

RESEARCH ARTICLE

The meaning and measurement of unrealised fertility: A comparison of measures among women aged 40–49 in the United States

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ABSTRACT Unrealised fertility – when people fall short of their childbearing goals – is inconsistently defined and measured, leading to wide variation in estimates of its prevalence and implications for health and well-being. Using a nationally representative sample of U.S. women aged 40–49, this study compares four potential approaches to measurement, finding prevalence estimates that range from 3.5% to 22.4% across indicators. Multivariable logistic regression models reveal that the social and reproductive health correlates of unrealised fertility also vary according to the selected indicator. Improved measures of unrealised fertility are needed to inform our understanding of fertility barriers, including who is most affected, and policies that support people in achieving their childbearing goals.

KEYWORDS Unrealised fertility • Fertility goals • Meaning • Survey measurement

Introduction

Across high-income and low-income countries alike, people are having fewer children than they desire (Assaf and Davis, 2022; Beaujouan and Berghammer, 2019; Casterline and Han, 2017; Yeatman and Smith-Greenaway, 2025). This phenomenon, commonly referred to as *unrealised fertility*, has become increasingly salient in the demographic research and policy discourse amid declining birth rates and delayed reproduction (de Ziegler et al., 2025; Philipov, 2009). Despite the growing interest in it, the concept of unrealised fertility remains inconsistently defined and measured, resulting in wide variation in its interpretation, its estimated prevalence and assessments of its implications for population health and well-being (Casterline, 2019; Yeatman and Smith-Greenaway, 2025). In a recent review article, Yeatman and Smith-Greenaway described historical approaches to the measurement of unrealised fertility and argued that the use of heterogeneous measures limits the comparability of findings across contexts (Yeatman and Smith-Greenaway, 2025). To offer a standardised comparison, they analysed one indicator of unrealised fertility across 24 countries to show its pervasiveness across widely divergent contexts, finding that more than 40% of women aged 45–49 in most countries in their sample had fewer children than desired. Building on this work, I highlight the variability of unrealised fertility as a demographic

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concept by examining its prevalence and correlates within a single country across four different indicators.

Past studies have defined unrealised fertility – also referred to as “a fertility gap”, “unmet demand for children” or “underachieved fertility” – as a failure to achieve *fertility goals*, a term that may reflect a broad range of individual or aggregated responses to survey questions about desired and anticipated childbearing (Badolato, 2025; Beaujouan, 2020; Casterline and Han, 2017; Philipov, 2009; United Nations Population Fund (UNFPA), 2025; Yeatman and Smith-Greenaway, 2025). Drawing from a nationally representative sample of women approaching the end of their reproductive careers in the United States (U.S.), I compare four indicators of unrealised fertility that are operationalised using survey questions about (1) ideal family size, (2) desires for a(nother) child, (3) intentions to have a(nother) child and (4) anticipated regret in the event of *not* having any (additional) children. Rather than assuming that these indicators reflect a singular construct, I hypothesise that each will produce distinct rates of prevalence.

After demonstrating variation in prevalence across these indicators, I investigate whether the correlates of unrealised fertility vary across indicators and, in turn, shape conclusions about who is most affected. In addition to analysing social factors traditionally linked with fertility (e.g. education, income, union status, religiosity), I consider the relationship between unrealised fertility and reproductive health factors. By critically examining how the prevalence and correlates of unrealised fertility vary across measurement approaches within a single setting, this study seeks to clarify the conceptual boundaries of this demographic phenomenon, and to inform research, policy and data collection efforts to identify and ameliorate barriers to pregnancy and childbearing.

Background

Using fertility goals to estimate unrealised fertility

Researchers have used both aggregate and individual-level approaches to study unrealised fertility, but in both cases, the concept is typically estimated using indirect techniques. Rather than simply asking people if they have fewer children than they would like, an approach advocated for by Yeatman and Smith-Greenaway (2025), researchers most often compare achieved fertility with fertility goals. Although aggregate approaches often yield estimates of unrealised fertility that are easier to understand and compare across contexts, these approaches fail to account for individual experiences and changes in fertility goals over the life course (Morgan and Rackin, 2010; Quesnel-Vallée and Morgan, 2003). To better understand the meaning and implications of unrealised fertility for individuals, greater conceptual clarity is needed about what it means to have a “fertility goal”, including how these goals are interpreted by survey respondents and articulated in demographic research. For comparison, I include one aggregate indicator of unrealised fertility (that uses fertility ideals) but focus the remainder of my analysis on measures of fertility goals at the individual level.

Fertility ideals

The term “*fertility ideals*” refers to the number of children a person would like to have in an abstract, often normative sense. Researchers conceptualise ideals as more distal determinants of fertility behaviour because they are often reported with less consideration of constraints or competing priorities (Casterline and Han, 2017; Hin, 2012; Miller, 1994, 2011; Ray et al., 2018). For instance, the Demographic and Health Surveys ask: “If you could (go back to the time you did not have any children and) choose exactly the number of children to have in your whole life, how many would that be?” The question phrasing “If you could choose” implicitly acknowledges that childbearing may not directly reflect personal aspirations or result from premeditated behaviours. Yet it is also true that ideals themselves may reflect norms transmitted intergenerationally by cultural, social or moral frameworks (Barber, 2000; Berrington, 2021; Brinton et al., 2018; Pearce and Davis, 2016). For example, an ideal family size of two children is persistent and nearly universal among women in Europe and the U.S. (Behrman, 2024; Sobotka and Beaujouan, 2014). Thus, ideal fertility may be less reflective of personal life goals than more concrete measures like desires or intentions to have a child in the future.

Despite these limitations, many studies rely on fertility ideals to measure and describe unrealised fertility (Assaf and Davis, 2021, 2022; Brinton et al., 2018; Casterline and Han, 2017; Channon and Harper, 2019; Goldstein et al., 2003; Lazzari and Beaujouan, 2026; Philipov and Bernardi, 2011; Tebeje et al., 2025). The age and time period in which people are asked about their ideals are important for estimating unrealised fertility. Longitudinal studies show that fertility ideals are flexible over relatively short periods, with one U.S.-based study showing that almost a third of women’s ideal family size shifted over a three-year period (Ray et al., 2018). Studies also reveal a tendency for post-hoc rationalisation; as people have more children, their ideal family size also increases (Kuhnt et al., 2017). If asked early in the life course, individuals who may have changed their childbearing preferences and do not see their goals as unrealised may nevertheless be classified as having unrealised fertility because their number of children has fallen short of their previously stated ideals (Müller et al., 2022; Yeatman et al., 2013).

Fertility desires

The difference between ideals and desires often goes unacknowledged (the term “desires” is sometimes used as a catch-all for a range of fertility goals), but comparative studies provide evidence that desires are indeed distinct from ideals as well as intentions (Badolato, 2025; Casterline and Han, 2017). Compared to ideals, fertility *desires* capture a more individualised aspiration for future childbearing grounded in lived experiences and current circumstances (Badolato, 2025; Berrington, 2021). Rather than asking about a hypothetical ideal, survey questions measuring desires ask direct questions about whether the respondent wants a(nother) child in the future (e.g. the National Survey of Family Growth (NSFG), National Survey of Fertility Barriers). In Casterline and Han’s foundational study, where they introduce the term “unrealised fertility”, they compare two indicators among women at the end of their reproductive careers. They find that the proportion who report having

fewer than their ideal number of children is far greater than the proportion who still desire a(nother) child (Casterline and Han, 2017). Unfortunately, both of these measures lack information about the strength of the respondents' ideals and desires and thus offer limited insight into the consequences of unrealised fertility, or into whether the respondents have any real plans or even the reproductive or medical capacity to fulfil their desires.

Fertility intentions

Fertility *intentions* imply a time-bound, motivated plan of action to fulfil a desire (Miller, 2011). The time range for questions about fertility intentions varies, with some surveys (e.g. the U.S. NSFG) asking general questions about whether the respondent intends to have a(nother) child at some time in the future, and others (e.g. the Generations and Gender Survey) asking about short-term intentions (i.e. within the next three years). In contrast to ideals and desires, intentions tend to incorporate perceived constraints (e.g. financial stability, relationship status, health conditions) and are generally more predictive of fertility behaviour (Ajzen and Klobas, 2013; Barber, 2001; Berrington, 2021; Hayford, 2009; Miller, 2011). Because of this closer relationship to fertility behaviours, intentions are sensitive to social and environmental conditions and are often dynamic across the life course, as specific events (e.g. union dissolution, illness, career change) may lead people to revise their intentions or prioritise other life goals (Barker and Buber-Ennsner, 2024; Gemmill, 2018; Hayford, 2009; Iacovou and Tavares, 2011; Trinitapoli and Yeatman, 2018; White and McQuillan, 2006). Furthermore, intended parity ultimately converges with completed parity as women approach the end of their reproductive years (Morgan and Rackin, 2010). As such, intentions-based measures may be useful for identifying women who want to have a child at a time in their life when it is increasingly challenging to achieve pregnancy, but this approach will inevitably exclude individuals who were unable to realise their fertility intentions earlier in the life course.

Survey-reported fertility goals are sensitive to age and period effects. As people grow older, they tend to become more certain of their goals, and during periods of economic and social uncertainty, childbearing plans may be temporarily postponed (Guzzo, 2022; Guzzo and Hayford, 2023; Hartnett and Gemmill, 2020; Manning et al., 2022). Nevertheless, due to common interpretations of ideals, desires and intentions as described above, these indicators may still be expected to produce varying estimates of unrealised fertility net of age and period effects. As observed in Casterline and Han's study (2017), fertility ideals will likely yield the highest estimates, followed by fertility desires and, lastly, fertility intentions, which are often more sensitive to current life circumstances and perceived constraints.

Fertility regret

A third, emerging approach relies on direct questions to ask people about fertility regret at older reproductive ages. Direct questions arguably provide a more person-centred

indicator of unrealised fertility since they rely on individual perceptions of goal fulfilment (Yeatman and Smith-Greenaway, 2025). Few surveys include such questions, so approaches and question wording vary. Greil et al. (2022) used an open-ended question in a representative telephone survey to ask U.S. women whether they would change anything about their past reproductive decisions. Coded responses revealed that 14% of women aged 25–45 reported having unfulfilled fertility desires, citing factors such as delayed timing, infertility or miscarriage. Other nationally representative surveys (e.g. the NSFG and the Generations and Gender Survey) ask respondents how they would feel or be affected if they did not have a(nother) child, while recent pilot studies have directly measured the reasons why people fall short of their fertility goals (United Nations Population Fund (UNFPA), 2025; Yeatman and Smith-Greenaway, 2025). These approaches offer valuable insight into how individuals evaluate their reproductive outcomes and what they perceive as the primary barriers to achieving their fertility goals.

In contrast to fertility goals, regret-based measures reflect emotional and psychological dimensions and consequences of unrealised fertility. They may also be particularly useful in identifying individuals who voluntarily relinquished their fertility goals due to constraints, rather than simply changing their minds or prioritising other life goals. While fertility regret may be subject to well-known biases in retrospective reporting, including post-hoc rationalisation and issues of recall, regret measured near the end of the reproductive career inevitably accounts for a longer span of life experiences, likely reflecting what people “truly wished they had even if it also represents an adjustment from their early life desires” (Yeatman and Smith-Greenaway, 2025). Because such measures are relatively novel and are not yet standard in demographic research, it is difficult to know how they will compare to other indicators of unrealised fertility. However, it is probable that some respondents who want (or would have ideally wanted) more children have already rationalised their fertility outcomes, leading them to *not* regret their experiences or anticipate any negative impacts of falling short of their ideals or desires. For this reason, we may expect measures of regret at older reproductive ages to produce estimates of unrealised fertility that are lower than those generated by indicators relying on fertility ideals and desires. Because fertility intentions encompass both desires and associated plans of action, we would expect that the proportion of people who report or anticipate feeling fertility regret (a failure to achieve their goals) would be similar to or greater than the proportion who intend to have a child in the future.

The correlates of unrealised fertility

Due to wide-ranging approaches to the measurement of unrealised fertility, studies find a broad range of social factors associated with the phenomenon. Regional comparisons of indicators using ideal family size and desire for a(nother) child at the end of the reproductive career suggest that the prevalence is highest in sub-Saharan Africa and is lowest in South Asia (Casterline and Han, 2017). In Europe, the gap between intended and actual fertility varies across regions and educational levels, with the widest gap being observed among women who are highly educated or live in southern Europe or a

German-speaking country and the smallest gap being found among women in central and eastern Europe (Beaujouan and Berghammer, 2019). Educational attainment and union status are also predictors of unrealised fertility: higher-educated women and those who delay marriage generally face higher risks of underachieving the fertility desires they reported at younger ages (Berrington and Pattaro, 2014; Nitsche and Hayford, 2020). In the U.S., rates differ across race and ethnicity; Hispanic women are less likely than non-Hispanic White women to achieve the fertility intentions they reported in early adulthood (Hartnett, 2014).

Beyond the social correlates of unrealised fertility, researchers have also considered the role of reproductive health factors, primarily parity and age at first birth. When fertility goals are compared at the end of the reproductive career, women who have more children overall and had their first birth at a younger age are less likely to have unrealised fertility (estimated by comparing ideal versus actual fertility and current desire for a(nother) child) (Casterline and Han, 2017). Recent studies have considered the role of infertility and other reproductive health conditions. By ages 42–50, men and women in Europe and Latin America who had ever experienced medical infertility had a higher likelihood of falling short of their family size ideals compared to individuals without a history of infertility (Lazzari and Beaujouan, 2026). In another study, researchers compared the gap between desires and intentions as a measure of unrealised fertility, finding that among women who desired a(nother) child, those with diagnosed reproductive health conditions (e.g. ovulation problems, endometriosis, uterine fibroids) were less likely to report an intention to have a child compared to women without a history of reproductive health issues (Guzzo and Broussard, 2026).

Reproductive health factors may directly contribute to unrealised fertility by limiting people's capacities to attain their goals (e.g. due to infertility or pregnancy loss), or they may indirectly contribute to unrealised fertility by shaping people's fertility goals. For instance, although women who have experienced infertility report a greater desire to have a baby and a higher ideal number of children, they tend to have lower fertility intentions (Shreffler et al., 2016). The contribution of such factors to unrealised fertility, however, remains underexplored.

The current study

The current study provides a direct comparison of four potential approaches to the measurement of unrealised fertility using a single, population representative sample of women in the U.S. While both fertility and fertility intentions have recently declined in the U.S., there is some evidence of a growing gap between desired and achieved fertility, particularly for cohorts who experienced the Great Recession prior to or during their childbearing years (Guzzo and Hayford, 2023). These trends provide a valuable context for critically analysing the prevalence and the interpretation of unrealised fertility across measurement approaches.

By evaluating the prevalence and the correlates of multiple indicators, I consider their relative strengths and weaknesses for demographic measurement and join others in

calling for new, direct and standardised measures of unrealised fertility (Yeatman and Smith-Greenaway, 2025).

Data and methods

Data

Data for this analysis come from three cycles of the NSFG, a cross-sectional, nationally representative survey of men and women aged 15–49 in the U. S., which are publicly available from the National Center for Health Statistics. The analytical sample includes women from the 1995 cycle and from the 2015–2017 and 2017–2019 cycles. For all analyses, I use sample weights provided by the NSFG that account for survey design and nonresponse to calculate nationally representative estimates for 1995 and the midpoint of each two-year cycle (2016 and 2018, respectively). For the multivariable logistic regression models, observations with missing data are excluded (<1.3% of the sample), resulting in a final sample of 2715 respondents.

I investigate the relationship between unrealised fertility and a range of social and reproductive health characteristics. Weighted summary statistics for the variables included in the regression models are presented in [Table 1](#).

Key variables

I first compare the prevalence of unrealised fertility among women in the U.S. using four distinct approaches to measurement. [Table 2](#) presents each measurement approach and the associated survey questions used to create each indicator.

To measure unrealised fertility using survey-reported fertility ideals, I use a question that the NSFG last asked of respondents in 1995: “If you yourself could choose exactly the number of children to have in your whole life, how many would you choose?” In the absence of longitudinal data, I have constructed a synthetic cohort to compare the ideal fertility of women aged 20–24 in 1995 ($n = 1518$) to the completed fertility of women from the same birth cohort ($n = 1920$) in the pooled 2015–2017 and 2017–2019 cycles, when women in the first group would have reached ages 40–48 ([Table 2](#), Indicator A). Synthetic cohorts have been used elsewhere to analyse the correspondence between fertility goals and outcomes, including with NSFG data ([Guzzo and Hayford, 2023](#); [Harknett and Hartnett, 2014](#)). Although this represents the only aggregate approach employed in my comparative analysis, it offers insight into how measures using ideal fertility – particularly ideal fertility that is documented early in the reproductive life course – may fail to account for updated or revised preferences, resulting in higher estimates of unrealised fertility.

The remaining indicators of unrealised fertility consider fertility goals and attitudes at the individual level among women approaching the end of their reproductive careers (aged 40–49). Indicator B examines the proportion of women aged 40–49 who desire a(nother) child. Nonsterile women were asked: “Looking to the future, do you, yourself,

Table 1 Weighted summary statistics of variables included in logistic regression models predicting unrealised fertility among women aged 40–49 in the United States ($N = 2715$)

	Percentage/Mean
Potential indicators of unrealised fertility	
Desires a(nother) baby	16.0
Intends to have a(nother) baby	3.5
Would be bothered some or a great deal if did not have a(nother) baby	8.1
Social characteristics	
<i>Race-ethnicity-nativity</i>	
White (non-Hispanic)	59.2
Black (non-Hispanic)	12.6
Hispanic	18.5
Other	9.6
<i>Education</i>	
Less than HS	9.5
HS/GED or some college	51.4
Bachelor's degree or more	39.0
<i>Household income</i>	
Above 200% of FPL	63.5
Below 200% of FPL	36.5
<i>Relationship status</i>	
Not married or cohabiting	32.4
Married or cohabiting	67.6
<i>Importance of religion</i>	
Not important	24.3
Somewhat important	25.4
Very important	50.3
Reproductive health characteristics	
<i>Number of live births (mean, 0–14)</i>	2.00
<i>Reproductive health conditions</i>	
None	60.0
One or more	40.0
<i>Experienced pregnancy loss in past five years</i>	
No	94.0
Yes	6.0
<i>Sterility status</i>	
Nonsterile	53.8
Surgically sterile	39.5
Non-surgically sterile	6.7

Source: National Survey of Family Growth, cycles 2015–2017 and 2017–2019.

Table 2 Four different approaches to the measurement of unrealised fertility

Indicator of unrealised fertility	NSFG survey question	Prevalence
A Unachieved ideals of a synthetic cohort ^a	<i>If you yourself could choose exactly the number of children to have in your whole life, how many would you choose? (1995)</i>	13.5% of cohort had an ideal of 1+ children in early adulthood but had zero 22.4% of cohort had an ideal of 2+ children in early adulthood but had <2
B Desires a(nother) child near the end of the reproductive career, aged 40–49 ^b	<i>(Looking to the future, do/if it were possible, would) you, yourself, want to have a(nother) baby at some time (after this pregnancy is over/in the future)?</i>	16% want a(nother) baby - Among nonsterile women: 13.4% want a(nother) baby - Among sterile women: 18.8% would want a(nother) baby if it were possible
C Intends to have a(nother) child near the end of the reproductive career, aged 40–49 ^{b c}	<i>Sometimes what people want and what they intend are different because they are not able to do what they want. The next questions are about your intentions to have a(nother) baby in the future. ... Looking to the future, do you intend to have a(nother) baby at some time (after this pregnancy is over)?</i>	3.5% intend to have a(nother) baby ^c - Among women who desire a(nother) baby: 20.8% intend to have a(nother) baby - Among nonsterile women: 6.6% intend to have a(nother) baby
D Fertility regret near the end of the reproductive career, aged 40–49 ^b	<i>If it turns out that you do not have (any/any additional) children, would that bother you a great deal, some, a little, or not at all?</i>	8.1% would be bothered some or a great deal if they do not have any (additional) children - Among women who desire a(nother) baby: 30.5% - Among women who intend to have a(nother) baby: 42.2%

^aDifference between the ideal and the achieved fertility of a synthetic cohort of women (ideal reported in 1995, aged 20–24; achieved parity reported in 2015–2019, aged 40–48).

^bNSFG 2015–2017 and 2017–2019 (pooled).

^cOnly nonsterile women received this question. Estimates for the full sample are presented because sterile women are coded as zero, having no intentions to have a(nother) baby, for the recorded NSFG variable.

Note: All estimates use survey weights.

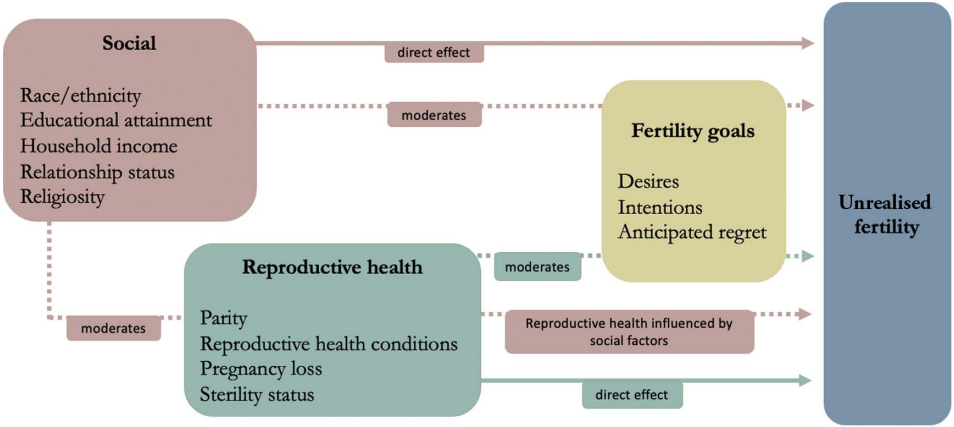
want to have a(nother) baby at some time?” Meanwhile, sterile women were asked a more hypothetical question: “*If it were possible*, would you, yourself, want to have a(nother) baby at some time in the future?” (emphasis added). Indicator C investigates the proportion of women who intended to have a(nother) child by the end of their reproductive career. Finally, Indicator D offers a novel and more direct estimation of unrealised fertility by documenting the proportion of women aged 40–49 who anticipated having *fertility regret*, a term I use to refer to women’s reports that they would be bothered some or a great deal if they did not have any (additional) children. Women who reported that they would be bothered only a little or not at all are coded as *not* anticipating feeling fertility regret.

Dependent variables for the multivariable logistic regression models include fertility desires, intentions and anticipated fertility regret (Indicators B, C and D in Table 2). The proportion of the sample with unrealised fertility according to Indicator A are presented in Table 1. Because this indicator uses an aggregate approach, individual-level unrealised fertility cannot be identified. I instead present the proportion of the synthetic cohort who (a) reported an ideal family size of at least one child in early adulthood but ultimately had no children, and (b) reported an ideal family size of two or more children in early adulthood but ultimately had one child or no children. Similarly, because individual-level unrealised fertility cannot be calculated, Indicator A is not included in the regression models. For all models, respondents who said that they do not know their fertility desires or intentions or whether they anticipate having fertility regret are coded as zero, and respondents who refused to answer are excluded from analysis. This coding strategy ensures that the estimates of unrealised fertility are conservative.

I assess the relationship between each measure of unrealised fertility and two sets of independent variables: social characteristics and reproductive health characteristics. Social characteristics include race and ethnicity (non-Hispanic White, non-Hispanic Black, Hispanic or other race), educational attainment (less than high school, high school degree or some college), household income (coded as one if within 200% of the federal poverty level and as zero otherwise), relationship status (coded as one if married or cohabiting and as zero otherwise) and religiosity (coded as zero if the respondent reported no current religious affiliation, that religion is not important in her daily life or that she doesn’t know know/refuses; coded as one if the respondent indicated that religion is somewhat important in her daily life; and coded as two if the respondent reported that religion is very important in her daily life).

I consider how reproductive health characteristics may contribute to unrealised fertility by including several variables available in the NSFG: number of live births, previous diagnosis or treatment of a reproductive health condition (endometriosis, pelvic inflammatory disease, uterine fibroids or an ovulation or menstruation problem), sterility status and recent pregnancy loss (past five years). As both sterile and nonsterile women were asked about their fertility desires, sterility status (coded as zero if not sterile, as one if surgically sterile and as two if non-surgically sterile) is included in the models predicting the desire for a(nother) child. Women who were sterile were not asked about their fertility intentions and are thus coded as having no intentions to have a(nother) child. A sensitivity test that excluded sterile women from this analysis yielded similar results.

Figure 1 Analytical framework: Social and reproductive health determinants of unrealised fertility



Analytical framework

Individuals may fall short of their childbearing goals for a range of reasons, but unrealised fertility due to infertility or miscarriage is qualitatively different from unrealised fertility that results from a voluntary revision of goals or the prioritisation of competing life ambitions, such as education or career.¹ These divergent pathways to unrealised fertility likely have distinct emotional, social and policy implications, yet many existing studies treat them as analytically equivalent or do not attempt to distinguish between them.

To better reflect the complexity of trajectories that may result in unrealised fertility, I employ an analytical framework (Figure 1) that considers social, reproductive health and psychological determinants. I draw from established theories of fertility behaviour, including the Theory of Planned Behaviour (Ajzen & Klobas, 2013) and Miller’s Traits–Desires–Intentions–Behaviour framework (Miller, 2011). Both of these approaches consider how traits, social characteristics and life experiences influence fertility orientations, preferences and goals. Demographers have primarily focused on the social determinants of unrealised fertility (e.g. relationship status, educational attainment, financial well-being) (Beaujouan and Berghammer, 2019; Brauner-Otto and Geist, 2018; Guzzo, 2022; Morgan and Rackin, 2010; Nitsche and Hayford, 2020). Although a woman’s existing number of children is routinely included in analyses, research that considers how other reproductive health factors and experiences may contribute to unrealised fertility remains limited. Using a *reproductive careers* approach, which draws attention to how people “experience their reproductive lives as embodied and interconnected throughout the life course” (Johnson et al., 2023), I consider how both social and reproductive health characteristics and

¹ Yeatman and Smith-Greenaway (2025) advocate for calling these “competing contingencies and preferences since the distinction between preferences and constraints can be blurry”.

experiences may both shape individuals' fertility goals and constrain their ability to achieve them.

In my analysis, I incorporate standard sociodemographic predictors and parity, but I also include markers of reproductive health that are often overlooked in demographic analyses, including recent miscarriage, sterility status and diagnoses of reproductive health conditions.

Fertility goals and orientations towards childbearing are key components of unrealised fertility, as without knowing what people want, we cannot observe whether they fall short of their goals. However, fertility goals are themselves informed by social and reproductive health factors. [Figure 1](#) illustrates how each set of factors may *directly* contribute to unrealised fertility by constraining the ability to become a parent (see solid “direct effect” lines in [Figure 1](#)). For example, a person may desire three children but only have two due to social constraints, such as union dissolution, or reproductive health constraints, such as miscarriage or infertility. These factors may also *indirectly* contribute to unrealised fertility by reducing people's desires and intentions to have children. This possibility is depicted by the dotted lines in [Figure 1](#) that travel from the social and reproductive health factors through fertility goals. One example of this scenario is that of a woman who desires three children but who, in response to the physical and emotional effects of repeated miscarriages, adjusts her desired or intended fertility downwards to just two children. This experience may be described using the concept of *relinquished* intentions or desires ([White and McQuillan, 2006](#)).

Reproductive health factors may also be moderated by social factors. This process is illuminated by the concept of *weathering*, which describes the early deterioration of health experienced by structurally marginalised groups “as a consequence of the cumulative impact of repeated experience with social, economic, or political exclusion” ([Geronimus, 2001](#)). Meso- and macro-level social factors, such as structural racism and exposure to environmental stressors, may lead to increased rates of adverse reproductive outcomes among marginalised groups. For example, miscarriage rates are higher among women who are Black, work night shifts and are exposed to pollution and pesticides ([Quenby et al., 2021](#)). This pathway to unrealised fertility is represented in [Figure 1](#) by the dotted line leading from social factors to unrealised fertility via reproductive health factors. Integrating these elements into the measurement of unrealised fertility allows for a more comprehensive and differentiated understanding of why individuals may not realise their fertility goals and how these experiences intersect with broader patterns of social stratification and inequality.

Analysis

I first compare the four measurement indicators described in [Table 2](#), showing how the estimated prevalence of unrealised fertility varies significantly across measures. Drawing from the analytical framework presented in [Figure 1](#), I use multivariable logistic regression models to explore the social and reproductive health correlates of unrealised fertility across

three separate measures among women aged 40–49: fertility desires, fertility intentions and fertility regret (Indicators B, C and D in [Table 2](#)).

Findings

The measurement of unrealised fertility: A comparison of four approaches

The four approaches to measurement yield distinct rates of prevalence among women approaching the end of their reproductive years in the U.S. ([Table 2](#)). Indicator A reveals that while 97% of the sample of women in 1995 (aged 20–24) reported an ideal family size of at least one child, by 2015–2019 (when women in this cohort had reached ages 40–48), only 83.5% of the sample had at least one child. Thus, 13.5% of these women fell short of their ideal family size. Similarly, 89.2% of the sample reported an ideal family size of two or more children in early adulthood, but only 66.8% had two or more children by their forties, a difference of 22.4%. This is the highest overall estimate of unrealised fertility across the four indicators.

Indicator B, which categorises women aged 40–49 who desired a(nother) baby as having unrealised fertility, shows a prevalence rate of 16%. Because both sterile and nonsterile women were asked about their fertility desires, [Table 2](#) presents the proportion for each group separately. Sterile women (85% of whom were surgically sterile) were more likely to report a desire for a(nother) baby (18.8% versus 13.4% of nonsterile women). As described elsewhere, this is likely due to selection: women who are sterile often already have children or may have discovered their sterility through prior attempts to achieve a desired pregnancy ([Guzzo and Broussard, 2026](#); [Shreffler et al., 2016](#)). Alternatively, this may reflect differences in the question wording rather than differences in the true orientation towards future childbearing. While nonsterile women reported their actual desire for a(nother) child, sterile women reported a hypothetical desire: namely, whether they *would* want to have a(nother) baby *if it were possible* (emphasis added).

Indicator C examines the fertility intentions of women aged 40–49. This indicator yields the lowest estimated prevalence of unrealised fertility, with just 3.5% of women reporting that they intended to have a(nother) baby. Among those who reported a desire for a(nother) baby, less than a quarter (20.8%) said that they intended to have a(nother) child, providing evidence that desires and intentions, even at the end of the reproductive life course, are perceived as distinct concepts among survey respondents. This discrepancy suggests that fertility intentions are likely a poor indicator of lifetime unrealised fertility since many women who want or would want to have a(nother) baby may have already relinquished their intentions earlier in the life course.

Indicator D, a measure of anticipated fertility regret, asked how women how they would feel if they ultimately did not have any (additional) children. Although only 3.5% of women aged 40–49 said they intended to have a(nother) baby, more than twice as many (8.1%) said they would be bothered some or a great deal if they did not have any (more) children. This proportion is larger among women who reported a desire for a(nother) baby (30.5%) and among women who reported an intention to have a(nother) baby (42.2%).

Surprisingly, however, the majority of women who reported having a positive desire or intention said they would be bothered only a little or not at all if they did not have a(nother) baby.

The social and reproductive health determinants of unrealised fertility

Table 3 presents the predicted odds of three indicators of unrealised fertility: fertility desires, fertility intentions and anticipated fertility regret at the end of the reproductive career. Models 1, 3 and 5 explore the association of each indicator with social characteristics. The second, nested models (Models 2, 4 and 6) explore the reproductive health correlates of each indicator of unrealised fertility.

Fertility desires at the end of the reproductive career

The likelihood of desiring a(nother) baby among women aged 40–49 did not differ by social characteristics, except in the case of religiosity; respondents who deemed religion to be “very important” in their daily life had 52% higher odds of desiring a(nother) baby (Model 1). This relationship increased in magnitude after the addition of reproductive health factors in Model 2. Household income became significant in the full model: when controlling for reproductive health factors, women with a household income below the poverty level had 58% higher odds of desiring a(nother) baby near the end of their reproductive career. After adding reproductive health covariates independently (models not shown), the number of live births was found to be the primary driver of this shift in significance.

Three reproductive health characteristics were associated with fertility desires, including number of live births, recent experience of pregnancy loss and sterility status (Model 2). Respondents who had received diagnoses or treatment for reproductive health conditions had similar odds of desiring a(nother) baby compared to those with no conditions. For each additional live birth, a woman had 30% lower odds of desiring a(nother) baby. Those who had experienced pregnancy loss within the past five years had 3.2 times higher odds of desiring a(nother) baby. Compared to nonsterile women, surgically and non-surgically sterile women had significantly higher odds (74% and 58% higher, respectively) of reporting that they would want a(nother) baby if it were possible.

Fertility intentions at the end of the reproductive career

Fertility intentions at the end of the reproductive life course varied across several social characteristics, including race, education and relationship status (Model 3), but not household poverty status or religiosity, as in Model 1. Black (versus White) women had more than twice the odds of intending to have a(nother) baby. Compared to those who had not completed high school, women who had completed high school or college had 3.5 to 4.5 times higher odds, respectively, of having positive fertility intentions ($p < 0.05$). Women who

Table 3 Weighted logistic regression models predicting unrealised fertility among women aged 40–49 in the United States (NSFG 2015–2019)

	Desires a(nother) baby				Intends to have a(nother) baby				Fertility regret			
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Social characteristics												
Race-ethnicity-nativity												
White (non-Hispanic)	Ref		Ref		Ref		Ref		Ref		Ref	
Black (non-Hispanic)	1.09	0.73–1.64	1.20	0.79–1.82	2.32*	1.14–4.71	3.08**	1.47–6.45	0.55**	0.35–0.85	0.66	0.43–1.03
Hispanic	1.18	0.83–1.68	1.30	0.91–1.87	1.42	0.76–2.68	1.65	0.87–3.14	0.53*	0.32–0.87	0.70	0.44–1.12
Other	1.46	0.85–2.50	1.54	0.90–2.62	0.66	0.27–1.62	0.70	0.28–1.73	1.17	0.69–1.99	1.20	0.70–2.06
Education												
Less than HS	Ref		Ref		Ref		Ref		Ref		Ref	
HS/GED or some college	1.29	0.75–2.20	1.08	0.63–1.87	3.49*	1.28–9.52	2.47	0.88–6.92	1.11	0.59–2.07	0.68	0.35–1.35
Bachelor's degree or more	1.11	0.62–2.01	0.91	0.50–1.66	4.55*	1.33–15.61	2.54	0.77–8.43	1.70	0.86–3.36	0.90	0.44–1.84
Household income												
Above 200% of FPL	Ref		Ref		Ref		Ref		Ref		Ref	
Below 200% of FPL	1.44	0.99–2.10	1.58*	1.09–2.28	1.01	0.48–2.09	1.28	0.61–2.71	1.64*	1.10–2.45	2.13***	1.45–3.13

(table continues)

Table 3 (continued)

	Desires a(nother) baby			Intends to have a(nother) baby			Fertility regret		
	Model 1	Model 2		Model 3	Model 4		Model 5	Model 6	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR
<i>Relationship status</i>									
Not married or cohabiting	Ref		Ref		Ref		Ref		Ref
Married or cohabiting	0.96	0.71–1.28	1.09	0.82–1.47	0.53*	0.29–0.94	0.74	0.40–1.39	0.64*
<i>Importance of religion</i>									
Not important	Ref		Ref		Ref		Ref		Ref
Somewhat important	1.32	0.86–2.04	1.38	0.91–2.11	0.91	0.38–2.15	1.12	0.46–2.73	2.00**
Very important	1.52*	1.08–2.15	1.67**	1.19–2.35	1.34	0.70–2.55	1.77	0.88–3.54	1.62*
Reproductive health characteristics									
Number of live births			0.70***	0.61–0.81			0.47***	0.33–0.65	0.45***
<i>Reproductive health conditions</i>									
None	Ref		Ref		Ref		Ref		Ref
One or more			0.88	0.65–1.19			0.55*	0.34–0.90	1.07
<i>Experienced pregnancy loss in past five years</i>									
No	Ref		Ref		Ref		Ref		Ref
Yes			3.20***	1.76–5.82			2.41**	1.26–4.62	2.53**

(table continues)

Table 3 (continued)

	Desires a(nother) baby				Intends to have a(nother) baby				Fertility regret			
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
<i>Sterility status</i>												
Nonsterile	Ref		Ref		Ref		–	–	Ref		Ref	
Surgically sterile			1.74**	1.23–2.44			–	–			0.99	0.66–1.50
Non-surgically sterile			1.58*	1.02–2.45			–	–			1.57	0.90–2.72
Constant	0.10***	0.05–0.18	0.13***	0.06–0.28	0.01***	0.00–0.04	0.03***	0.01–0.12	0.06***	0.03–0.12	0.15***	0.07–0.34
<i>N</i> (unweighted)	2715		2715		2715		2715		2715		2715	
Model fit	F(9, 100) = 2.49*		F(14, 95) = 8.80***		F(9, 100) = 5.68***		F(12, 97) = 8.37***		F(9, 100) = 3.26**		F(14, 95) = 9.16***	

* $p < .05$, ** $p < .01$, *** $p < .001$ Observations with missing data on the following variables, comprising <1.3% of sample, were excluded: desire for a(nother) baby ($n = 4$); fertility regret ($n = 1$); relationship status ($n = 14$); pregnancy loss in past five years ($n = 131$).

were married or cohabiting (versus neither) had approximately half the odds of intending to have a(nother) baby ($OR = 0.53, p < 0.05$). Unlike fertility desires, intentions to have more children did not vary according to household income.

The relationship between reproductive health characteristics and fertility intentions was similar to that of fertility desires: each additional birth was associated with 53% lower odds of intending to have a(nother) baby ($p < 0.001$), and women who experienced pregnancy loss in the past five years had 2.4 times higher odds of intending to have a(nother) baby ($p < 0.01$). Although reproductive health conditions were not associated with fertility desires in Model 2, respondents who had received a past diagnosis or treatment for a condition had 45% lower odds of intending to have a(nother) baby ($p < 0.05$) (Model 4).² The relationship between two social characteristics (education and relationship status) and fertility intentions was no longer significant after the inclusion of reproductive health characteristics in the model. Again, I evaluated reproductive health covariates independently and found that the inclusion of the number of live births in the model was the cause for this shift in significance. Higher odds of intending to have a(nother) baby among Black (versus White women) persisted and increased in magnitude following the inclusion of reproductive health characteristics (Model 4).

Anticipated fertility regret at the end of the reproductive career

In the final set of models, I explore the social and reproductive health factors associated with women's anticipated fertility regret. Although Black and Hispanic women both reported higher odds of intending to have a(nother) baby (with only the odds ratio for Black women reaching statistical significance in Model 3), Black and Hispanic women were about half as likely as White women to say they would feel bothered if they did not have a(nother) baby. Respondents with a household income below the federal poverty limit had 64% higher odds of anticipating feeling fertility regret, while those who were married or cohabiting had 36% lower odds. Religiosity was also associated with higher odds of anticipating experiencing regret. Relative to those for whom religion was not important, respondents who deemed religion to be somewhat or very important were nearly twice as likely to anticipate feeling regret (somewhat important: $OR = 1.62, p < 0.05$; very important: $OR = 2.00, p < 0.01$).

Model 6 presents the odds of reporting fertility regret with the inclusion of social and reproductive health characteristics. For each additional live birth, respondents had 55% lower odds of anticipating feeling fertility regret. As with previous indicators (fertility desires and intentions), the inclusion of live births in the model was the primary driver of the loss in significance of social characteristics. In this case, race and relationship status were no longer significantly associated with fertility regret, but associations of fertility regret with household income and religiosity persisted and were magnified following the inclusion of reproductive health characteristics. As in previous models, a recent pregnancy loss was

2 As a sensitivity test, this model was alternatively specified with only nonsterile women. Results were largely similar except for reproductive health conditions, which were no longer significant. This suggests that the negative effect of reproductive health conditions on intentions to have a(nother) baby was driven primarily by women who were sterile.

associated with higher odds of anticipating experiencing regret ($OR = 2.53, p < 0.01$). Although women who were sterile (both surgically and non-surgically) had higher odds of desiring a(nother) baby (Model 2), they were not more likely to say that they would be bothered if they did not have a(nother).

Discussion

Variation in the prevalence of unrealised fertility across indicators

This study demonstrates that the prevalence and the correlates of unrealised fertility vary widely depending on how the concept is measured. Across four indicators – fertility ideals, desires, intentions and anticipated regret – estimates ranged from 3.5% to 22.4% among U.S. women aged 40–49. These discrepancies highlight the conceptual and methodological complexity of unrealised fertility and demonstrate the need for greater precision and standardisation in future survey research.

As expected, the aggregate-cohort indicator, which measured the correspondence of fertility ideals (reported earlier in the life course) to completed fertility, produced higher estimates of unrealised fertility (between 13.5% and 22.4%). Because this measure fails to account for potential revisions in individual fertility goals over the life course, a better estimate would compare completed fertility to the ideal family size reported at the end of the reproductive life course (cf. [Assaf and Davis, 2021](#); [Casterline and Han, 2017](#); [Lazzari and Beaujouan, 2026](#); [Yeatman and Smith-Greenaway, 2025](#)). Unfortunately, the NSFG dropped this question after 1995. Nevertheless, this indirect estimate is informative in that it appears to better reflect an upper bound of unrealised fertility than other indicators.

Indicators B and C (desires and intentions to have a(nother) child, respectively) examined women's fertility goals at the end of their reproductive careers. In terms of estimating unrealised fertility, fertility desires were closer to fertility ideals, while intentions to have a(nother) child were significantly lower, thus providing a lower bound estimate of unrealised fertility. This low estimate likely obscured the relinquishment of previously held fertility goals. Specifically, women who were sterile were not asked this question, and were subsequently recoded in the NSFG as having *no* intentions to have a(nother) baby. Sterilisation remains a leading form of contraception in the U.S., but nearly a quarter of women who are sterilised express a desire for reversal, and sterilisation regret is particularly high among women who undergo the procedure at age 30 or younger ([Eckhaut and Sweeney, 2018](#)). Thus, this is a potentially important oversight. Nevertheless, Indicator C may provide a useful benchmark for comparing changes in the proportion of women striving to become pregnant at older ages, particularly as women continue to delay reproduction until later in the life course.

Indicator D represents the anticipated emotional consequences of unrealised fertility and thus reflects the most person-centred indicator in the study. As a measure of unrealised fertility, it differs from other indicators by directly identifying the proportion of the population for whom not having a(nother) child is perceived as consequential. As with other fertility goals, this measure at the end of the reproductive life course may not fully capture fertility

regret that occurred earlier in life, but since the estimated prevalence of this indicator (8%) falls between that of the intentions (3.5%) and desires (16%) indicators, it is likely capturing a wider range of the population with unrealised fertility for whom it will have prolonged emotional impacts.

Variation in the social and reproductive health correlates of unrealised fertility across indicators

Consistent with prior demographic research, I found that unrealised fertility in the U.S. is socially patterned, but the significance and the direction of the association differed across indicators. The analytical framework presented here describes how social and reproductive health factors may independently or jointly influence whether fertility goals are met, revised or relinquished. At the end of the reproductive life course, lower-income and religious women were more likely to desire a(nother) baby and anticipate feeling fertility regret, even after controlling for reproductive health factors, which illustrates that these indicators are embedded within moral and socioeconomic contexts. Compared to White women, Black women were more likely to intend to have a(nother) baby at the end of their reproductive career even after accounting for reproductive health, which suggests that unmeasured social factors, such as cultural norms or structural conditions, may sustain higher fertility aspirations during a period in the life course when pregnancy is less attainable.

Although researchers have extensively studied the role of education in shaping fertility goals and the achievement of desired fertility (Barber, 2001; Beaujouan and Berghammer, 2019; Berrington and Pattaro, 2014; Guzzo and Hayford, 2024), the women in this sample had similar odds of reporting a desire for a(nother) child and anticipating feeling fertility regret across educational levels. Higher-educated women had greater odds of intending to have a(nother) child at the end of their reproductive career, but these effects disappeared with the inclusion of achieved parity, which suggests that delayed childbearing, rather than unmeasured sociocultural characteristics, was the primary driver of unrealised fertility among this group.

Two reproductive health factors proved to be strong and consistent correlates of unrealised fertility. Each additional birth reduced the odds of experiencing unrealised fertility across all measures, and recent pregnancy loss increased those odds two- to threefold. Reproductive health diagnoses were not associated with fertility desires but were negatively associated with intentions at the end of the reproductive career. This distinction supports recent arguments that desires and intentions are shaped by different sets of constraints (Badolato, 2025), and that people with health challenges may still want to have children but feel unable to act on that desire due to biological constraints (Badolato, 2025; Guzzo and Broussard, 2026; Lazzari, 2025; Lazzari and Beaujouan, 2025). The findings presented in this study suggest that fertility desires may better reflect the unrealised fertility of people with reproductive health conditions since they may no longer hold positive fertility intentions at the end of their reproductive career. However, a recent study showed that people who experience infertility may also adjust their ideal family size downwards over time (Lazzari and Beaujouan, 2026), highlighting the limitations of any measure of unrealised

fertility that operationalises survey-reported goals. The analytical framework used in this study can motivate future research investigating how a broader range of reproductive health factors – which may themselves be shaped by social and structural conditions – influence fertility goals as well as achieved fertility.

Sterility status provides an instructive example of how survey design may affect estimates. The alternative question wording (“if it were possible . . .”) may have elicited responses closer to the women’s fertility ideals than their prospective desires, which demonstrates the need to harmonise question phrasing and clarify the concept of unrealised fertility (Table 2). Women who were sterile had higher odds of desiring a(nother) baby but were automatically recoded by the NSFG as having no fertility intentions. In the U.S., nearly a quarter of surgically sterile women express a desire to have their procedures reversed (Eeckhaut and Sweeney, 2018), which suggests that some women in this group may still have positive childbearing intentions, and thus may not be accounted for in estimates of unrealised fertility that rely on intentions-based measures. Because socioeconomically disadvantaged women and women of colour are more likely to both undergo sterilisation and desire a sterilisation reversal (Johnsen and Sweeney, 2022), the inclusion of sterile individuals in measures of unrealised fertility is critical for providing a clearer picture of who fails to achieve their fertility goals and why.

Future measurement and policy implications

The wide-ranging estimates of unrealised fertility observed in this study have implications for future demographic measurement and policy. As debates over fertility decline intensify, statistics about the “fertility gap” may be invoked to justify pronatalist interventions, including those that may limit access to contraception and abortion (Forati and Bartz, 2024; Gietel-Basten et al., 2022). Because the present study reveals strong variation in the prevalence and distribution of unrealised fertility across measures, public claims about fertility shortfalls should be subject to greater scrutiny. Indicators based on early-life ideals may overestimate unrealised fertility, while those grounded in current desires, intentions and anticipated regret may better reflect the lived realities and consequences of unrealised fertility but fail to capture the experiences of individuals who may have relinquished their fertility goals earlier in life. Refining these indicators should involve efforts to document people’s reproductive histories, current preferences and the broad range of factors, both social and reproductive, that inhibit people from achieving the families they desire.

Direct, retrospective measures of fertility regret are especially promising indicators of unrealised fertility, yet such questions are rarely asked in population-based surveys (for notable exceptions, see Greil et al., 2022 and Yeatman and Anderson, 2025). The question in the NSFG is unique, as it *prospectively* asks respondents how they would feel if they did not have any (additional) children. Results from the full model are largely consistent with patterns found in the model predicting fertility desires, which suggests that these indicators may be measuring similar constructs and orientations towards parenthood. Future studies should investigate not only retrospective accounts of fertility regret, but also the consequences, both material and emotional, of unrealised fertility. For example, how does unrealised

fertility affect women's relationships, their mental health and the care and support they receive at older ages? Women who experience reproductive health constraints, such as infertility and pregnancy loss, report significant levels of psychosocial distress (McQuillan et al., 2003; Quenby et al., 2021). In contrast, little is known about the consequences of unrealised fertility, particularly when it is induced by social constraints.

In addition to the reproductive characteristics analysed in this study, future research should explore how other reproductive experiences contribute to unrealised fertility, including the physical, financial and emotional challenges associated with infertility, IVF, pregnancy, childbirth and the postpartum period. These studies could investigate the relationship between specific events or conditions (e.g. birth trauma, medical interventions like Caesarean section, hyperemesis gravidarum, postpartum depression) and fertility goals, fertility outcomes and unrealised fertility.

Limitations

This study is subject to several limitations. First, the four indicators developed for comparative analysis were limited to the specific variables available within the NSFG. Consequently, these measures do not reflect the full range of indicators that have been used to estimate unrealised fertility. Second, the results reflect the fertility goals and outcomes of a specific cohort of U.S. women and may not be generalisable to men, gender-diverse individuals or populations in different cohorts or social contexts. Nevertheless, by explicitly comparing four indicators within a single nationally representative dataset, the study results demonstrate significant heterogeneity in estimates of unrealised fertility and provide a replicable framework for comparative studies in other contexts.

Second, the reproductive health determinants of unrealised fertility should be interpreted with caution, as infertility and pregnancy loss are often underreported in surveys (Lindberg and Scott, 2018). Similarly, as many reproductive health conditions go unrecognised or undiagnosed, knowledge of the impact of reproductive health factors on desired and achieved fertility is limited. The reproductive health characteristics analysed in the present study reflect those of women aged 40–49 and may not have been present earlier in the life course when most women initiate childbearing. Future surveys and novel data collection efforts (Nobles et al., 2026) that track fertility goals prospectively and document a broad range of social and reproductive health experiences would allow for a more accurate assessment of how various factors influence the achievement and revision of fertility goals.

Conclusion

This study responds to recent calls to recognise unrealised fertility as a prevalent and consequential demographic phenomenon (Casterline, 2019; United Nations Population Fund (UNFPA), 2025; Yeatman, 2025; Yeatman and Smith-Greenaway, 2025). The current findings highlight the heterogeneity of four potential indicators of unrealised fertility within a single population of women near the end of their reproductive careers in the U.S.

The results also reveal strong variation in the associated correlates of unrealised fertility across indicators, providing justification for the development of new, standardised measures in future surveys. Investigating how, when and why people fall short of their fertility goals can improve our understanding of the causes and consequences of unrealised fertility and inform policy aimed at supporting reproductive autonomy and equity.

A key implication for demographic research is that claims about the prevalence, distribution or causes of unrealised fertility should be tied explicitly to the underlying construct being measured. For many policy-related questions, particularly those concerned with well-being and the lived consequences of having fewer children than desired, direct measures of current or anticipated fertility regret are likely to be more informative than measures of fertility ideals, desires or intentions because they capture the perceived impact of achieving or falling short of one's goals, and are also more likely to account for goals that were relinquished earlier in the life course. To better identify the social and reproductive determinants of unrealised fertility, surveys should incorporate new questions assessing the reasons why people have fewer children than desired. Consistently including sterile women and harmonising question wording are essential to producing comparable, equitable estimates of who is most affected and why.

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References

- Ajzen, I., and Klobas, J. (2013). Fertility intentions: An approach based on the theory of planned behavior. *Demographic Research*, 29, 203–232. <https://doi.org/10.4054/DemRes.2013.29.8>
- Assaf, S., and Davis, L. M. (2021). *Comparing ideal and completed family size: A focus on women in low-and middle-income countries with unrealized fertility* (DHS Analytical Studies No. 78). ICF. <https://www.dhsprogram.com/publications/publication-as78-analytical-studies.cfm>
- Assaf, S., and Davis, L. M. (2022). Unrealized fertility among women in low and middle-income countries. *PLOS ONE*, 17(11), e0276595. <https://doi.org/10.1371/journal.pone.0276595>
- Badolato, L. (2025). The fertility desires–intentions gap in the United States. *Population Studies, In press*, 1–19. <https://doi.org/10.1080/00324728.2025.2501315>
- Barber, J. S. (2000). Intergenerational influences on the entry into parenthood: mothers' preferences for family and nonfamily behavior. *Social Forces*, 79(1), 319–348. <https://doi.org/10.1093/sf/79.1.319>
- Barber, J. S. (2001). Ideational influences on the transition to parenthood: Attitudes toward childbearing and competing alternatives. *Social Psychology Quarterly*, 64(2), 101–127. <https://doi.org/10.2307/3090128>
- Barker, R., and Buber-Ennsner, I. (2024). Uncertainty and flexibility of fertility intentions. *Advances in Life Course Research*, 61, 100618. <https://doi.org/10.1016/j.alcr.2024.100618>

- Beaujouan, E. (2020). Latest-late fertility? Decline and resurgence of late parenthood across the low-fertility countries. *Population and Development Review*, 46(2), 219–247. <https://doi.org/10.1111/padr.12334>
- Beaujouan, E., and Berghammer, C. (2019). The gap between lifetime fertility intentions and completed fertility in Europe and the United States: A Cohort Approach. *Population Research and Policy Review*, 38(4), 507–535. <https://doi.org/10.1007/s11113-019-09516-3>
- Behrman, J. A. (2024). Ideal family size and reproductive orientations: An exploration of change over time in the United States. *Demography*, 61(5), 1535–1557. <https://doi.org/10.1215/00703370-11577510>
- Berrington, A. (2021). Chapter 15: Fertility desires, intentions, and behaviour. In *Research Handbook on the Sociology of the Family*. Edward Elgar Publishing. <https://doi.org/10.4337/9781788975544.00025>
- Berrington, A., and Pattaro, S. (2014). Educational differences in fertility desires, intentions and behaviour: A life course perspective. *Advances in Life Course Research, Fertility over the Life Course*, 21, 10–27. <https://doi.org/10.1016/j.alcr.2013.12.003>
- Brauner-Otto, S. R., and Geist, C. (2018). Uncertainty, doubts, and delays: economic circumstances and childbearing expectations among emerging adults. *Journal of Family & Economic Issues*, 39(1), 88–102. <https://doi.org/10.1007/s10834-017-9548-1>
- Brinton, M. C., Bueno, X., Oláh, L., and Hellum, M. (2018). Postindustrial fertility ideals, intentions, and gender inequality: A comparative qualitative analysis. *Population and Development Review*, 44(2), 281–309. <https://doi.org/10.1111/padr.12128>
- Casterline, J. (2019). *Childbearing as choice*. Presidential address at the Annual Meeting of the Population Association of America, Austin, Texas, 12 April 2019.
- Casterline, J. B., and Han, S. (2017). Unrealized fertility: Fertility desires at the end of the reproductive career. *Demographic Research*, 36, 427–454. <https://www.jstor.org/stable/26332137>
- Channon, M. D., and Harper, S. (2019). Educational differentials in the realisation of fertility intentions: Is sub-Saharan Africa different? *PLOS ONE*, 14(7), e0219736. <https://doi.org/10.1371/journal.pone.0219736>
- de Ziegler, D., Braumann, N., Sean, S., and Toner, J. P. (2025). The “Baby Bust”: Awareness of the gap between desired and actual family size and review of practical options. *Fertility and Sterility*. <https://doi.org/10.1016/j.fertnstert.2025.09.012>
- Eeckhaut, M. C. W., and Sweeney, M. M. (2018). Understanding sterilization regret in the United States: The role of relationship context. *Journal of Marriage and Family*, 80(5), 1259–1270. <https://doi.org/10.1111/jomf.12500>
- Forati, R., and Bartz, D. (2024). “Blessed Be the Fruit”—The Contemporary rise of pronatalism. *New England Journal of Medicine*, 391(17), 1569–1571. <https://doi.org/10.1056/NEJMp2410208>
- Gemmill, A. (2018). From some to none? Fertility expectation dynamics of permanently childless women. *Demography*, 56(1), 129–149. <https://doi.org/10.1007/s13524-018-0739-7>
- Geronimus, A. T. (2001). Understanding and eliminating racial inequalities in women’s health in the United States: The role of the weathering conceptual framework. *Journal of the American Medical Women’s Association* (1972), 56(4), 133–136, 149–150.
- Gietel-Basten, S., Rotkirch, A., and Sobotka, T. (2022). Changing the perspective on low birth rates: Why simplistic solutions won’t work. *BMJ*, 379, e072670. <https://doi.org/10.1136/bmj-2022-072670>
- Goldstein, J., Lutz, W., and Testa, M. R. (2003). The emergence of sub-replacement family size ideals in Europe. *Population Research and Policy Review*, 22(5), 479–496. <https://doi.org/10.1023/B:POPU.0000020962.80895.4a>
- Greil, A. L., Lowry, M. H., Burch, A. R., Slauson-Blevins, K., Park, N., and McQuillan, J. (2022). Reproductive regrets among a population-based sample of U.S. women. *Socius*, 8, 23780231221142969. <https://doi.org/10.1177/23780231221142969>
- Guzzo, K. B. (2022). The formation and realization of fertility goals among a US cohort in the post-recession years. *Population and Development Review*, 48(4), 991–1026. <https://doi.org/10.1111/padr.12509>
- Guzzo, K., and Broussard, K. (2026). Women’s reproductive health conditions and fertility goals. *Population Research and Policy Review*, 45(10). <https://doi.org/10.1007/s11113-026-09996-0>
- Guzzo, K. B., and Hayford, S. R. (2023). Evolving fertility goals and behaviors in current U.S. childbearing cohorts. *Population and Development Review*, 49(1), 7–42. <https://doi.org/10.1111/padr.12535>

- Guzzo, K. B., and Hayford, S. R. (2024). Educational experiences and American young adults' childbearing goals: A research note. *Journal of Marriage and Family*, 86(2), 513–525. <https://doi.org/10.1111/jomf.12953>
- Harknett, K., and Hartnett, C. S. (2014). The gap between births intended and births achieved in 22 European countries, 2004–07. *Population Studies*, 68(3), 265–282. <https://doi.org/10.1080/00324728.2014.899612>
- Hartnett, C. (2014). White-Hispanic differences in meeting lifetime fertility intentions in the U.S. *Demographic Research*, 30(43), 1245–1276. <https://doi.org/10.4054/DemRes.2014.30.43>
- Hartnett, C. S., and Gemmill, A. (2020). Recent trends in U.S. childbearing intentions. *Demography*, 57(6), 2035–2045. <https://doi.org/10.1007/s13524-020-00929-w>
- Hayford, S. R. (2009). The evolution of fertility expectations over the life course. *Demography*, 46(4), 765–783. <https://doi.org/10.1353/dem.0.0073>
- Hin, S. (2012). Fertility preferences: What measuring second choices teaches us. *Vienna Yearbook of Population Research*, 9, 131–156. <https://doi.org/10.1553/populationyearbook2011s131>
- Iacovou, M., and Tavares, L. P. (2011). Yearning, Learning, and Conceding: Reasons men and women change their childbearing intentions. *Population and Development Review*, 37(1), 89–123. <https://doi.org/10.1111/j.1728-4457.2011.00391.x>
- Johnsen, S., and Sweeney, M. (2022). Female sterilization in the life course: Understanding trends and differentials in early sterilization. *Demographic Research*, 47, 529–544. <https://doi.org/10.4054/DemRes.2022.47.18>
- Johnson, K. M., Shreffler, K. M., Greil, A. L., and McQuillan, J. (2023). Bearing the reproductive load? Unequal reproductive careers among U.S. women. *Population Research and Policy Review*, 42(1), 14. <https://doi.org/10.1007/s11113-023-09770-6>
- Kuhnt, A.-K., Kreyenfeld, M., and Trappe, H. (2017). Fertility ideals of women and men across the life course. In M. Kreyenfeld and D. Konietzka (Eds.), *Childlessness in Europe: Contexts, Causes, and Consequences* (pp. 235–251). Springer International Publishing. https://doi.org/10.1007/978-3-319-44667-7_11
- Lazzari, E. (2025). Fertility preferences adjusted: Reimagining parenthood in response to the uncertainty of infertility. *Genus*, 81(1), 12. <https://doi.org/10.1186/s41118-025-00248-1>
- Lazzari, E., and Beaujouan, É. (2025). Self-assessed physical and mental health and fertility expectations of men and women across the life course. *Demography*, 62(2), 543–569. <https://doi.org/10.1215/00703370-11873109>
- Lazzari, E., and Beaujouan, E. (2026). Infertility and unrealized ideal family Size. *Population and Development Review*, 52(1), 70–93. <https://doi.org/10.1111/padr.70043>
- Lindberg, L., and Scott, R. (2018). Effect of ACASI on reporting of abortion and other pregnancy outcomes in the U.S. National Survey of Family Growth. *Studies in Family Planning*, 49(3). <https://doi.org/10.1111/sifp.12068>
- Manning, W. D., Guzzo, K. B., Longmore, M. A., and Giordano, P. C. (2022). Cognitive schemas and fertility motivations in the U.S. during the COVID-19 pandemic. *Vienna Yearbook of Population Research*, 20, 261–284. <https://doi.org/10.1553/populationyearbook2022.res1.7>
- McQuillan, J., Greil, A. L., White, L., and Jacob, M. C. (2003). Frustrated fertility: Infertility and psychological distress among women. *Journal of Marriage and Family*, 65(4), 1007–1018. <https://doi.org/10.1111/j.1741-3737.2003.01007.x>
- Miller, W. B. (1994). Childbearing motivations, desires, and intentions: A theoretical framework. *Genetic, Social & General Psychology Monographs*, 120(2), 223.
- Miller, W. B. (2011). Differences between fertility desires and intentions: Implications for theory, research and policy. *Vienna Yearbook of Population Research*, 9, 75–98. <https://doi.org/10.1553/populationyearbook2011s75>
- Morgan, S. P., and Rackin, H. (2010). The correspondence between fertility intentions and behavior in the United States. *Population and Development Review*, 36(1), 91–118. <https://doi.org/10.1111/j.1728-4457.2010.00319.x>
- Müller, M. W., Hamory, J., Johnson-Hanks, J., and Miguel, E. (2022). The illusion of stable fertility preferences. *Population Studies*, 76(2), 169–189. <https://doi.org/10.1080/00324728.2022.2057577>
- Nitsche, N., and Hayford, S. R. (2020). Preferences, partners, and parenthood: Linking early fertility desires, marriage timing, and achieved fertility. *Demography*, 57(6), 1975–2001. <https://doi.org/10.1007/s13524-020-00927-y>

- Nobles, J., Cannon, L., Hwang, S., Malloy, S., Noddin, K., and Wilcox, A. J. (2026). Mobile device data for the study of miscarriage and its causes. *Npj Women's Health*, 4(1), 11. <https://doi.org/10.1038/s44294-026-00129-8>
- Pearce, L. D., and Davis, S. N. (2016). How early life religious exposure relates to the timing of first birth. *Journal of Marriage and Family*, 78(5), 1422–1438. <https://doi.org/10.1111/jomf.12364>
- Philipov, D. (2009). Fertility intentions and outcomes: The role of policies to close the gap. *European Journal of Population/Revue Européenne de Démographie*, 25(4), 355–361. <https://doi.org/10.1007/s10680-009-9202-1>
- Philipov, D., and Bernardi, L. (2011). Concepts and operationalisation of reproductive decisions implementation in Austria, Germany and Switzerland. *Comparative Population Studies*, 36(2–3), Article 2–3. <https://doi.org/10.12765/CPoS-2011-14>
- Quenby, S., Gallos, I. D., Dhillon-Smith, R. K., Podsek, M., Stephenson, M. D., Fisher, J., Brosens, J. J., Brewin, J., Ramhorst, R., Lucas, E. S., McCoy, R. C., Anderson, R., Daher, S., Regan, L., Al-Memar, M., Bourne, T., MacIntyre, D. A., Rai, R., Christiansen, O. B., . . . Coomarasamy, A. (2021). Miscarriage matters: The epidemiological, physical, psychological, and economic costs of early pregnancy loss. *The Lancet*, 397(10285), 1658–1667. [https://doi.org/10.1016/S0140-6736\(21\)00682-6](https://doi.org/10.1016/S0140-6736(21)00682-6)
- Quesnel-Vallée, A., and Morgan, S. P. (2003). Missing the target? Correspondence of fertility intentions and behavior in the U.S. *Population Research and Policy Review*, 22(5), 497–525. <https://doi.org/10.1023/B:POPU.0000021074.33415.c1>
- Ray, C. M., Harcey, S. R., Greil, A. L., Tiemeyer, S., and McQuillan, J. (2018). Stability and change in personal fertility ideals among US women in heterosexual relationships. *Demographic Research*, 39, 459–486. <https://doi.org/10.4054/DemRes.2018.39.16>
- Shreffler, K. M., Tiemeyer, S., Dorius, C., Spierling, T., Greil, A. L., and McQuillan, J. (2016). Infertility and fertility intentions, desires, and outcomes among US women. *Demographic Research*, 35, 1149–1168. <https://doi.org/10.4054/DemRes.2016.35.39>
- Sobotka, T., and Beaujouan, É. (2014). Two is best? The persistence of a two-child family ideal in Europe. *Population and Development Review*, 40(3), 391–419. <https://doi.org/10.1111/j.1728-4457.2014.00691.x>
- Tebeje, T. M., Abebe, M., Teshale, A. B., and Aregu, M. B. (2025). Factors associated with unrealized fertility among women approaching the end of reproductive age in sub-Saharan Africa. *PLOS ONE*, 20(9), e0331265. <https://doi.org/10.1371/journal.pone.0331265>
- Trinitapoli, J., and Yeatman, S. (2018). The flexibility of fertility preferences in a context of uncertainty: flexibility of fertility preferences in a context of uncertainty. *Population and Development Review*, 44(1), 87–116. <https://doi.org/10.1111/padr.12114>
- United Nations Population Fund (UNFPA). (2025). *The real fertility crisis: The pursuit of reproductive agency in a changing world*. (State of World Population 2025.). UNFPA. <https://doi.org/10.18356/9789211591576>
- White, L., and McQuillan, J. (2006). No Longer Intending: The relationship between relinquished fertility intentions and distress. *Journal of Marriage and Family*, 68(2), 478–490. <https://doi.org/10.1111/j.1741-3737.2006.00266.x>
- Yeatman, S. (2025). *Unrealized fertility*. Paper Presented at the Pre-PAA Mini-Conference “Fertility Goals: Conceptualization, Measurement, and Impact for Science and Policy”, Washington D.C., 10 April 2025.
- Yeatman, S., and Anderson, T. (2025). *Unrealized fertility in the U.S.: Results from a pilot test of new measures*. Paper presented at the Annual Meeting of the Population Association of America, Austin, Texas, 11 April 2025.
- Yeatman, S., Sennott, C., and Culpepper, S. (2013). Young women’s dynamic family size preferences in the context of transitioning fertility. *Demography*, 50(5), 1715–1737. <https://doi.org/10.1007/s13524-013-0214-4>
- Yeatman, S., and Smith-Greenaway, E. (2025). Unrealized fertility in demography. *Demographic Research*, 53, 1145–1172. <https://doi.org/10.4054/DemRes.2025.53.36>