NATIONAL CENTER FOR HEALTH STATISTICS
Health E-Stats
DECEMBER 2019

Prevalence of Prescription Opioid Analgesic Use Among Adults: United States, 2013–2016

by Steven M. Frenk, Ph.D., P.M.P., Qiuping Gu, M.D., Ph.D., National Center for Health Statistics; and Michele K. Bohm, M.P.H., National Center for Chronic Disease Prevention and Health Promotion

Prescription opioid analgesics are used to treat pain resulting from a variety of health conditions, surgery, and injury. However, opioid-related deaths have emerged as a public health issue (1), and efforts to monitor prescription opioid analgesic use are ongoing (2,3). This analysis uses data from the National Health and Nutrition Examination Survey (NHANES) to examine the prevalence (age adjusted for race and Hispanic-origin estimates) of prescription opioid analgesic use among U.S. adults.

During 2013–2016, 6.5% of adults aged 20 and over reported using a prescription opioid analgesic in the past 30 days (Figure 1, Table).

The percentage of adults who used a prescription opioid analgesic increased with age, from 3.2% among younger adults aged 20–39, to 7.5% among middle-aged adults 40–59, and to 9.6% among adults aged 60 and over. This pattern was observed for men and women.

A higher percentage of women (7.6%) compared with men (5.3%) used a prescription opioid analgesic. This pattern was also seen within each age group, although the difference among adults aged 20–39 was not significant.

Age-adjusted opioid analgesic use was highest among non-Hispanic white (6.6%) and non-Hispanic black (6.7%) adults compared with non-Hispanic Asian (2.0%) and Hispanic (5.3%) adults (Figure 2). Use was higher among Hispanic adults compared with non-Hispanic Asian adults. The percentage of non-Hispanic white (7.7%) and non-Hispanic black (8.4%) women using an opioid analgesic was higher compared with non-Hispanic Asian (2.4%) and Hispanic (5.8%) women. Use was higher among Hispanic women compared with non-Hispanic Asian women. However, among men, there were no significant differences among non-Hispanic white (5.4%), non-Hispanic black (4.6%), and Hispanic (4.7%) men. A higher percentage of non-Hispanic white women and non-Hispanic black women used an opioid analgesic compared with men in the same race and Hispanic-origin groups.

Data source and methods

NHANES, conducted by the National Center for Health Statistics (NCHS), is a multistage probability survey of the civilian noninstitutionalized population of the United States (4). Each survey participant completes a household interview and a physical examination. During the household interview, survey participants were asked if they had taken a prescription medication in the past 30 days. Those who answered "yes" were asked to show the interviewer the medication containers of all prescription medications. For each drug reported, the interviewer recorded the product's complete name from the container or a pharmacy print out. NCHS used Cerner Multum Lexicon's therapeutic classification scheme to classify prescription medications (5).

Interview sample weights, which accounted for the differential probabilities of selection, nonresponse, and noncoverage, were incorporated into the estimation process. Taylor series linearization was used to compute variance estimates. Differences between subgroups and linear trends were evaluated using orthogonal contrasts to calculate a Student's t statistic. Differences were considered significant at $p < 0.05$. All reported estimates, except the estimate for non-Hispanic Asian men, met NCHS reliability standards (6). Estimates by race and Hispanic origin were age adjusted using the direct method to the 2000 projected U.S. population using the age groups 20–39, 40–59, and 60 and over (7).

Study methods, including variable design, are based on prior research (8).

References

1. Scholl L, Seth P, Kariisa M, Wilson N, Baldwin G. Drug and opioid-involved overdose deaths—United States, 2013–2017. MMWR Morb Mortal Wkly Rep 67:1419–27. 2019. Available from: https://dx.doi.org/10.15585/mmwr.mm675152e1.

2. Dowell D, Haegerich TM, Chou R. CDC guideline for prescribing opioids for chronic pain—United States. JAMA 315(15):1624–45. 2016.

3. Schieber LZ, Guy Jr GP, Seth P, Young R, Mattson CL, Mikosz CA, Schieber RA. Trends and patterns of geographic variation in opioid prescribing practices by state, United States, 2006–2017. JAMA Network Open 2(3):e190665. 2019.

4. National Center for Health Statistics. National Health and Nutrition Examination Survey: Questionnaires, datasets, and related documentation. Available from: https://wwwn.cdc.gov/nchs/nhanes/.

5. National Center for Health Statistics. National Health and Nutrition Examination Survey: 2015–2016 data documentation, codebook, and frequencies. 2019. Available from: https://wwwn.cdc.gov/Nchs/Nhanes/2015-2016/RXQ_RX_I.htm.

6. Park JD, Talih M, Malec DJ, Beresovsky V, Carroll M, Gonzalez Jr. JF, et al. National Center for Health Statistics data presentation standards for proportions. National Center for Health Statistics. Vital Health Stat 2(175). 2017.

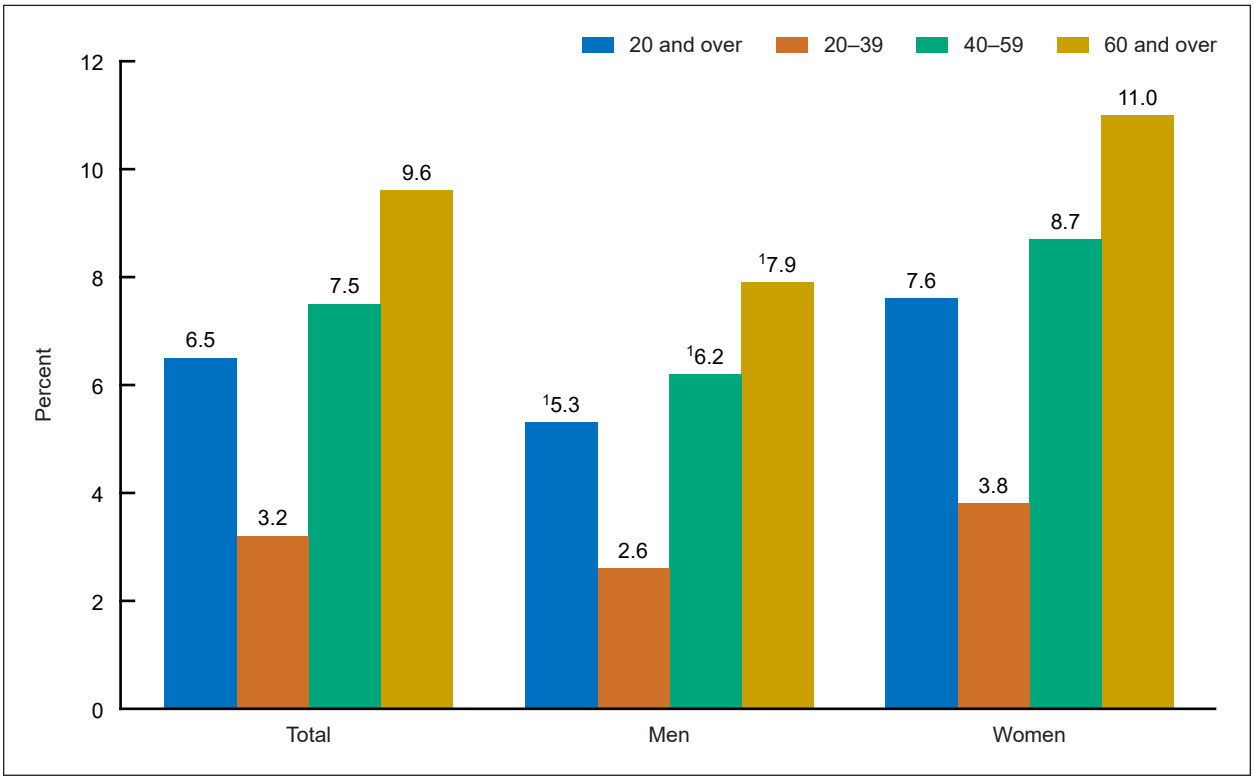
7. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy People Statistical Notes, no. 20. Hyattsville, MD: National Center for Health Statistics. 2001.

8. Frenk SM, Porter KS, Paulozzi LJ. Prescription opioid analgesic use among adults: United States, 1999–2012. NCHS Data Brief, no. 189. Hyattsville, MD: National Center for Health Statistics. 2015.

Suggested citation

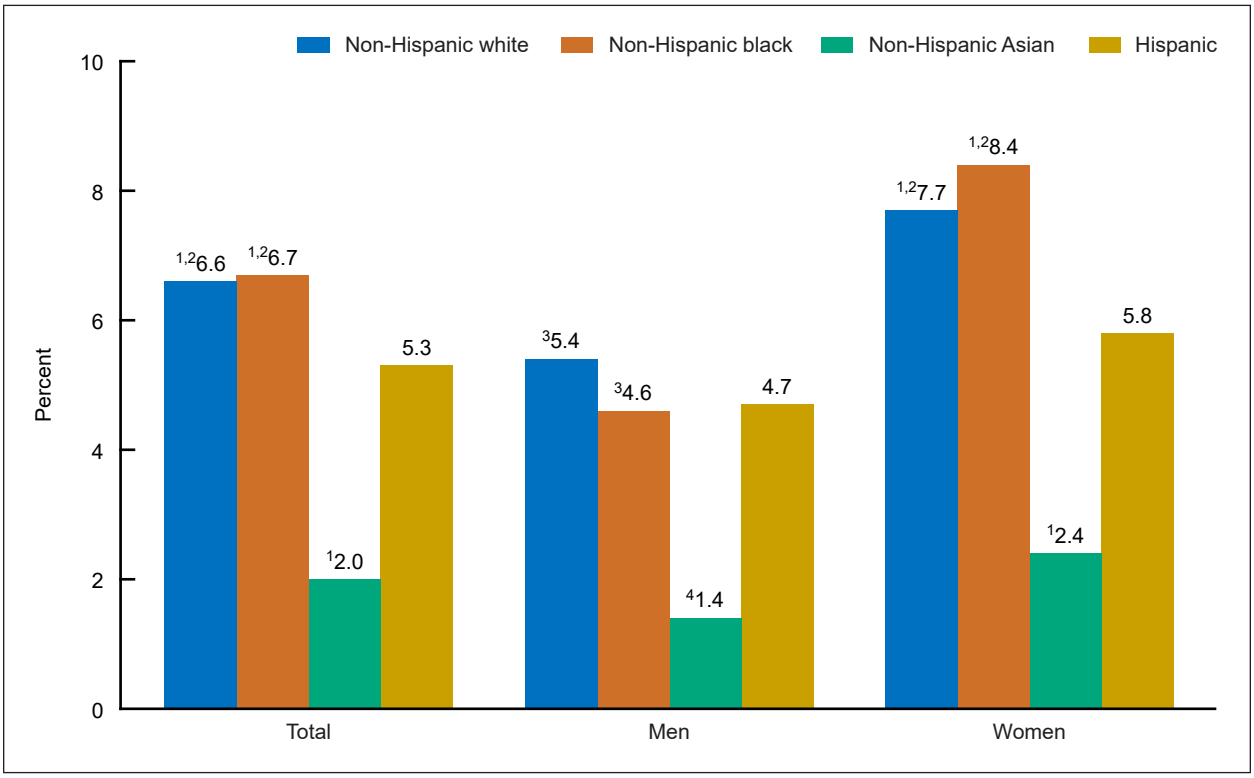
Frenk SM, Gu Q, Bohm MK. Prevalence of prescription opioid analgesic use among adults: United States, 2013–2016. NCHS Health E-Stat. 2019.

Figure 1. Crude percentage of adults aged 20 and over who used a prescription opioid analgesic in the past 30 days, by sex and age: United States, 2013–2016



[1]Significant difference between men and women in the same age group.
NOTE: Significant increasing linear trend by age group.
SOURCE: NCHS, National Health and Nutrition Examination Survey, 2013–2016.

Figure 2. Age-adjusted percentage of adults aged 20 and over who used a prescription opioid analgesic in the past 30 days, by sex and race and Hispanic origin: United States, 2013–2016



[1]Significantly different from Hispanic persons.
[2]Significantly different from non-Hispanic Asian persons.
[3]Significant difference between men and women in the same race and Hispanic-origin group.
[4]Estimate does not meet NCHS reliability standards.
NOTE: All estimates are age adjusted by the direct method to the 2000 projected U.S. population using the age groups 20–39, 40–59, and 60 and over.
SOURCE: NCHS, National Health and Nutrition Examination Survey, 2013–2016.

Table. Crude and age-adjusted prevalence rates of prescription opioid analgesic use, in the past 30 days, among adults aged 20 and over: United States, 2013–2016

Sex, age group, race and Hispanic origin	Sample size (*n*)	Percent (95% CI)
Crude estimate		
Overall:		
20 and over	761	6.5 (5.7, 7.4)
20–39	124	3.2 (2.5, 4.0)
40–59	270	7.5 (5.9, 9.2)
60 and over	367	9.6 (8.0, 11.4)
Men:		
20 and over	316	5.3 (4.2, 6.7)
20–39	50	2.6 (1.8, 3.8)
40–59	109	6.2 (4.3, 8.6)
60 and over	157	7.9 (6.0, 10.3)
Women:		
20 and over	445	7.6 (6.7, 8.6)
20–39	74	3.8 (2.7, 5.1)
40–59	161	8.7 (7.1, 10.4)
60 and over	210	11.0 (8.9, 13.4)
Age-adjusted estimate		
Overall:		
Non-Hispanic white	357	6.6 (5.6, 7.7)
Non-Hispanic black	170	6.7 (5.8, 7.7)
Non-Hispanic Asian	27	2.0 (1.0, 3.5)
Hispanic	166	5.3 (4.3, 6.4)
Men:		
Non-Hispanic white	150	5.4 (3.9, 7.2)
Non-Hispanic black	62	4.6 (3.6, 5.8)
Non-Hispanic Asian	9	*1.4 (0.4, 3.3)
Hispanic	71	4.7 (3.7, 5.9)
Women:		
Non-Hispanic white	207	7.7 (6.6, 9.0)
Non-Hispanic black	108	8.4 (7.2, 9.6)
Non-Hispanic Asian	18	2.4 (1.2, 4.3)
Hispanic	95	5.8 (4.5, 7.3)

*Estimate does not meet NCHS standards of reliability.

NOTES: CI is confidence interval. Prevalence estimates are age adjusted by the direct method to the projected 2000 U.S. census population using the age groups 20–39, 40–59, and 60 and over. The age-adjusted estimates for adults of other race and Hispanic-origin groups are not provided separately, but members of these groups are included in the overall crude estimate.

SOURCE: NCHS, National Health and Nutrition Examination Survey, 2013–2016.