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Infertility and Impaired Fecundity in Women and Men in the United States, 2015–2019

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Abstract

Objective—Using National Survey of Family Growth data from 2015–2019, this report presents updated national estimates of infertility in U.S. women and men and estimates of impaired fecundity (physical ability to have children) in U.S. women. Detailed demographic breakdowns are also presented, and overall estimates for 2015–2019 are compared with those for 2011–2015.

Methods—Data for this report come primarily from the 2015–2019 National Survey of Family Growth, which consisted of 21,441 interviews with men and women ages 15–49, conducted from September 2015 through September 2019. The response rate was 65.9% for women and 62.4% for men.

Results—The percentage of women ages 15–44 who had impaired fecundity did not change between 2011–2015 and 2015–2019. The percentage of married women with impaired fecundity also remained stable over this time period. Among all women, 13.4% of women ages 15–49 and 15.4% of women ages 25–49 had impaired fecundity in 2015–2019. The percentage of married women ages 15–44 who were infertile rose from 2011–2015 (6.7%) to 2015–2019 (8.7%). Among married and cohabiting women ages 15–49 in 2015–2019, 7.8% had infertility. Both infertility and impaired fecundity were associated with age for nulliparous (never had a live birth) women after adjusting for other factors. Some form of infertility (either subfertility or nonsurgical sterility) was seen in 11.4% of men ages 15–49 and 12.8% of men ages 25–49 in 2015–2019.

Keywords: current fertility problems • male fertility problems • demographic patterns • National Survey of Family Growth

Introduction

A recent report by the World Health Organization highlighted the importance of understanding the magnitude of infertility and identifying people who are potentially in need of fertility care (1). In addition, the U.S. National Public Health Action Plan for the Detection, Prevention, and Management of Infertility documents that infertility has public health implications beyond the ability to have children as a quality-of-life issue, and also represents a marker of the past, present, and future health of reproductive-age women and men (2,3).

As part of its overall mission to collect data on fertility and the intermediate factors that explain birth rates in the United States, the National Survey of Family Growth (NSFG) has provided two population-based, nationally representative measures for fertility problems in women: infertility (since 1973) and impaired fecundity (since 1982) (4–7). Infertility in women is defined as a lack of pregnancy in the 12 months before the survey, despite having had unprotected vaginal intercourse in each of those months with the same husband or cohabiting partner. Impaired fecundity in women is defined as physical difficulty in either getting pregnant or carrying a pregnancy to live birth. Since the addition of an independent sample of males to NSFG in 2002, the survey has also been used to define a measure of infertility in men (4), which includes the components of nonsurgical sterility and subfertility as captured in the impaired fecundity status measure for women. NSFG also collects information on important correlates of fertility problems in the general U.S. population overall, rather than only among those seeking medical help to have a baby.

It is widely recognized that estimates of infertility will vary, sometimes

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significantly, based on the definitions and study methodology used, particularly with regard to defining the "at-risk" population (1,8–11). By using a standardized approach to monitoring the prevalence of 12-month infertility in married women since 1973, and impaired fecundity in women of reproductive age since 1982, NSFG provides demographic snapshots of the impact of societal trends such as delayed marriage (12,13) and childbearing (14,15) through the 2000s and increased surgical sterilization into the 1990s (16), informing the potential demand for infertility-related medical services.

In 2015–2019, 13.4% of women in the United States ages 15–49 (9.7 million) had impaired fecundity, and 8.5% of married women ages 15–49 (2.4 million) had infertility (17). While some breakdowns by age and parity (number of live births) have been published using 2015–2019 data (17), analyses examining impaired fecundity and infertility by more detailed demographic subgroups are based on older NSFG data. Estimates for women ages 15–44 in 2011–2015 included some breakdowns by limited demographic characteristics (18), but estimates of infertility in both women and men in the United States, and impaired fecundity in women, were last produced for detailed demographic subgroups using 2006–2010 NSFG data (4). Using the most recently available NSFG data from 2015–2019, this report updates those earlier analyses (4) with detailed subgroup tabulations for U.S. women and men. Analyses focusing on detailed demographic breakdowns are restricted to adults ages 25–49 due to the relative rarity of infertility and impaired fecundity at younger ages, as well as the fact that key socioeconomic markers such as education and household income are more in flux at younger ages.

Methods

Data source

The current report is based primarily on combined 2015–2017 and 2017–2019 NSFG data, which come from interviews conducted from September 2015 through September 2019 (19). This combined data file is based on 21,441 face-to-face interviews—11,695 with women and 9,746 with men—and is representative of the U.S. household population ages 15–49. The response rate for the 2015–2019 NSFG was 64.3% overall, 65.9% for women, and 62.4% for men (20). Selected estimates for women and men ages 15–44 in 2015–2019 are also shown for the purpose of comparison with 2011–2015 estimates, when the survey was limited to ages 15–44. The 2011–2015 estimates are based on combining data from the 2011–2013 and 2013–2015 NSFG releases. Further details on the sample design, variance estimation, and fieldwork procedures have been published previously (21).

Infertility and impaired fecundity measures for women

This report uses two measures that have both been consistently defined for women since the 1982 NSFG: infertility status and fecundity status.

Infertility status among women

Infertility status, as coded in the INFERT variable, reflects a measure typically used in data collection and monitoring to identify couples who may have difficulty having a baby and may warrant medical evaluation to see if fertility treatment services could help them. The INFERT variable is constructed based on answers to detailed questions on contraceptive use, sexual activity, and marital or cohabiting status. When neither the respondent nor her current husband or cohabiting partner is surgically sterile, a woman is defined as infertile at time of interview if she and her husband or partner had been continuously married or cohabiting, were sexually active each month, had not used contraception, and did not become pregnant during the previous 12 months or longer.

This measure has traditionally been limited to married or cohabiting women because infertility is a couple-based phenomenon—unless he or she is completely sterile, either partner may potentially achieve pregnancy through vaginal intercourse with a different partner of the opposite sex. The measure requires at least 12 months of sexual relationship with the same male partner and reliable reporting of contraception and pregnancy, as married or cohabiting women's reporting of these experiences may be less prone to misreporting. Also, this measure does not attempt to distinguish if the infertility stems from the female or male partner.

Infertility status, as shown in Tables 1 and 4, has three categories: surgically sterile, infertile, and presumed fertile. The "presumed fertile" category is a residual category indicating that the married or cohabiting woman is neither surgically sterile nor infertile at the time of interview. While Table 4 does show the distribution of infertility status for cohabiting women separately, the sample sizes of cohabiting women were not large enough to support further tabulation by the variables shown, so those demographic breakdowns are limited to married women.

Fecundity status among women

Fecundity status, as coded in the FECUND variable, describes the physical ability of a woman to not only conceive a pregnancy but also have a live birth. This measure is defined for all women, regardless of their relationship status. As with the infertility measure, married or cohabiting women are classified as surgically sterile on FECUND if their husbands or male cohabiting partners are surgically sterile. In addition, married or cohabiting women are asked separate questions about fertility problems encountered by each member of the couple, while single, noncohabiting women can report only about their own impaired fecundity. This means that a married or cohabiting woman could be classified as surgically sterile or as having impaired fecundity solely on the basis of her husband's or male cohabiting partner's status.

Fecundity status shown in this report has three main categories: surgically sterile, having impaired fecundity, and presumed fecund. As with the INFERT variable, the FECUND variable is constructed based on responses to NSFG survey questions, not by a medical examination. Also, the "presumed fecund" category is a residual category

indicating that the woman does not meet the conditions of surgical sterility or impaired fecundity.

Women were classified as **surgically sterile** if they (or their current husband or male cohabiting partner) had an unreversed sterilizing operation such as a tubal sterilization, hysterectomy, or vasectomy. The category was further divided into contraceptive and noncontraceptive subcategories, based on the reasons reported for the sterilizing operation. A sterilizing operation was considered noncontraceptive if the only reason given was medical problems, such as "medical problems with your female organs." Contraceptive and noncontraceptive surgical sterility are shown separately in Table 1, but due to the small numbers of women with noncontraceptive surgical sterility, later tables only show the combined category of "surgically sterile."

Impaired fecundity includes women in the following three subgroups: nonsurgically sterile, subfecund, and long interval without conception, described below.

Nonsurgically sterile—Women who have not reported any sterilization operations for themselves or their current husband or male cohabiting partner are asked the following questions, and are defined as nonsurgically sterile if they answer "no" to either question:

- "Some women are not physically able to have children. As far as you know, is it physically possible for you, yourself, to have (a/another) baby?"
- If the woman is married or cohabiting: "What about [HUSBAND/PARTNER]? As far as you know, is it physically possible for him to father a baby in the future?"

Subfecund—Women not already responding as surgically or nonsurgically sterile are asked the following questions about physical difficulties having a baby, and are classified as subfecund if they answer "yes" to any question:

- "Some women are physically able to have (a/another) baby, but have difficulty getting pregnant or carrying the baby to term. As far as you know, would you, yourself, have any **difficulty** getting pregnant (again) or carrying (a/another) baby (after this pregnancy)?"
- If the woman is married or cohabiting: "As far as you know, does [HUSBAND/PARTNER] have any difficulty fathering a baby?"
- "At any time has a medical doctor ever advised you never to become pregnant (again)?"

Long interval without conception (or 36-month infertility)—Women not already classified as surgically sterile, nonsurgically sterile, or subfecund could be defined as having a "long interval without conception" if they had been continuously married or cohabiting, were sexually active in each month, had not used contraception, and had not had a pregnancy for 36 consecutive months or longer.

Presumed fecund is a residual category (as was "presumed fertile" with infertility status) and means that the woman—or couple, if married or cohabiting—was not surgically sterile and did not have impaired fecundity. The percentage of currently married women with impaired fecundity is higher than the percentage of married women with infertility because impaired fecundity includes problems carrying pregnancies to live birth in addition to problems conceiving, whereas infertility includes only problems conceiving. However, infertility is not strictly a subset of impaired fecundity for married women or cohabiting women, as explained in the next section of this report.

Relationship between infertility and impaired fecundity

Despite the broader definition of impaired fecundity that includes problems carrying pregnancies to live birth, not all married or cohabiting women with 12-month infertility will necessarily have impaired fecundity. The main reason for this is that impaired fecundity includes a component of 36-month infertility, rather than 12-month infertility. Some married or cohabiting women who have not been infertile for at least 36 months may be categorized as presumed fecund on the impaired fecundity measure based on their answers to the questions about nonsurgical sterility and subfecundity. Because of this potential but incomplete overlap of the two measures of fertility problems for married or cohabiting women, some analyses of infertility services include women with "any fertility problems," defined as having either infertility or impaired fecundity at the time of interview (Table 5 and Figure 3). For example, among the 5.24 million married women ages 15–49 with any fertility problems in 2015–2019, 36.3% had both impaired fecundity and 12-month infertility, 53.3% had only impaired fecundity, and 10.4% had only 12-month infertility. A similar extent of overlap in these measures was seen in married women ages 15–44 with any current fertility problems in 2006–2010 (4).

Infertility status among men

Although a completely analogous measure of infertility cannot be constructed for men as for women, NSFG includes data that can be used to construct a fairly comparable measure (Table 6). Infertility status among men is based on direct questions about surgical sterility and men's physical ability to father a child. Men are coded into four categories based on responses they give for themselves or for their current wives or female cohabiting partners:

Surgically sterile—If they reported an unreversed vasectomy or some other reason for surgical sterility, or that their wives or cohabiting partners are surgically sterile.

Nonsurgically sterile—If they responded "no" to the following question that parallels the question women are asked about nonsurgical sterility: "Some men are not physically able to father children. As far as you know, is it physically possible for you, yourself, to biologically father a child in the future?" Men are also coded in this category if their current wives or cohabiting partners are nonsurgically sterile.

Subfertile—If they respond "yes" to the following question about their subfertility, paralleling the question women are asked about subfecundity: "Some men are physically able to father a child, but would have difficulty doing so. As far as you know, would you have any **difficulty** fathering a child?"

Presumed fertile—A residual category indicating that men (and their

current wives or female cohabiting partners, if applicable) did not meet the definitions for the other categories.

This measure reflects the man's own infertility status and, if he is married or cohabiting, the status of his wife or partner. Although this male measure is similar to the female measures, it is not intended to yield estimates directly comparable with the female-based estimates of infertility or fecundity status because of the differences in the level of detail collected in the male and female NSFG questionnaires. In addition, given the typical age differences between spouses or partners, the age distribution of wives or cohabiting partners of men ages 25–49, as shown in Table 6, would be somewhat younger than 25–49. For these reasons, estimates of infertility for men ages 25–49 would vary from estimates for women. For men, a significant association with age and male infertility is not generally seen until ages beyond NSFG's upper bound of 49, so it is unlikely that NSFG-based estimates of male infertility would show the same prevalence or differentials seen in women. However, these data can still provide a useful estimate of infertility for the general population from the male perspective.

Demographic and behavioral measures

Estimates of infertility and impaired fecundity presented in this report are shown with respect to several key social and demographic characteristics reflecting the time of interview, including age, number of biological children, marital or cohabiting status, education, household income relative to the federal poverty level, and race and Hispanic origin. These characteristics have been chosen because earlier studies have documented their association either with fertility problems or with timing of attempts to have a child (22–26).

- *Number of biological children*: For women, the PARITY variable indicates the number of live births they have had and for this analysis is categorized as none or one or more. For men, the BIOKIDS variable indicates the number of biological children they have fathered and is also categorized as none or one or more. Primary infertility or primary impaired fecundity is defined as physical difficulties having a first child, and nulliparous (never had a live birth) women who are infertile are characterized as having primary infertility. Secondary infertility or impaired fecundity is defined as parous women (those who have had at least one live birth) at the time of interview who are experiencing physical difficulties having another child.
- *Marital or cohabiting status*: The RMARITAL variable used to indicate marital or cohabiting status is based only on relationships with opposite-sex spouses or partners, in keeping with the marital or cohabiting status variables that have been defined across all NSFG data releases to date, based on the focus of the survey on factors associated with risk of pregnancy as well as the risk of fertility problems. Its categories are grouped into currently married; currently cohabiting; never married, not cohabiting; and formerly married, not cohabiting.
- *Education*: The HIEDUC variable indicates the respondent's highest degree or highest year of completed schooling as of the date of interview and is categorized as no high school diploma or GED; high school diploma or GED; some college, no bachelor's degree; bachelor's degree; or master's degree or higher. For most tabulations shown, the highest education category shown is "master's degree or higher," but for selected figures, educational attainment has been categorized as "less than bachelor's degree" or "bachelor's degree or higher."
- *Household income relative to the federal poverty level*: The POVERTY variable is based on a comparison of each respondent's household income with the federal poverty thresholds for a family of that size, as defined by the U.S. Census Bureau; adjustments are not made for variations in cost of living in the place where the respondent resides. For example, if the value is below 100%, the household income is below the federal poverty threshold for a family of that size. Values above 100% mean the household income is above the federal poverty threshold for a family of that size, and the higher the percentage, the wealthier the respondent may be. Categories are grouped into 0%–99%, 100%–299%, 300%–399%, and 400% or more.
- *Race and Hispanic origin*: The definitions used in this report comply with the 1997 Office of Management and Budget guidelines for the presentation of race and ethnicity data in federal statistics (27). These guidelines allow respondents to report more than one race or Hispanic origin and are reflected in the publicly available HISPRACE2 variable, and additional nonpublic variables are used to define the category for Asian non-Hispanic, single race (subsequently, Asian) that is shown in selected tables where sample sizes permit. Other categories of race and ethnicity data included in this report are Black non-Hispanic, single race (subsequently, Black), White non-Hispanic, single race (subsequently, White), and Hispanic.
- *Fertility intentions*: The INTENT variable for women indicates whether the respondent intends to have a (or another) child sometime, or if married or cohabiting, whether she and her husband or male cohabiting partner intend to have a (or another) child sometime, if neither partner is sterile.

Statistical analysis

Estimates in this report were generated using SAS-callable SUDAAN software (28) to produce standard errors accounting for the complex sample design of NSFG. Each table in this report includes standard errors as a measure of the precision of each point estimate (percentage) presented (excepting the text table, which shows numbers of women in millions, and Table 5, which shows adjusted odds ratios with 95% confidence intervals for women). All estimates were based on sampling weights designed to produce estimates

that are nationally representative of the reproductive-age household population of the United States. These analyses were conducted using the 4-year sample weights constructed for the 2015–2019 data (and 2011–2015 where applicable); population size estimates in this report reflect the approximate midpoint of 2015–2019 interviewing (July 2017) or 2011–2015 interviewing (July 2013) (19). All estimates presented meet the National Center for Health Statistics guidelines for presentation of proportions (29).

When comparing differences between subgroups, statistical significance was determined by two-tailed *t* tests at the 5% level using point estimates and their standard errors. No adjustments were made for multiple comparisons. Terms such as "greater than" and "less than" indicate that a statistically significant difference was found. Terms such as "similar" or "no difference" indicate that the estimates being compared were not significantly different. Lack of comment regarding any difference does not mean that significance was tested and ruled out.

The cross-sectional nature of these survey data means that valid causal inferences cannot be made. In addition, most tables presented in this report are bivariate associations that may be explained by other factors not controlled for in those analyses. However, Table 5 shows multiple logistic regression (PROC SURVEYLOGISTIC) results for infertility, impaired fecundity, and a combined measure of any fertility problems (indicating either condition). Adjusted odds ratios (AORs) for these infertility measures among women ages 25–49 are shown, controlling for age, parity, marital or cohabiting status, education, household income relative to the federal poverty level, and race and Hispanic origin. Table 5 shows 95% confidence intervals for each AOR, along with a *p* value indicating the statistical significance of the AOR. A Technical Notes Table is also provided with unadjusted odds ratios for each variable shown in Table 5. It is possible that statistical power to detect differences between some population subgroups was limited based on the 2015–2019 data.

Results

Infertility and impaired fecundity in 2011–2015 and 2015–2019

Table 1 shows the percent distribution by fecundity and infertility status for all women and for married women ages 15–44 and 15–49 in the United States for 2011–2015 and 2015–2019.

- Among women ages 15–49 in 2015–2019, 13.4% had impaired fecundity. Among women ages 15–44, the percentage with impaired fecundity remained stable between 2011–2015 (12.1%) and 2015–2019 (12.7%).
- Among married women ages 15–49 in 2015–2019, 16.3% had impaired fecundity. Among married women ages 15–44, the percentage with impaired fecundity between 2011–2015 (15.5%) and 2015–2019 (16.0%) did not change significantly.
- A higher percentage of married women (or their husbands or male partners) were surgically sterile for contraceptive reasons compared with all women. For example, in 2015–2019, 35.3% of married women ages 15–49 were surgically sterile for contraceptive reasons compared with 22.0% of all women.
- Among married women ages 15–49 in 2015–2019, 8.5% were infertile. The percentage of married women ages 15–44 who were infertile rose from 6.7% in 2011–2015 to 8.7% in 2015–2019.

Table A provides the estimated numbers of women with infertility or impaired fecundity in the U.S. household population over the periods 2011–2015 and 2015–2019. This table is included because, though percentages remained relatively stable across both periods, the number of women represented in the population fluctuated over time.

Table A. Number of women ages 15–44 or 15–49 with infertility or impaired fecundity: United States, 2011–2015 and 2015–2019

Characteristic	2011–2015	2015–2019	
	15–44	15–44	15–49
	Number (millions)		
Number of women with impaired fecundity	7.40	7.86	9.70
No births (primary impaired fecundity)	3.10	3.73	4.31
One or more births (secondary impaired fecundity)	4.30	4.13	5.39
Number of married women with impaired fecundity	3.61	3.65	4.70
No births (primary impaired fecundity)	1.08	1.09	1.41
One or more births (secondary impaired fecundity)	2.53	2.56	3.29
Number of married women with infertilty	1.56	1.99	2.45
No births (primary infertility)	0.65	0.87	1.05
One or more births (secondary infertility)	0.91	1.12	1.40
Number of women with any fertility problems[1]	8.02	8.50	10.43
No births (primary fertility problems)	3.37	3.95	4.55
One or more births (secondary fertility problems)	4.66	4.55	5.88
Number of married women with any fertility problems[1]	4.01	4.16	5.24
No births (primary fertility problems)	1.24	1.28	1.61
One or more births (secondary fertility problems)	2.77	2.88	3.63

[1]Either impaired fecundity or infertility.

NOTES: Total number in millions may differ from sum of numbers by parity because of rounding. For this report, married women include only those married to men. Impaired fecundity is difficulty conceiving or bringing a pregnancy to term. Married or cohabiting women are classified as infertile if they have had unprotected vaginal intercourse with the same husband or partner for at least 12 consecutive months but have not had a pregnancy.

SOURCE: National Center for Health Statistics, National Survey of Family Growth, 2011–2015 and 2015–2019.

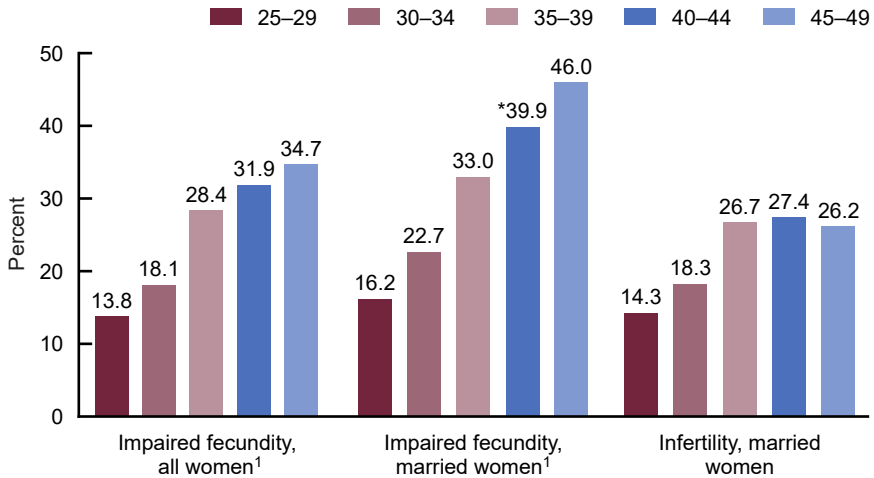
- The estimated numbers of women with impaired fecundity in all women, impaired fecundity and infertility in married women, or any fertility problems in all women and married women overall and by parity were not significantly different between the two time periods.
- Among women 15–49, an estimated 10.43 million had any fertility problems in 2015–2019, about one-half of whom (5.24 million) were married.
- An estimated 8.50 million women ages 15–44 had fertility problems of some kind (either impaired fecundity or infertility) in 2015–2019. This was similar to the 8.02 million women ages 15–44 with any fertility problems in 2011–2015. Among married women ages 15–44, 4.01 million had any fertility problems in 2011–2015 and 4.16 million in 2015–2019.
- Similar to previous data years examining women ages 15–44 (4), primary impaired fecundity among all women ages 15–49 (that is, impaired fecundity in nulliparous women [4.31 million]), represented slightly less than one-half of all women with impaired fecundity (9.70 million) in 2015–2019. When limited to married women, primary impaired fecundity (1.41 million) represented closer to one-third of the total (4.70 million).

Fecundity status

All women

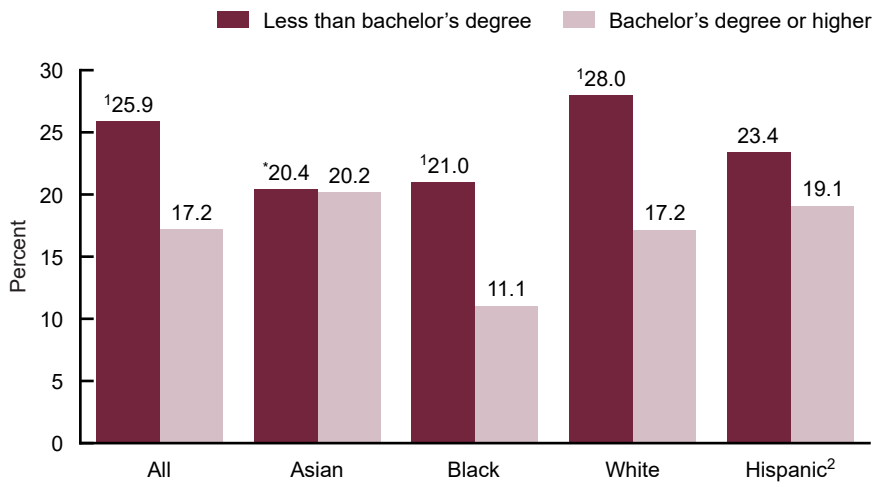
- Among all women, the percentage with impaired fecundity increased from 8.0% in those ages 15–24 to 17.6% in ages 45–49 (Table 2). Similarly, surgical sterilization increased with age—0.7% of women ages 15–24 had undergone surgical sterilization, but by ages 45–49 more than one-half (55.3%) had done so. This combination of increases in surgical sterility and impaired fecundity with age results in a decline in the corresponding residual category of presumed fecundity with age.
- By parity, the increase in impaired fecundity with age was seen only among nulliparous women. The percentage of nulliparous women with impaired fecundity increased with age, from 13.8% of women ages 25–29 to 34.7% of women ages 45–49 (Figure 1).
- Impaired fecundity was higher in currently married women (16.5%) than never-married, noncohabiting women (13.6%). The percentage of surgically sterile women was three times higher in those who were currently married (39.1%) and two times higher in those who were currently cohabiting (27.6%) compared with never-married, noncohabiting women (13.2%).
- No significant variation in the percentage of impaired fecundity by education was seen in women ages 25–49. However, education was associated with overall fecundity status, partly due to surgical sterilization patterns. The percentage of surgical sterilization in women decreased with increasing education—nearly one-half of women with less than a high school education were surgically sterile (45.6%) compared with nearly one-quarter of women with a master's degree or higher (23.3%). Correspondingly, women with the highest levels of education were more likely to be presumed fecund than women with lower levels of education.
- No significant differences between household income relative to the federal poverty level and either impaired fecundity or surgical sterilization were seen.
- Among the race and Hispanic-origin groups shown, a lower percentage of Black women (12.8%) had impaired fecundity than White women (15.9%). The percentage of Asian women who were surgically sterile (20.5%) was lower than for Black (30.9%), Hispanic (32.4%), and White (34.0%) women.
- Figure 2 shows the percentage of impaired fecundity in nulliparous women by education (less than a bachelor's degree or a bachelor's degree or higher) and race and Hispanic origin. For nulliparous White and Black women, those with a bachelor's degree or higher were less likely to have impaired fecundity than those with less education. The observed difference by education level among Hispanic women was not significant. No

Figure 1. Impaired fecundity and infertility in nulliparous women, by age: United States, 2015–2019



* Estimate does not meet National Center for Health Statistics standards of reliability or precision.
[1]Linear trend for age was statistically significant.
NOTES: Impaired fecundity is difficulty conceiving or bringing a pregnancy to term. Women are classififed as infertile if they have had unprotected vaginal intercourse with the same husband or cohabiting partner for at least 12 consecutive months but have not had a pregnancy. Nulliparous women have never given birth to a live infant. For this report, married women include only those married to men.
SOURCE: National Center for Health Statistics, National Survey of Family Growth, 2015–2019.

Figure 2. Impaired fecundity in nulliparous women ages 25–49, by education and race and Hispanic origin: United States, 2015–2019



* Estimate does not meet National Center for Health Statistics standards of reliability or precision.
[1]Significantly different from bachelor's degree or higher.
[2]People of Hispanic origin may be of any race.
NOTES: Impaired fecundity is difficulty conceiving or bringing a pregnancy to term. Nulliparous women have never given birth to a live infant. Differences in education by race and Hispanic-origin groups were not significant.
SOURCE: National Center for Health Statistics, National Survey of Family Growth, 2015–2019.

significant differences were found when comparing race and Hispanic-origin groups within each education category.

Married women

- The percentage of impaired fecundity in married women increased with increasing age, as did surgical sterility (Table 3).
- The percentage of nulliparous married women with impaired fecundity increased from 16.2% in those ages 25–29 to 46.0% in ages 45–49 (Figure 1).
- For married women ages 25–49, surgical sterility was lower by education—for example, one-half of married women with no high school degree or GED were surgically sterile (50.1%), compared with 30.7% of those with a master's degree or higher. The net effect of these patterns in surgical sterilization and impaired fecundity was that a higher percentage of married women ages 25–49 with bachelor's degrees (54.3%) or master's degrees or higher (53.0%) were presumed fecund, compared with 34.7%–31.2% of women with a high school education or less.
- Differences in fecundity status varied by race and Hispanic origin for selected categories:
  - Race and Hispanic origin was not significantly associated with impaired fecundity in married women ages 25–49.
  - A lower percentage of Asian women (22.7%) were surgically sterile than Hispanic (39.2%) and White (40.8%) women. Correspondingly, a higher percentage of married Asian women (59.0%) were presumed fecund than Hispanic (45.6%) and White (42.9%) women.

Infertility status

The percent distribution of married or cohabiting women ages 15–49 or 25–49 in 2015–2019, by infertility status and selected socioeconomic and demographic characteristics, is shown in Table 4.

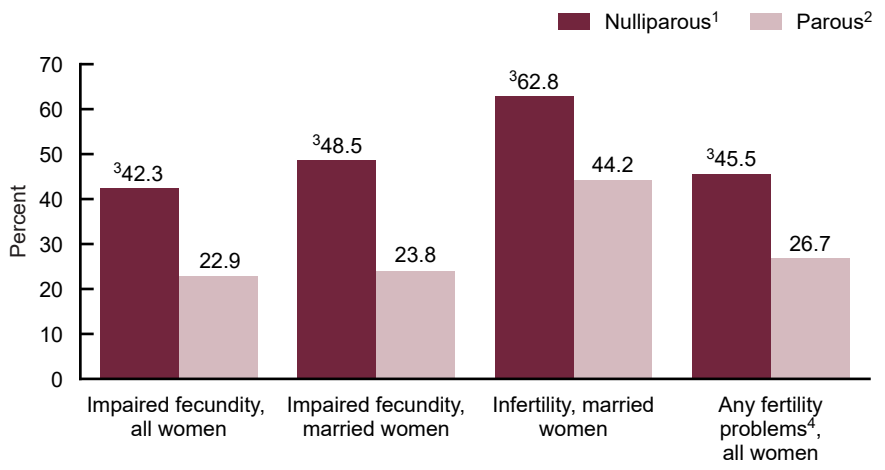
- In 2015–2019, a smaller percentage of cohabiting women were infertile (5.7%) compared with married women (8.5%) (Table 4).
- Unlike impaired fecundity, no association between age and infertility in married women was seen.
- Infertility in married women was not significantly associated with education, household income relative to the federal poverty level, or race and Hispanic origin.
- Similar to impaired fecundity in married women, surgical sterility decreased with education, and the percentage of women presumed fertile was correspondingly higher. For example, a higher percentage of married women ages 25–49 with a bachelor's degree (63.3%) or master's degree or higher (60.4%) were presumed fertile, compared with 40.8%–38.1% of women with a high school education or less. In addition, the percentage of Asian women (67.7%) who were presumed fertile was higher than Black (53.3%), Hispanic (53.1%), or White (50.6%) women.

Fertility intentions among women with impaired fecundity or infertility

Figure 3 illustrates percentages of impaired fecundity or infertility by intent to have a child (or another child), by parity.

- Among all women ages 25–49 with impaired fecundity, a higher percentage of nulliparous women with impaired fecundity (42.3%) intended to have a child than parous women with impaired fecundity (22.9%).
- This pattern by parity was similar for married women with infertility or impaired fecundity. For example, 62.8% of nulliparous married women with infertility intended to have a child, compared with 44.2% of parous, married women with infertility.
- Nearly one-half (45.5%) of nulliparous women with any fertility problems (either impaired fecundity or infertility), and just over one-quarter (26.7%) of parous women with any fertility problems intended to have a child (or another child) in the future.

Figure 3. Percentage of women ages 25–49 with impaired fecundity or infertility who intend to have a child or another child, by parity: United States, 2015–2019



[1]Women who have never given birth to a live infant.
[2]Women who have given birth to a live infant.
[3]Significantly different from parous.
[4]Includes impaired fecundity and infertility.
NOTES: Impaired fecundity is difficulty conceiving or bringing a pregnancy to term. Women are classififed as infertile if they have had unprotected vaginal intercourse with the same husband or cohabiting partner for at least 12 consecutive months but have not had a pregnancy. Nulliparous women have never given birth to a live infant. For this report, married women include only those married to men.
SOURCE: National Center for Health Statistics, National Survey of Family Growth, 2015–2019.

Multivariate analysis of fertility problems

- Table 5 presents multivariate logistic models showing the AORs for impaired fecundity, infertility, or any fertility problems in women ages 25–49. These models adjust for the demographic characteristics included in Tables 2–4 to assess which characteristics may have the strongest net effect on the odds of these types of fertility problems.
- Among nulliparous women, age was associated with impaired fecundity, infertility, and the combined measure of any fertility problems. Compared with the reference group of parous women ages 25–29, nulliparous women ages 35–39 were three times more likely to have impaired fecundity. The odds of impaired fecundity were more than four times as high for nulliparous women ages 40–44 (AOR is 4.21) and 45–49 (AOR is 4.46) compared with parous women ages 25–29. For infertility, a more pronounced association with age was seen among nulliparous women, with adjusted odds of infertility being five times higher for those ages 30–34 and increasing to 10 times higher for ages 45–49, compared with parous women ages 25–29. This is in contrast to the bivariate results from Table 4, which found no significant associations between age and infertility, either overall or by parity.
- Never-married, noncohabiting women were less likely to have impaired fecundity than married women (AOR is 0.61). In the model for infertility, which was limited to married or cohabiting women ages 25–49, cohabiting women were also less likely to have infertility compared with married women (AOR is 0.54).
- In these adjusted models, neither education nor race and Hispanic origin showed a net association with impaired fecundity, infertility, or any fertility problems overall. The Technical Notes Table with unadjusted odds ratios shows that Black women were less likely than White women to have impaired fecundity (odds ratio is 0.78) or any fertility problems overall (odds ratio is 0.77). However, these bivariate differences were no longer significant after controlling for the other factors included in the adjusted logistic models.
- No significant association was seen between household income relative to the federal poverty level and infertility after adjustment. However, for impaired fecundity, women with household incomes of less than 100% of the federal poverty level were about 1.4 times more likely to have impaired fecundity than women with household incomes of 400% of the federal poverty level or higher. Women in this lowest category of income relative to the federal poverty level were similarly 1.3 times more likely to have any fertility problems than women in the highest category of income relative to the federal poverty level.

Male infertility status

- In 2015–2019, 11.4% of men ages 15–49 had some type of infertility. Estimates of some type of infertility, either nonsurgical sterility or subfertility, in men ages 15–44 were similar in 2015–2019 as compared with 2011–2015 (Table 6).
- The percentage of men with some type of infertility increased from 7.8% in men ages 15–24 to 14.3% in those ages 45–49. Similar to the pattern for women (Table 2), surgical sterility increased with age from 0.3% of men ages 15–24 to 40.5% of those ages 45–49. Also mirroring the pattern for women, the combination of increased infertility and surgical sterility resulted in a decline in the percentages of presumed fertility with age.
- With regard to age by number of biological children, some type of infertility increased with age only for men who had no biological children.
- Some type of infertility was highest in married men (16.7%) compared with all other marital status groups, and for cohabiting men (12.4%) compared with formerly married and never-married men (6.7%–6.8%).
- Neither education nor household income relative to the federal poverty level was significantly associated with surgical sterility or some type of infertility.

- The percentage of some type of infertility was higher in Hispanic men (16.9%) compared with Asian (11.1%), Black (11.7%), or White (11.8%) men.

Discussion

This report updates national estimates for NSFG-based measures of infertility and impaired fecundity in women, along with a measure of infertility status among men, in the United States using the most recently available data from the 2015–2019 NSFG. The overall prevalence of impaired fecundity in all women and married women ages 15–44 appeared unchanged between 2011–2015 and 2015–2019. The percentage of infertility rose in married women ages 15–44 from 2011–2015 to 2015–2019. In 2015–2019, 13.4% of all women ages 15–49, and 16.3% of married women in the same age group, had impaired fecundity. When limited to women ages 25–49, the prevalence of impaired fecundity was 15.4% for all women and 16.5% for married women. In 2015–2019, 8.6% of married women ages 25–49 were infertile (defined as at least 12 consecutive months of unprotected vaginal intercourse and no pregnancy with their husbands). Among men ages 25–49 in 2015–2019, 12.8% reported some type of infertility, based on either nonsurgical sterility or subfertility. Although this measure of male infertility is not directly comparable with either measure of fertility problems derived from the female NSFG data, the estimate is similar to the 15.4% of women ages 25–49 with impaired fecundity.

NSFG offers several strengths for studying infertility and impaired fecundity in the U.S. household population. In addition to rigorous quality control measures and robust response rates (21), NSFG includes detailed data on sexual activity, contraception, pregnancy, marriage, and cohabitation, such that reliable and consistent measures of fertility problems can be defined over time. The NSFG age range of 15–49 (expanded in 2015–2017 from ages 15–44) may still exclude the measurement of fertility problems in older women pursuing childbearing. However, using nationally representative survey data—rather than nonprobability-based samples of women or couples "trying to conceive" or those seeking medical help for infertility—allows NSFG to derive a more generalizable estimate of the prevalence of fertility problems in the U.S. household population in this age group.

NSFG-based estimates of impaired fecundity and infertility presented in this report for the total population of women ages 15–49 fall within the range of estimates from other national demographic and health surveys (1). However, definitions and survey methodology vary markedly between the United States and other countries, and also between studies within the same country (9,11,30–32). One key difference is that some national estimates may be based on the denominator of couples seeking pregnancy, and others (including some using NSFG data) may be limited to individuals seeking pregnancy or those who intend to have a child (31–33). Given the significant societal trends in delayed marriage (12,13) and childbearing (14,15) over the past decades, estimates restricted to such subgroups may be higher than general population estimates due to changes in age, marital status, and other compositional factors associated with who is seeking pregnancy. In addition, even when using the same definitions and methodology, cross-national estimates of infertility vary (30). This may be due to population composition differences between countries, as well as differences in other general health and behavioral factors that may impact prevalence such as general health status and rates of sexually transmitted infections and pelvic inflammatory disease (3,34,35).

As seen with the NSFG data presented here, infertility or impaired fecundity is not the same as intention or desire to have a child, and neither of these measures is contingent on fertility intentions or desires. This is both a strength and limitation for understanding population-based estimates. NSFG measures may provide a more accurate snapshot of the fecundity and infertility status of the general reproductive-age population, independent of any sociodemographic selectivity or temporal trends associated with who seeks pregnancy and when they do so in their life course. However, these measures can potentially be misconstrued as direct indicators of the need (or unmet need) for fertility care, as has also been demonstrated with National Survey of Fertility Barriers data (36). Some data users may not recognize that an individual or couple can remain infertile or fulfill the definition of impaired fecundity for years after they have stopped trying to have a child, or they may not wish to have a child at all. While there is value in determining the population-based prevalence of fertility problems independent of fertility intentions, the results presented in this report should be interpreted with the recognition that there is a wide range of responses to fertility problems that may not involve medical services to have a baby. In summary, NSFG measures for women can be used in conjunction with fertility intentions and desires to provide population-based estimates of the potential demand for fertility care and to assess the extent to which this demand is met.

In addition, these measures of infertility and impaired fecundity are by definition focused on those who may seek pregnancy through vaginal intercourse and relationships with opposite-sex partners, which excludes others who may also wish to pursue biological parenthood and require fertility care as well. There have been advancements in the measurement of infertility due to both earlier detection and an improved understanding of optimal times for medical intervention for all people (2,3). Data from NSFG have been an integral part of the ongoing work to evaluate and improve definitions needed to estimate the prevalence and correlates of fertility problems in the United States (1,30).

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Table 1. Fecundity and infertility status of women ages 15–44 or 15–49: United States, 2011–2015 and 2015–2019

Characteristic	2011–2015	2015–2019	
	15–44	15–44	15–49
Number (thousands), all women	61,263	61,935	72,420
Number (thousands), married women	23,342	22,777	28,780
	Percent distribution (standard error)		
Fecundity status, all women	100.0 …	100.0 …	100.0 …
Surgically sterile, contraceptive	18.4 (0.70)	17.5 (0.70)	22.0 (0.75)
Surgically sterile, noncontraceptive	0.8 (0.10)	1.0 (0.18)	1.9 (0.22)
Impaired fecundity[1]	12.1 (0.41)	12.7 (0.45)	13.4 (0.41)
Nonsurgically sterile	2.1 (0.18)	1.9 (0.20)	2.7 (0.22)
Subfecund	9.3 (0.39)	9.8 (0.42)	9.5 (0.39)
Long interval without conception[2]	0.6 (0.10)	1.0 (0.16)	1.2 (0.17)
Presumed fecund[3]	68.7 (0.81)	68.8 (0.87)	62.7 (0.88)
Fecundity status, married women	100.0 …	100.0 …	100.0 …
Surgically sterile, contraceptive	30.4 (1.27)	30.0 (1.27)	35.3 (1.31)
Surgically sterile, noncontraceptive	1.1 (0.20)	1.3 (0.32)	2.3 (0.40)
Impaired fecundity[1]	15.5 (0.79)	16.0 (0.81)	16.3 (0.73)
Nonsurgically sterile	2.5 (0.37)	2.1 (0.40)	3.1 (0.39)
Subfecund	11.6 (0.79)	11.5 (0.68)	10.7 (0.63)
Long interval without conception[2]	1.3 (0.24)	2.4 (0.44)	2.6 (0.41)
Presumed fecund[3]	53.1 (1.30)	52.7 (1.38)	46.1 (1.26)
Infertility status, married women	100.0 …	100.0 …	100.0 …
Surgically sterile	31.5 (1.28)	31.3 (1.29)	37.6 (1.33)
Infertile[4]	6.7 (0.52)	8.7 (0.74)	8.5 (0.65)
Presumed fertile[3]	61.8 (1.34)	60.0 (1.33)	53.9 (1.28)
Any fertility problems[5], all women	13.1 (0.43)	13.7 (0.47)	14.4 (0.44)
Any fertility problems[5], married women	17.2 (0.80)	18.3 (0.93)	18.2 (0.87)

… Category not applicable.
[1]Impaired fecundity is difficulty conceiving or bringing a pregnancy to term.
[2]Married or cohabiting women who have had unprotected vaginal intercourse with the same husband or partner for at least 36 consecutive months, but have not had a pregnancy.
[3]Residual category based on those who do not fulfill the definitions of the other categories shown.
[4]Married or cohabiting women are classified as infertile if they have had unprotected vaginal intercourse with the same husband or partner for at least 12 consecutive months but have not had a pregnancy. Data are shown here for married women.
[5]Either impaired fecundity or infertility.

NOTES: For this report, married women include only those married to men. Fecundity and infertility status for married or cohabiting women also reflects the status of their husbands or partners.

SOURCE: National Center for Health Statistics, National Survey of Family Growth, 2011–2015 and 2015–2019.

Table 2. Fecundity status of all women ages 15–44, 15–49, or 25–49, by selected characteristics: United States, 2015–2019

Characteristic	Number (thousands)	Total	Surgically sterile[1]	Impaired fecundity[2]	Presumed fecund[3]
		Percent distribution (standard error)			
Total, 2011–2015 (ages 15–44)	61,263	100.0	19.2 (0.71)	12.1 (0.41)	68.7 (0.81)
Total, 2015–2019 (ages 15–44)	61,935	100.0	18.6 (0.73)	12.7 (0.45)	68.8 (0.87)
Total, 2015–2019 (ages 15–49)	72,420	100.0	23.9 (0.78)	13.4 (0.41)	62.7 (0.88)
Age					
15–24	19,468	100.0	0.7 (0.23)	8.0 (0.67)	91.3 (0.68)
25–29	11,348	100.0	7.2 (0.87)	13.3 (1.15)	79.5 (1.46)
30–34	10,792	100.0	19.6 (1.64)	13.3 (1.18)	67.2 (1.93)
35–39	10,530	100.0	37.8 (1.80)	15.9 (1.37)	46.4 (1.87)
40–44	9,683	100.0	45.7 (2.31)	17.2 (1.51)	37.1 (2.10)
45–49	10,600	100.0	55.3 (2.13)	17.6 (1.42)	27.1 (1.74)
Ages 25–49					
Total, 2015–2019[4]	52,952	100.0	32.5 (1.03)	15.4 (0.51)	52.2 (1.11)
Marital or cohabiting status:					
Currently married	27,603	100.0	39.1 (1.36)	16.5 (0.75)	44.4 (1.27)
Currently cohabiting	7,586	100.0	27.6 (2.33)	15.2 (1.47)	57.2 (2.59)
Never married, not cohabiting	10,998	100.0	13.2 (1.10)	13.6 (1.25)	73.1 (1.64)
Formerly married, not cohabiting	6,765	100.0	42.2 (2.21)	13.8 (1.49)	44.0 (2.47)
Parity and age:					
No births	14,422	100.0	7.2 (0.84)	21.0 (1.39)	71.8 (1.57)
25–29	6,209	100.0	0.8 (0.45)	13.8 (1.86)	85.4 (1.81)
30–34	3,045	100.0	*	18.1 (2.97)	78.2 (3.22)
35–39	1,978	100.0	8.0 (2.34)	28.4 (3.65)	63.6 (4.12)
40–44	1,523	100.0	20.5 (3.78)	31.9 (4.84)	47.6 (5.11)
45–49	1,667	100.0	24.2 (3.14)	34.7 (4.25)	41.1 (3.73)
One or more births	38,531	100.0	41.9 (1.10)	13.3 (0.59)	44.8 (1.09)
25–29	5,139	100.0	14.9 (1.73)	12.7 (1.47)	72.4 (2.25)
30–34	7,747	100.0	25.8 (2.13)	11.3 (1.26)	62.9 (2.13)
35–39	8,552	100.0	44.6 (1.92)	13.0 (1.28)	42.4 (1.87)
40–44	8,160	100.0	50.4 (2.44)	14.5 (1.63)	35.1 (2.16)
45–49	8,933	100.0	61.1 (2.37)	14.5 (1.49)	24.4 (1.94)
Education:					
No high school diploma or GED	4,799	100.0	45.6 (2.61)	15.4 (1.62)	39.0 (2.41)
High school diploma or GED	12,390	100.0	41.4 (1.92)	14.4 (1.26)	44.3 (1.87)
Some college, no bachelor's degree	15,570	100.0	34.1 (1.43)	15.2 (0.89)	50.7 (1.71)
Bachelor's degree	12,929	100.0	22.2 (1.76)	15.9 (1.37)	61.8 (1.70)
Master's degree or higher	7,264	100.0	23.3 (1.93)	16.6 (1.73)	60.0 (2.48)
Household income relative to the federal poverty level:					
0%–99%	10,407	100.0	35.3 (1.87)	15.3 (1.24)	49.4 (1.73)
100%–299%	20,220	100.0	34.5 (1.48)	15.1 (0.87)	50.3 (1.56)
300%–399%	5,350	100.0	32.6 (2.42)	13.8 (1.62)	53.6 (2.72)
400% or higher	16,975	100.0	28.2 (1.63)	16.2 (0.96)	55.6 (1.72)
Race and Hispanic origin:					
Asian, non-Hispanic	2,615	100.0	20.5 (4.07)	17.3 (2.63)	62.2 (4.36)
Black, non-Hispanic	7,016	100.0	30.9 (1.94)	12.8 (0.95)	56.3 (2.05)
White, non-Hispanic	30,499	100.0	34.0 (1.49)	15.9 (0.73)	50.2 (1.62)
Hispanic[5]	10,284	100.0	32.4 (1.90)	13.8 (1.12)	53.9 (2.00)

* Figure does not meet National Center for Health Statistics standards of reliability or precision.
[1]Includes surgical sterility for both contraceptive and noncontraceptive reasons, as shown separately in Table 1 in this report.
[2]Includes nonsurgically sterile, subfecund, and long interval without conception, as shown separately in Table 1.
[3]Residual category based on those who do not fulfill the definitions of the other categories shown.
[4]Includes women of other or multiple races and Hispanic-origin groups (not shown separately).
[5]People of Hispanic origin may be of any race.

NOTES: Percentages may not add to 100 because of rounding. For this report, married women include only those married to men. Fecundity status for married or cohabiting women also reflects the status of their husbands or partners.

SOURCE: National Center for Health Statistics, National Survey of Family Growth, 2011–2015 and 2015–2019.

Table 3. Fecundity status of married women ages 15–44, 15–49, or 25–49, by selected characteristics: United States, 2015–2019

Characteristic	Number (thousands)	Total	Surgically sterile[1]	Impaired fecundity[2]	Presumed fecund[3]
		Percent distribution (standard error)			
Total, 2011–2015 (ages 15–44)	23,342	100.0	31.5 (1.28)	15.5 (0.79)	53.1 (1.30)
Total, 2015–2019 (ages 15–44)	22,777	100.0	31.3 (1.29)	16.0 (0.81)	52.7 (1.38)
Total, 2015–2019 (ages 15–49)	28,780	100.0	37.6 (1.34)	16.3 (0.73)	46.1 (1.26)
Age					
15–24	1,177	100.0	*	11.4 (2.56)	85.4 (3.65)
25–29	4,003	100.0	11.6 (2.06)	13.4 (1.75)	75.0 (2.42)
30–34	5,752	100.0	22.8 (2.40)	13.9 (1.70)	63.3 (2.55)
35–39	6,123	100.0	41.1 (2.34)	17.2 (1.98)	41.6 (2.27)
40–44	5,645	100.0	49.4 (3.14)	19.5 (2.15)	31.1 (2.65)
45–49	6,081	100.0	60.9 (2.89)	17.6 (2.02)	21.6 (2.27)
Ages 25–49					
Total, 2015–2019[4]	27,603	100.0	39.1 (1.36)	16.5 (0.75)	44.4 (1.27)
Parity and age:					
No births	4,909	100.0	12.1 (1.85)	27.7 (2.25)	60.2 (2.52)
25–29	1,635	100.0	*	16.2 (3.29)	82.0 (3.33)
30–34	1,128	100.0	*	22.7 (4.71)	71.0 (5.65)
35–39	908	100.0	*	33.0 (6.67)	*
40–44	551	100.0	*	*	28.8 (6.87)
45–49	687	100.0	31.4 (5.59)	46.0 (6.49)	22.6 (4.67)
One or more births	22,695	100.0	44.9 (1.45)	14.1 (0.93)	41.0 (1.35)
25–29	2,368	100.0	18.5 (3.17)	11.4 (1.97)	70.2 (3.42)
30–34	4,624	100.0	26.8 (2.76)	11.8 (1.88)	61.4 (2.77)
35–39	5,215	100.0	46.2 (2.49)	14.5 (1.85)	39.3 (2.27)
40–44	5,094	100.0	51.4 (3.34)	17.3 (2.32)	31.3 (2.70)
45–49	5,394	100.0	64.6 (3.10)	13.9 (2.02)	21.4 (2.49)
Education:					
No high school diploma or GED	1,996	100.0	50.1 (4.51)	18.7 (3.14)	31.2 (3.79)
High school diploma or GED	5,660	100.0	49.2 (2.84)	16.1 (2.08)	34.7 (2.69)
Some college, no bachelor's degree	7,586	100.0	42.7 (2.26)	17.4 (1.77)	39.8 (2.44)
Bachelor's degree	7,765	100.0	30.2 (2.33)	15.5 (1.68)	54.3 (2.07)
Master's degree or higher	4,595	100.0	30.7 (2.58)	16.3 (1.90)	53.0 (2.77)
Household income relative to the federal poverty level:					
0%–99%	3,088	100.0	38.9 (3.83)	19.0 (2.69)	42.1 (3.25)
100%–299%	9,714	100.0	42.0 (2.26)	17.0 (1.42)	41.0 (2.28)
300%–399%	3,134	100.0	43.2 (3.26)	14.5 (2.18)	42.3 (3.32)
400% or higher	11,667	100.0	35.6 (2.16)	16.0 (1.15)	48.4 (1.91)
Race and Hispanic origin:					
Asian, non-Hispanic	1,752	100.0	22.7 (5.08)	18.3 (3.37)	59.0 (5.22)
Black, non-Hispanic	1,858	100.0	35.5 (4.78)	14.8 (2.69)	49.6 (4.40)
White, non-Hispanic	17,585	100.0	40.8 (1.67)	16.3 (1.01)	42.9 (1.64)
Hispanic[5]	5,246	100.0	39.2 (2.57)	15.2 (1.52)	45.6 (2.52)

* Figure does not meet National Center for Health Statistics standards of reliability or precision.
[1]Includes surgical sterility for both contraceptive and noncontraceptive reasons, as shown separately in Table 1 in this report.
[2]Includes nonsurgically sterile, subfecund, and long interval without conception, as shown separately in Table 1.
[3]Residual category based on those who do not fulfill the definitions of the other categories shown.
[4]Includes women of other or multiple races and Hispanic-origin groups (not shown separately).
[5]People of Hispanic origin may be of any race.

NOTES: Percentages may not add to 100 because of rounding. For this report, married women include only those married to men. Fecundity status for married women also reflects the status of their husbands.

SOURCE: National Center for Health Statistics, National Survey of Family Growth, 2011–2015 and 2015–2019.

Table 4. Infertility status of married or cohabiting women ages 15–44, 15–49, or 25–49, by selected characteristics: United States, 2015–2019

Characteristic	Number (thousands)	Total	Surgically sterile	Infertile[1]	Presumed fertile[2]
		Percent distribution (standard error)			
Total, 2011–2015 (ages 15–44)	32,378	100.0	27.3 (1.00)	6.6 (0.42)	66.1 (1.03)
Total, 2015–2019 (ages 15–44)	31,482	100.0	27.9 (1.07)	7.6 (0.51)	64.6 (1.07)
Total, 2015–2019 (ages 15–49)	38,484	100.0	33.7 (1.14)	7.8 (0.49)	58.5 (1.08)
Marital or cohabiting status					
Married	28,780	100.0	37.6 (1.33)	8.5 (0.65)	53.9 (1.28)
Cohabiting	9,704	100.0	22.0 (1.87)	5.7 (0.82)	72.3 (2.07)
All married women					
Age:					
15–24	1,177	100.0	*	*	91.4 (3.14)
25–29	4,003	100.0	11.6 (2.06)	9.0 (1.69)	79.4 (2.31)
30–34	5,752	100.0	22.8 (2.40)	6.6 (1.22)	70.6 (2.54)
35–39	6,123	100.0	41.1 (2.34)	10.3 (1.42)	48.6 (2.11)
40–44	5,645	100.0	49.4 (3.14)	9.7 (1.82)	40.9 (2.98)
45–49	6,081	100.0	61.0 (2.88)	7.7 (1.27)	31.3 (2.55)
Ages 25–49					
Total, 2015–2019 (married, ages 25–49)[3]	27,603	100.0	39.1 (1.36)	8.6 (0.67)	52.3 (1.30)
Parity and age:					
No births	4,909	100.0	12.3 (1.84)	20.7 (2.10)	67.1 (2.61)
25–29	1,635	100.0	*	14.3 (3.70)	84.0 (3.74)
30–34	1,128	100.0	*	18.3 (4.59)	75.4 (5.54)
35–39	908	100.0	*	26.7 (5.01)	61.3 (5.79)
40–44	551	100.0	*	27.4 (6.41)	*
45–49	687	100.0	32.4 (5.56)	26.2 (6.59)	41.4 (6.42)
One or more births	22,695	100.0	44.9 (1.45)	6.0 (0.66)	49.1 (1.42)
25–29	2,368	100.0	18.5 (3.17)	5.4 (1.25)	76.2 (3.41)
30–34	4,624	100.0	26.8 (2.76)	3.7 (1.03)	69.5 (2.75)
35–39	5,215	100.0	46.2 (2.49)	7.4 (1.36)	46.4 (2.46)
40–44	5,094	100.0	51.4 (3.34)	7.8 (1.92)	40.8 (3.15)
45–49	5,394	100.0	64.6 (3.10)	5.3 (1.08)	30.1 (2.77)
Education:					
No high school diploma or GED	1,996	100.0	50.1 (4.51)	11.8 (2.77)	38.1 (4.64)
High school diploma or GED	5,660	100.0	49.2 (2.84)	9.9 (1.71)	40.8 (2.64)
Some college, no bachelor's degree	7,586	100.0	42.7 (2.26)	9.0 (1.14)	48.3 (2.21)
Bachelor's degree	7,765	100.0	30.2 (2.33)	6.5 (1.07)	63.3 (2.24)
Master's degree or higher	4,595	100.0	30.8 (2.56)	8.7 (1.70)	60.4 (2.87)
Household income relative to the federal poverty level:					
0%–99%	3,088	100.0	38.9 (3.83)	10.5 (2.08)	50.6 (3.60)
100%–299%	9,714	100.0	42.0 (2.26)	8.8 (1.15)	49.2 (2.24)
300%–399%	3,134	100.0	43.2 (3.26)	7.3 (2.14)	49.5 (3.18)
400% or higher	11,667	100.0	35.6 (2.15)	8.4 (1.02)	56.0 (2.01)
Race and Hispanic origin:					
Asian, non-Hispanic	1,752	100.0	22.7 (5.08)	9.6 (2.47)	67.7 (5.44)
Black, non-Hispanic	1,858	100.0	35.5 (4.78)	11.2 (1.94)	53.3 (4.67)
White, non-Hispanic	17,585	100.0	40.8 (1.66)	8.6 (0.86)	50.6 (1.67)
Hispanic[4]	5,246	100.0	39.2 (2.57)	7.7 (1.06)	53.1 (2.65)

* Figure does not meet National Center for Health Statistics standards of reliability or precision.
[1]Married or cohabiting women are classified as infertile if they have had unprotected vaginal intercourse with the same husband or partner for at least 12 consecutive months, but have not had a pregnancy.
[2]Residual category based on those who do not fulfill the definitions of the other categories shown.
[3]Includes women of other or multiple races and Hispanic-origin groups (not shown separately).
[4]People of Hispanic origin may be of any race.

NOTES: Percentages may not add to 100 because of rounding. For this report, married women include only those married to men. Infertility status for married women also reflects the status of their husbands.

SOURCE: National Center for Health Statistics, National Survey of Family Growth, 2011–2015 and 2015–2019.

Table 5. Adjusted odds ratios for selected measures of fertility problems in women ages 25–49: United States, 2015–2019

Characteristic	Impaired fecundity[1]	Infertility[2]	Any fertility problems[3]
Parity and age	Adjusted odds ratio (95% confidence interval)		
No births:			
25–29	1.34 (0.85–2.09)	3.43 (1.57–7.49)	1.37 (0.90–2.09)
30–34	1.87 (1.20–2.93)	†4.99 (2.15–11.61)	1.78 (1.16–2.73)
35–39	‡3.03 (1.85–4.95)	§7.89 (4.11–15.16)	§3.05 (1.97–4.73)
40–44	§4.21 (2.72–6.53)	§9.46 (4.27–20.95)	§3.88 (2.50–6.04)
45–49	§4.46 (2.86–6.96)	§9.96 (4.45–22.28)	§4.25 (2.69–6.71)
One or more births:			
25–29	Reference	Reference	Reference
30–34	§0.83 (0.57–1.22)	§1.00 (0.50–1.98)	§0.86 (0.59–1.24)
35–39	§0.98 (0.66–1.45)	‡1.72 (0.92–3.22)	§0.99 (0.69–1.42)
40–44	‡1.12 (0.75–1.67)	¶1.83 (0.88–3.82)	‡1.07 (0.72–1.59)
45–49	¶1.23 (0.83–1.82)	‡1.57 (0.82–3.00)	¶1.13 (0.77–1.67)
Marital or cohabiting status[4]			
Currently married	Reference	Reference	Reference
Currently cohabiting	0.86 (0.63–1.18)	¶0.54 (0.34–0.86)	†0.90 (0.67–1.21)
Formerly married, not cohabiting	0.69 (0.52–0.91)	…	†0.62 (0.46–0.82)
Never married, not cohabiting	¶0.61 (0.46–0.81)	…	§0.53 (0.40–0.69)
Education			
No high school diploma or GED	1.13 (0.77–1.65)	†2.39 (1.16–4.93)	1.17 (0.81–1.69)
High school diploma or GED	0.97 (0.67–1.41)	1.81 (1.02–3.19)	1.02 (0.72–1.43)
Some college, no bachelor's degree	0.96 (0.71–1.29)	1.42 (0.89–2.25)	0.99 (0.75–1.32)
Bachelor's degree	Reference	Reference	Reference
Master's degree or higher	0.94 (0.67–1.33)	1.29 (0.72–2.32)	1.02 (0.72–1.46)
Household income relative to the federal poverty level			
0%–99%	¶1.44 (1.06–1.97)	1.36 (0.74–2.48)	¶1.34 (1.00–1.81)
100%–299%	1.19 (0.94–1.52)	1.22 (0.80–1.87)	1.09 (0.86–1.39)
300%–399%	0.94 (0.68–1.32)	1.00 (0.53–1.88)	0.93 (0.66–1.31)
400% or higher	Reference	Reference	Reference
Race and Hispanic origin			
Asian, non-Hispanic	1.05 (0.70–1.58)	1.12 (0.68–1.84)	1.12 (0.81–1.56)
Black, non-Hispanic	0.88 (0.71–1.10)	1.36 (0.92–2.02)	0.92 (0.74–1.15)
White, non-Hispanic	Reference	Reference	Reference
Hispanic[5]	0.90 (0.71–1.12)	0.98 (0.66–1.46)	0.89 (0.71–1.11)

† $p < 0.10$.
‡ $p < 0.01$.
§ $p < 0.001$.
¶ $p < 0.05$.
… Category not applicable.
[1]Includes nonsurgically sterile, subfecund, and long interval without conception, as shown separately in Table 1 in this report.
[2]Infertility is defined only for married or cohabiting women and indicates they have have had unprotected vaginal intercourse with the same husband or partner for at least 12 consecutive months, but have not had a pregnancy.
[3]Includes having either impaired fecundity or 12-month infertility.
[4]For this report, married women include only those married to men.
[5]People of Hispanic origin may be of any race.

NOTE: Women of other races and Hispanic-origin groups or multiple race groups are not included in the logistic regression models due to small sample size.

SOURCE: National Center for Health Statistics, National Survey of Family Growth, 2015–2019.

Table 6. Infertilty status among men ages 15–44, 15–49, or 25–49, by selected characteristics: United States, 2015–2019

Characteristic	Number (thousands)	Total	Surgically sterile[1]	Some type of infertility[1]			Presumed fertile[2]
				Subtotal	Nonsurgically sterile	Subfertile	
		Percent distribution (standard error)					
Total, 2011–2015 (ages 15–44)	60,875	100.0	12.2 (0.65)	10.7 (0.60)	5.1 (0.41)	5.6 (0.36)	77.2 (0.91)
Total, 2015–2019 (ages 15–44)	61,882	100.0	11.8 (0.72)	10.9 (0.52)	4.7 (0.37)	6.2 (0.40)	77.3 (0.89)
Total, 2015–2019 (ages 15–49)	71,930	100.0	15.8 (0.72)	11.4 (0.50)	5.1 (0.35)	6.3 (0.37)	72.8 (0.89)
Age							
15–24	20,105	100.0	0.3 (0.11)	7.8 (0.75)	3.9 (0.59)	3.9 (0.52)	91.9 (0.74)
25–29	11,412	100.0	3.0 (0.61)	9.4 (1.11)	4.5 (0.78)	4.9 (0.85)	87.7 (1.21)
30–34	10,686	100.0	11.9 (1.37)	12.9 (1.13)	4.4 (0.67)	8.4 (1.07)	75.3 (1.68)
35–39	10,269	100.0	23.3 (1.86)	14.9 (1.37)	5.6 (0.88)	9.3 (1.18)	61.8 (2.26)
40–44	9,271	100.0	34.1 (2.31)	13.0 (1.44)	6.0 (0.96)	7.0 (1.24)	52.9 (2.35)
45–49	10,188	100.0	40.5 (2.19)	14.3 (1.39)	7.4 (1.03)	6.9 (1.06)	45.2 (2.34)
Ages 25–49							
Total, 2015–2019[3]	51,825	100.0	21.8 (0.90)	12.8 (0.62)	5.5 (0.41)	7.3 (0.48)	65.4 (1.07)
Marital or cohabiting status:							
Currently married	27,326	100.0	33.9 (1.36)	16.7 (0.94)	6.4 (0.64)	10.3 (0.76)	49.5 (1.54)
Currently cohabiting	7,434	100.0	20.2 (2.41)	12.4 (1.51)	5.1 (0.91)	7.3 (1.36)	67.3 (2.64)
Never married, not cohabiting	13,196	100.0	0.7 (0.19)	6.8 (0.69)	4.4 (0.59)	2.5 (0.40)	92.5 (0.71)
Formerly married, not cohabiting	3,870	100.0	10.7 (1.57)	6.7 (1.33)	4.7 (0.99)	2.0 (0.92)	82.6 (1.88)
Number of biological children and age:							
No biological children	20,848	100.0	6.9 (0.93)	13.1 (0.92)	6.5 (0.69)	6.6 (0.70)	80.1 (1.27)
25–29	8,027	100.0	0.7 (0.28)	8.4 (1.21)	4.6 (0.91)	3.8 (0.91)	90.9 (1.23)
30–34	5,163	100.0	3.5 (1.10)	12.4 (1.60)	5.5 (1.07)	6.9 (1.25)	84.1 (1.82)
35–39	3,081	100.0	*	18.9 (3.06)	6.9 (1.99)	12.0 (2.62)	72.8 (3.52)
40–44	2,160	100.0	18.3 (4.02)	15.0 (2.85)	8.7 (2.47)	6.3 (1.80)	66.8 (4.12)
45–49	2,417	100.0	22.7 (3.93)	20.9 (3.81)	12.4 (3.53)	8.5 (1.83)	56.4 (4.18)
One or more biological children	30,977	100.0	31.8 (1.17)	12.6 (0.78)	4.9 (0.53)	7.7 (0.64)	55.6 (1.25)
25–29	3,385	100.0	8.2 (1.89)	11.7 (2.36)	*	7.3 (1.85)	80.1 (2.97)
30–34	5,523	100.0	19.7 (2.38)	13.3 (1.79)	3.4 (1.02)	9.8 (1.58)	67.1 (2.50)
35–39	7,187	100.0	29.7 (2.25)	13.2 (1.43)	5.0 (0.84)	8.2 (1.22)	57.1 (2.53)
40–44	7,111	100.0	38.9 (2.60)	12.5 (1.86)	5.2 (1.11)	7.2 (1.51)	48.7 (2.66)
45–49	7,771	100.0	46.0 (2.62)	12.3 (1.50)	5.9 (0.95)	6.4 (1.21)	41.7 (2.66)
Education:							
No high school diploma or GED	4,832	100.0	23.1 (2.86)	15.8 (1.84)	8.4 (1.28)	7.4 (1.60)	61.1 (3.00)
High school diploma or GED	14,568	100.0	23.7 (1.70)	12.5 (1.13)	7.2 (0.93)	5.2 (0.70)	63.8 (1.76)
Some college, no bachelor's degree	14,140	100.0	23.0 (1.70)	13.4 (1.20)	5.2 (0.83)	8.2 (0.92)	63.6 (1.77)
Bachelor's degree	12,364	100.0	17.1 (1.48)	11.3 (0.94)	3.9 (0.71)	7.4 (0.77)	71.6 (1.74)
Master's degree or higher	5,922	100.0	22.8 (2.71)	12.8 (1.90)	3.3 (0.74)	9.5 (1.85)	64.4 (3.32)
Household income relative to the federal poverty level:							
0%–99%	6,248	100.0	21.5 (2.21)	13.2 (1.64)	7.1 (1.07)	6.2 (1.20)	65.3 (2.40)
100%–299%	17,881	100.0	20.7 (1.45)	13.2 (1.04)	7.0 (0.75)	6.2 (0.80)	66.1 (1.64)
300%–399%	6,897	100.0	24.5 (2.18)	11.0 (1.56)	4.5 (1.10)	6.5 (1.11)	64.5 (2.36)
400% or higher	20,798	100.0	21.9 (1.44)	13.0 (0.97)	4.2 (0.59)	8.8 (0.79)	65.2 (1.71)
Race and Hispanic origin:							
Asian, non-Hispanic	2,681	100.0	8.6 (2.56)	11.1 (2.08)	*	*	80.3 (3.20)
Black, non-Hispanic	5,873	100.0	15.2 (1.76)	11.7 (1.47)	6.1 (1.06)	5.7 (1.21)	73.1 (2.31)
White, non-Hispanic	30,166	100.0	25.5 (1.13)	11.8 (0.86)	4.4 (0.50)	7.4 (0.69)	62.6 (1.40)
Hispanic[4]	10,721	100.0	19.0 (1.62)	16.9 (1.43)	8.2 (1.18)	8.7 (1.01)	64.1 (2.06)

* Figure does not meet National Center for Health Statistics standards of reliability or precision.
[1]For currently married or cohabiting men, these categories may reflect the status of their wives or cohabiting partners.
[2]Residual category based on those who do not fulfill the definitions of the other categories shown.
[3]Includes men of other or multiple races and Hispanic-origin groups (not shown separately).
[4]People of Hispanic origin may be of any race.

NOTES: Percentages may not add to 100 because of rounding. Infertility status for married or cohabiting men also reflects the status of their wives or partners.

SOURCE: National Center for Health Statistics, National Survey of Family Growth, 2011–2015 and 2015–2019.

Technical Notes

Table. Unadjusted odds ratios for selected measures of fertility problems in women ages 25–49: United States, 2015–2019

Characteristic	Impaired fecundity[1]	Infertility[2]	Any fertility problems[3]
Parity and age	Unadjusted odds ratio (95% confidence interval)		
No births:			
25–29	†1.10 (0.71–1.72)	2.30 (1.12–4.73)	†1.11 (0.73–1.68)
30–34	1.57 (1.04–2.38)	3.48 (1.64–7.37)	1.52 (1.02–2.28)
35–39	‡2.61 (1.68–4.04)	§6.66 (3.56–12.44)	§2.67 (1.76–4.05)
40–44	§3.45 (2.20–5.40)	§7.91 (3.55–17.62)	§3.14 (2.00–4.95)
45–49	§3.73 (2.42–5.76)	§7.97 (3.69–17.19)	§3.57 (2.28–5.61)
One or more births:			
25–29	Reference	Reference	Reference
30–34	§0.84 (0.58–1.22)	§0.96 (0.48–1.91)	§0.88 (0.61–1.27)
35–39	§0.98 (0.67–1.45)	†1.65 (0.88–3.11)	‡1.00 (0.70–1.44)
40–44	†1.12 (0.75–1.67)	1.80 (0.87–3.75)	†1.09 (0.73–1.62)
45–49	¶1.18 (0.81–1.73)	‡1.51 (0.80–2.82)	†1.11 (0.76–1.63)
Marital or cohabiting status			
Currently married	Reference	Reference	Reference
Currently cohabiting	0.92 (0.70–1.21)	†0.67 (0.45–0.99)	0.96 (0.74–1.25)
Formerly married, not cohabiting	0.80 (0.60–1.07)	…	0.70 (0.51–0.95)
Never married, not cohabiting	0.81 (0.63–1.04)	…	¶0.71 (0.55–0.91)
Education			
No high school diploma or GED	0.99 (0.72–1.37)	1.78 (1.00–3.19)	0.97 (0.71–1.33)
High school diploma or GED	0.92 (0.66–1.28)	1.47 (0.92–2.35)	0.93 (0.69–1.25)
Some college, no bachelor's degree	0.90 (0.69–1.17)	1.31 (0.87–1.98)	0.91 (0.70–1.18)
Bachelor's degree	Reference	Reference	Reference
Master's degree or higher	1.03 (0.73–1.43)	1.45 (0.87–2.42)	1.11 (0.79–1.56)
Household income relative to the federal poverty level			
0%–99%	0.96 (0.74–1.24)	1.00 (0.63–1.59)	0.87 (0.67–1.14)
100%–299%	0.89 (0.73–1.08)	0.96 (0.68–1.37)	0.81 (0.67–0.99)
300%–399%	0.79 (0.58–1.07)	0.75 (0.42–1.33)	0.77 (0.56–1.06)
400% or higher	Reference	Reference	Reference
Race and Hispanic origin			
Asian, non-Hispanic	1.11 (0.75–1.64)	1.24 (0.72–2.15)	¶1.19 (0.85–1.67)
Black, non-Hispanic	†0.78 (0.64–0.95)	1.37 (0.96–1.95)	†0.77 (0.63–0.95)
White, non-Hispanic	Reference	Reference	Reference
Hispanic[4]	0.85 (0.68–1.05)	0.99 (0.71–1.39)	0.82 (0.66–1.02)

† $p < 0.05$.
‡ $p < 0.01$.
§ $p < 0.001$.
¶ $p < 0.10$.
… Category not applicable.
[1]Difficulty conceiving or bringing a pregnancy to term; includes nonsurgically sterile, subfecund, and long interval without conception, as shown separately in Table 1 in this report.
[2]Defined only for married or cohabiting women and indicates they have had unprotected vaginal intercourse with the same husband or partner for at least 12 consecutive months, but have not had a pregnancy.
[3]Includes having either impaired fecundity or 12-month infertility.
[4]People of Hispanic origin may be any race.

NOTE: Women of other race and Hispanic-origin groups or multiple race groups are not included in the logistic regression models due to small sample size.

SOURCE: National Center for Health Statistics, National Survey of Family Growth, 2015–2019.

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