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Rates of anxiety and depression symptoms declined in 2021, remained higher than pre-pandemic

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Introduction

Now in its third year, the COVID-19 pandemic has claimed 1 million lives in the United States and over 6 million lives worldwide.[1] Evidence also indicates that the pandemic has impacted individuals' mental health as COVID continues to disrupt daily life. Shortly after the World Health Organization (WHO) declared COVID-19 a global pandemic, the U.S. Census Bureau began fielding its brand new survey, the Household Pulse Survey (HPS), in order to measure the social and economic effects of COVID-19 on U.S. households in near real-time.[2]

The Pandemic-era Household Pulse Survey

The U.S. Census Bureau's Household Pulse Survey (HPS) collects data on household demographics, education, employment, food sufficiency, financial spending, housing security, and physical and mental health. Seven phases of the HPS have been completed as of writing of this brief, with the most recent phase scheduled to end on May 9, 2022.

While the content of the HPS has varied since it was first fielded in April 2020, all versions of the HPS have included questions about anxiety and depression symptoms. This recognizes the ongoing stressors that the pandemic has imposed on individuals, such as new variants of COVID-19, job losses, financial hardships, renewed lockdowns, and school closures. To measure symptoms of anxiety and depression among respondents, the HPS asks questions from a four-item screening tool (see below) commonly used by health care providers.[3]

Household Pulse Survey Anxiety and Depression Screening Questionnaire

The Household Pulse Survey includes questions from a four-item Patient Health Questionnaire (PHQ-4) to identify symptoms of anxiety and depression among respondents. These questions ask how often in the past two weeks people were bothered by:

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

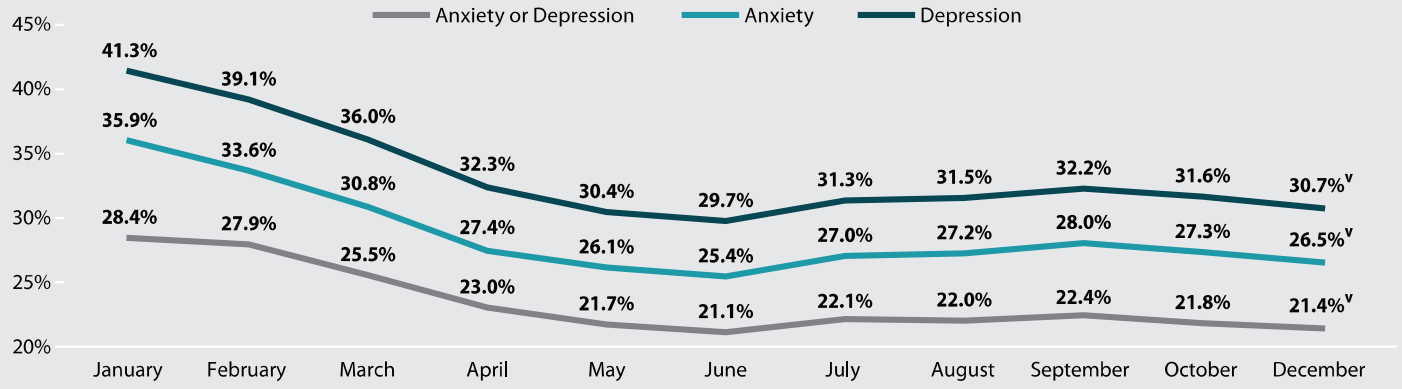
In an earlier study using HPS data, SHADAC found that rates of anxiety and depression symptoms were elevated and increased during the course of 2020—the first year of the COVID-19 pandemic. This brief revisits the issue of pandemic-era anxiety and depression symptoms for 2021, finding that rates declined during the second year of the crisis but remained elevated compared to pre-pandemic data.[4] Additionally, wide disparities in anxiety and depression symptoms persisted across examinations of certain demographic categories, such as age, gender, and income, throughout 2021.

Trend shows elevated but declining anxiety and depression symptoms in 2021

From January to December 2021, the HPS showed a significant decline in overall rates of anxiety and depression symptoms among U.S. adults. However, these rates remained noticeably higher than benchmarks from pre-pandemic surveys. The overall rate of anxiety or depression symptoms reported in the HPS in December 2021 was 30.7 percent, nearly three times the rate of anxiety or depression symptoms for adults over 18 (11.3 percent) as reported in December 2019 by the National Health Interview Survey (NHIS), which is fielded by the U.S. Centers for Disease Control and Prevention (CDC).[5] Individual measures of anxiety and depression symptoms in December 2021 showed even larger differences when compared to December 2019 benchmarks. The overall rate of anxiety symptoms reported in the HPS in December 2021 was 26.5 percent, more than triple the rate of anxiety symptoms reported in December 2019 in the NHIS (8.6 percent).[5] Similarly, the overall rate of depression symptoms reported in the HPS in December 2021 (21.4 percent) was more than triple the rate of depression symptoms reported in December 2019 in the NHIS (6.7 percent).[5]

According to the 2021 HPS data, rates of anxiety and depression peaked in January and declined over the next several months, effectively plateauing for the second half of the year (Figure 1).[6] The percent of U.S. adults reporting symptoms of anxiety or depression decreased significantly from January (41.3 percent) to December (30.7 percent). Similar trends followed for individual measures of anxiety and depression, with rates of anxiety significantly decreasing from 35.9 percent in January to 26.5 percent in December, and rates of depression significantly decreasing from 28.4 percent in January to 21.4 percent in December. As with the anxiety or depression category, individual measures of anxiety and depression declined in the first half of the year before largely leveling out in the second half of the year.

Figure 1. Pandemic-era rates of anxiety or depression (2021)*



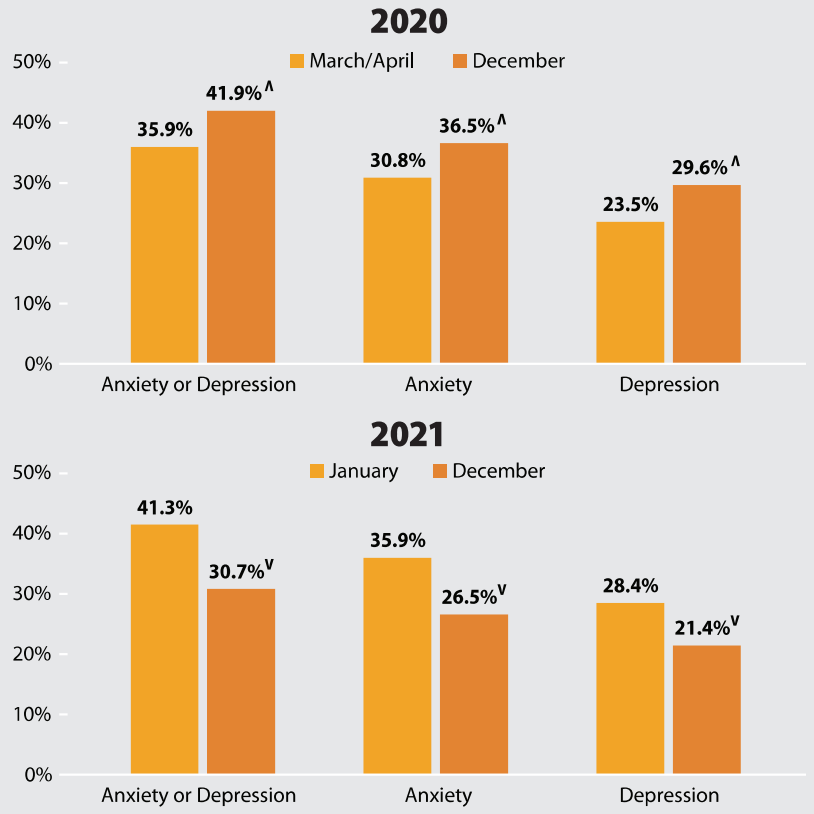
Source: SHADAC analysis of Household Pulse Survey.
v Statistically significant decrease since January 2021 at the 95% confidence level.
* Data not available for November 2021.

Data spanning from the beginning of the pandemic in 2020 through the end of 2021 show that rates of anxiety and depression symptoms for the total U.S. population reached peak levels in late 2020 but have trended downward since January 2021. The HPS found that rates of anxiety and depression symptoms increased significantly between March/April 2020 and December 2020, but declined significantly from January 2021 to December 2021 (Figure 2). These findings are consistent with national survey data released by the CDC showing peak levels of anxiety and depression symptoms in December 2020, followed by a decline in reported rates of anxiety and depression symptoms in 2021.[7]

Inequities in mental health burden

Despite an overall decline in pandemic-related anxiety and depression rates among U.S. adults in 2021, HPS data show significant differences in mental health burden across different demographic groups. Patterns of disparities in anxiety and depression symptoms persisted throughout the year, though our analysis focuses primarily on the December 2021 estimates.

Figure 2. Pandemic-era rates of anxiety or depression (2020 vs. 2021)

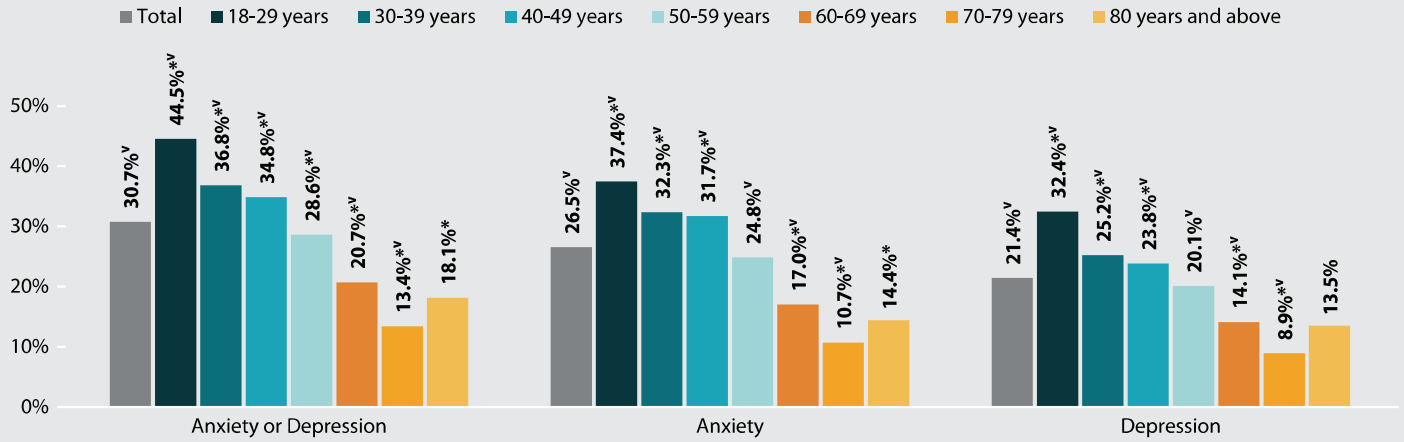


Source: SHADAC analysis of Household Pulse Survey.
^ Statistically significant increase since March/April 2020 at the 95% confidence level.
v Statistically significant decrease since January 2021 at the 95% confidence level.

Younger adults report significantly higher anxiety and depression symptoms

Respondents in the youngest age category (18-29 years) reported higher rates of anxiety and depression in December 2021 than any other age group. Nearly half of adults age 18-29 reported symptoms of anxiety or depression, a significantly higher rate than in the total U.S. adult population (Figure 3). Levels of anxiety or depression symptoms decreased when examined progressively by rising age groups, with adults age 70-79 reporting the lowest rate of anxiety or depression (13.4 percent). The same pattern followed for individual measures of anxiety and depression symptoms, which were highest among adults age 18-29 and decreased when examined progressively by rising age groups, with adults age 70-79 reporting the lowest rates of anxiety (10.7 percent) and depression (8.9 percent). All age groups saw their rates of anxiety or depression symptoms decrease significantly from January to December 2021, with the exception of persons age 80 and older, whose rates held steady over the course of the year.

Figure 3. Rates of anxiety or depression in adults by age group, December 2021

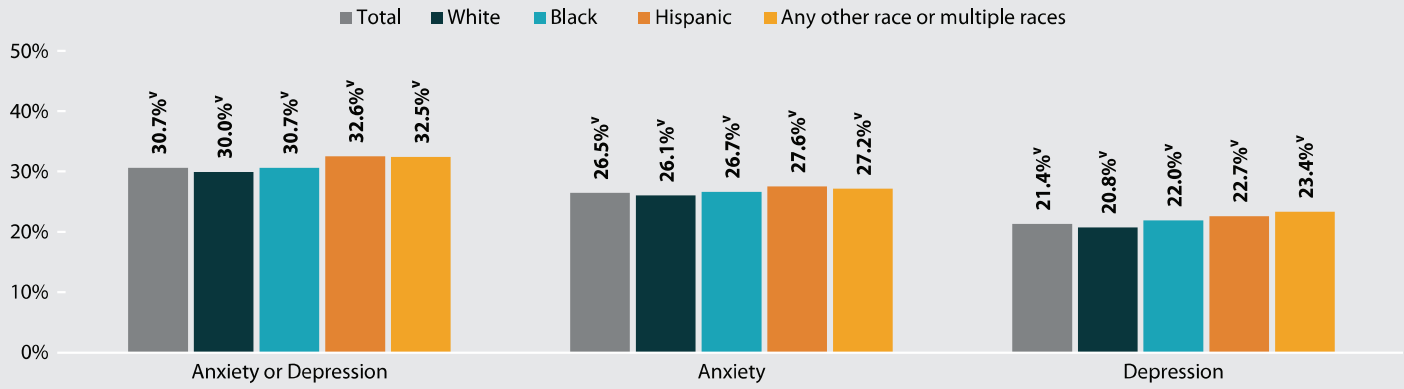


Source: SHADAC analysis of the Household Pulse Survey.
* Statistically significant difference from total population rate at the 95% confidence level.
v Statistically significant decrease since January 2021 at the 95% confidence level.

Similar rates of anxiety and depression across racial and ethnic groups

From January to December 2021, rates of anxiety and depression symptoms declined significantly for all racial and ethnic groups (Black, Hispanic, White, and a category of "any other race or multiple races"). No group had rates of anxiety or depression that were significantly different than the total U.S. adult population rate of 30.7 percent in December 2021 (Figure 4). The patterns were similar for independent measures of anxiety and depression symptoms: each group experienced statistically significant declines, and no racial or ethnic group's rates differed significantly from the total population rates.

Figure 4. Rates of anxiety or depression among adults by race/ethnicity, December 2021*

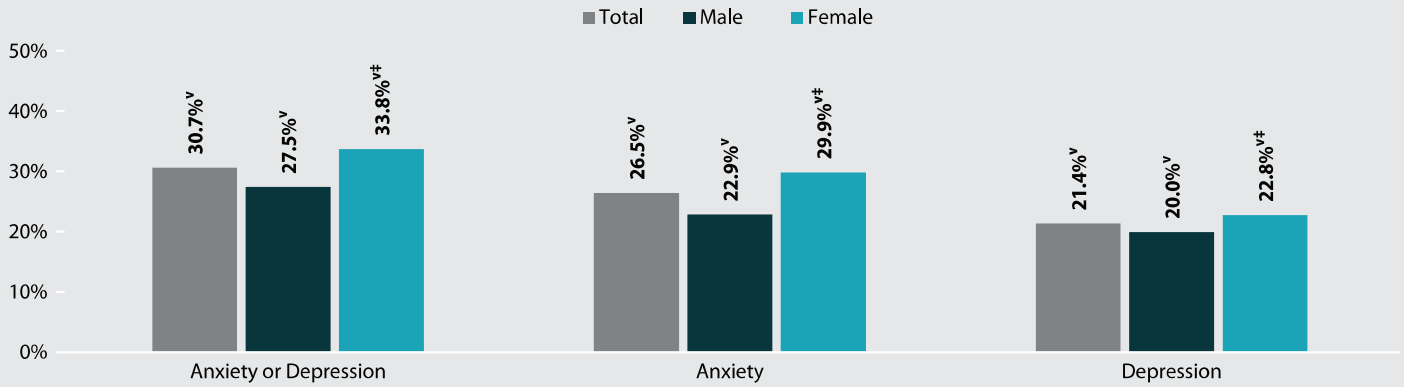


Source: SHADAC analysis of the Household Pulse Survey.
v Statistically significant decrease since January 2021 at the 95% confidence level.
* None of the race/ethnicity group rates differed significantly from the total population rate at the 95% confidence level.

Females report higher anxiety, depression symptoms

Both males and females reported significant decreases in anxiety and depression symptoms between January 2021 and December 2021. However, these rates were consistently higher in females compared to males (Figure 5). Approximately one-third of females reported anxiety or depression symptoms in December 2021, a significantly higher rate than the rate of anxiety or depression symptoms in males (27.5 percent) for that month. Individual measures of anxiety and depression mirrored this trend: females reported a significantly higher rate of anxiety (29.9 percent) compared to males (22.9 percent), as well as a significantly higher rate of depression (22.8 percent) compared to males (20.0 percent). For all measures of anxiety and depression symptoms, females reported significantly higher rates than the total population, while males reported significantly lower rates than the total population.

Figure 5. Rates of anxiety or depression by sex, December 2021



Source: SHADAC analysis of the Household Pulse Survey.
v Statistically significant decrease since January 2021 at the 95% confidence level.
‡ Statistically significant difference from male rate at the 95% confidence level.

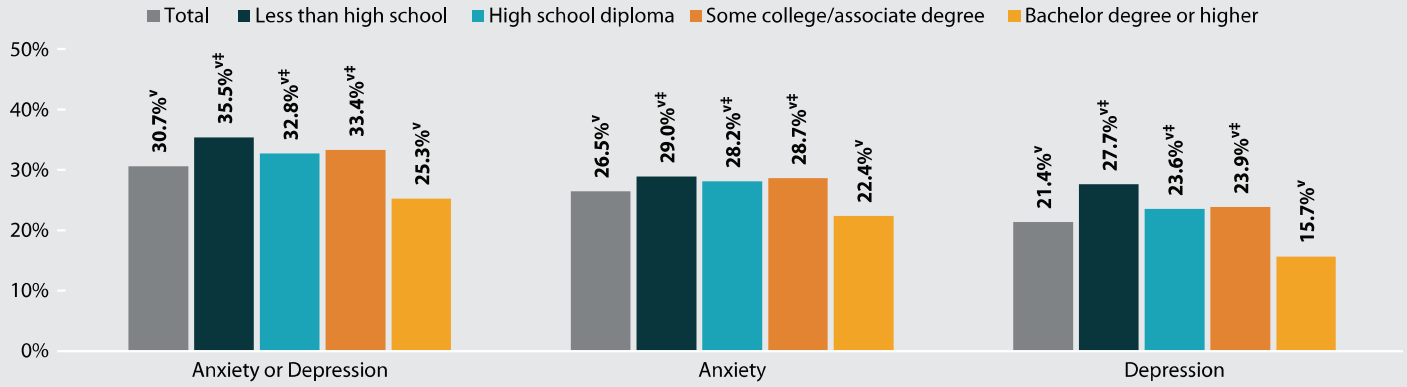
Anxiety, depression symptoms higher among adults with less education, lower income

In the U.S., education level and household income are highly correlated[8], a relationship reflected in the HPS data. Rates of anxiety and depression followed similar patterns between these two demographic categories. Adults with less education and lower household income consistently reported higher levels of anxiety and depression, whereas adults with more education and higher household income consistently reported lower rates.

In December 2021, adults across all education levels reported a decrease in anxiety and depression rates relative to the beginning of the year. However, these rates varied significantly by education level: more than one-third of adults with less than a high school diploma reported symptoms of anxiety or depression compared to approximately one-fourth of adults with a bachelor degree or higher (Figure 6). Adults with a bachelor degree or higher reported a significantly lower rate of anxiety or depression symptoms (25.3 percent) compared to the total adult population rate of 30.7 percent. By comparison, adults with less than a high school diploma reported a higher rate of anxiety or depression symptoms (35.5 percent) compared to the total adult population rate of 30.7 percent, although this difference was not statistically significant.

Individual measures of anxiety and depression rates followed a similar pattern. In terms of reported anxiety symptoms, adults with a bachelor degree or higher had a significantly lower rate (22.4 percent) compared to the total adult population rate (26.5 percent), whereas adults who did not complete high school had a higher rate (29.0 percent) than the total adult population rate. In terms of reported depression symptoms, adults with a bachelor degree or higher reported a significantly lower rate (15.7 percent) compared to the total adult population, while those who did not complete high school reported a significantly higher rate (27.7 percent) than the total adult population rate.

Figure 6. Rates of anxiety or depression among adults by education level, December 2021

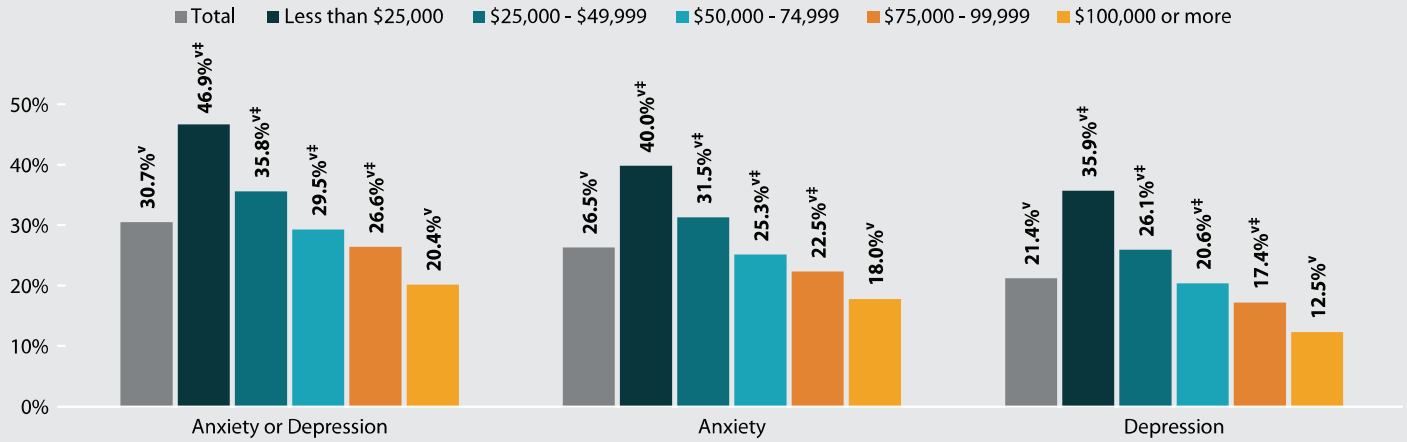


Source: SHADAC analysis of the Household Pulse Survey.
v Statistically significant decrease since January 2021 at the 95% confidence level.
‡ Statistically significant difference from bachelor degree or higher rate at the 95% confidence level.

Adults across all income levels reported a significant decrease in anxiety and depression symptoms between January and December 2021. However, adults with higher income levels consistently reported lower rates of anxiety and depression symptoms, while those with lower income levels reported higher rates (Figure 7). In December 2021, one-fifth of adults in the highest income group ($100,000 or more per year) reported symptoms of anxiety or depression, whereas nearly half of adults in the lowest income group (less than $25,000 per year) reported symptoms of anxiety or depression.

The highest income group reported a significantly lower rate of anxiety or depression (20.4 percent) compared to the total adult population rate of 30.7 percent. Conversely, the lowest income group reported a significantly higher rate of anxiety or depression (46.9 percent) compared to the total adult population rate. Similar patterns followed for individual measures of anxiety and depression symptoms. Adults earning $100,000 or more per year reported a significantly lower rate of anxiety (18.0 percent) than the total adult population, and adults earning less than $25,000 per year reported a significantly higher anxiety rate (40.0 percent) than the total adult population. When examining depression symptoms, adults earning $100,000 or more per year reported a significantly lower rate (12.5 percent) than the total adult population, and adults earning less than $25,000 per year reported a significantly higher rate (35.9 percent) than the total adult population.

Figure 7. Rates of anxiety or depression among adults by income category, December 2021



Source: SHADAC analysis of the Household Pulse Survey.
v Statistically significant decrease since January 2021 at the 95% confidence level.
‡ Statistically significant difference from $100,000 or more income group rate at the 95% confidence level.

Most states saw decreased rates of anxiety/depression symptoms

Over the course of 2021, 36 states and the District of Columbia (D.C.) saw significant decreases in rates of anxiety or depression symptoms among their residents (Figure 8). Fourteen states (Alaska, Arkansas, Hawaii, Kentucky, Louisiana, Maine, Montana, Nebraska, Nevada, New York, North Dakota, Vermont, West Virginia, and Wyoming) had rates that did not change significantly between January and December 2021. No states saw a significant increase in rates of anxiety or depression symptoms in 2021.

Rates of anxiety or depression symptoms varied across states in December 2021, ranging from a low of 24.0 percent (South Dakota) to a high of 39.9 percent (West Virginia). While most states had a rate of anxiety or depression that was not significantly different from the overall U.S. rate of 30.7 percent, six states experienced significantly higher rates (Kentucky, Louisiana, Nevada, Oklahoma, Oregon, and West Virginia) while just half that number of states had significantly lower rates (South Carolina, South Dakota, and Wisconsin) (Table 1).

Table 1. States with significantly different rates of anxiety or depression compared to total U.S. adult population, December 2021

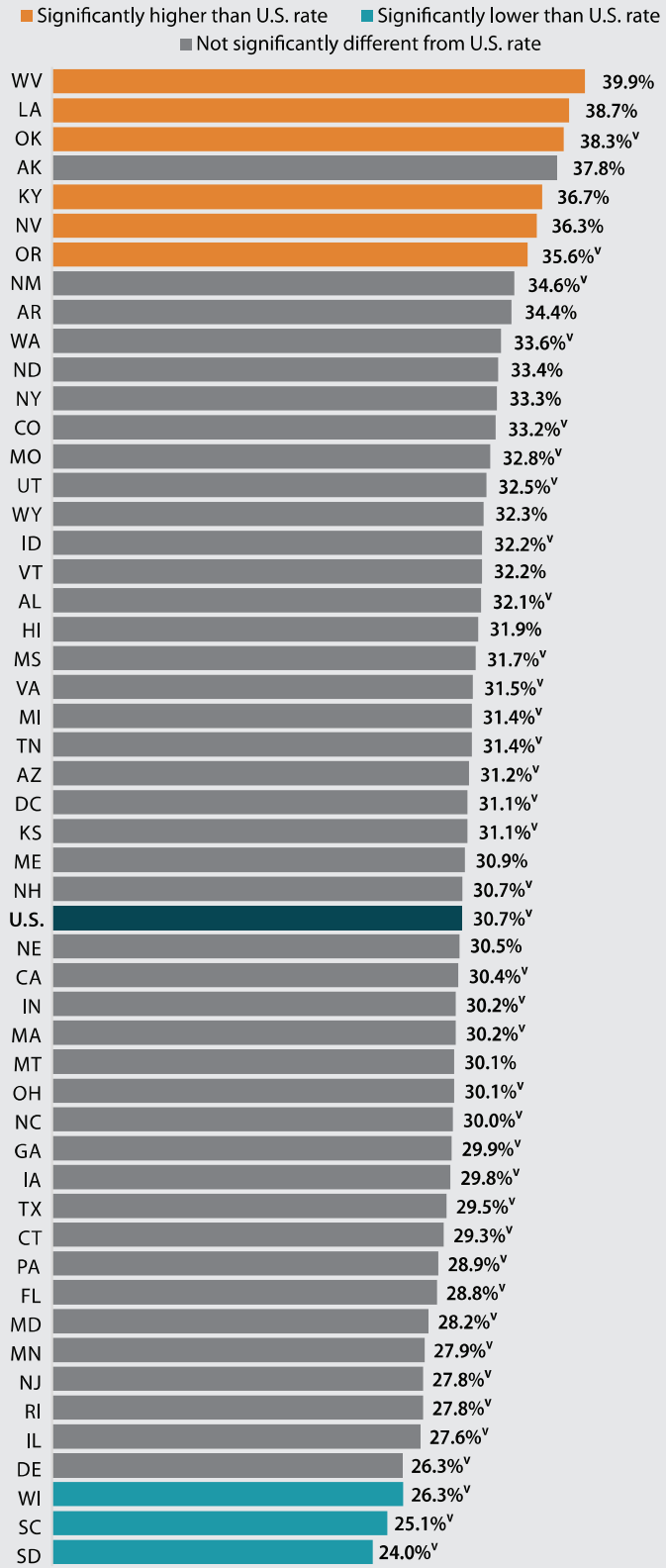
U.S. rate of anxiety or depression: 30.7%			
Higher than the U.S. rate		Lower than the U.S. rate	
West Virginia	39.9%	South Dakota	24.0%
Louisiana	38.7%	South Carolina	25.1%
Oklahoma	38.3%	Wisconsin	26.3%
Kentucky	36.7%		
Nevada	36.3%		
Oregon	35.6%		

Conclusion

The data presented in this brief illustrate a recent decline in overall anxiety and depression rates among U.S. adults, though these rates remain higher than benchmarks from pre-pandemic surveys. Downward trending rates of anxiety and depression in the total adult population offer reason for hope with regard to pandemic-related impact on mental health in the United States.

However, despite this more recent overall decline, it is important to note that disparities in mental health burden that surged with the rise of the COVID crisis continued to persist at the end of 2021, as shown by disproportionately high rates of anxiety and depression symptoms among young people, females, and individuals with less educational attainment and lower incomes. Findings from the HPS and other surveys can help public health officials and health policymakers gauge continued mental health needs of the U.S. and state populations, as well as to identify demographic groups that have been especially affected by the crisis and may benefit from particular outreach efforts.

Figure 8. Rates of anxiety or depression among adults by state, December 2021



Source: SHADAC analysis of the Household Pulse Survey.
Colors represent statistically significant difference from U.S. rate at the 95% confidence level.
v Statistically significant decrease since January 2021 at the 95% confidence level.

References

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[6] Beginning in Phase 3.2 (collection period July 21-August 2, 2021) of the Household Pulse Survey, the reference period for the four mental health questions (PHQ-4) on feeling anxious, worrying, losing interest, and feeling down changed from "the last 7 days" to "the last two weeks." This update to the PHQ-4 is described in the 2021 Household Pulse Survey User Notes for Phase 3.2. https://www2.census.gov/programs-surveys/demo/technical-documentation/hhp/Phase3-2_2021_Household_Pulse_Survey_User_Notes_11032021.pdf

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