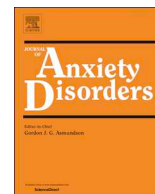




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Editorial

COVID-19 stress and substance use: Current issues and future preparations



The COVID-19 pandemic has led to significant increases in psychiatric morbidity, and exacerbated existing psychiatric disturbances (Gruber et al., *in press*). Early in the course of the COVID-19 pandemic, survey data revealed significant increases in anxiety-related symptoms in the general public. For example, in a large survey conducted in China from January 31 2020 to February 2 2020 ($N = 1210$), over half of respondents reported significant mental health difficulties as a direct result of the pandemic, with anxiety the most frequently endorsed symptom (Wang et al., 2020). Similarly, in a survey conducted from March 18 to 22 2020, high levels of anxiety were found among a sample of $N = 2766$ adults in Italy (Mazza et al., 2020). As illustrated in various papers included in this volume, fears specific to the coronavirus and contamination (Lee, Jobe, Mathis, & Gibbons, 2020; McKay, Minaya, & Storch, 2020, b; Mertens, Gerritsen, Duijndam, Salemink, & Engelhard, 2020) as well as factors that exacerbate negative psychological outcomes, including viewing stressful media content (Chao, Xue, Liu, Yang, & Hall, 2020) and having a pre-existing anxiety-related disorder (Asmundson et al., 2020), are particularly salient in the context of COVID-related distress. In addition to the widespread rise in anxiety and fear during the pandemic, it is anticipated that substance use and abuse will increase as well (Clay & Parker, 2020; Pfefferbaum & North, *in press*). As will be discussed here, there are several specific and unique pandemic-relevant factors that contribute to increased substance use and abuse risk.

The emotional impact of COVID-19 on anxiety is not surprising. Prior research has shown that pandemics lead to increases in anxiety problems in the general public and exacerbate anxiety in at risk groups. For example, following the Severe Acute Respiratory Syndrome (SARS) pandemic, there were increases in anxiety symptoms in a sample of university students in Hong Kong, one of the epicenters of the outbreak (Wong, Gao, & Tam, 2007). What distinguishes COVID-19 from other pandemics is the worldwide pervasiveness of infection risk. For example, during the Ebola outbreak in late 2014 to early 2015, there was generally low fear of contracting the illness in the United States, despite widespread media coverage of the disease. However, specific individual factors such as contamination fear and anxiety sensitivity were predictive of higher levels of anxiety over being infected by the Ebola virus (Blakey, Reuman, Jacoby, & Abramowitz, 2015), despite the country having only 11 documented cases. In contrast, as of this writing on July 16 2020, the number of COVID-19 cases in the United States is approaching 3.5 million and with close to 137,000 deaths (<https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/cases-in-us.html>).

The existing research suggests that pandemics activate a behavioral immune system (BIS; Schaller & Park, 2011). The BIS is associated with increased interoceptive monitoring that would signal potential infection and motivate behaviors to avoid contracting illness. However, this response is aversive and associated with anxiety and other adverse

reactions (such as disgust; McKay, Yang et al., 2020). The BIS is also associated with other emotional and behavioral responses to pandemics. The recently developed COVID-19 Stress Scales (Taylor, Landry, Paluszek, Fergus et al., 2020) is comprised of five factors that can be roughly associated with BIS activation: Danger and Contamination Fears, Xenophobia, Trauma and Stress Symptoms, Social and Economic Concerns, and Obsessive Checking and Reassurance Seeking. Each of these constructs is associated with increased risk for substance use or abuse.

Danger and Contamination Fears, such as present in obsessive-compulsive disorder, are associated with higher rates of alcohol use and abuse (discussed in Markarian et al., 2010). This has likewise been observed in checking behaviors (Hasler et al., 2005). And, trauma has a well-documented risk of substance use (Jacobsen, Southwick, & Kosten, 2001).

The increased interoceptive awareness that comes with BIS activation can be expected to result in increased substance use, such as alcohol or marijuana. Past research has shown that anxious arousal from interoceptive awareness (due to anxiety sensitivity, for example) increases desire for alcohol (Novak, Burgess, Clark, Zvolensky, & Brown, 2003) and is predictive of alcohol use disorders after two years (Schmidt, Buckner, & Keough, 2007). Similar findings related to marijuana use have been reported (Bonn-Miller, Zvolensky, & Bernstein, 2007).

This unique constellation of emotional reactions due to COVID-19—what has come to be referred to as the COVID Stress Syndrome (Taylor, Landry, Paluszek, McKay et al., 2020)—can be considered significant contributors to increased substance use morbidity in the general population. In addition to the unique interoceptive anxiety consequences of BIS activation, the availability of substances of abuse makes this highly likely and represents a significant public health concern. Stores that distribute alcohol have been deemed essential businesses during this pandemic and, coupled with job loss and increased time at home and isolating, make usage more likely. Economic distress has long been viewed as a risk factor for alcohol abuse (i.e., Dee, 2001). Associations between xenophobia and substance use are less clear, largely due to a lack of specific investigations. It would not be surprising, however, to find xenophobia associated with substance abuse, given the economic anxiety and fears of social displacement that animate its occurrence.

Collectively, it appears that the major dimensions of COVID-19 Stress Syndrome all contribute to a significant increased substance use liability. These associations warrant investigation in order to develop targeted interventions to address substance use and abuse problems arising from the COVID-19 pandemic. We encourage researchers to systematically tackle these important issues in preparation for challenges people may face with substance use and abuse in the face of

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present pandemic-related circumstances, post-COVID-19, and for future pandemics

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