

Sleep Duration and Quality Among Women Aged 40–59, by Menopausal Status

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Key findings

Data from the National Health Interview Survey, 2015

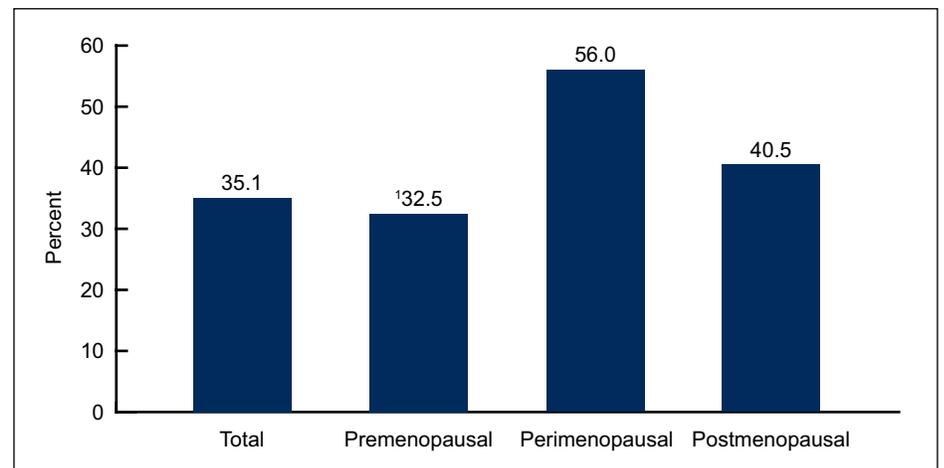
- Among those aged 40–59, perimenopausal women (56.0%) were more likely than postmenopausal (40.5%) and premenopausal (32.5%) women to sleep less than 7 hours, on average, in a 24-hour period.
- Postmenopausal women aged 40–59 were more likely than premenopausal women aged 40–59 to have trouble falling asleep (27.1% compared with 16.8%, respectively), and staying asleep (35.9% compared with 23.7%), four times or more in the past week.
- Postmenopausal women aged 40–59 (55.1%) were more likely than premenopausal women aged 40–59 (47.0%) to not wake up feeling well rested 4 days or more in the past week.

Sleep duration and quality are important contributors to health and wellness. Insufficient sleep is associated with an increased risk for chronic conditions such as cardiovascular disease (1) and diabetes (2). Women may be particularly vulnerable to sleep problems during times of reproductive hormonal change, such as after the menopausal transition. Menopause is “the permanent cessation of menstruation that occurs after the loss of ovarian activity” (3). This data brief describes sleep duration and sleep quality among nonpregnant women aged 40–59 by menopausal status. The age range selected for this analysis reflects the focus on midlife sleep health. In this analysis, 74.2% of women are premenopausal, 3.7% are perimenopausal, and 22.1% are postmenopausal.

Keywords: insufficient sleep • menopause • National Health Interview Survey

Perimenopausal women were more likely than premenopausal and postmenopausal women to sleep less than 7 hours, on average, in a 24-hour period.

Figure 1. Percentage of nonpregnant women aged 40–59 who slept less than 7 hours, on average, in a 24-hour period, by menopausal status: United States, 2015



*Significant quadratic trend by menopausal status ($p < 0.05$).

NOTES: Women were postmenopausal if they had gone without a menstrual cycle for more than 1 year or were in surgical menopause after the removal of their ovaries. Women were perimenopausal if they no longer had a menstrual cycle and their last menstrual cycle was 1 year ago or less. Women were premenopausal if they still had a menstrual cycle. Access data table for Figure 1 at: https://www.cdc.gov/nchs/data/databriefs/db286_table.pdf#1.

SOURCE: NCHS, National Health Interview Survey, 2015.

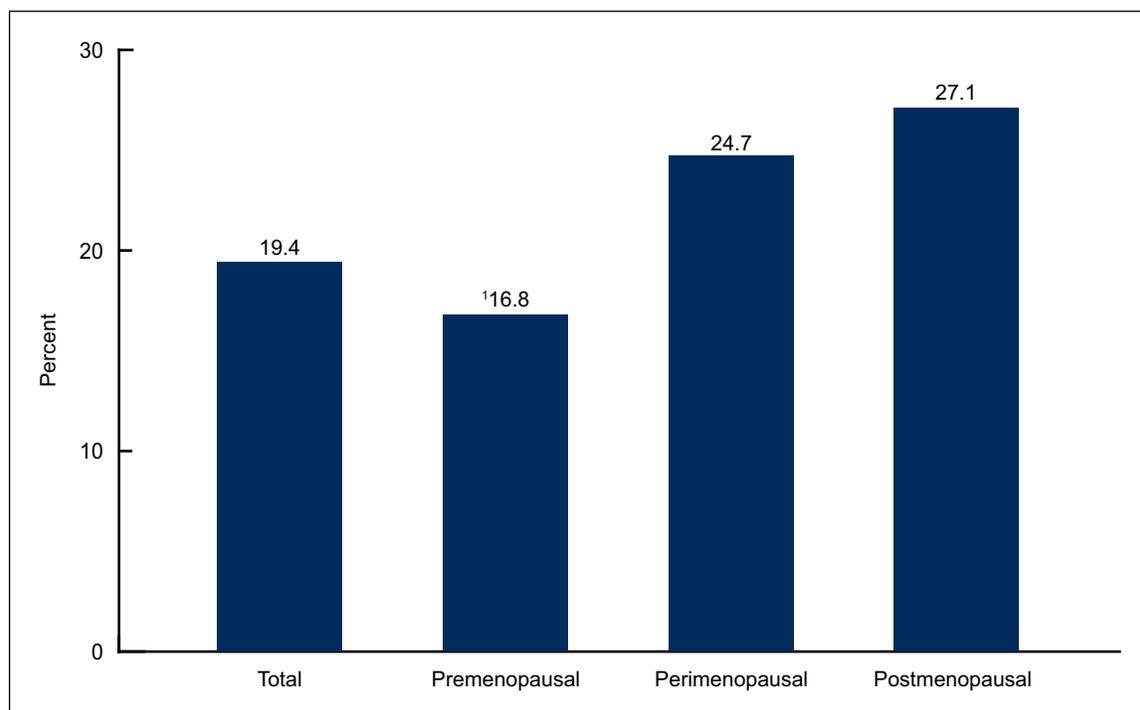


More than one in three nonpregnant women aged 40–59 slept less than 7 hours, on average, in a 24-hour period (35.1%) (Figure 1). Perimenopausal women were most likely to sleep less than 7 hours, on average, in a 24-hour period (56.0%), compared with 32.5% of premenopausal and 40.5% of postmenopausal women. Postmenopausal women were significantly more likely than premenopausal women to sleep less than 7 hours, on average, in a 24-hour period.

The percentage of women aged 40–59 who had trouble falling asleep four times or more in the past week varied by menopausal status.

Nearly one in five nonpregnant women aged 40–59 had trouble falling asleep four times or more in the past week (19.4%) (Figure 2). The percentage of women in this age group who had trouble falling asleep four times or more in the past week increased from 16.8% among premenopausal women to 24.7% among perimenopausal and 27.1% among postmenopausal women. Postmenopausal women were significantly more likely than premenopausal women to have trouble falling asleep four times or more in the past week.

Figure 2. Percentage of nonpregnant women aged 40–59 who had trouble falling asleep four times or more in the past week, by menopausal status: United States, 2015

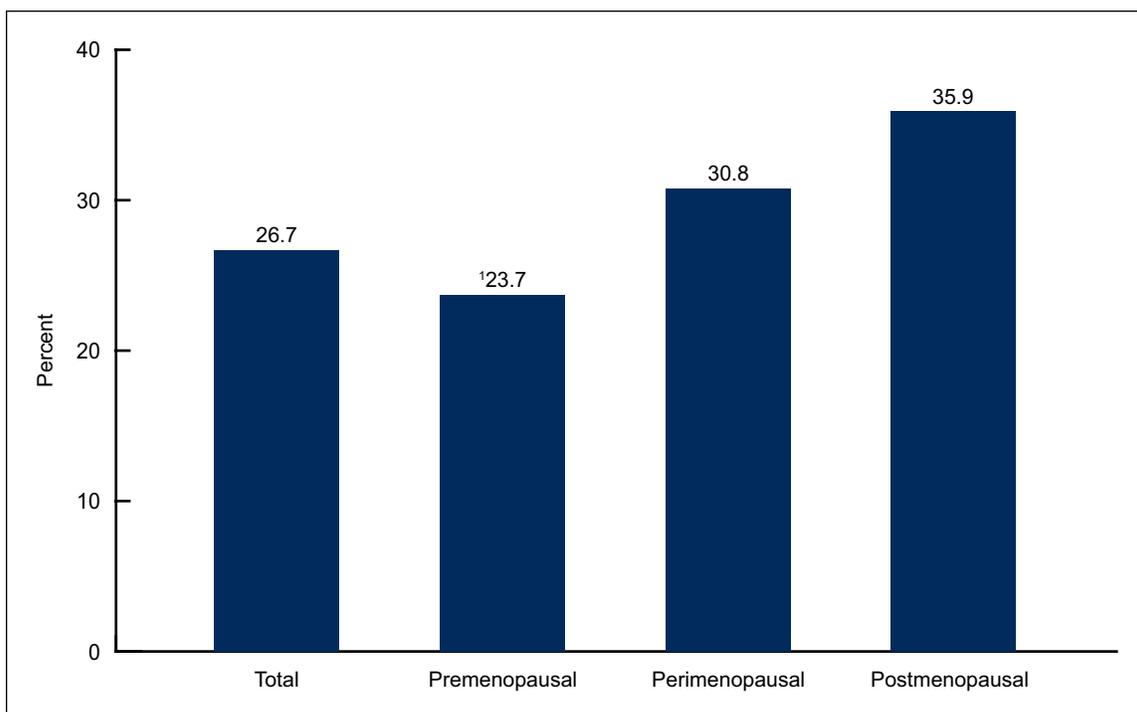


*Significant linear trend by menopausal status ($p < 0.05$).
 NOTES: Women were postmenopausal if they had gone without a menstrual cycle for more than 1 year or were in surgical menopause after the removal of their ovaries. Women were perimenopausal if they no longer had a menstrual cycle and their last menstrual cycle was 1 year ago or less. Women were premenopausal if they still had a menstrual cycle. Access data table for Figure 2 at: https://www.cdc.gov/nchs/data/databriefs/db286_table.pdf#2.
 SOURCE: NCHS, National Health Interview Survey, 2015.

The percentage of women aged 40–59 who had trouble staying asleep four times or more in the past week varied by menopausal status.

More than one in four nonpregnant women aged 40–59 had trouble staying asleep four times or more in the past week (26.7%) (Figure 3). The percentage of women aged 40–59 who had trouble staying asleep four times or more in the past week increased from 23.7% among premenopausal, to 30.8% among perimenopausal, and to 35.9% among postmenopausal women. Postmenopausal women were significantly more likely than premenopausal women to have trouble staying asleep four times or more in the past week.

Figure 3. Percentage of nonpregnant women aged 40–59 who had trouble staying asleep four times or more in the past week, by menopausal status: United States, 2015



*Significant linear trend by menopausal status ($p < 0.05$).

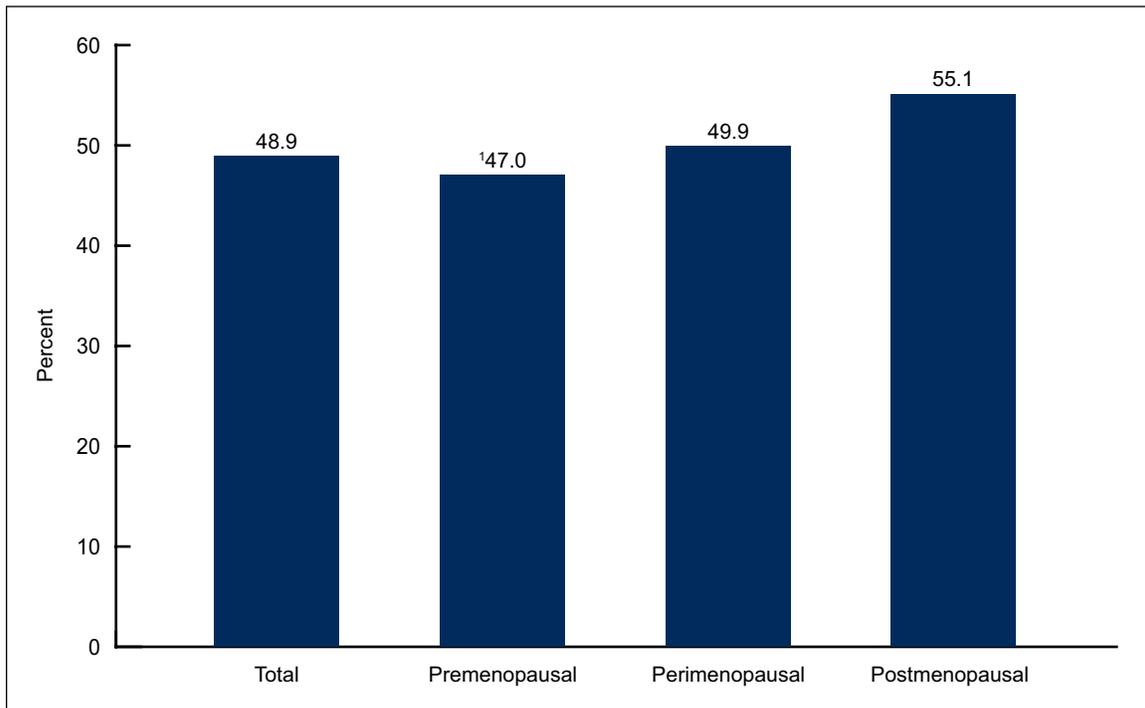
NOTES: Women were postmenopausal if they had gone without a menstrual cycle for more than 1 year or were in surgical menopause after the removal of their ovaries. Women were perimenopausal if they no longer had a menstrual cycle and their last menstrual cycle was 1 year ago or less. Women were premenopausal if they still had a menstrual cycle. Access data table for Figure 3 at: https://www.cdc.gov/nchs/data/databriefs/db286_table.pdf#3.

SOURCE: NCHS, National Health Interview Survey, 2015.

The percentage of women aged 40–59 who did not wake up feeling well rested 4 days or more in the past week varied by menopausal status.

Nearly one in two nonpregnant women aged 40–59 did not wake up feeling well rested 4 days or more in the past week (48.9%) (Figure 4). The percentage of women in this age group who did not wake up feeling well rested 4 days or more in the past week increased from 47.0% among premenopausal women to 49.9% among perimenopausal and 55.1% among postmenopausal women. Postmenopausal women were significantly more likely than premenopausal women to not wake up feeling well rested 4 days or more in the past week.

Figure 4. Percentage of nonpregnant women aged 40–59 who did not wake up feeling well rested 4 days or more in the past week, by menopausal status: United States, 2015



¹Significant linear trend by menopausal status ($p < 0.05$).

NOTES: Women were postmenopausal if they had gone without a menstrual cycle for more than 1 year or were in surgical menopause after the removal of their ovaries. Women were perimenopausal if they no longer had a menstrual cycle and their last menstrual cycle was 1 year ago or less. Women were premenopausal if they still had a menstrual cycle. Access data table for Figure 4 at: https://www.cdc.gov/nchs/data/databriefs/db286_table.pdf#4.

SOURCE: NCHS, National Health Interview Survey, 2015.

Summary

This report describes sleep duration and sleep quality among U.S. nonpregnant women aged 40–59 by menopausal status. Perimenopausal women were most likely to sleep less than 7 hours, on average, in a 24-hour period compared with premenopausal and postmenopausal women. In contrast, postmenopausal women were most likely to have poor-quality sleep. A greater percentage of postmenopausal women had frequent trouble falling asleep, staying asleep, and not waking well rested compared with premenopausal women; the percentage of perimenopausal women with poor-quality sleep was between the percentages for the other two groups in all three categories. Sleep duration changes with advancing age (4), but sleep duration and quality are also influenced by concurrent changes in women’s reproductive hormone levels (5). Because sleep is critical for optimal health and well-being (6), the findings in this report highlight areas for further research and targeted health promotion.

Definitions

Menopausal status: A three-level categorical variable was created from a series of questions that asked women: 1) “How old were you when your periods or menstrual cycles started?”; 2) “Do you still have periods or menstrual cycles?”; 3) “When did you have your last period or menstrual cycle?”; and 4) “Have you ever had both ovaries removed, either as part of a hysterectomy or as one or more separate surgeries?” Women were postmenopausal if they a) had gone without a menstrual cycle for more than 1 year or b) were in surgical menopause after the removal of their ovaries. Women were perimenopausal if they a) no longer had a menstrual cycle and b) their last menstrual cycle was 1 year ago or less. Premenopausal women still had a menstrual cycle.

Not waking feeling well rested: Determined by respondents who answered 3 days or less on the questionnaire item asking, “In the past week, on how many days did you wake up feeling well rested?”

Short sleep duration: Determined by respondents who answered 6 hours or less on the questionnaire item asking, “On average, how many hours of sleep do you get in a 24-hour period?”

Trouble falling asleep: Determined by respondents who answered four times or more on the questionnaire item asking, “In the past week, how many times did you have trouble falling asleep?”

Trouble staying asleep: Determined by respondents who answered four times or more on the questionnaire item asking, “In the past week, how many times did you have trouble staying asleep?”

Data source and methods

Data from the 2015 National Health Interview Survey (NHIS) were used for this analysis. NHIS is a multipurpose health survey conducted continuously throughout the year by the National Center for Health Statistics. Interviews are conducted in person in respondents' homes, but follow-ups to complete interviews may be conducted over the telephone. Data for this analysis came from the Sample Adult core and cancer supplement sections of the 2015 NHIS. For more information about NHIS, including the questionnaire, visit the NHIS website: <https://www.cdc.gov/nchs/nhis/index.htm>.

All analyses used weights to produce national estimates. Estimates on sleep duration and quality in this report are nationally representative of the civilian, noninstitutionalized nonpregnant female population aged 40–59 living in households across the United States. The sample design is described in more detail elsewhere (7). Point estimates and their estimated variances were calculated using SUDAAN software (8) to account for the complex sample design of NHIS. Linear and quadratic trend tests of the estimated proportions across menopausal status were tested in SUDAAN via PROC DESCRIPT using the POLY option. Differences between percentages were evaluated using two-sided significance tests at the 0.05 level

About the author

Anjel Vahratian is with the National Center for Health Statistics, Division of Health Interview Statistics. The author gratefully acknowledges the assistance of Lindsey Black in the preparation of this report.

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