ages 12 and older had AUD in the past year (SAMHSA, 2023). Opioid withdrawal occurs when individual's dependent on opioids like heroin or prescription painkillers cease or reduce their use. Symptoms usually begin within a few hours to a few days after the last dose and may consist of gastrointestinal distress, such as nausea, vomiting, diarrhea, and abdominal cramps. Flu like symptoms like a runny nose, watery eyes, sweating, chills, muscle aches, and general malaise can also occur. Additionally, Psychological symptoms including anxiety, restlessness, irritability, insomnia, depression, and drug cravings are common during benzodiazepine withdrawal. Benzodiazepine withdrawal happens when individuals who have been regularly using benzodiazepines like Xanax or Valium for an extended period stop or reduce their usage. There are various withdrawal symptoms that can manifest during this time including anxiety and panic attacks. Insomnia, Restlessness and irritability are also commonly reported symptoms along with muscle stiffness and tremors. Increased heart rate and blood pressure can occur as well. In severe cases of withdrawal seizures have been known to happen. In accordance with research published in JAMA Network Open in 2013 it was found that the number of adults filling prescriptions for benzodiazepines increased from 8.1 million to 13.5 million between 1996 to that year alone (Bachuber MA, 2016). It is important to note that benzodiazepine withdrawal can be difficult particularly for individuals using these medications over an extended period of time as it may be risky or even dangerous. Abruptly stopping or reducing the use of benzodiazepines without proper medical supervision could lead to severe withdrawal

symptoms such as seizures. It is generally recommended that individuals taper off their medication under the guidance of healthcare professionals in order to minimize any potential risks associated with withdrawal. Alcohol withdrawal is experienced by those who have been consuming alcohol heavily on a regular basis when they abruptly stop or considerably decrease their alcohol intake. The symptoms that can occur during this time can range from mild to severe and may include tremors, anxiety, restlessness, sweating, nausea and vomiting, insomnia, and increased heart rate and blood pressure.

Correlation with Mental Health Issues

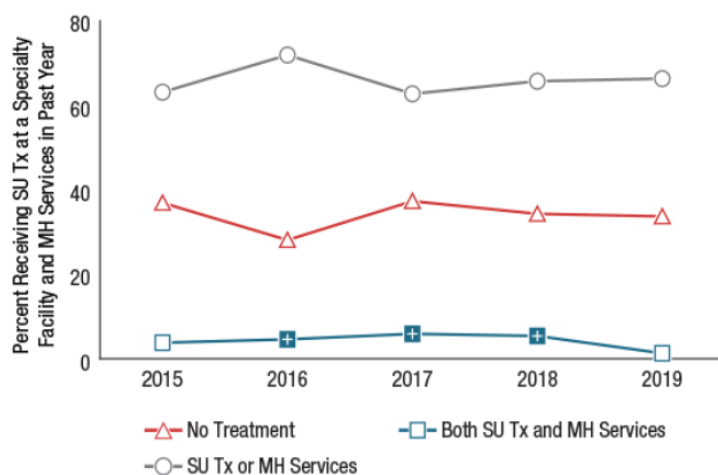
Research also shows a potential link between substance abuse and mental health conditions, especially in frequent users. Cannabis has been shown to increase the risk of psychosis and cognitive impairment. Many users who suffer from depression also turn to recreational use, and consequently drug addiction which can worsen those mental health conditions. Not to mention other disorders such as bipolar disorder, anxiety disorder and attention-deficit disorder, all of which increase the risk of substance abuse in the pursuit of thrill, relief and impulse respectively. Among the 397,000 adolescents aged 12 to 17 in 2019 who had a co-occurring SUD and an MDE in the past year (2019 DT 11.9), 66.3 percent (or 263,000 people) received either substance use treatment at a specialty facility or mental health services in the past year, 62.5 percent (or 249,000 people) received only mental health services, and 2.4 percent (or 10,000 people) received only substance use treatment at a specialty facility (Figure 1 and 2019 DT 11.14) (SAMSHA, 2020). This further clarifies the link between the two disease categories. The interaction between mental syndromes (such as mental health disorders) and drug abuse is intricate and bidirectional in nature. See Figure 1 for more context:

Substance abuse often coexists with various types of mentally related illnesses – each sharing an influence over the other conditions' intensity. This pattern is referred to as a dual diagnosis or comorbidity when both conditions occur simultaneously rather than separately. Multiple elements contribute towards understanding this relationship between these two phenomena: shared risk factors for acquiring both conditions; individuals' inclination towards self-medication; as well as the detrimental effects of substance abuse on mental health. Both mental health disorders and substance abuse share various common risk factors, which include genetic predispositions, environmental influences, and early life experiences. Those individuals with a predisposition towards mental health disorders might also be particularly prone to substance abuse due to shared susceptibilities. For certain individuals battling mental health issues, Substance abuse becomes a form of self-medication – a coping mechanism that eases distressing symptoms.

Momentarily numbs emotional pain and offers an escape from reality. Unfortunately, this self-medicating venture often forms a vicious cycle of dependency that further aggravates mental health symptoms and dramatically heightens the likelihood of developing substance abuse dependencies. Substance abuse profoundly impacts one's mental health in negative

ways; it can alter brain chemistry under specific circumstances. Intensify pre-existing mental symptoms and even foster the emergence of novel types of mental illnesses. Moreover, It is also worth noting that substance abuse hampers judgment abilities and elevates impulsivity.

Figure 1. Receipt of Substance Use Treatment at a Specialty Facility and Mental Health Services in the Past Year among Youths Aged 12 to 17 with Past Year Substance Use Disorder and Major Depressive Episode: 2015-2019



MH = mental health; SU Tx = substance use treatment.

* Difference between this estimate and the 2019 estimate is statistically significant at the .05 level.

Figure 1 Table. Receipt of Substance Use Treatment at a Specialty Facility and Mental Health Services in the Past Year among Youths Aged 12 to 17 with Past Year Substance Use Disorder and Major Depressive Episode: 2015-2019

Service Type	2015	2016	2017	2018	2019
No Treatment	36.9	28.1	37.3	34.3	33.7
Substance Use Treatment at a Specialty Facility or Mental Health Services	63.1	71.9	62.7	65.7	66.3
Both Substance Use Treatment at a Specialty Facility and Mental Health Services	3.8	4.6*	5.9*	5.4*	1.3

* Difference between this estimate and the 2019 estimate is statistically significant at the .05 level.

Figure 1: Receipt of SUD and MHS in Past Year

Societal & Cultural Impact

Societal factors also play a contribute significantly to drug abuse. Not the least of which is peer pressure, where a study conducted in the journal of Pediatrics found that adolescents were 50% more likely to participate in drug use when a close friend or peer is already engaged in it. Additionally, a lower socioeconomic status can amplify the risk of addiction due to limited healthcare, education and employment opportunities. This is mainly due to these factors motivating individuals to use opioids and such as a coping mechanism. Drug addiction rates can be significantly impacted by a society's' legal framework as well as its policy decisions. Societal values play a crucial role in shaping various elements such as drug laws enforcement strategies availability of treatment services. Implementing stringent punitive measures without acknowledging the importance of treatment and harm reduction can contribute to a perpetual cycle of criminalization and repeat offenses. Conversely policies

that prioritize prevention, treatment, and rehabilitation hold considerable promise in reducing drug addiction rates while offering vital support for individuals on their path to recovery.

A handful of environmental and cultural factors also add to the problem. Where some communities are much more accepting towards certain drug use, facilitating the acquisition and use of said drugs by individuals in that community. The way different cultures respond to drug use can vary widely - ranging from complete prohibition through to harm reduction strategies. This response is often shaped by cultural values, beliefs rooted in faith and governmental policies. Cultural acceptance refers to how much tolerance there is for normalization of drug usage within a particular culture or subculture. Different societies or communities may hold different levels of acceptance for varied drugs, influencing the attitudes and behaviors of individuals regarding drug usage. Cultural beliefs

and attitudes play an essential role in shaping how drugs are viewed within a particular cultural context, shaping both perception and acceptance - for example, certain substances are accepted and used extensively in traditional practices or ceremonies due to perceived medicinal or spiritual properties. Practices strongly rooted in culture may involve the use of psychoactive substances, with examples including the use of peyote in Native American ceremonies or an indigenous South American culture using ayahuasca. In addition, the media, including movies, music, and other popular forms of entertainment, have the power to influence attitudes and behaviors surrounding drug use. Media portrayals sometimes glamorize substance abuse, particularly amongst impressionable individuals like adolescents. The broader culture can also harbor its own subsets with distinct values, norms and behaviors. Peer pressure within these groups has a strong impact on drug usage. The desire to fit in with the expectations of a particular cultural subgroup is a critical contributor to the initiation as well as ongoing abuse of drugs.

Predetermined Factors

Moving on, the issue is not only limited to environmental factors, but predetermined factors too. Genetics play an important role in determining an individual's susceptibility to substance abuse, mainly due to genes that control dopamine regulation and secretion. Different people have different tolerances and reactions to the same drug, which further complicates the problem. Even gender and age all affect vulnerability and response to drugs. In fact, A multitude of studies have unequivocally established that addiction susceptibility is determined, in part. Genetic factors account for approximately 40-60% of one's risk. These genetic influences stem from a complex interplay among multiple genes. Interestingly, certain variants within these genes have demonstrated the capacity to either heighten or diminish an individual's propensity for addiction. A notable gene known as DRD2 assumes relevance as it codes for dopamine receptors within the brain - modifications within this gene have been associated with an elevated vulnerability towards addictive behaviors particularly when it comes to substances like alcohol or opioids. Notably genetic variations also seem to impact stress response and effective coping mechanisms which deviate into maladaptive habits inclusive of drug use. The gene CRH (corticotropin releasing hormone) intricately with regulating stress response emerges as particularly salient in this context. As the variance imposed on CRH influences one's vulnerability in turn leading towards substance misuse they come forth as important determinants shaping how individuals experience cope during stressful situations which can relate back to presence of genetic alterations. However, this remains largely an unexplored field where there is a lack of research to conclude further information.

Treatment Solutions

Fortunately, there have been numerous efforts to combat substance addiction, not the least of which is CBT (Cognitive-Behavioral Therapy). CBT concentrates on the identification and modification of the negative thought patterns that commonly plague those suffering from substance addiction. It trains patients in coping methods, problem-solving skills and withdrawal management. Its efficacy at treating these disorders has been proven by many studies. CBT (Cognitive Behavioral Therapy) places significant emphasis on cognitive restructuring—an indispensably important element for transformation and improvement. This entails the identification and challenge of negative or irrational thoughts and beliefs closely intertwined with substance use. Therapists serve a crucial role in aiding individuals to recognize these flawed thinking patterns that emerge by underestimating the consequences of substance abuse or clinging onto beliefs reinforcing addictive behaviors. By successfully shifting cognitive perspectives towards more balanced and realistic thoughts. Individuals can foster healthier behaviors whilst simultaneously diminishing their vulnerability towards relapse. Another valuable aspect within CBT involves conducting a functional analysis—a process designed to delve deep into the intricate connection between thoughts and emotions. And substance use behaviors. The purpose is to enable individuals to accurately recognize triggers within high-risk situations alongside gaining insight into preceding thoughts and emotions that sway them towards substance intake. Such understanding regarding the functional relationship among these vital elements empowers individuals with indispensable coping mechanisms required for proactively addressing triggers, effectively managing cravings, as well as making choices that facilitate long lasting recovery. Empirical evidence collected from extensive research reveals that participation in CBT yields noteworthy outcomes such as significant reductions in substance use—an outcome deserving recognition—coupled with enhanced treatment retention rates while effectively enhancing overall psychological well-being. Additionally, CBT's effectiveness does not discriminate amongst various substances—providing promising results across opioids, alcohol usage disorders along with cocaine and cannabis addictions alike. It is important to emphasize the adaptability inherent within CBT—the ability to tailor its approach catering specifically to individual needs either through immersive group therapy settings or one on one counseling sessions tailored to address unique requirements.

Another form of treatment is MI (Motivational Interviewing), where a motivational patient-counsellor approach is taken, it has shown therapeutic effects to encourage reaching one's goals and mending their concerns – many attribute their detoxification to it and the Cochrane Database of Systemic Reviews reported positive outcomes in the reduction of substance abuse

among samples. MI focuses on fostering a collaborative and non-confrontational relationship between the therapist and the individual. The therapist takes a supportive and empathetic approach working together with the individual to delve into their motivations, values, and goals in relation to change. This collaborative dynamic promotes trust and enables open dialogue to explore any conflicting feelings. A key aspect of MI is evoking change talk, which involves the individual expressing their own desires, reasons, and commitment to change. The therapist actively listens, reflects, and asks open ended questions to encourage and amplify these change talk statements. By highlighting the individuals' own motivations MI strengthens their internal drive for change. MI aims to help individuals recognize and contemplate the gap between their current behavior and their broader aspirations or desired future. By acknowledging this discrepancy with empathy rather than judgment. MI seeks to increase motivation for change by exploring potential positive outcomes.

CM (Contingency Management) is another approach that employs motivational methods to encourage abstinence and detoxification, but also incorporates rewards like vouchers and gift cards to further promote treatment retention. As such it has been associated in various studies and analyses like in the Journal of Substance Abuse Treatment where there is a positive correlation between withdrawal and the use of CM. The principles underlying CM revolve around positive reinforcement, whereby desirable rewards or incentives are utilized to reinforce desired behaviors. Within CM practices. Token economies commonly find application. Primarily in group settings or residential treatment programs. Token economies involve individuals earning tokens or points when they engage in drug free behaviors or successfully attain treatment goals. These tokens can accordingly be exchanged for a range of rewards or privileges. Thus, establishing a structured system for reinforcement. CM seeks to transcend the confines of formal treatment settings by instilling learned behaviors in real life situations. Individuals are encouraged to apply the skills and behaviors reinforced during the program to their everyday lives. This includes formulating strategies for coping with triggers. Preserving abstinence. And harnessing the skills acquired through CM for long term recovery. However beneficial it may be. The implementation of a CM program necessitates significant resources and funding due to the provision of tangible rewards or incentives. The availability of such rewards often hinges on the levels of funding and resources allocated within each specific program. Additionally upholding a durable CM intervention might prove challenging due to financial constraints posed over time. Furthermore, implementing CM raises ethical questions. Skeptics argue that material incentives for behavior change may compromise intrinsic motivation or engender dependence on external

rewards. Debates persist about whether individuals genuinely aspire to modify their conduct or simply conform in order to access these incentives. It is imperative that careful consideration be given towards striking a balance between utilizing rewards while duly honoring an individual's autonomy and self-determination.

TC (Therapeutic Communities) are treatment programs that cultivate an encouraging and organized environment for substance-abuse patients. They strive to address psychological, physical and social problems linked to these disorders by building a therapeutic community where each member can partake in the process of detoxing. By creating a structured environment that promotes personal growth and accountability, participants can live within the community and follow a daily routine that includes group therapy sessions, educational activities, vocational training, and recreational pursuits. The environment is designed to foster personal responsibility, mutual support, and a sense of belonging. TCs place a strong emphasis on peer support, where individuals within the community support and hold each other accountable for their actions, fostering a sense of camaraderie and shared experiences. Peers act as positive role models, providing encouragement, empathy, and understanding throughout the recovery journey. Peer support helps individuals develop social skills, build healthy relationships, and gain a sense of belonging. Treatment interventions are tailored to address the specific needs of each individual, with a focus on comprehensive healing and personal growth. This may involve addressing co-occurring mental health disorders and providing medical care as well as promoting physical well-being through exercise and nutrition. They often offer vocational training and life skills development as part of the program. This includes educational workshops, job readiness training, and support in finding employment or pursuing further education. By equipping individuals with practical skills and providing opportunities for personal growth, TCs aim to enhance their ability to reintegrate into society successfully. Another facet of TCs is their ability to recognize the importance of ongoing support after completing the residential program. They often provide aftercare services and help individuals transition back into their communities. However, it is important to note that therapeutic communities may not be suitable for everyone. Some individuals may require different levels of care or have specific treatment needs that are better addressed through other modalities. Therefore, comprehensive assessments and personalized treatment planning are crucial to determine the most appropriate approach for each individual.

Medication Assisted Treatment (MAT) is a widely recognized and evidence-based approach used to address substance use disorders. It combines

medications with behavioral therapies and support services to help individuals achieve and sustain recovery from substance abuse. MAT utilizes specific medications, such as methadone, buprenorphine, and naltrexone. Depending on the substance being abused. In addition to medication MAT incorporates behavioral therapies like cognitive behavioral therapy (CBT) contingency management, and motivational interviewing. These therapies are essential in addressing the psychological and behavioral aspects of addiction by helping individuals develop coping skills modify maladaptive behaviors and address underlying issues related to substance abuse. By targeting the psychological and social factors contributing to addiction. Behavioral therapies complement medication effectively. MAT takes a comprehensive approach to treatment by addressing the physical, psychological, and social aspects of addiction. It recognizes that substance use disorders are complex conditions requiring a holistic approach. Alongside medication and therapy. MAT often includes other support services like case management, counseling, vocational training, housing assistance and peer support. These additional services help meet individual needs. Promote overall well-being. And support individuals throughout their recovery journey. MAT adopts a harm reduction approach by aiming to minimize the negative consequences associated with substance abuse. It provides medications that reduce cravings and withdrawal symptoms. In turn, stabilizing lives. Reducing high risk behaviors. And decreasing the likelihood of overdose or other substance related harms. MAT acknowledges that abstinence may not be immediately achievable for everyone but focuses on reducing overall harm caused by substance use. Research consistently demonstrates the effectiveness of MAT in reducing substance use rates. Elevating treatment retention. Reducing overdose risk. And improving overall treatment outcomes. It has shown particularly significant effectiveness in treating opioid use disorder; reducing opioid related mortality; enhancing overall quality of life.

Gene Therapy

A more elusive field of therapy is the emerging field of therapeutic gene modulation as a potential avenue for treating drug addiction. Advances in gene therapy techniques offer the possibility of targeting specific genes or gene networks associated with addiction, potentially rewiring the neural circuits implicated in drug-seeking behaviors. In gene replacement therapy Replacing a faulty or missing gene with a functional one is a key aspect of gene therapy. This therapy involves introducing a therapeutic gene into the target cells, which then restores the production of a specific protein that is deficient or non-functional due to genetic mutation. Various delivery methods are utilized in gene therapy to transfer these therapeutic genes into the target cells. One such method involves using viral vectors, where viruses such as adenoviruses,

lentiviruses, or adeno associated viruses are modified to carry therapeutic genes. These viruses act as vehicles to deliver genetic material into the target cells. Alternatively. Non-viral vectors can also be employed, where delivery systems like lipid nanoparticles or naked DNA directly introduce therapeutic genes into the cells. These non-viral methods are typically less immunogenic and carry lower risks of immune responses compared to viral vectors. Nevertheless, achieving efficient and targeted delivery of therapeutic genes to specific cells or tissues remains a challenge in gene therapy. Researchers are continuously striving to enhance delivery efficiency and overcome biological barriers through ongoing research efforts. While gene therapy holds immense potential in treating various diseases. It also raises ethical concerns regarding human gene modification and equitable access to treatment. To address these concerns. Stringent regulatory frameworks have been established to ensure responsible development and use of gene therapy. Promising results have been observed in clinical trials for several diseases through gene therapy treatments that have gained regulatory approval. Continued research advancements in gene editing technologies, delivery systems, and understanding of gene regulation offer great potential for the future of this field.

CONCLUSION

In conclusion. Drug addiction is a complex issue that arises from a combination of genetic predispositions and environmental influences. Individual factors like peer pressure and mental health conditions as well as societal factors also play a significant role. Understanding these underlying causes is crucial for designing effective prevention and intervention strategies for drug addiction. The widespread prevalence of this issue underscores the urgent need for comprehensive approaches in addressing it as an important public health concern. Prevention is an important strategy in tackling drug addiction. Focusing on environmental factors like the availability and accessibility of drugs, peer influence, and societal attitudes, public awareness campaigns, education programs or therapeutic interventions is crucial to resolve this issue. Due to ethical issues that may arise, gene therapy may be considered a suboptimal solution for the time-being, however its efficacy should not be understated especially with its ever-advancing progression. On the other hand, different treatment methods like cognitive behavioral therapy (CBT). Motivational interviewing (MI). Contingency management (CM) and medication assisted treatment (MAT) can still used to address the underlying psychological, behavioral, and physiological aspects of addiction. When analyzing their effectiveness through statistics. MAT stands out as a highly effective approach for combating drug addiction. MAT combines medications such as buprenorphine and methadone with counseling and behavioral therapies. Studies have shown that MAT has significant benefits in reducing

substance use. Improving treatment retention rates and decreasing the risk of overdose by addressing the physical, psychological, and social aspects of addiction. MAT offers a comprehensive approach to treatment that helps individuals stabilize their lives, reduce cravings and minimize negative consequences related to substance abuse using evidence-based medications and therapies used in a personalized manner. However, it is important to note that its effectiveness may vary among individuals; therefore, it is essential to make treatment decisions under the guidance of healthcare professionals. Additionally, taking a multidimensional approach that addresses broader social determinants of addiction such as poverty, education levels and social support is necessary for long term solutions.

REFERENCES

- Bachuber, H. S. (2016). Increasing benzodiazepine prescriptions and overdose mortality in the United States. *Am J Public Health*, 686-688.
- Hoening, D. R. (2020). *Key Substance Use and Mental Health Indicators in the United States*. Substance Abuse and Mental Health Services Administration.
- SAMHSA. (2023, January 11). *Key substance use and mental health indicators in the United States: Results from the 2019 National Survey on Drug Use and Health (HHS Publication No. PEP20-07-01-001)*. Retrieved from Substance Abuse and Mental Health Services Administration. : <https://www.samhsa.gov/data/sites/default/files/reports/rpt39441/NSDUHDetailedTabs2021/NSDUHDetailedTabs2021/NSDUHDetTabsSect5pe2021.htm#tab5.6a>
- SAMSHA. (2020, September). *Key substance use and mental health indicators in the United States: Results from the 2019 National Survey on Drug Use and Health (HHS Publication No. PEP20-07-01-001)*. Retrieved from Substance Abuse and Mental Health Services Administration: <https://www.samhsa.gov/data/sites/default/files/reports/rpt29393/2019NSDUHFFRPDFWHTML/2019NSDUHFFR090120.htm#fig79>