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Prevalence of Depression Among Adults Aged 20 and Over: United States, 2013–2016

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Key findings

Data from the National Health and Nutrition Examination Survey

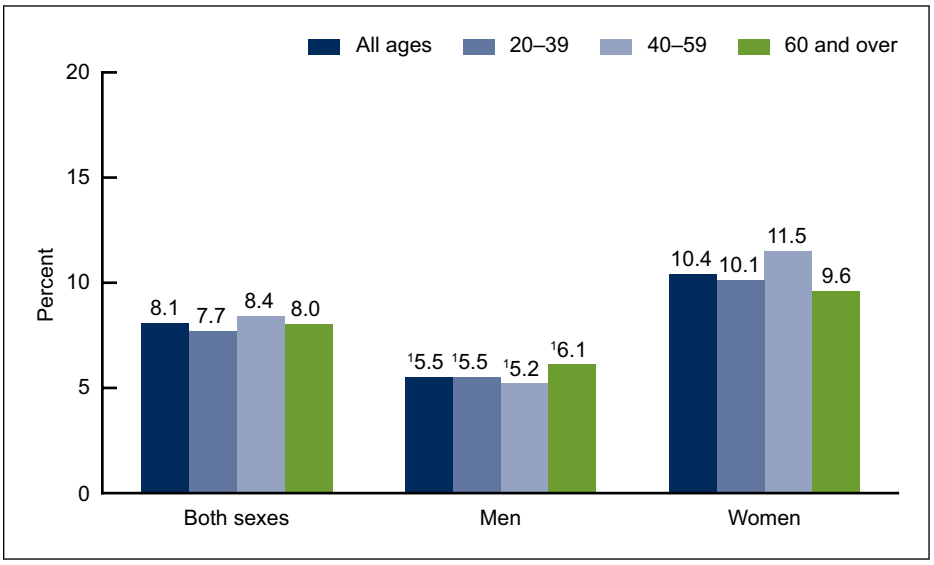
- During 2013–2016, 8.1% of American adults aged 20 and over had depression in a given 2-week period.
- Women (10.4%) were almost twice as likely as were men (5.5%) to have had depression.
- Depression was lower among non-Hispanic Asian adults, compared with Hispanic, non-Hispanic black, or non-Hispanic white adults.
- The prevalence of depression decreased as family income levels increased.
- About 80% of adults with depression reported at least some difficulty with work, home, and social activities because of their depression.
- From 2007–2008 to 2015–2016, the percentage of American adults with depression did not change significantly over time.

Major depression is a common and treatable mental disorder characterized by changes in mood, and cognitive and physical symptoms over a 2-week period (1). It is associated with high societal costs (2) and greater functional impairment than many other chronic diseases, including diabetes and arthritis (3). Depression rates differ by age, sex, income, and health behaviors (4). This report provides the most recent national estimates of depression among adults. Prevalence of depression is based on scores from the Patient Health Questionnaire (PHQ-9), a symptom-screening questionnaire that allows for criteria-based diagnoses of depressive disorders (5). Estimates for non-Hispanic Asian persons are presented for the first time.

Keywords: mental health • NHANES

During 2013–2016, 8.1% of Americans aged 20 and over had depression in a given 2-week period.

Figure 1. Percentage of persons aged 20 and over with depression, by age and sex: United States, 2013–2016



[1]Significantly different from females in same age group.
NOTES: Depression was defined as a score greater than or equal to 10 on the Patient Health Questionnaire. Access data table for Figure 1 at: https://www.cdc.gov/nchs/data/databriefs/db303_table.pdf#1.
SOURCE: NCHS, National Health and Nutrition Examination Survey, 2013–2016.

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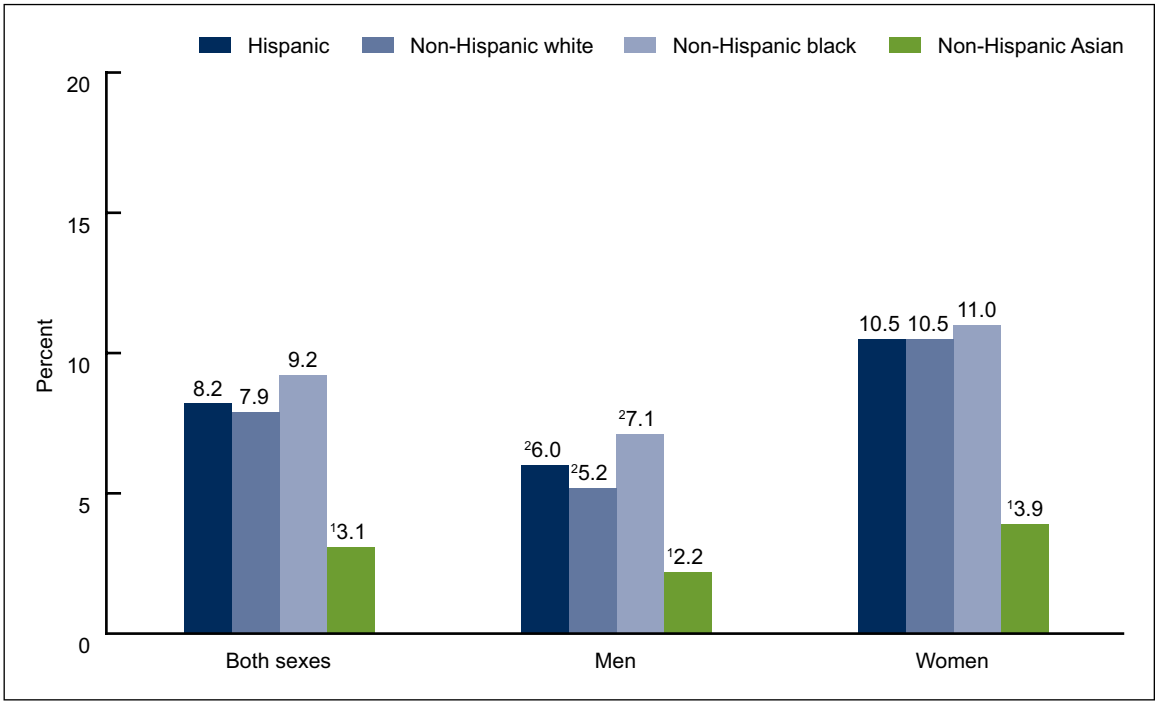
- Overall, women (10.4%) were almost twice as likely to have depression as men (5.5%). This pattern also was observed among each age group (Figure 1).
- Among both men and women, the percentage with depression did not differ statistically across age groups.

The prevalence of depression was lower among non-Hispanic Asian adults than among any other race and Hispanic-origin group.

- Overall, non-Hispanic Asian adults had the lowest prevalence of depression (3.1%) compared with Hispanic (8.2%), non-Hispanic white (7.9%), and non-Hispanic black (9.2%) adults. This pattern was observed among both men and women (Figure 2).
- The prevalence of depression was not statistically different for Hispanic, non-Hispanic white, and non-Hispanic black adults, overall and among both men and women.
- Among all race and Hispanic-origin groups, except non-Hispanic Asian, men had a significantly lower prevalence of depression compared with women.

Figure 2. Percentage of persons aged 20 and over with depression, by race and Hispanic origin and sex: United States, 2013–2016

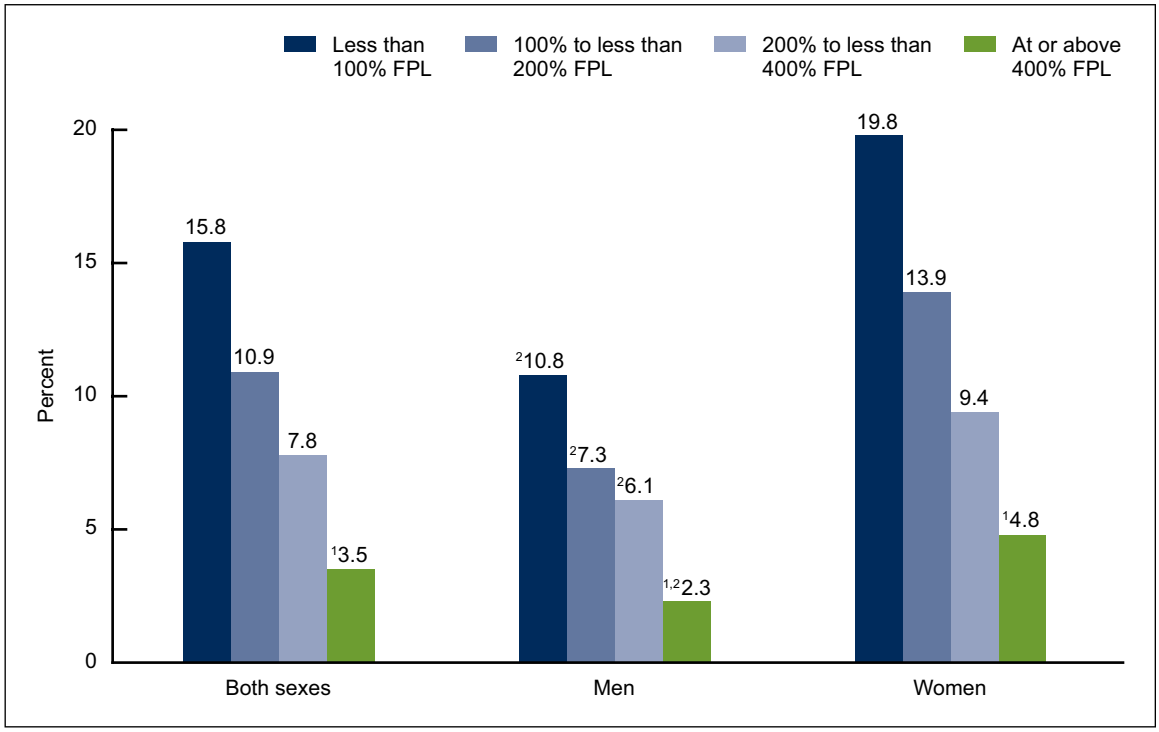


[1]Significantly lower than Hispanic, non-Hispanic white, and non-Hispanic black.
[2]Significantly lower than women of the same race and Hispanic-origin group.
NOTES: Depression was defined as a score greater than or equal to 10 on the Patient Health Questionnaire. Access data table for Figure 2 at: https://www.cdc.gov/nchs/data/databriefs/db303_table.pdf#2.
SOURCE: NCHS, National Health and Nutrition Examination Survey, 2013–2016.

The prevalence of depression among adults decreased as family income levels increased.

- Overall, 15.8% of adults from families living below the federal poverty level (FPL) had depression. The prevalence of depression decreased to 3.5% among adults at or above 400% of the FPL (Figure 3).
- Among both men and women, the prevalence of depression decreased with increasing levels of family income.
- Men with family incomes at or above 400% of the FPL had the lowest prevalence of depression (2.3%), while women with family incomes below the FPL had the highest prevalence (19.8%).

Figure 3. Percentage of persons aged 20 and over with depression, by family income level: United States, 2013–2016

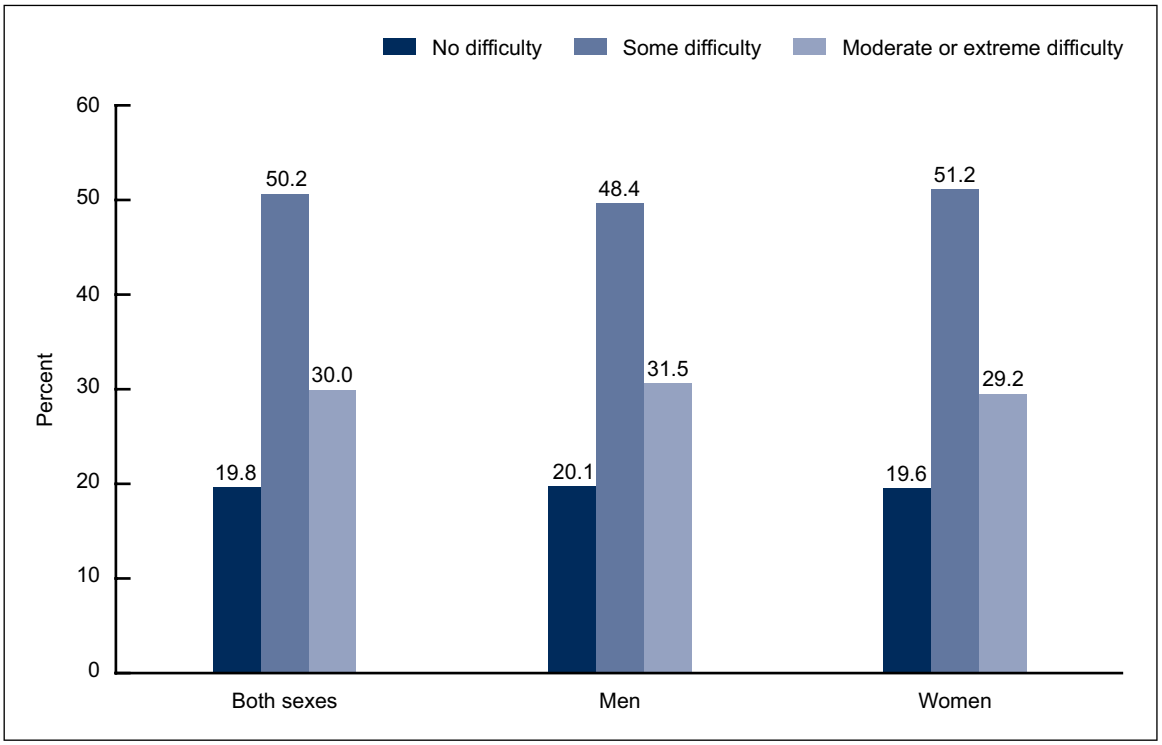


[1]Significant decreasing linear trend.
[2]Significantly lower than women in same family income level.
NOTES: Family income levels are defined by the federal poverty level (FPL). Depression was defined as a score greater than or equal to 10 on the Patient Health Questionnaire. Access data table for Figure 3 at: https://www.cdc.gov/nchs/data/databriefs/db303_table.pdf#3.
SOURCE: NCHS, National Health and Nutrition Examination Survey, 2013–2016.

About 80% of adults with depression reported at least some difficulty with work, home, or social activities because of their depression symptoms.

- 50.2% of adults with depression reported some difficulty with work, home, or social activities because of their depression symptoms (Figure 4).
- 30.0% of adults with depression reported moderate or extreme difficulty with work, home, or social activities because of their depression symptoms.
- The percentage of adults with depression reporting difficulty with work, home, or social activities due to depression symptoms was similar in men and women.

Figure 4. Percentage of persons aged 20 and over with depression who reported difficulty with work, home, or social activities due to depression symptoms: United States, 2013–2016

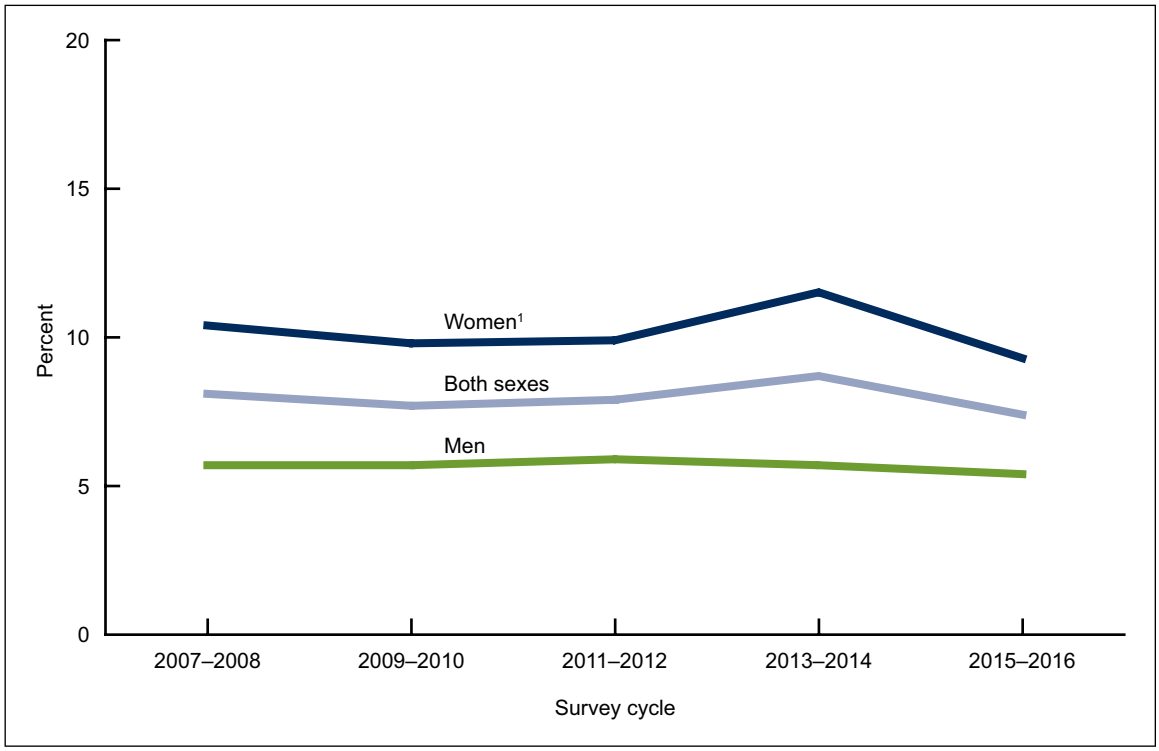


NOTES: Depression was defined as a score greater than or equal to 10 on the Patient Health Questionnaire. Access data table for Figure 4 at: https://www.cdc.gov/nchs/data/databriefs/db303_table.pdf#4.
SOURCE: NCHS, National Health and Nutrition Examination Survey, 2013–2016.

Over a 10-year period, from 2007–2008 to 2015–2016, the percentage of adults with depression did not change significantly.

- Among men, the prevalence of depression was 5.7 % in 2007–2008 and 5.4% in 2015–2016 (Figure 5).
- Among women, the prevalence of depression was 10.4% in 2007–2008 and 9.3% in 2015–2016.

Figure 5. Prevalence of depression among persons aged 20 and over: United States, 2007–2008 to 2015–2016



[1]Women had a higher prevalence of depression than men at every time point.
NOTES: Depression was defined as a score greater than or equal to 10 on the Patient Health Questionnaire. Access data table for Figure 5 at: https://www.cdc.gov/nchs/data/databriefs/db303_table.pdf#5.
SOURCE: NCHS, National Health and Nutrition Examination Survey, 2007–2016.

Summary

During 2013–2016, 8.1% of American adults had depression in a given 2-week period. As observed in other studies (4,6), depression was almost twice as common among women as among men. Depression prevalence did not differ by age. Non-Hispanic Asian adults had the lowest prevalence of depression, a finding noted in other studies (7). Depression prevalence did not vary significantly among the other race and Hispanic-origin groups studied. The proportion of adults with depression increased with decreasing family income level. About 80% of adults with depression reported at least some difficulty with work, home, or social activities due to their depression symptoms. From 2007–2008 to 2015–2016, the prevalence of depression among both men and women showed no significant changes, similar to the results of another major federal survey that tracks depression estimates in the United States (8).

Prevalence estimates reported here do not include populations considered at higher risk for depression (i.e., those in nursing homes or other institutions). Persons currently treated for depression (i.e., medication or therapy) may not have screened positively for depression using the PHQ-9. Finally, some persons with depression may not have been able or willing to participate in the National Health and Nutrition Examination Survey (NHANES). Therefore, these findings may represent conservative estimates of depression among adults in the United States.

Definitions

Depression: Measured using the score from the Patient Health Questionnaire (PHQ-9), a nine-item depression-screening instrument that asks about the frequency of symptoms of depression in the past 2 weeks (5). Response categories of "not at all," "several days," "more than half the days," and "nearly every day" are given a score of 0 to 3. Summary scores ranged from 0 to 27. Depression was defined using a score of 10 or higher, a well-validated cut point used in primary care settings (5).

Difficulties related to depression: Persons with a score of 1 or more on the PHQ-9 symptoms are asked: "How difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?" Responses are 0 (not at all difficult), 1 (somewhat difficult), 2 (moderately difficult), or 3 (extremely difficult). In Figure 4, 1 was defined as "some difficulty," 2 and 3 were defined as "moderate or extreme difficulty."

Percent of federal poverty level: Based on the income-to-poverty ratio, a measure of the annual total family income divided by the poverty guidelines, adjusted for family size.

Data sources and methods

Data from the NHANES 2007–2016 were used for these analyses. Data from two combined cycles (2013–2016) were used to test differences between subgroups. Trends in depression prevalence reflect a 10-year period of five 2-year NHANES survey cycles, 2007–2016.

NHANES is a cross-sectional survey designed to monitor the health and nutritional status of the noninstitutionalized civilian U.S. population (9). The survey consists of home interviews and standardized physical examinations in mobile examination centers (MEC). The PHQ-9 was administered by trained interviewers during a private interview in the MEC. Approximately 89% of MEC-examined adults completed the PHQ-9.

The NHANES sample is selected through a complex, multistage probability design. During 2007–2016, non-Hispanic black, non-Hispanic Asian, and Hispanic persons, among other groups, were oversampled to obtain reliable estimates for these population subgroups. Race and Hispanic origin-specific estimates reflect individuals reporting only one race. Persons reporting another race or multiple races are included in the total but are not reported separately.

Examination sample weights, which account for the differential probabilities of selection, nonresponse, and noncoverage, were incorporated into the estimation process. The standard errors of the percentages were estimated using Taylor series linearization (10), a method that incorporates the sample weights and sample design.

A *t* statistic was used to test for difference between groups. Tests for trends by family income and survey cycle were evaluated using orthogonal polynomials to determine linear or quadratic trends. The significance level for statistical testing was set at $p < 0.05$. All differences reported are statistically significant unless otherwise indicated. All estimates presented are statistically reliable based on a relative standard error of the estimate being at or below 30%. Statistical analyses were conducted using SAS System for Windows (release 9.4; SAS Institute Inc., Cary, N.C.) and SUDAAN (release 11.1; RTI International, Research Triangle Park, N.C.).

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