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Treatment for Anxiety and Substance Use Disorders During the COVID-19 Pandemic: Challenges and Strategies

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Abstract

The COVID-19 pandemic is likely to exacerbate existing anxiety and substance use disorders (SUDs) and increase vulnerability among individuals previously free of these conditions. Numerous pandemic-related stressors—coronavirus infection fears, social distancing and isolation, activity restrictions, financial insecurity and unemployment, caregiving or childcare responsibilities—place a substantial burden both on the general population and on many health care providers. Anxiety symptoms such as worry, tension, irritability, difficulty concentrating, and sleep disruption are increasingly prevalent. For individuals in SUD treatment, anxiety can complicate efforts to achieve treatment goals. In this commentary, we outline the potential impact of anxiety on substance use problems during the COVID-19 crisis and describe key behavioral, pharmacological, and digital health treatment considerations. We highlight populations of special concern due to heightened vulnerability and challenges accessing services, strategies to support health care providers, and directions for future research.

ANXIETY AND SUBSTANCE USE DURING THE COVID-19 PANDEMIC

Emerging evidence suggests that the COVID-19 pandemic may have a substantial impact on anxiety and associated substance use disorders (SUDs). Epidemiologic survey data from the U.S. population prior to the COVID-19 pandemic (N=43,093) found 12-month *DSM-IV* prevalence of approximately 11% for anxiety disorders and 9% for SUDs, and 18% of those with a SUD had a comorbid anxiety disorder.¹ Across studies, the presence of any anxiety disorder has been associated with 1.6–4.2 higher odds of having a SUD.² These conditions seem likely to increase in prevalence. Results from the July 2020 Household Pulse Survey,

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designed to track pandemic-related impacts (N=79,776), found that 36% of adults in the U.S. had symptoms of anxiety disorder based on the Generalized Anxiety Disorders-2 (GAD-2) scale compared with 8% of adults in January-June 2019 (N=17,067).³ Adults over age 65, smokers, those with chronic medical conditions or who are immuno-compromised are more vulnerable than others to COVID-19 and may be especially prone to anxiety during this challenging time.

Anxiety can lead to increased substance use, new onset of SUDs, and relapse among those in recovery. Since the pandemic began, off-premises alcohol sales have increased 21% in physical stores, and on-line sales have doubled compared to the same time last year.⁴ Sales figures and restrictions in alcohol availability vary by state, although no clear regional pattern has emerged. It is hypothesized that increases in drinking may be sustained in response to stress during the pandemic.⁵ Continued behavior that involves drinking (e.g., going to bars, celebrations without social distancing) or other substance use may increase risk of COVID-19 transmission. As a result, providers can anticipate that anxiety in conjunction with substance use and SUDs may be pervasive for the foreseeable future.

INTERVENTIONS TO MANAGE ANXIETY AND SUBSTANCE USE DISORDERS

Behavioral therapies, pharmacotherapy, and digital health tools can be used to address co-occurring SUDs and anxiety disorders (including posttraumatic stress disorder [PTSD], an overlapping condition). Several interventions using cognitive behavioral therapy (CBT) components have been developed and evaluated recently (Table 1). For example, Coordinated Anxiety Learning and Management for Addiction Recovery Centers (CALM-ARC), is a 7-session, exposure-based, computerized but therapist-directed CBT approach to anxiety treatment in SUD specialty care.⁶ With decreased levels of human connection and the potential for pandemic-related PTSD (or triggering of earlier trauma), including domestic violence concerns that have arisen during the pandemic, trauma-informed care that also addresses substance use based on the Seeking Safety model (e.g., establishing safety, identifying triggers, but without exposures) may be appropriate.⁷ Concurrent Treatment of PTSD and Substance Use Disorders Using Prolonged Exposure (COPE) is another approach based on CBT principles with evidence of efficacy and a manual available for providers.⁸ Mindfulness-based relapse prevention also has evidence of efficacy, particularly as an aftercare strategy for individuals who have completed SUD treatment,⁹ and may be valuable in acknowledging patients' valid concerns and emotions regarding the pandemic while also building skills to manage anxiety.

Medications can be useful, especially in conjunction with behavioral therapy.^{10,11} Preferred medications have favorable safety features including low abuse liability and low risk of toxicity. Options include selective serotonin reuptake inhibitors (SSRIs) such as sertraline and paroxetine, as well as buspirone, gabapentin, hydroxyzine, topiramate, naltrexone, and disulfiram (Table 1). SSRIs can be effective in managing symptoms of generalized anxiety disorder but may not have a direct impact on alcohol and other substance use. Gabapentin has shown positive effects on alcohol treatment outcomes, mood symptoms and sleep,¹² and

may potentially benefit individuals with opioid and cannabis use disorders. Topiramate can reduce frequency of alcohol use and alcohol craving, as well as PTSD symptom severity.¹³ Naltrexone and disulfiram have been effective in treating patients with PTSD and alcohol use disorder, showing reduction in alcohol use and symptoms of PTSD.¹⁴ These medications often can be managed via telehealth. In response to the pandemic, as of April 2020 DATA-waived practitioners have been allowed to prescribe buprenorphine via telephone for maintenance or detoxification treatment without first conducting an in-person medical evaluation.

Mobile apps to reduce anxiety are available in multiple languages and there is preliminary evidence for their efficacy.¹⁵ During the pandemic, widely used apps such as Calm® and Headspace® have released free versions. Apps have also been developed to help treat SUDs, including reSET-O, which uses cognitive behavioral and contingency management principles and has FDA authorization as a digital therapeutic for opioid use disorder. A similar app by the same developer, re-SET, targets SUDs more broadly. Both products aim to improve abstinence and SUD outpatient treatment program retention (Table 1). Given variable uptake of mobile apps and the potential for “Zoom fatigue,” it is unclear whether digital solutions will be effective in managing anxiety and substance use during the pandemic, yet these tools may help to reach patients without access to other forms of treatment.

STRATEGIES FOR SUPPORTING HEALTH CARE PROVIDERS

Providers face unprecedented challenges with rapid changes in care delivery, economic uncertainty, and working from home while balancing family needs. The American Society of Addiction Medicine, Substance Abuse and Mental Health Services Administration, American Medical Association, and other professional organizations have extensive resources posted online to help providers manage stress during the pandemic (Table 1). Healthcare organizations can promote a culture of workplace wellness by encouraging open dialogue about self-care and ensuring that provider schedules allow for basic needs related to nutrition and sleep, breaks from screen time, peer interaction, and mental health support when needed. The widespread pivot to virtual care delivery from home presents potential opportunities such as flexible work hours and improved patient attendance, but implications for provider stress are poorly understood. Some individuals may benefit from increased control over schedules and amelioration of certain stressors (e.g., transportation hassles and costs). Yet virtual care can blur boundaries between work and leisure time, and reduced in-person contact with patients may have negative impacts.

REACHING VULNERABLE POPULATIONS

Although the adverse mental health effects of the pandemic are widely felt, some populations are especially vulnerable. Older adults are at greater risk of severe COVID-19 illness and are more likely to be socially isolated and lonely, putting them at risk for both mental health problems and SUDs.¹⁶ Households with children and adolescents have reported elevated levels of stress associated with juggling work and parenting.¹⁷ Anxiety among adolescents may be worsened during the pandemic, and school closures lead to

reduced access to services such as counseling, academic tutoring, meals, physical activity, and opportunities for reporting and preventing abuse. Women, among whom anxiety is already more prevalent and who carry a disproportionate share of household duties, are bearing even more responsibility as work, housekeeping, and home-schooling duties collide.

Race/ethnic and socioeconomic disparities in health care access may lead to poor mental health and SUD treatment access in addition to worse COVID-19 clinical outcomes.¹⁸ Non-white populations are at greater risk of infection with the Coronavirus, and serious complications and death from COVID-19, due to higher rates of pre-existing chronic medical conditions, crowded housing and “essential” jobs that place them at increased risk of exposure, e.g., grocery store, manufacturing, and transportation positions.¹⁹ In New York, for example, Hispanics are three and a half times more likely, and African-Americans more than five times more likely to die from COVID-19 than whites,²⁰ and similar patterns exist across the U.S.

The “digital divide” in accessing health services using technology is exacerbated during COVID-19: older people, those with more functional or psychiatric impairment, and individuals with lower educational attainment may be less able to access virtual health options.²¹ These are critically important populations to assist in accessing anxiety and SUD treatment. If telehealth can be made more broadly available, the pandemic situation may in fact provide an opportunity to increase access to care for vulnerable populations who might not otherwise initiate care. The recent COVID-19-related announcement by the Centers for Medicare & Medicaid Services granting parity in payments for telephone-delivered care as an alternative to video visits may improve treatment options for patients who lack sufficient internet access.

SUMMARY

SUDs are often associated with anxiety, and these combined problems may be challenging to treat during the COVID-19 pandemic. Anxiety can lead to both new-onset SUDs and relapse, and it is important for treatment to be accessible for patients with either type of disorder. There is a pressing need to investigate innovative treatment approaches during the pandemic, including models that can be conducted remotely while also considering the effects of social isolation and altered contact with providers. Mobile apps are promising yet it is unknown whether patient engagement can be achieved and sustained. Research also should examine the efficacy of coping strategies being promoted to support health care providers, race/ethnic disparities in access to mental health and SUD treatment, and the potential for policy (e.g., telehealth expansion, telephone visit reimbursement) to improve the availability of services to treat anxiety and SUDs as the pandemic continues.

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REFERENCES

1. Grant BF, Stinson FS, Dawson DA, et al. Prevalence and co-occurrence of substance use disorders and independent mood and anxiety disorders: results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Arch Gen Psychiatry* 2004;61(8):807–816. [PubMed: 15289279]
2. Lai HM, Cleary M, Sitharthan T, Hunt GE. Prevalence of comorbid substance use, anxiety and mood disorders in epidemiological surveys, 1990–2014: A systematic review and meta-analysis. *Drug Alcohol Depend* 2015;154:1–13. [PubMed: 26072219]
3. Centers for Disease Control & Prevention, National Center for Health Statistics. Mental health: Household Pulse Survey July 29, 2020 <https://www.cdc.gov/nchs/covid19/pulse/mental-health.htm>. Accessed August 10, 2020.
4. The Nielsen Company. Rebalancing the ‘COVID-19 effect’ on alcohol sales. Nielsen Insights; May 7, 2020 <https://www.nielsen.com/us/en/insights/article/2020/rebalancing-the-covid-19-effect-on-alcohol-sales/>. Accessed August 10, 2020.
5. Rehm J, Kilian C, Ferreira-Borges C, et al. Alcohol use in times of the COVID 19: Implications for monitoring and policy. *Drug Alcohol Rev* 2020.
6. Wolitzky-Taylor K, Krull J, Rawson R, Roy-Byrne P, Ries R, Craske MG. Randomized clinical trial evaluating the preliminary effectiveness of an integrated anxiety disorder treatment in substance use disorder specialty clinics. *J Consult Clin Psychol* 2018;86(1):81–88. [PubMed: 29300100]
7. Najavits LM, Hien D. Helping vulnerable populations: a comprehensive review of the treatment outcome literature on substance use disorder and PTSD. *J Clin Psychol* 2013;69(5):433–479. [PubMed: 23592045]
8. Back SE, Foa EB, Killeen TK, et al. *Concurrent Treatment of PTSD and Substance Use Disorders Using Prolonged Exposure (COPE): Therapist Guide*. New York: Oxford University Press; 2015.
9. Roos CR, Bowen S, Witkiewitz K. Baseline patterns of substance use disorder severity and depression and anxiety symptoms moderate the efficacy of mindfulness-based relapse prevention. *J Consult Clin Psychol* 2017;85(11):1041–1051. [PubMed: 29083220]
10. Hien DA, Levin FR, Ruglass LM, et al. Combining seeking safety with sertraline for PTSD and alcohol use disorders: A randomized controlled trial. *J Consult Clin Psychol* 2015;83(2):359–369. [PubMed: 25622199]
11. Foa EB, Yuskov DA, McLean CP, et al. Concurrent naltrexone and prolonged exposure therapy for patients with comorbid alcohol dependence and PTSD: a randomized clinical trial. *JAMA* 2013;310(5):488–495. [PubMed: 23925619]
12. Mason BJ, Quello S, Goodell V, Shadan F, Kyle M, Begovic A. Gabapentin treatment for alcohol dependence: a randomized clinical trial. *JAMA Intern Med* 2014;174(1):70–77. [PubMed: 24190578]
13. Batki SL, Pennington DL, Lasher B, et al. Topiramate treatment of alcohol use disorder in veterans with posttraumatic stress disorder: a randomized controlled pilot trial. *Alcohol Clin Exp Res* 2014;38(8):2169–2177. [PubMed: 25092377]
14. Petrakis IL, Poling J, Levinson C, et al. Naltrexone and disulfiram in patients with alcohol dependence and comorbid post-traumatic stress disorder. *Biol Psychiatry* 2006;60(7):777–783. [PubMed: 17008146]
15. Huberty J, Green J, Glissmann C, Larkey L, Puzia M, Lee C. Efficacy of the mindfulness meditation mobile app “Calm” to reduce stress among college students: randomized controlled trial. *JMIR Mhealth Uhealth* 2019;7(6):e14273.
16. Satre DD, Hirschtritt ME, Silverberg MJ, Sterling SA. Addressing problems with alcohol and other substances among older adults during the COVID-19 pandemic. *Am J Geriatr Psychiatry* 2020;28(7):780–783. [PubMed: 32359882]
17. Panchal N, Kamal R, Orgera K, et al. The implications of COVID-19 for mental health and substance use. Kaiser Family Foundation; April 21, 2020 <https://www.kff.org/health-reform/issue-brief/the-implications-of-covid-19-for-mental-health-and-substance-use/>. Accessed August 10 2020.
18. Webb Hooper M, Napoles AM, Perez-Stable EJ. COVID-19 and racial/ethnic disparities. *JAMA*, 5 11, 2020.

19. Artiga S, Garfield R, Orgera K. Communities of color at higher risk for health and economic challenges due to COVID-19. Kaiser Family Foundation; April 7, 2020 <https://www.kff.org/coronavirus-covid-19/issue-brief/communities-of-color-at-higher-risk-for-health-and-economic-challenges-due-to-covid-19/view/footnotes/>. Accessed August 10, 2020.
20. Holtgrave DR, Barranco MA, Tesoriero JM, Blog DS, Rosenberg ES. Assessing racial and ethnic disparities using a COVID-19 outcomes continuum for New York State. *Ann Epidemiol* 2020;48:9–14. [PubMed: 32723697]
21. Dewar S, Lee PG, Suh TT, Min L. Uptake of virtual visits in a geriatric primary care clinic during the COVID-19 pandemic. *J Am Geriatr Soc* 2020.

Table 1.

Selected behavioral and pharmacological treatments, mobile apps, and provider resources for addressing anxiety and substance use disorders during the COVID-19 pandemic.

Behavioral Interventions ^a	Approach / components	Pandemic considerations
Coordinated Anxiety Learning and Management for Addiction Recovery Centers (CALM ARC)	-Education about SUD/anxiety disorder comorbidity -Cognitive restructuring skills -Hierarchy of stimuli for exposures -Goal setting and relapse prevention	-Computerized aspect is especially appropriate in the COVID-19 context -Brief format (7 sessions) enhances feasibility
-Concurrent Treatment of PTSD and Substance Use Disorders Using Prolonged Exposure (COPE)	-Education about the relationship between PTSD and SUD -Cognitive-behavioral techniques to manage cravings -Relaxation training -Imaginal and in vivo exposures	-Published manual available for providers -Longer format (12 sessions) requires somewhat greater commitment from patients
-Seeking Safety	-Patient safety as key goal -Integrated focus on substance use and trauma -Interpersonal skills-building -Not exposure-based	-Addresses potential recurrence of trauma -longer format (25 sessions) requires substantial time commitment
-Mindfulness-Based Relapse Prevention	-Meditation/mindfulness practice -Awareness of substance use triggers -Develop self-compassion -Build healthy lifestyle	-Focus on present moment rather than uncertain future -Compassion for self and others during times of stress -Brief format (8 sessions)
Medications ^b	Potential benefits	Concerns / side effects ^c
-Selective serotonin reuptake inhibitors (e.g., paroxetine, sertraline)	-Reduced anxiety -Strong safety profiles	-May have little impact on alcohol use -Sexual side effects
-Buspirone	-Reduced anxiety -Fewer drinking days -Long acting	-Headache -Drowsiness
-Gabapentin ^d	-Reduced anxiety, improved sleep -Reduced alcohol craving -Quick acting	-Dizziness -Drowsiness
-Hydroxyzine	-Reduced anxiety, improved sleep -Quick acting	-Dizziness -Drowsiness -Dry mouth
-Topiramate	-Reduced alcohol craving -Reduced drinking -Improvement in PTSD symptoms	-Transient impairment in learning and memory
-Naltrexone	-Reduced alcohol craving -Reduced PTSD symptoms	-Gastrointestinal side effects -Sleep problems
-Disulfiram	-Disrupts alcohol metabolism -Causes aversive alcohol reaction	-Drowsiness -Headache
Mobile apps	Key content	Source
-Headspace	-Instruction for beginners -Stress reduction strategies -Brief, structured meditations	https://www.headspace.com/
-Calm	-Sleep improvement tools -Breathing exercises -Longer meditations	https://www.calm.com/
-reSET and reSET-O	-Cognitive behavioral therapy and contingency management for SUDs -Separate opioid app (Re-SET-O)	https://www.resetforrecovery.com/
Provider Resources	Information provided ^c	Source

Behavioral Interventions ^a	Approach / components	Pandemic considerations
-American Society of Addiction Medicine	-Access to buprenorphine and other medications -Telehealth resources -Clinician wellbeing information	https://www.asam.org/Quality-Science/covid-19-coronavirus
-Substance Abuse and Mental Health Services Administration	-Training and technical assistance -Treatment funding opportunities	https://www.samhsa.gov/coronavirus
-American Psychiatric Association	-Mental health effects of COVID-19 -Crisis resources	https://www.psychiatry.org/psychiatrists/covid-19-coronavirus
-American Medical Association	-Clinical updates -Burnout prevention -Medical ethics	https://www.ama-assn.org/topics/coronavirus-covid-19
-American Psychological Association	-Psychological aspects of COVID-19 -Family and parenting -Stress management	https://www.apa.org/topics/covid-19

Notes: SUD = substance use disorder. PTSD = post-traumatic stress disorder.

^a In addition to combined intervention models noted here, cognitive behavioral therapy tools including activity scheduling, relaxation training, and cognitive restructuring are valuable in addressing both anxiety and SUD symptoms.

^b Benzodiazepines are not recommended due to dependence potential.

^c Partial list.

^d Gabapentin for anxiety and alcohol treatment is off-label.