



COVID-19 Pandemic Coincided with Elevated and Increasing Anxiety and Depression Symptoms

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SUMMARY

This brief uses the U.S. Census Bureau's Household Pulse Survey to examine rates of anxiety and depression symptoms across states and demographic groups within the U.S. adult population.

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Introduction

Soon after states began to impose stay-at-home orders to contain the COVID-19 pandemic, the Census Bureau began fielding a new survey to measure the impacts of the crisis on people in the United States. The Household Pulse Survey (HPS) addresses issues such as economic consequences, including employment and income loss; health-related social needs, including food security and access to transportation; and access to health care, including health insurance coverage and difficulties getting medical treatment.¹

The HPS also asks questions about people's mental health (see below), an issue that has been a serious concern since the beginning of the pandemic. The public health crisis, along with responses to it, imposed extraordinary stress on individuals, such as worries about the deadly coronavirus and the financial toll of historic job losses, while simultaneously constraining access to common coping resources by asking people to limit their in-person social contacts with family, friends and others outside their households. In particular, the HPS asked questions from a four-item screening tool commonly used by health care providers to identify symptoms of anxiety and depression.²

Household Pulse Survey Anxiety and Depression Screening Questionnaire

To gauge symptoms of anxiety and depression among respondents, the Household Pulse Survey asks questions from a four-item Patient Health Questionnaire (PHQ-4), which asks how often in the past week people were bothered by:

- | | |
|---|---|
| 1. Feeling nervous, anxious, or on edge | 3. Having little interest or pleasure in doing things |
| 2. Not being able to stop or control worrying | 4. Feeling down, depressed, or hopeless |

Since the first fielding of the HPS in early 2020, the data have shown elevated rates of anxiety and depression symptoms among respondents, consistent with findings of similar research by the U.S. Centers for Disease Control and Prevention (CDC).³ These indications of increased mental health burden associated with the coronavirus crisis persisted throughout 2020, and they hint at additional need for mental health care that may require continued attention as the most severe stages of the pandemic abate.

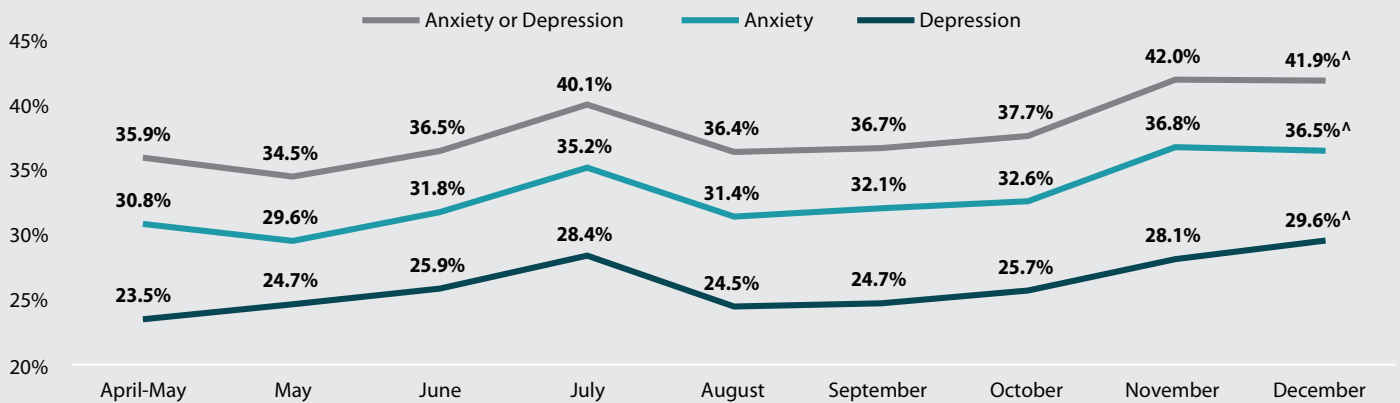
Trend of elevated anxiety and depression

Beginning in late April and early May 2020, the HPS showed rates of anxiety and depression symptoms that were noticeably higher than benchmarks from other pre-pandemic surveys. The HPS found that 35.9 percent of adults in April/May of 2020 reported symptoms of either anxiety or depressive disorders, which is more than triple the rate of 11.0 percent found in the CDC's National Health Interview Survey (NHIS) from roughly a year earlier (January to June 2019).⁴ The relatively high rates of anxiety and depression symptoms found by the HPS are consistent with other research conducted during the pandemic, such as a CDC study that found nearly 30.9 percent of adults reporting anxiety or depression symptoms during June 2020.⁵

In looking at symptoms of anxiety and depression independently, the differences in the elevated rates of 2020 remain starkly apparent. The April/May 2020 HPS found that almost one third (30.8 percent) of adults reported symptoms of anxiety, almost quadruple the rate of 8.2 percent reported in the 2019 NHIS. During those same time periods, the HPS found that 23.5 percent of adults reported symptoms of depressive disorders, which was also nearly quadruple the rate of 6.6 percent from the NHIS.

The HPS found that high rates of anxiety and depression symptoms persisted throughout the remaining months of 2020, never falling below one-third of the adult population, and ending with the highest levels of the year—42.0 percent in November and 41.9 percent in December (see Figure 1). Similar trends followed for the individual measures of anxiety and depression, with rates of anxiety remaining high and reaching peaks of 36.8 percent in November and 36.5 percent in December, and depression similarly spiking to measure 28.1 percent in November and 29.6 percent in December. The December 2020 rates for each measure were significantly higher than their initial rates in April/May 2020.

Figure 1. Pandemic-era rates of anxiety or depression (2020)



Source: SHADAC analysis of the Household Pulse Survey.
[^] Statistically significant increase since April/May at the 95% confidence level.

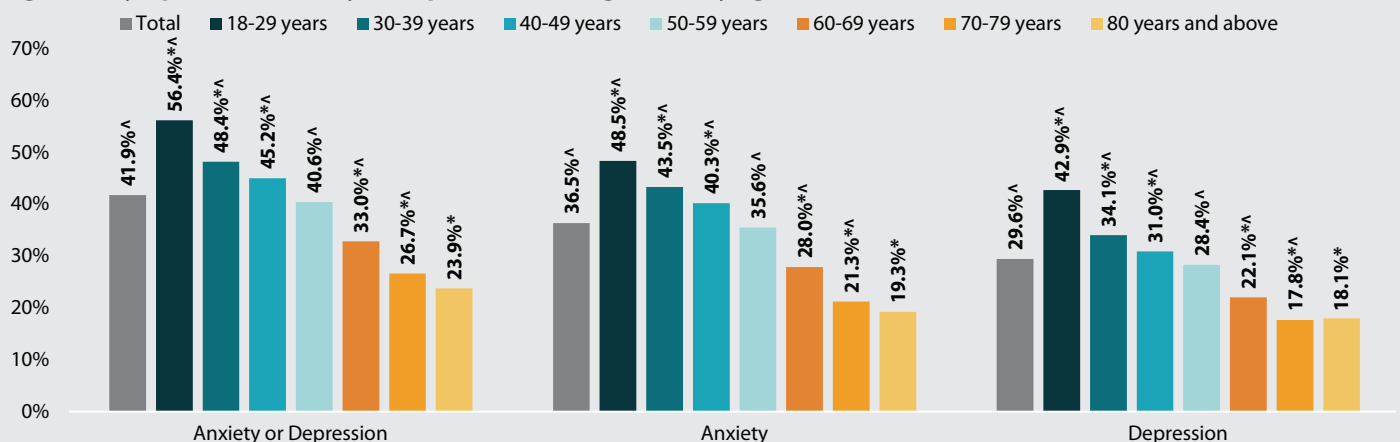
Inequities highlighted in mental health burden

Though self-reported symptoms of anxiety and depression appear to be elevated across the adult U.S. population, HPS data show wide variation across different demographic groups. The patterns of disparities in anxiety and depression have persisted throughout 2020, though our analysis focuses primarily on the final estimates of the year (December 2020).

More than half of younger adults report anxiety or depression symptoms

By age categories of adults, younger people consistently reported the highest rates of anxiety or depression, with more than half (56.4 percent) of those age 18-29 reporting symptoms of anxiety or depression in December 2020 (see Figure 2). Rates of anxiety or depression symptoms declined as age increased, such that people age 80 and older reported the lowest prevalence at 23.9 percent. Each of these rates was significantly different from the rate of 41.9 percent for the total adult population. Additionally, all age groups saw their rates of anxiety or depression symptoms increase significantly from April/May to December 2020, with the exception of people age 80 and older.

Figure 2. Symptoms of anxiety or depression among adults by age, December 2020



Source: SHADAC analysis of the Household Pulse Survey.
^{*} Statistically significant difference from total population rate at the 95% confidence level.
[^] Statistically significant increase since April/May at the 95% confidence level.

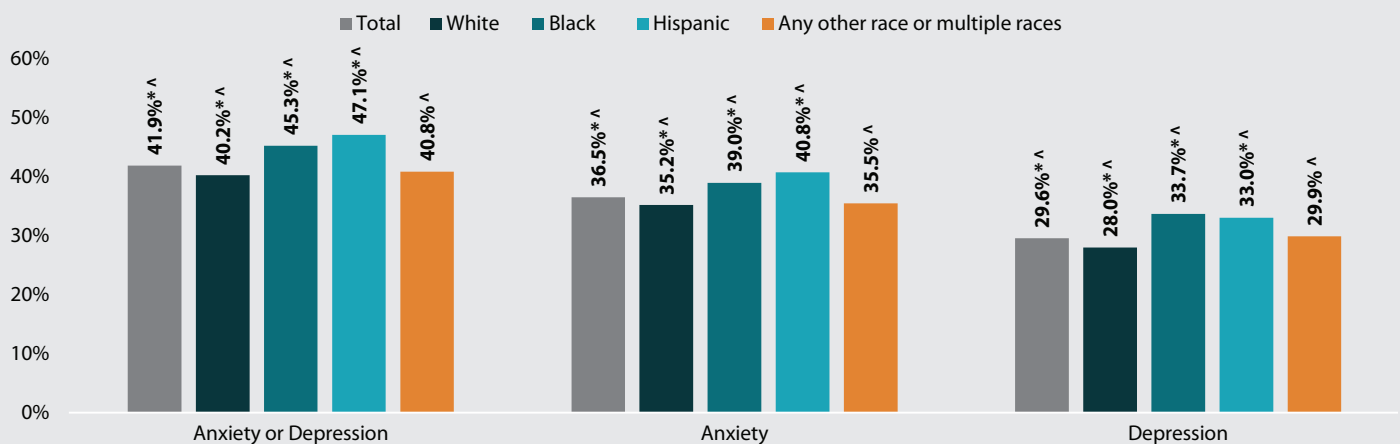
Patterns were similar when examining anxiety and depression separately. Younger adults age 18-29 reported the highest rates of both anxiety (48.5 percent) and depression (42.9 percent), which were significantly higher than the total adult population rates of 36.5 percent and 29.6 percent, respectively. Younger adults' rates of anxiety and depression also increased significantly from levels reported in April/May 2020.

Anxiety, depression symptoms higher among Black, Hispanic adults

Each racial and ethnic group—Black, Hispanic, White, and a category of “any other race or multiple races”—reported increases in anxiety or depression symptoms from April/May to December 2020.⁶ However, Black and Hispanic adults regularly reported higher levels of anxiety or depression, while White adults reported lower rates.

In December 2020, Hispanic adults reported the highest rate of anxiety or depression symptoms, at 47.1 percent, followed by Black adults, at 45.3 percent—both of which were significantly higher than the total population rate of 41.9 percent (see Figure 3). White adults' rate was 40.2 percent, which was significantly lower than the total population rate. The rate of 40.8 percent for adults reporting any other race or multiple races was not significantly different from the total population rate.

Figure 3. Symptoms of anxiety or depression among adults by race/ethnicity, December 2020



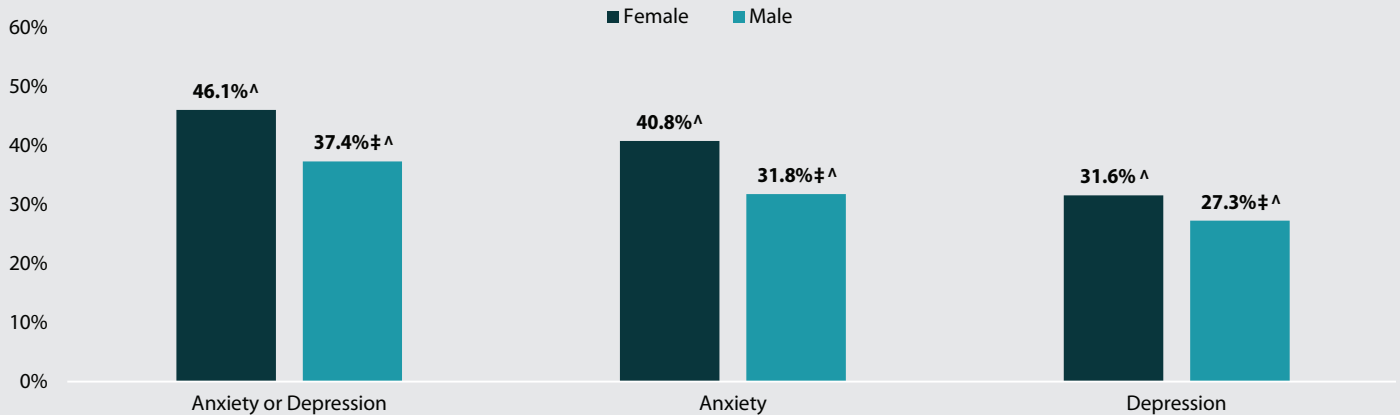
Source: SHADAC analysis of the Household Pulse Survey.
 * Statistically significant difference from total population rate at the 95% confidence level.
 ^ Statistically significant increase since April/May at the 95% confidence level.

Similar patterns were found when examining anxiety and depression symptoms separately, with Black and Hispanic adults both reporting similarly high rates of anxiety and of depression symptoms—and both significantly higher than the total population rates. Meanwhile, White adults reported the lowest rates of anxiety symptoms and depression symptoms, which were significantly lower than the total population rates. For anxiety and depression symptoms examined independently, each racial and ethnic group again reported significant increases over the course of the year from April/May to December.

Females report higher anxiety, depression symptoms

Both females and males saw their rates of anxiety and depression symptoms increase during 2020, but females consistently reported higher rates than males. For instance, nearly one-half (46.1 percent) of females reported anxiety or depression symptoms in December 2020, which was significantly higher than the rate of 37.4 percent of males—just over one-third. That pattern also was true in examining anxiety and depression independently (see Figure 4).

Figure 4. Symptoms of anxiety or depression among adults by gender, December 2020



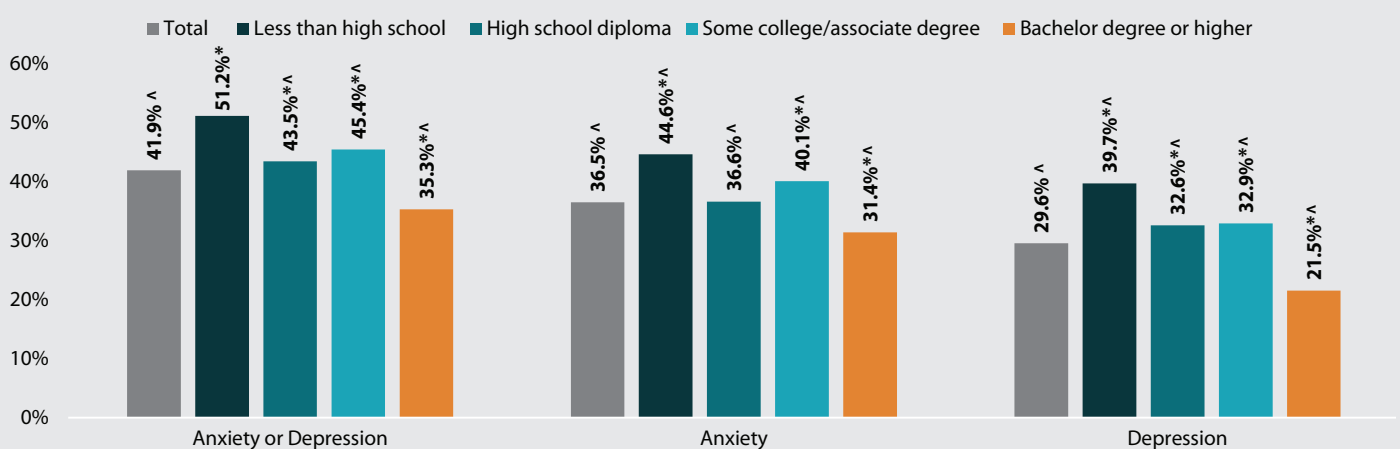
Source: SHADAC analysis of the Household Pulse Survey.
[‡] Statistically significant difference from female rate at the 95% confidence level.
[^] Statistically significant increase since April/May at the 95% confidence level.

Anxiety, depression symptoms higher among adults with less education, lower income

Personal education levels and household income are closely linked in the U.S., and the HPS shows similar patterns and trends in anxiety and depression rates across both of these measures. People with higher levels of education and income consistently reported lower rates of anxiety and depression symptoms, while those with lower levels of education and income reported higher rates.

In December 2020, roughly one-half (51.2%) of adults with less than a high school education reported anxiety or depression symptoms (see Figure 5). Although that rate was not significantly higher than their April/May 2020 rate, it was significantly higher than the total population rate of 41.9 percent from December 2020. By contrast, only about one-third (35.3 percent) of adults with a bachelor's degree or more education reported anxiety or depression symptoms in December 2020. Their rate was significantly higher than in April/May 2020, and it was significantly lower than the total population rate for December 2020.

Figure 5. Symptoms of anxiety or depression among adults by education level, December 2020



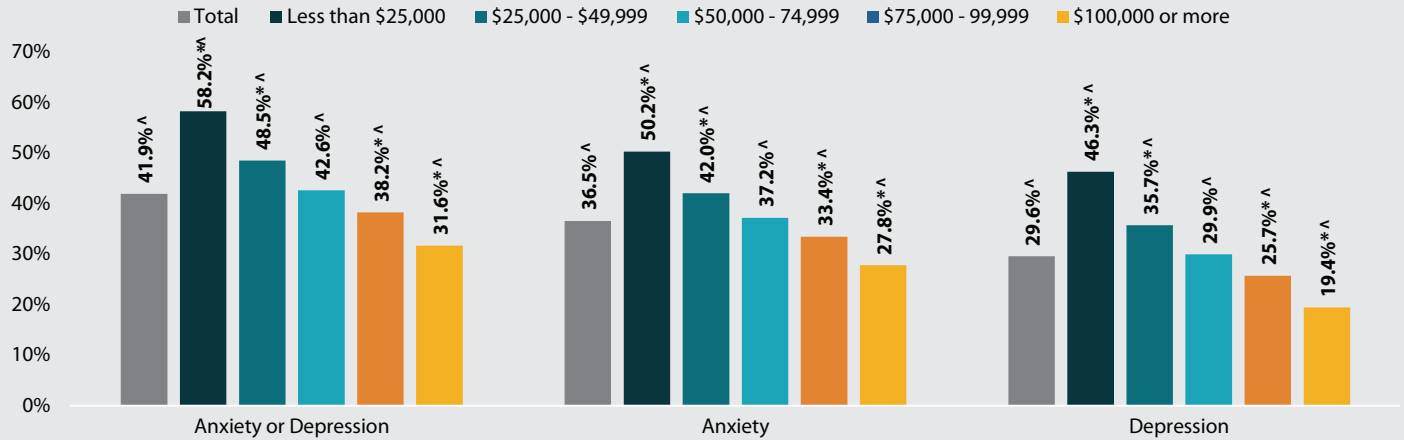
Source: SHADAC analysis of the Household Pulse Survey.
^{*} Statistically significant difference from total population rate at the 95% confidence level.
[^] Statistically significant increase since April/May at the 95% confidence level.

Patterns were similar for anxiety and depression symptoms independently. Adults with less than a high school education had the highest rates of anxiety symptoms (44.6 percent) and depression symptoms (39.7 percent), while those with a bachelor's degree or more education had the lowest rates of anxiety symptoms (31.4 percent) and depression symptoms (21.5 percent). Each of those rates represented a statistically significant increase since April/May 2020, and they were significantly different from the total population rates of 36.5 percent for anxiety symptoms and 29.6 percent for depression symptoms.

Most adults in lower income category report anxiety or depression symptoms

In December 2020, more than one-half (58.2 percent) of adults with household incomes of less than \$25,000 reported anxiety or depression symptoms (see Figure 6). That rate represented a statistically significant increase over the April/May 2020 rate, and it was significantly higher than the total population rate of 41.9 percent for December 2020. Rates of anxiety or depression symptoms fell gradually as people's incomes increased, such that those with incomes of \$100,000 or more reported the lowest level, at about one-third (31.6 percent). Their rate also represented a statistically significant increase since April/May 2020, and it was significantly lower than the total population rate in December 2020.

Figure 6. Symptoms of anxiety or depression among adults by household income category, December 2020

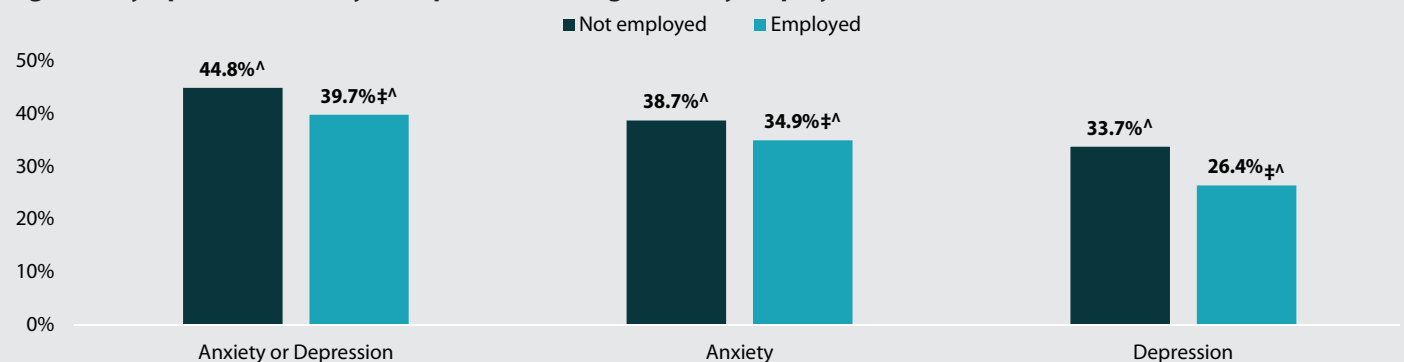


Source: SHADAC analysis of the Household Pulse Survey.
 * Statistically significant difference from total population rate at the 95% confidence level.
 ^ Statistically significant increase since April/May at the 95% confidence level.

Anxiety, depression increased across employment status

People of all employment statuses (employed and not employed) reported statistically significant increases in anxiety and depression symptoms over the course of 2020. However, those who were not employed reported consistently higher rates of anxiety and depression. In December 2020, 44.8 percent of people who were not employed reported symptoms of anxiety or depression, compared to 39.7 percent of employed people (see Figure 7). Although the difference was relatively small—approximately 5 percentage points of difference—the difference was nevertheless statistically significant. The patterns were similar when examining rates for anxiety and depression independently.

Figure 7. Symptoms of anxiety or depression among adults by employment status, December 2020



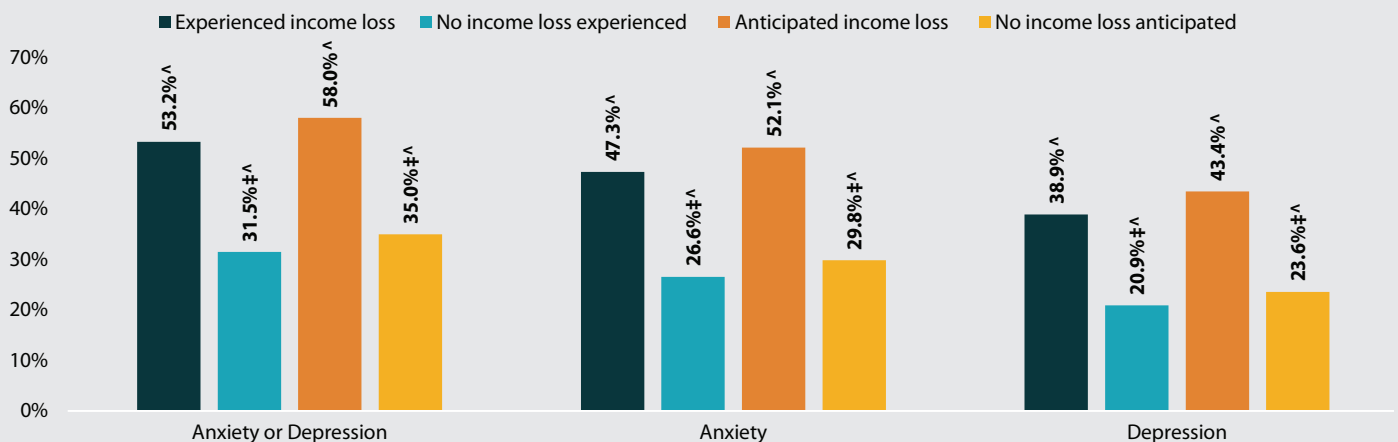
Source: SHADAC analysis of the Household Pulse Survey.
 ‡ Statistically significant difference from not employed rate at the 95% confidence level.
 ^ Statistically significant increase since April/May at the 95% confidence level.

Higher anxiety, depression for adults with anticipated and experienced employment income loss

The HPS also asked respondents whether they had experienced a loss of employment income since the crisis began in mid-March and if they anticipated a loss of employment income in the coming four weeks from when they were surveyed. Data showed that rates of anxiety and depression symptoms increased significantly across all groups, regardless of whether they experienced or anticipated an employment income loss or not. However, rates of anxiety and depression symptoms were dramatically higher among people reporting experienced or anticipated employment income losses.

In December 2020, more than one-half (53.2 percent) of people who experienced an employment income loss reported symptoms of anxiety or depression, which was significantly higher than the roughly one-third (31.5 percent) rate among people who hadn't experienced such a loss (see Figure 8). Data were similar for anticipated employment income losses. More than one-half (58.0 percent) of people who anticipated an employment income loss reported anxiety or depression symptoms, which was significantly higher than the roughly one-third (35.0 percent) rate among people who didn't anticipate such a loss. Those patterns also held consistent when examining rates of anxiety and depression symptoms independently.

Figure 8. Symptoms of anxiety or depression among adults by experienced or anticipated employment income loss, December 2020



Source: SHADAC analysis of the Household Pulse Survey.
[‡] Statistically significant difference from experienced or anticipated income loss rate at the 95% confidence level.
[^] Statistically significant increase since April/May at the 95% confidence level.

Most states saw increased rates of depression/anxiety symptoms

During the course of year, 31 states experienced statistically significant increases in their rates of people reporting anxiety or depression symptoms (see Figure 9 on next page). The remaining 19 states and the District of Columbia did not see their rates change significantly; none saw a statistically significant decline in anxiety or depression symptom rates.

Rates of anxiety and depression symptoms also varied across the states, from a low of approximately one-third (32.1 percent) in South Dakota to a high of approximately one-half (48.6 percent) in Louisiana. Additionally, while most states' rates of anxiety and depression symptoms were not significantly different from the overall U.S. rate of 41.9 percent, there were five states with rates significantly higher (Louisiana, Nevada, New Mexico, Oklahoma, and Oregon) and nine states with rates significantly lower (Iowa, Maine, Minnesota, Nebraska, North Carolina, North Dakota, South Carolina, South Dakota, and Wisconsin).

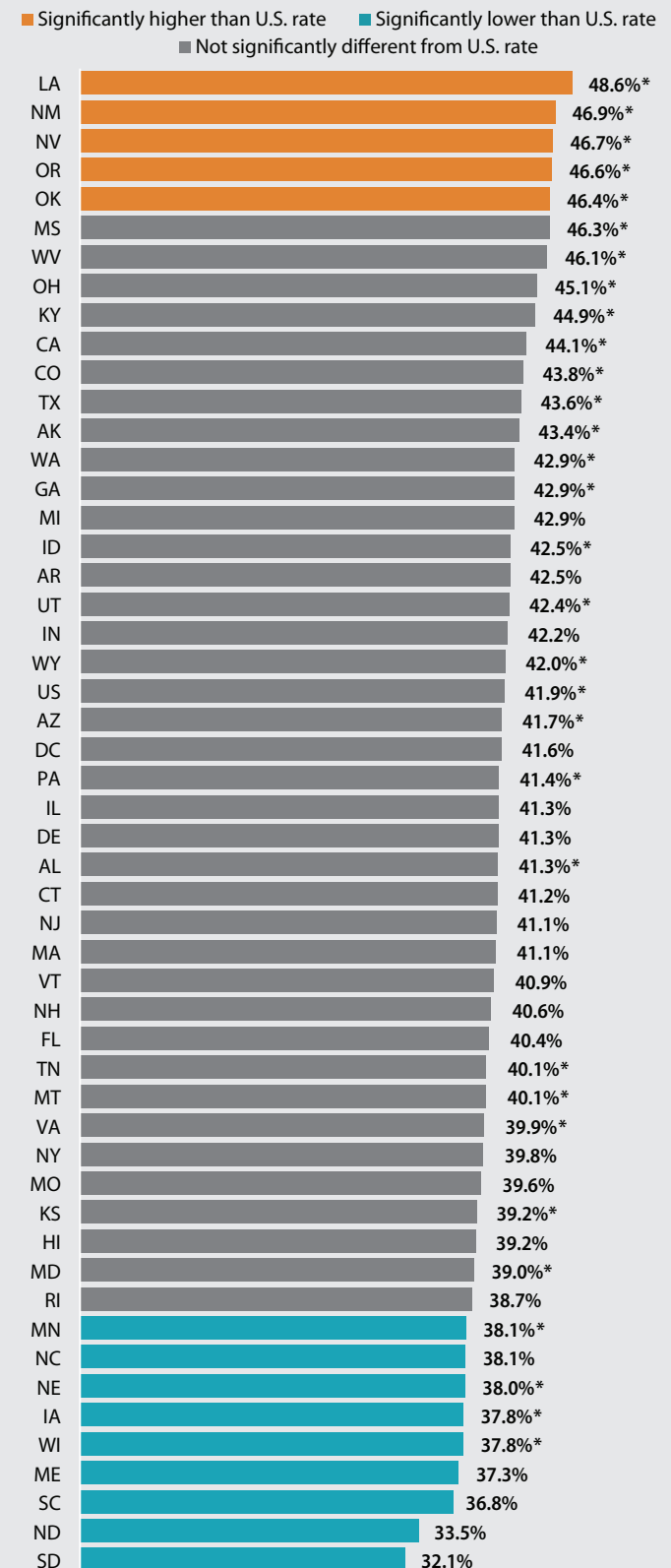
Conclusion

Taken together, these data on persistent elevated levels of anxiety and depression illustrate the mental health toll that the coronavirus and related crises of the past year have taken on the U.S. population. As the development and deployment of vaccines allow the country to drag itself out of the darkest days of the pandemic and take further steps toward normalcy, it is important to remember that vaccines only address the virus itself, and that attending to other impacts of the crisis will require continued monitoring and different solutions.

The pandemic will not disappear all at once but will likely gradually fade into the background. Likewise, various consequences of the pandemic—such as the mental health impacts—may similarly linger for an undetermined period of time, as people continue to grapple with the fallout of the disaster, including ruined businesses and family finances, lost loved ones, and myriad other traumas.

Survey data such as these highlighted in our brief can help public health officials and health policymakers identify mental health needs of the U.S. and state populations. These data also can help officials and policymakers to focus on the needs of groups—such as younger adults, Black and Hispanic people, females, and people with lower income and education levels—that have been especially affected by the crisis, ultimately helping them to gain or enhance access to needed mental health care.

Figure 9: Symptoms of anxiety and depression among adults by state, December 2020



Source: SHADAC analysis of the Household Pulse Survey.
 Colors represent statistically significant difference from U.S. rate at the 95% confidence level.
 * Statistically significant increase since April/May at the 95% confidence level.

References

- ¹ State Health Access Data Assistance Center (SHADAC). (2021, April 14). Measuring Coronavirus Impacts with the Census Bureau's New Household Pulse Survey: Utilizing the Data and Understanding the Methodology. *SHADAC Blog*. <https://www.shadac.org/Household-Pulse-SurveyMethods>
- ² Vahratian, A., Blumberg, S.J., Terlizzi, E.P., Schiller, J.S. (2021, April 2). Symptoms of Anxiety or Depressive Disorder and Use of Mental Health Care among Adults During the COVID-19 Pandemic — United States, August 2020–February 2021. *MMWR*, 70(13), 490–494.
- ³ Czeisler, M.É., Lane, R.I., Petrosky, E., Wiley, J.F., Christensen, A., Njai, R., Weaver, M.D., Robbins, R., Facer-Childs, E.R., Barger, L.K., Czeisler, C.A., Howard, M.E., Rajaratnam, S.M.W. (2020, August 14). Mental Health, Substance Use, and Suicidal Ideation During the COVID-19 Pandemic — United States, June 24–30, 2020. *MMWR*, 69(32), 1049–1057.
- ⁴ The pandemic-era rates from the CDC study and the HPS are not perfectly comparable the pre-pandemic rates from the NHIS because they come from different surveys with different methodologies. However, since they ask essentially the same questions on anxiety and depression, the rates should presumably be similar, so the substantially higher estimates in the pandemic-era surveys provide reason for concern.
- ⁵ Czeisler, M.É., Lane, R.I., Petrosky, E., Wiley, J.F., Christensen, A., Njai, R., Weaver, M.D., Robbins, R., Facer-Childs, E.R., Barger, L.K., Czeisler, C.A., Howard, M.E., Rajaratnam, S.M.W. (2020, August 14). Mental Health, Substance Use, and Suicidal Ideation During the COVID-19 Pandemic — United States, June 24–30, 2020. *MMWR*, 69(32), 1049–1057.
- ⁶ Due to sample size and other limitations in the race and ethnicity categories in the HPS, we were unable to produce standalone estimates for certain groups, such as American Indians and Alaska Natives. We included these individuals, as well as Asians, in the category for individuals reporting “any other race or multiple races.”