

General

The Psych Behind Psychedelics: Exploring Hallucinogen Use as a Marker for Untreated Mental Health Disorders

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Keywords: Psychedelics, Hallucinogen use

<https://doi.org/10.52965/001c.127794>

Health Psychology Research

Vol. 13, 2025

Objective

Are individuals who use hallucinogens self-medicating their mental illness and are they more likely to abuse other illegal substances?

Design, setting, participants

Data from the National Survey on Drug Use and Health (NSDUH), collected by the Substance Abuse and Mental Health Services Administration (SAMHSA) database was queried for correlations with hallucinogen use. Using age group as a control variable, different variables were run through a crosstab in order to find significant data pointing to the implications of hallucinogen use.

Results

The data from the crosstab analysis showed three key findings about hallucinogen use: Those with mental illness or substance abuse issues were substantially more likely to use hallucinogens, the hallucinogen use greatly increased with the pandemic along with further mental health issues, and those who used hallucinogens were more significantly likely to abuse other illegal substances, primarily in a younger population.

Conclusion

The positive correlation between mental health issues and hallucinogen use emphasizes the need for better mental health services, especially after the COVID-19 pandemic.

The positive correlation between hallucinogen use and other drug use indicates the widespread drug abuse problem, especially within a younger population in which drugs pose a larger neurological threat.

INTRODUCTION

Hallucinogens are a category of psychoactive drugs characterized by their impact on human consciousness, typically drastically altering human consciousness. In high doses, they can lead to delirium, hallucinations, and a disconnect from reality for long and unpredictable periods of time. In the most severe yet rare cases, overdoses of hallucinogens can be fatal.¹ Despite their name, hallucinogens do not always cause hallucinations, but rather primarily alter perception and cognitive function, even in smaller doses.²

While psychedelics are technically a subset of hallucinogens, the terms are often used interchangeably as hallucinogens most commonly come in the form of psychedelics.^{3,4} When used alone and without proper preventative measures, individuals taking hallucinogens may act rashly, injuring themselves or others due to their altered perception of reality and confused state.⁴

While hallucinogens typically lack the inherently addictive properties of other commonly used substances, such as opioids or alcohol, this false pretense of safety might lead individuals to take hallucinogens more regularly, develop dependence, and eventually cause withdrawal symptoms. These withdrawal symptoms may include memory loss, confusion, seizures, or worsening of mental illnesses such as anxiety or depression.^{5,6}

However, possibly due to their relatively low risk in comparison to more common harmful drugs, the possible benefits of hallucinogens may suggest their use in treating otherwise untreated mental conditions. If not abused, proper use of hallucinogens has been found to reduce feelings of anxiety, depression, eating disorders, and post-traumatic stress disorder.⁷ Moreover, while dependence on psychedelics can occur with improper long-term use, research has shown the therapeutic properties of psychedelics that can aid in reducing drug addiction.⁸ Although hallucinogens can have negative short-term and long-term effects on

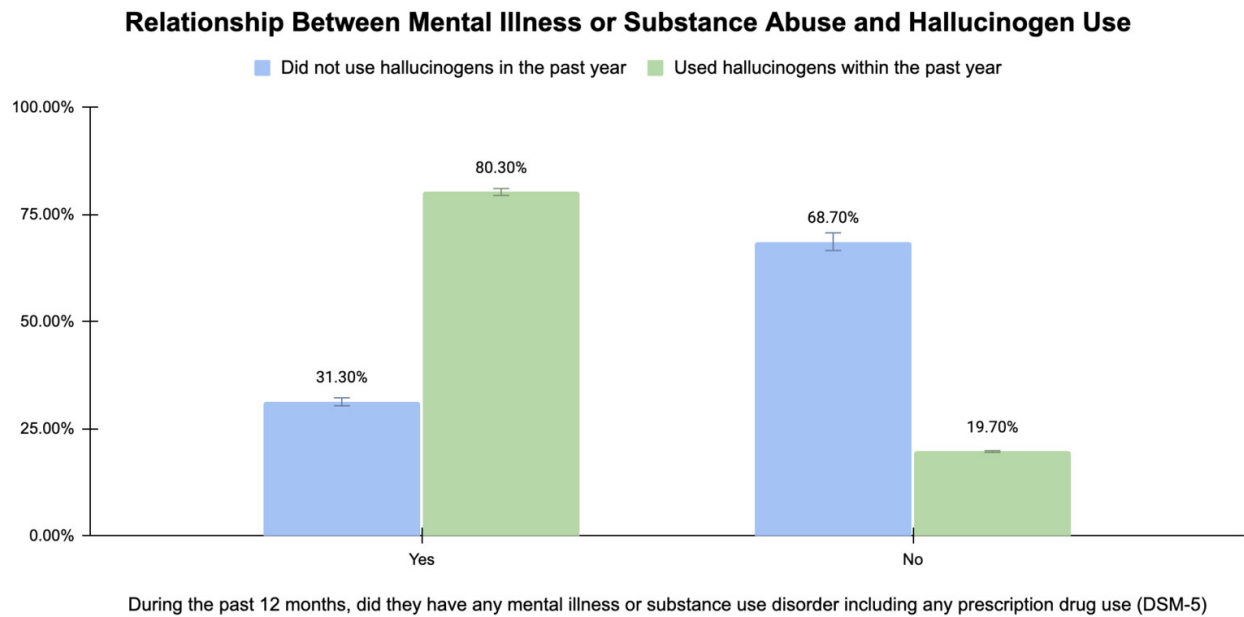


Figure 1. Relationship between hallucinogen use per week and existence of mental illness or substance abuse

mentally healthy users, studies have shown the benefits in reducing the impacts of depression and anxiety on those with preexisting mental illnesses, as they can increase serotonin levels.^{8,9} These findings indicate that, under proper conditions, individuals with untreated mental conditions might turn to psychedelics for psychological relief.¹⁰ However, despite their potential benefits, psychedelics have psychological and physical risks that make them dangerous for potential users. Medically prescribed mental health treatments are safer and more effective alternatives for those suffering from mental illness.

METHODS

In order to analyze the demographics of hallucinogen use and infer the possible causes and other risks of hallucinogen use, data was obtained through the Substance Abuse and Mental Health Services Administration (SAMHSA) database. Three main themes were identified: hallucinogen use after the COVID-19 pandemic, hallucinogen use as a way of coping with or self-treating mental illness, and the prevalence of other substance abuse coexisting with hallucinogen use. This data was obtained from the National Survey on Drug Use and Health (NSDUH), in which non-institutionalized individuals aged 12 and older throughout the United States were surveyed on their substance use and mental health issues. Participants of the survey include individuals living in the United States or District of Columbia that reside in households, non-institutional group quarters, and military bases.¹¹ Information from these surveys was then uploaded onto a database in which different variables can be queried. The graphs and tables obtained through this database display the trends between different variables

that aid in understanding the landscape of hallucinogen use

RESULTS

Analysis of NSDUH data resulted in three major conclusions about hallucinogen use: those with mental health or substance abuse issues are likely to use hallucinogens, many individuals increased hallucinogen use after the COVID-19 pandemic, and those who abuse other substances are also more likely to use hallucinogens.

SELF-MEDICATION/COPING

[Figure 1](#) displays the vast prevalence of hallucinogen use in individuals who already have an existing mental illness or substance abuse issues. Those with these conditions were much more likely to use hallucinogens (80.30%) compared to those without (19.70%). This shows the strong positive correlation between existing mental conditions and hallucinogen use, suggesting that individuals may take hallucinogens to feed existing substance abuse issues or try to mitigate the effects of these issues or mental illnesses.

[Figure 2](#) shows the significant correlation between having an MDE and using hallucinogens in the past 12 months. A greater percentage of those who had used hallucinogens in the past year had also had a MDE (25.10%) as compared to the percentage of those who did not use hallucinogens and had a MDE (8.20%). Moreover, 91.80% of those who did not use hallucinogens also did not have a MDE, further suggesting the correlation between MDEs and hallucinogen use.

Relationship Between Major Depressive Episode (MDE) and Hallucinogen Use

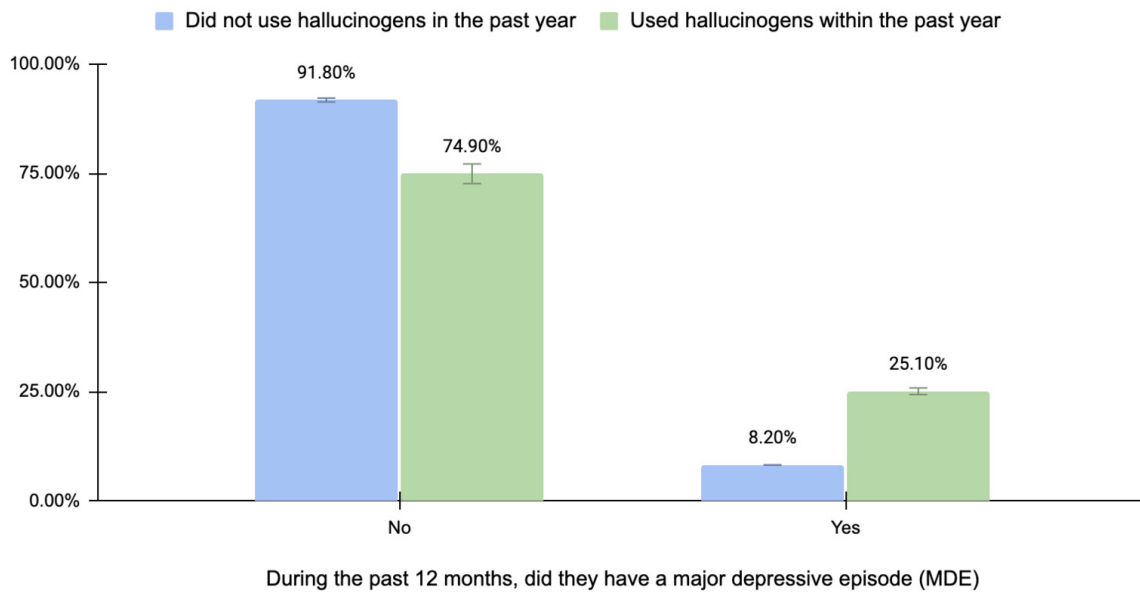


Figure 2. Relationship between Major Depressive Episode (MDE) and hallucinogen use

Relationship Between Mental Health and Drug Use Due to COVID-19

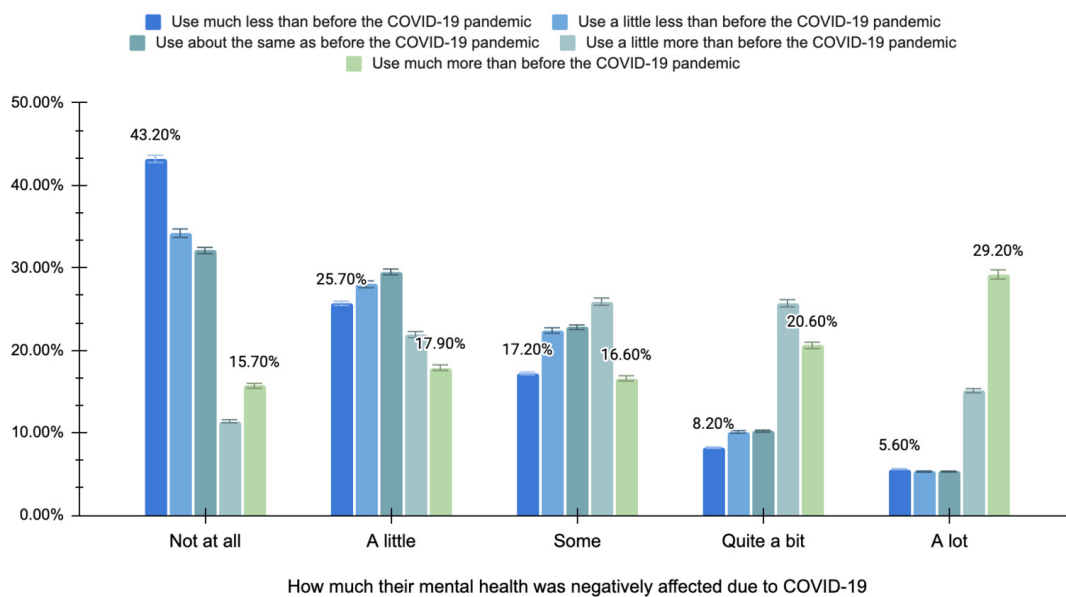


Figure 3. The Relationship between mental health decline and increased drug usage following the COVID-19 pandemic

COVID-19 IMPACT

Figure 3 displays the relationship between mental health decline and change in drug usage after the pandemic. Results show that people who had little to no mental health decline following the pandemic were more likely to have used the same, if not less, number of drugs as they did before. Those with no mental decline due to COVID-19 had

the highest percentage of using less drugs (43.20%). However, those who had “quite a bit” or “a lot” of mental health decline following the pandemic were far more likely to have a large increase in their drug usage, as they had the highest percentages of using much more drugs (20.60% and 29.20%).

While figure 3 displays the increase in overall drug usage due to mental health decline following the pandemic, figure

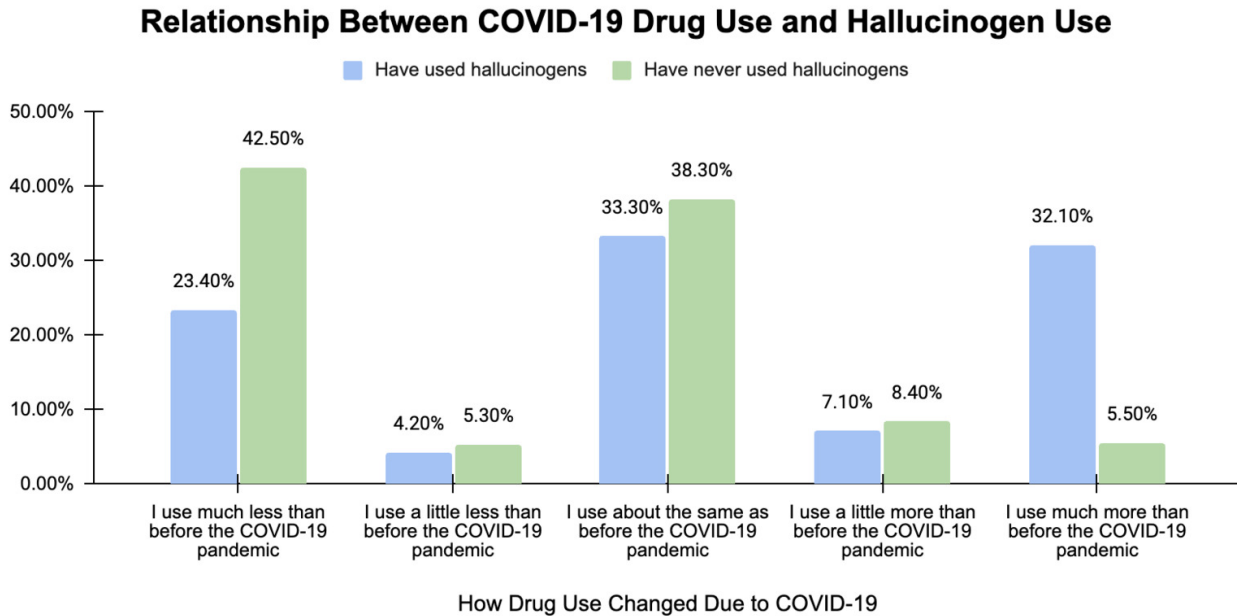


Figure 4. Relationship between increased drug use after COVID-19 and hallucinogen use

4 displays how likely those individuals are to have used hallucinogens in particular. Those who use much more drugs following the pandemic are far more likely to have used hallucinogens (32.10% of hallucinogen users) than not use hallucinogens (5.50% of hallucinogen non-users). Furthermore, those who use much less drugs than before the pandemic typically do not use hallucinogens (42.50% of non-users) rather than use hallucinogens (23.4% of users). The graph shows that considering the overall increase in drug use due to the pandemic, hallucinogen use in particular significantly increased. While the middle values remain relatively similar with no notable changes, the most significant numbers are in the extremes.

COEXISTING DRUG USE

Figure 6 shows the direct correlation between minors who illegally use alcohol and hallucinogens. Similar to the trend found in figure 5, the vast majority of those who illegally drank alcohol have also used hallucinogens (88.30%), and the vast majority of those who did not drink alcohol have not used hallucinogens (84.20%).

Figure 7 displays the trends among minors aged 12-17 in their use of illicit or addictive drugs along with hallucinogens. The drastic contrast between those who do and do not use hallucinogens prove how hallucinogens are most commonly used alongside other illegal substances, primarily in a younger population. Of the drugs research, marijuana was the most highly correlated with hallucinogens, as 91.10% of marijuana users also used hallucinogens, with alcohol being second (88.30%) and vape nicotine being third (83.60%).

DISCUSSION

The analysis of the data revealed three key factors that were strongly correlated with hallucinogen use: pre-existing mental health conditions, the impact of the COVID-19 pandemic, and co-occurring substance abuse. These themes highlight the need for a better understanding of the complex interplay between mental health, societal stressors, and substance use patterns.

The data suggests that mental illness or substance use disorders may be a significant risk factor for hallucinogen use. Due to their impact on mental state and consciousness, many individuals may turn to psychedelic drugs as a form of self-treatment for a mental illness or to cope with existing substance abuse disorders.¹² However, without proper health safety measures, which those with substance abuse or mental issues are less likely to have, this can end up being more likely to cause harm rather than significant help. The notable correlation between those with mental issues and those who take hallucinogens may be due to the lack or ineffectiveness of mental health resources available to these groups. While the use of hallucinogens for recreational purposes should not be ignored, as many instances of hallucinogen use do not coexist with mental health issues, mental health and substance abuse are still important factors to target in order to reduce the overall risks of unsafe hallucinogen use.

This needed emphasis on mental health improvement nationally is further highlighted by the patterns shown after COVID-19, as mental health decline was seen to have a direct correlation with the increased use of hallucinogens. The COVID-19 pandemic had a large impact on people worldwide, as it increased isolation and stress, and led to substantial changes in people's daily routines. These stress-

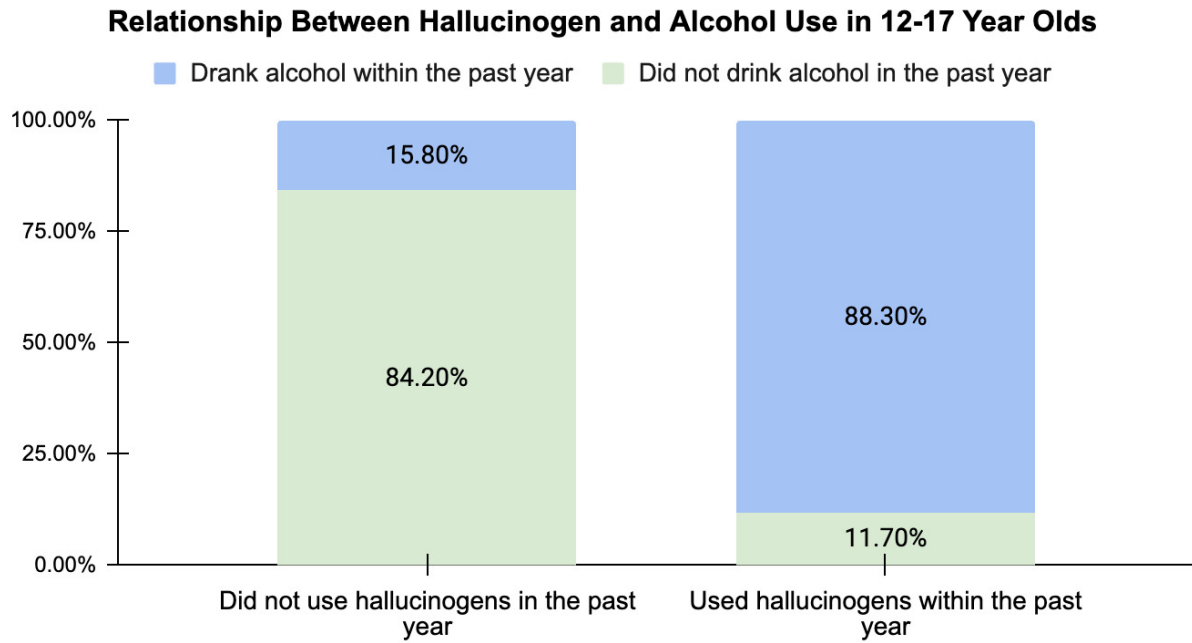


Figure 6. The Relationship Between Hallucinogen and Alcohol Use in 12-17 Year Olds

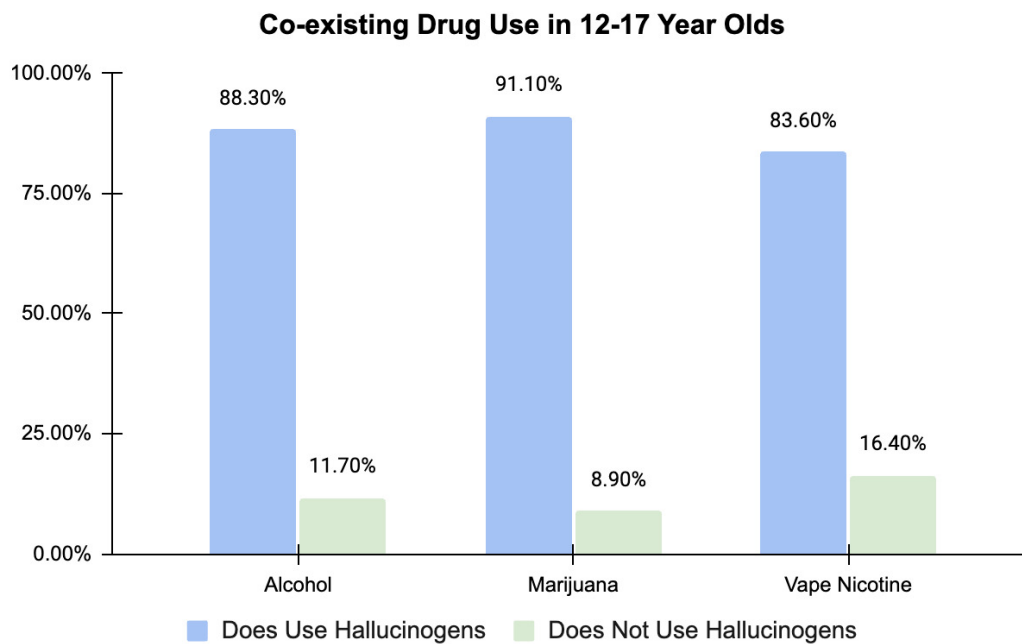


Figure 7. Co-existing Drug Use in 12-17 Year Olds

ful circumstances have led to a worldwide decline in mental health following the pandemic.^{13,14} As drug use as a whole increased, the correlation between increased drug use and hallucinogen use in particular highlights the increase in hallucinogen use after the pandemic. The rates of mental illness and substance abuse have increased since the start of the pandemic, causing people to become more susceptible to using and depending on drugs such as hallucinogens for psychological aid or to sustain substance abuse

issues.¹⁵ This necessitates better crisis intervention strategies to provide targeted support for vulnerable populations in times of widespread societal stress.

This study also highlights the significant correlation between hallucinogen use and other illicit drugs, especially among younger populations (12-17 year olds). This pattern suggests that hallucinogen use is typically part of a broader substance abuse issue amongst adolescents rather than just an isolated behavior. This highlights the alarmingly high

access that children and teenagers have to illegal drugs. People who take drugs in this age range are at a higher risk of developing substance abuse disorders or having larger negative impacts on their brain function later in life due to their stage in neurological development.¹⁶ The high levels of hallucinogens being taken alongside other drugs, especially in younger populations, emphasize the prevalent issue of drug abuse nationally. s. These findings underline the need to improve drug education and prevention in youth. Specifically, developing effective age-appropriate intervention that addresses the root cause of substance abuse in adolescents is extremely necessary. Hallucinogens in particular are important to look out for in this case because they not only have their own inherent dangers to users, but can be indicative of much larger, more dangerous drug abuse problems.

This study opens up several avenues for future research about the impacts of hallucinogen use. Due to the significant usage of hallucinogens, it is important to research more about the specific long-term effects in order to properly understand and mitigate the dangers. Future studies may help shed more light on potential therapeutic uses for hallucinogens in controlled conditions to avoid their misuse in vulnerable populations.

CONCLUSION

Due to the psychologically and physically damaging effects of hallucinogens, proper measures should be taken to ensure that their usage is monitored and used responsibly, if at all. Hallucinogen use likely suggests further problems within an individual, as hallucinogens are rarely one's only drug of choice but rather are one of multiple illegal or addictive drugs. As hallucinogen use also greatly suggests a decline in one's mental health, proper mental health treatment should be made more readily available and less stigmatized to the general population so that they can get the treatment that they need rather than having to rely on drugs that pose a much greater risk, which has become especially more important after the COVID-19 pandemic.

AUTHOR CONTRIBUTION STATEMENT

All authors have made substantial contributions to the conception or design of this work and drafting or revising it critically for important intellectual content and have approved the final version to be published.

FINANCIAL SUPPORT

This research received no specific grant from any funding agency, commercial or not-for-profit sectors.

CONFLICT OF INTEREST STATEMENT

Conflicts of Interest: None

ETHICS STATEMENT

The data reported in this paper is publicly available, de-identified aggregate data, and meets the National Institutes of Health criteria for exempt minimal risk studies.

DATA AVAILABILITY STATEMENT

All data reported in this paper are publicly available at: <https://www.samhsa.gov/data/data-we-collect/mh-cld-mental-health-client-level-data>

DATA SHARING STATEMENT

All data reported in this paper are publicly available from: <https://www.samhsa.gov/data/data-we-collect/nsduh-national-survey-drug-use-and-health>

Submitted: November 02, 2024 EDT. Accepted: December 02, 2024 EDT. Published: January 06, 2025 EDT.

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