RESEARCH ARTICLE

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U.S. Census Bureau-assessed prevalence of anxiety and depressive symptoms in 2019 and during the 2020 COVID-19 pandemic

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Abstract

Background: The disruptions to daily life caused by the coronavirus disease 2019 (COVID-19) pandemic may have impacted mental health, particularly mood disorders. This study aimed to compare prevalence rates of anxiety disorder and depressive disorder in national samples in the U.S. before and during the pandemic.

Methods: Participants ($n = 336,525$) were from U.S. Census Bureau-administered nationally representative probability samples, one from the first half of 2019 and four during the pandemic in April and May 2020. All participants completed the Patient Health Questionnaire-2 screening for depressive disorder and the Generalized Anxiety Disorder-2 screening for anxiety disorders.

Results: Compared to U.S. adults in 2019, U.S. adults in April and May 2020 were more than three times as likely to screen positive for depressive disorders, anxiety disorders, or one or both, with more than one out of three screening positive for one or both. The prevalence of anxiety decreased slightly between the April 23–May 4, 2020 and the May 21–26, 2020 administrations, while the prevalence of depression increased slightly.

Conclusions: U.S. adults in 2020 are considerably more likely to screen positive for mood disorders than in 2019, with anxiety declining and depression increasing from April to May.

KEYWORDS
anxiety, COVID-19, depression, economic hardship, mood disorders, pandemic, social isolation, unemployment

1 | INTRODUCTION

Coronavirus disease 2019 (COVID-19) began to spread in the U.S. in early 2020, leading to 1.7 million cases and more than 100,000 deaths. Measures to contain the virus changed many aspects of daily life (e.g., employment and income, schooling, social interaction, and travel). Given the direct impacts of the virus and related disruptions, researchers predicted increases in anxiety and depression, and potentially their sequelae, including suicide (Pfefferbaum & North, 2020; Reger, Stanley, & Joiner, 2020). However, relevant prevalence estimates from national samples before versus during the pandemic are scant. Accurate nationally representative estimates of anxiety and depression are needed to guide health and public policy, but also to inform risk assessment, intervention, prevention, and relevant science. To this end, we compared the results of standard screening measures for anxiety and depressive disorders in nationally representative probability samples administered by the U.S. Census Bureau in 2019 and in multiple assessments from April to May 2020. Within the April to May 2020 assessments, we explored trends for increases or decreases in both depressive and anxiety symptoms.

2 | METHODS

The National Health Interview Survey (NHIS) and the Household Pulse Survey (HPS), both administered by the U.S. Census Bureau, used probability designs with random selection relying on the Census Bureau's Master Address File. NHIS uses a personal household interview; HPS used online surveys. For both, estimates were weighted to adjust for nonresponse and to match Census Bureau estimates of the population by age, gender, race and ethnicity, and educational attainment. Estimates were available for five time points: The January–June 2019 administration of the NHIS (n = 17,067; National Center for Health Statistics, 2020) and the April 23–May 5, 2020 (n = 69,316), May 7–12, 2020 (n = 39,447), May 14–19, 2020 (n = 119,897), and May 21–26, 2020 (n = 90,798) administrations of the HPS (Fields et al., 2020).

Participants completed the Patient Health Questionnaire-2 (PHQ-2) and the Generalized Anxiety Disorder (GAD-2) screening measures. The PHQ-2 measure of depressive symptoms asks how often participants have experienced "having little interest or pleasure in doing things" and "feeling down, depressed, or hopeless," cardinal symptoms of mood disorders (e.g., one or both is required for a major depressive disorder diagnosis; American Psychiatric Association, 2013). The GAD-2 anxiety measure asks how often participants have experienced "feeling nervous, anxious, or on edge" and "not being able to stop or control worrying," core symptoms of GAD (American Psychiatric Association, 2013). For both, response choices were not at all = 0, several days = 1, more than half the days = 2, and nearly every day = 3. Responses for the two items were added together; scores of ≥3 were recorded as positive cases. NHIS participants were asked about symptoms in the last 2 weeks and HPS participants were asked about symptoms in the last 7 days. We report the percentage of positive cases in each time period for anxiety, depression, and one or both and compare rates during the four time points using relative risk with 95% confidence intervals.

3 | RESULTS

Compared to U.S. adults in the first half of 2019, U.S. adults in April–May 2020 were more than three times as likely to screen positive for anxiety disorder, depressive disorder, or both, with more than one out of three screening positive for one or both in the 2020 samples (see Table 1). The prevalence of anxiety decreased slightly but significantly between the April 23–May 4, 2020 and the May 21–26, 2020 administrations, while the prevalence of depression increased slightly but significantly.

4 | DISCUSSION

The prevalence of anxiety and depression among U.S. adults was three times higher during the pandemic than a year earlier in Census Bureau-administered national probability samples. The different time

TABLE 1 Symptoms of anxiety disorder, symptoms of depressive disorder, and symptoms of anxiety disorder and/or depressive disorder

	2019	April 23–May 4, 2020	RR, 2019 versus April 23–May 5, 2020	May 7–12, 2020	RR, 2019 versus May 7–12, 2020	RR, April 23–May 5 versus May 7–12, 2020	May 14–19, 2020	RR, 2019 versus May 14–19, 2020	RR, May 7–12 versus May 14–19, 2020	RR, April 23–May 5 versus May 14–19, 2020	May 21–26 2020	RR, 2019 versus May 21–26, 2020	RR, May 14–19 versus May 21–26, 2020	RR, May 7–12 versus May 21–26, 2020	RR, April 23–May 5 versus May 21–26, 2020
Anxiety	8.2%	30.8%	3.76 (3.57, 3.96)	30.0%	3.66 (3.47, 3.86)	0.97 (0.96, 0.99)	28.2%	3.44 (3.27, 3.62)	0.94 (0.92, 0.96)	0.92 (0.90, 0.93)	29.4%	3.59 (3.41, 3.78)	1.04 (1.03, 1.06)	0.98 (0.96, 1.00)	0.95 (0.94, 0.97)
Depression	6.6%	23.5%	3.56 (3.36, 3.77)	24.1%	3.65 (3.44, 3.88)	1.02 (1.00, 1.05)	24.4%	3.70 (3.49, 3.92)	1.01 (0.99, 1.03)	1.04 (1.02, 1.06)	24.9%	3.77 (3.56, 4.00)	1.02 (1.01, 1.04)	1.03 (1.01, 1.05)	1.06 (1.04, 1.08)
One or both	11.0%	35.9%	3.26 (3.12, 3.41)	34.4%	3.13 (2.99, 3.27)	0.96 (0.94, 0.97)	33.9%	3.08 (2.95, 3.22)	0.99 (0.97, 1.00)	0.94 (0.93, 0.96)	34.3%	3.12 (2.99, 3.26)	1.01 (1.00, 1.02)	1.00 (0.98, 1.01)	0.96 (0.94, 0.97)

Note: Numbers in parentheses are 95% CIs for the RRs. 95% CIs that do not include 1 are in bold.
U.S. adults, January–June 2019, n = 17,067; April 23–May 5, 2020, n = 69,316; May 7–12, 2020, n = 39,447; May 14–19, 2020, n = 119,897; and May 21–26, 2020, n = 90,798.
Abbreviations: CI, confidence interval; RR, relative risk.

scales (symptoms over 2 weeks in 2019 vs. symptoms over 7 days in 2020) suggest that, if anything, the 2020 numbers may be slight underestimates, given that the window of reporting was shorter in 2020.

The small differential trends in the prevalence of depressive versus anxiety symptoms over the course of April–May 2020 deserve consideration. In both cases, symptoms remain high, with some indication of a lessening of anxiety symptoms and an increase in depressive symptoms. On the one hand, the reduced anxiety could reflect adaptation; on the other, anxiety symptoms remain more pronounced than depressive symptoms even despite decreased anxiety, and the increase in depressive symptoms may reflect growing resignation. Growing resignation combined with high anxiety is a concerning combination (e.g., for suicide risk [Stanley et al., 2018]).

The symptom increases from 2019 to 2020 occurred despite possible pandemic-related buffering effects (e.g., rallying together and prioritizing health) and raise concerns about pandemic-related risk factors for mood disorders (e.g., loneliness, economic strain, increased alcohol use, reduced physical activity, and increased interpersonal conflict). These population-level effects need effective solutions available to most, including, in terms of maximized access, those that are self-guided (e.g., daily morning sunlight exposure, routine physical activity and exercise [e.g., walking], and reaching out to an array of others). Access to quality mental healthcare, in general, is imperative, and improved telehealth and access to and fluency with it are priorities as well.

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