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Concern that contraception affects future fertility: How common is this concern among young people and does it stop them from using contraception?☆

Annalisa Watson [a,b], Jennifer Yarger [c,d,*], Erica Sedlander [e], Josephine Urbina [b], Kristine Hopkins [f], Maria I. Rodriguez [g], Liza Fuentes [h], Cynthia C. Harper [b,c]

[a] School of Public Health, University of California, Berkeley, CA, United States
[b] Department of Obstetrics, Gynecology and Reproductive Sciences, Bixby Center for Global Reproductive Health, University of California, San Francisco, CA, United States
[c] Philip R. Lee Institute for Health Policy Studies, University of California, San Francisco, CA, United States
[d] Department of Epidemiology and Biostatistics, University of California, San Francisco, CA, United States
[e] Department of Social and Behavioral Sciences, Institute for Health and Aging, University of California, San Francisco, CA, United States
[f] Population Research Center, University of Texas at Austin, Austin, TX, United States
[g] Department of Obstetrics and Gynecology, Oregon Health & Science University, Portland, OR, United States
[h] Boston Medical Center, Boston, MA, United States

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ABSTRACT

Objectives: This study examines the concern that contraception affects future fertility among community college students and its association with contraceptive use.
Study design: We used baseline data from a randomized controlled trial with 2060 community college students assigned female at birth. We used mixed-effects multivariate logistic regression adjusted for clustered data to assess sociodemographic factors associated with concerns about contraception affecting future fertility and to test the association between this concern and contraceptive use.
Results: Most participants (69%) worried about contraception affecting their future fertility. Multivariable results indicated that first-generation college students (adjusted odds ratio [aOR], 1.24; 95% confidence interval [CI], 1.01–1.55) and non-English speakers at home (aOR, 1.30; 95% CI, 1.04–1.64) were more concerned. Racial and ethnic differences were significant, with Black non-Hispanic (aOR, 2.83; 95% CI, 1.70–4.70), Asian/Pacific Islander non-Hispanic (aOR, 2.12; 95% CI, 1.43–3.14), and Hispanic (aOR, 1.54; 95% CI, 1.17–2.02) participants more likely to be concerned than White non-Hispanic counterparts. Participants who received contraceptive services in the past year had lower odds of this concern (aOR, 0.72; 95% CI 0.59–0.88). Furthermore, participants with this concern had lower odds of using contraception (aOR, 0.67; 95% CI, 0.49–0.91), especially hormonal contraception (aOR, 0.77; 95% CI, 0.61–0.97).
Conclusions: Most students feared contraception's impact on fertility, and this fear was associated with not using contraception. Disparities in this concern may be tied to discrimination, reproductive coercion, and limited reproductive health care access. Addressing concerns about contraception affecting future fertility is crucial to person-centered contraceptive counseling.
Implications: This study examines the concern that contraception affects future fertility among sexually active female community college students and its impact on contraceptive use. Most participants expressed concerns about contraception affecting future fertility. Addressing future fertility concerns in patient-centered contraceptive counseling is crucial for reaching young people.

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* Corresponding author.
E-mail address: jennifer.yarger@ucsf.edu (J. Yarger).

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1. Introduction

Beliefs that contraception affects future fertility persist despite evidence of comparable pregnancy rates within 1 year after stopping contraception compared to nonusers [1–3]. Certain contraceptives, in particular, the injectable, may delay the return to fertility for 6 months [4–6], while others, such as the copper intrauterine device (IUD), show immediate return to fertility [1]. Levonorgestrel IUDs and the oral contraceptive pill may cause minimal delay [2,3,7,8], as shown in a recent global study in low- and middle-income countries that also found delays with the implant [9]. Effectively communicating these short delays may be necessary in counseling, given the widespread fear of infertility from contraception globally [10–13].

Less is known about the concern that contraception affects future fertility in the United States and its association with contraceptive use [11–14]. Research has identified concerns about hormones and long-acting methods. For instance, college-aged women in the Southeastern United States expressed the belief that IUDs would cause physical damage and lead to infertility [15]. Another qualitative study revealed that community college students feared hormonal contraception might harm future fertility [16]. Limited survey research in the United States found that over one-third (37%) of adolescents and young adults believed that IUDs and implants caused infertility [12]. Only one US study, however, examined this concern as a barrier to contraceptive use, with 23% reporting it as a barrier to IUD use and 19% reporting it as a barrier to implant use [17].

The concern that contraception affects future fertility may vary with health care access and contraceptive counseling. An Ethiopian study found that recent provider visits were associated with lower odds of fear of infertility [18]. Language barriers and health literacy can exacerbate this concern, affecting health care use and communication [19]. However, there is no research on health care factors related to this concern in the United States.

Social determinants of health, including education and structural racism, may influence the belief that contraception affects future fertility [20]. Lower education levels have been associated with negative contraceptive care experiences [21]. Conversely, higher education is associated with greater fertility awareness [22]. Concern that contraception affects future fertility may be more prevalent among minoritized communities due to racism and reproductive injustice, including the targeting of contraceptives [23,24]. Evaluating this contraceptive belief through a social determinants of health lens is critical for advancing reproductive justice [20].

Global research indicates that concern that contraception affects future fertility impacts reproductive choices, leading some individuals to switch to less effective methods or avoid contraception altogether [10,11,13,14,25]. Le Guen et al. conducted a review, identifying "hormonophobia," an excessive fear of hormones, as a prominent theme in contraceptive nonuse in the United States and Europe [13]. Further research is needed to examine the relationship between fear that contraception affects future fertility and contraceptive use in the United States, shedding light on factors that influence contraceptive decision-making.

We examined the concern that contraception affects future fertility and sociodemographic characteristics associated with this concern in a large and diverse sample of sexually active community college students in the United States. We also examined whether this concern was associated with lower contraceptive use, including hormonal methods.

2. Methods

We used baseline data from an ongoing cluster randomized controlled trial testing a contraception education intervention in 29 California and Texas community colleges from April 2018 to May 2023. Eligible participants (N = 2086) were assigned female at birth, aged 18–25 years, English speakers, sexually active with a male partner in the past year, not seeking pregnancy, and enrolled in their first year of community college at the participating site.

Recruitment was conducted in person and remotely through campus tabling, flyers, classroom announcements, emails, social media, and online campus resources. Participants provided electronic consent and completed a 40-minute self-administered online baseline questionnaire, covering sociodemographic factors, contraceptive knowledge and attitudes, contraceptive and pregnancy experiences, educational goals, and access to health services. Participants received $50 remuneration upon survey completion [26]. The study was approved by the Institutional Review Boards (IRBs) at the University of California, San Francisco and The University of Texas at Austin; participating college sites approved the study with their own IRB or used the corresponding state university's IRB approval.

2.1. Measures

2.1.1. Fear of contraception affecting future fertility

The primary outcome was participants' concern about contraception affecting their future fertility. The survey item was "Please indicate how strongly you agree or disagree with these statements about birth control: I'm worried it would affect my future fertility" (strongly agree, agree, disagree, strongly disagree). We dichotomously coded responses as "strongly agree/agree" = 1 and "strongly disagree/disagree" = 0.

2.1.2. Contraceptive use

We included two measures of current contraceptive use as secondary outcomes. The first was the use of any method of contraception (withdrawal, fertility awareness, condoms, emergency contraception, vaginal ring, transdermal patch, oral contraceptive pill, injectable, subdermal implant, IUD, or other method) or no method (dichotomous). Among contraception users, we created an additional dichotomous variable for hormonal method (yes, no).

2.1.3. Sociodemographic characteristics

We included sociodemographic variables associated with health care access, education, resources, and opportunities: age (adolescents 18–19 years, young adults 20–25 years), self-reported race and ethnicity (Hispanic, White non-Hispanic, Black non-Hispanic, Asian/Pacific Islander non-Hispanic, American Indian/other/multiracial non-Hispanic), language spoken at home (English, other language), first-generation college student, current receipt of public assistance, state of residence (California, Texas), and pregnancy history.

2.1.4. Receipt of sexual health education and contraceptive services

We also included variables associated with contraception information: participants' receipt of school-based sex education and receipt of contraceptive services in the past year.

2.2. Analytic sample

From our overall sample of 2086 baseline surveys, we excluded observations with missing data: concern that contraception affects future fertility (n = 12), race and ethnicity (n = 5), first-generation student (n = 7), language spoken at home (n = 5), receiving public assistance (n = 6), received sex education during school (n = 1), received contraceptive services (n = 8), and contraceptive method (n = 5). Our final analytic sample included 2060 baseline surveys.

2.3. Statistical analysis

We examined study variables using descriptive statistics. We calculated percentages and used univariate logistic regression, with cluster robust standard errors to account for clustering by study site to compare the concern that contraception affects future fertility by sociodemographic characteristics, receipt of sexual health education, and receipt of contraceptive services. Then, we conducted multivariate analyses using mixed-effects logistic regression, incorporating random effects for site to assess variations in this concern while accounting for clustering.

Furthermore, we examined the association between this concern and contraceptive use in two successive multivariate mixed-effects logistic regression models with the outcomes for contraceptive use (yes, no) and hormonal contraceptive use (yes, no). These models also accounted for the hierarchical data structure by site. These models included the concern that contraception affects future fertility, age, race and ethnicity, first-generation student status, language spoken at home, pregnancy history, public assistance, state of residence, school-based sex education, and contraception health care visits in the past year. We coded all variables dichotomously except for race and ethnicity. We also conducted a sensitivity analysis with a model of concern for future fertility and contraceptive use with withdrawal and no method combined to see whether concern about fertility keeps people from seeking a method, instead relying on withdrawal or no method. Analyses were conducted in Stata version 17.0 (College Station, TX), and significance levels reported at $p \leq 0.05$.

3. Results

Eighty-two percent of participants were aged 18–19 years (Table 1). The sample was racially and ethnically diverse: 58% Hispanic, 20% White non-Hispanic, 10% Asian/Pacific Islander non-Hispanic, 6% Black non-Hispanic, and 6% American Indian/other/multirace non-Hispanic individuals. Sixty-eight percent were first-generation students, and 50% spoke a non-English language at home. Twenty-two percent received public assistance, and 85% had sex education in school. Almost half (46%) received contraceptive services in the past year, and 10% had experienced pregnancy. Among all participants, 76% used contraception, 40% used a hormonal method, and 14% used an IUD or implant.

Most participants (69%) worried about contraception affecting their future fertility (Table 2). In bivariate analyses, concern varied by sociodemographic characteristics. Hispanic (72%), Asian/Pacific Islander (76%), and Black participants (80%) were more likely to be concerned than White participants (56%, $p < 0.001$). First-generation college students had higher levels of concern (72%, $p < 0.01$) compared to those with college-educated parents or guardians, as did participants who spoke a language other than English at home (75%, $p < 0.001$) vs those in English-speaking households. Conversely, individuals receiving contraceptive services in the past year were less likely to be concerned (64%, $p < 0.001$), as were California residents (67%, $p < 0.05$) or those who had school-based sex education (68%, $p < 0.05$) compared to their respective peers. Figure 1 illustrates the concern that contraception affects future fertility by contraception use. Generally, those using long- or short-acting methods were less concerned, whereas those using barrier methods or no method expressed greater concern.

Multivariable logistic regression results showed that Hispanic (adjusted odds ratio [aOR], 1.54; 95% CI, 1.17–2.02), Black (aOR, 2.83; 95% CI, 1.70–4.70), and Asian/Pacific Islander (aOR, 2.12; 95% CI, 1.43–3.14) students were more concerned about contraception affecting their future fertility than White students (Table 3). First-generation college students (aOR, 1.24; 95% CI, 1.01–1.55) and those speaking a non-English language at home (aOR, 1.30; 95% CI,

Table 1
Characteristics of participants: community college students in California and Texas assigned female at birth (N = 2060)

Characteristics	Total (%)
Sociodemographic characteristics	
Age (y)	
18–19	81.6
20–25	18.4
Female/woman gender identity	99.1
Race/ethnicity	
White non-Hispanic	20.4
Hispanic	57.7
Asian/Pacific Islander non-Hispanic	10.0
Black non-Hispanic	5.9
American Indian/other/multiracial non-Hispanic	6.0
First-generation college student	67.9
Speaks language other than English at home	50.1
Ever been pregnant	9.9
Receives public assistance	22.6
State of residence	
California	71.4
Texas	28.6
Receipt of sex education and contraceptive services	
Received sex education in school	84.4
Received contraceptive services in the past year	46.3
Contraceptive use	
Using contraception[a]	86.2
Using hormonal contraception	40.1
Emergency contraception	0.9
Hormonal IUD	5.0
Injectable	3.7
Oral contraceptive pill	21.0
Subdermal implant	8.2
Transdermal patch	0.5
Vaginal ring	0.8
Condoms	33.1
Copper IUD	1.4
Fertility awareness method	1.6
Withdrawal	9.8
Other method	0.2
No method	13.8

IUD = intrauterine device.
[a] Including withdrawal and other methods.

Table 2
Concern that contraception affects future fertility by participant characteristics among community college students assigned female at birth in California and Texas (N = 2060)

	Concern that contraception affects future fertility		
Characteristics	Yes (%)	No (%)	P value[a]
Total	69.2	30.8	
Age (y)			0.345
18–19	68.8	31.2	
20–25	71.0	29.0	
Race			
White non-Hispanic (Ref.)	56.0	44.0	Ref.
Hispanic	72.4	27.6	< 0.001
Asian/Pacific Islander non-Hispanic	75.6	24.4	< 0.001
Black non-Hispanic	80.2	19.8	0.001
American Indian/other/multiracial non-Hispanic	62.1	37.9	0.273
First-generation college student	71.7	28.3	0.003
Speaks language other than English at home	74.5	25.5	< 0.001
Ever been pregnant	65.0	35.0	0.185
Receives public assistance	72.3	27.7	0.095
State of residence			0.019
California	66.9	33.1	
Texas	74.9	25.1	
Received sex education in school	68.1	31.9	0.046
Received contraceptive services in the past year	64.0	36.0	< 0.001

[a] Univariate logistic regression with cluster robust standard errors for site.

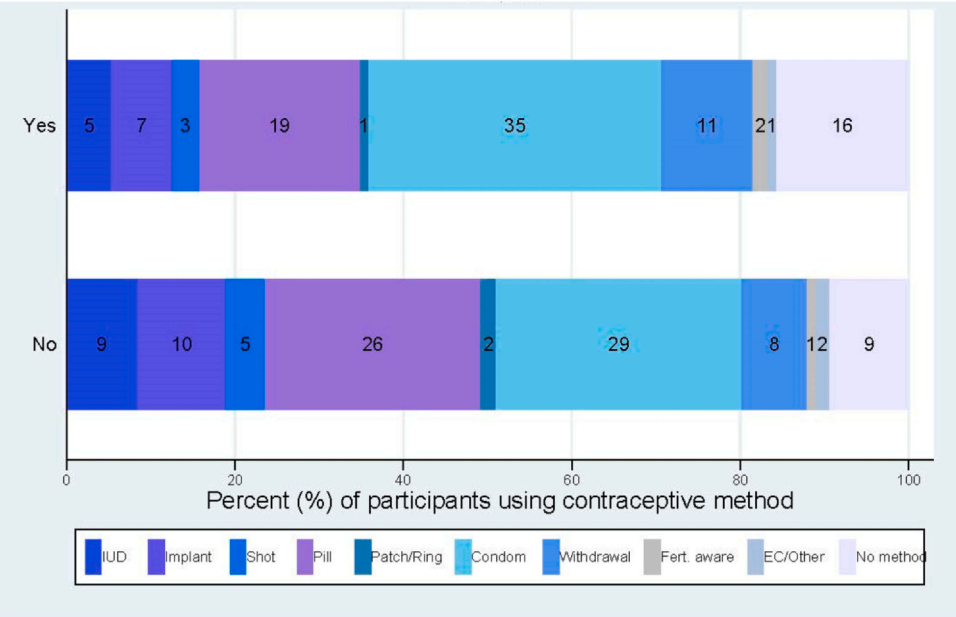

Fig. 1. Contraceptive method use by concern that contraception affects future fertility among community college students assigned female at birth in California and Texas ($N = 2060$). The horizontal bar graph displays participants' main contraceptive method (%) by concern that contraception affects future fertility (yes or no). IUD = intrauterine device.

1.04–1.64) had elevated odds of this concern compared to their peers. Conversely, those who had received contraceptive services in the past year were less concerned that contraception affects future fertility (aOR, 0.72; 95% CI 0.59–0.88), as those who had been pregnant (aOR, 0.69; 95% CI, 0.49–0.97) compared to their respective counterparts. Other covariates were not significant.

We conducted multivariable models to examine the association between concerns that contraception affects future fertility and contraceptive use (Table 4). In Model 1, those concerned that contraception affects future fertility were significantly less likely to use any method of contraception than those without this concern (aOR, 0.67; 95% CI, 0.49–0.91). In Model 2, among contraceptive users, those concerned that contraception affects future fertility had lower odds of using hormonal contraception (aOR, 0.77; 95% CI, 0.61–0.97). Sensitivity analysis combining withdrawal and no contraception yielded consistent results (results not shown).

Table 3
Characteristics associated with concern that contraception affects future fertility among community college students assigned female at birth in California and Texas: mixed-effects multivariable logistic regression results ($N = 2060$)

Characteristics	aOR[a]	95% CI
Age 18–19 y (ref = age 20–25 y)	0.89	0.68–1.16
Race		
White non-Hispanic	Ref.	
Hispanic	1.54**	1.17–2.02
Asian/Pacific Islander non-Hispanic	2.12***	1.43–3.14
Black non-Hispanic	2.83***	1.70–4.70
American Indian/other/multiracial non-Hispanic	1.32	0.87–2.01
First-generation college student	1.24*	1.01–1.55
Speaks language other than English at home	1.30*	1.04–1.64
Ever been pregnant	0.69*	0.49–0.97
Receives public assistance	1.11	0.87–1.42
Resides in California (ref = Texas)	0.79	0.62–1.02
Received sex education in school	0.80	0.60–1.07
Received contraceptive services in the past year	0.72**	0.59–0.88

aOR = adjusted odds ratio.
*$p < 0.05$; **$p < .01$; ***$p < 0.001$.
[a] Multivariable mixed-effects logistic regression model with random effects for site.

4. Discussion

Most (69%) community college participants in California and Texas worried about contraception affecting their future fertility. This concern was associated with significantly lower contraceptive use among sexually active individuals. The belief that contraception causes infertility persists among young people—and likely affects contraceptive behavior—despite ample evidence disproving the association [1–3].

Concerns about contraception affecting future fertility varied by sociodemographic characteristics. Concern was higher among young people of color, non-English speakers at home, and first-generation students. Differences in this concern by race, ethnicity, and language may be tied to structural racism, reproductive coercion, and consequential medical distrust among Black, Indigenous, and people of color, as well as immigrant populations [24,27,28].

Concern that contraception affects future fertility may also be connected to racial disparities in infertility rates, with Black women experiencing higher rates compared to White women [29]. These disparities result from reduced access to preventive reproductive health services and treatments for sexually transmitted infections, fibroids, ectopic pregnancy, or other gynecologic conditions affecting future fertility [30–32]. Furthermore, access to infertility treatment in the United States is highly stratified by race and income, rendering it unaffordable for most Americans [33]. The disparities in reproductive health and fertility care are widespread across race and ethnicity [30]. The term "stratified reproduction," which describes how sociocultural structures empower privileged women while disempowering others in reproduction, is important in this context [34]. Recognizing the role of medical racism behind stratified reproduction is crucial. It underscores the need for more patient-centered contraceptive and fertility education and services, as well as health-protective measures for fertility [35].

This study highlights the frequent concern that contraception affects future fertility among young people and shows its association with reduced contraceptive use. Among contraceptive users, concern that contraception affects future fertility was linked to lower hormonal method use. Similar findings from low- and middle-income countries demonstrate that fear of infertility is associated with using

Table 4
Contraception use by concern that contraception affects future fertility among community college students assigned female at birth in California and Texas: mixed-effects multivariable logistic regression results[a]

	Model 1 Using contraception vs not using contraception ($N = 2060$)		Model 2 Using hormonal contraception vs nonhormonal contraception ($n = 1776$)	
Characteristics	aOR	95% CI	aOR	95% CI
Concern that contraception affects future fertility	0.67*	0.49–0.91	0.77*	0.61–0.97
Age 18–19 y (ref = age 20–25 y)	1.43*	1.03–1.99	0.89	0.66–1.20
Race				
White non-Hispanic	Ref.			
Hispanic	0.89	0.58–1.37	0.60**	0.43–0.83
Asian/Pacific Islander non-Hispanic	0.88	0.51–1.53	0.62*	0.40–0.97
Black non-Hispanic	0.36***	0.21–0.63	0.57	0.33–1.00
American Indian/other/multiracial non-Hispanic	0.85	0.44–1.65	0.57*	0.35–0.94
First-generation college student	0.87	0.64–1.18	1.00	0.78–1.28
Speaks language other than English at home	0.71*	0.52–0.97	0.71**	0.54–0.92
Ever been pregnant	1.23	0.76–2.00	1.57*	1.06–2.33
Receives public assistance	0.89	0.65–1.21	0.82	0.62–1.09
Resides in California (ref = Texas)	0.92	0.69–1.24	1.03	0.79–1.34
Received sex education in school	0.97	0.68–1.39	1.04	0.76–1.43
Received contraceptive services in the past year	2.17***	1.64–2.87	8.67***	6.95–10.82

aOR = adjusted odds ratio.
*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.
[a] Multivariable mixed-effects logistic regression model with random effects for site.

less effective contraception or nonuse [11,14]. Collectively, these findings emphasize the global relevance of concerns about future fertility in influencing contraceptive choices.

Our results highlight the importance of addressing fertility concerns in contraceptive education and counseling, both in clinical and nonclinical settings, considering that not all young people have access to clinic visits. Participants who had seen a provider for contraception in the past year were less likely to express concern about future fertility. We recognize the potential for selection bias in this relationship, as those actively seeking hormonal contraception from a provider may inherently differ from those who do not in unaccounted ways in our analyses. Nevertheless, our findings underscore the importance of including evidence-based information about return to fertility into contraceptive counseling for all methods [36].

Students reporting sex education in school were no less likely to report concern that contraception affects future fertility. Given the inconsistent quality and scope of sex education throughout the United States, many students likely lack education about infertility and its true causes. Research indicates that young women often possess insufficient knowledge of reproductive health and overestimate infertility risks [37,38]. Moreover, this knowledge gap presents an opportunity for providers to address not only the belief that contraception affects future fertility but also to raise awareness about preventable causes of infertility, including untreated sexually transmitted infections [39].

This study has limitations. The cross-sectional design precludes establishing causal relationships between concern that contraception affects future fertility and contraceptive use. For example, contraceptive use might lead to greater concern about future fertility for some people. Further longitudinal research is needed to fully understand the complex relationships between these variables. The wording of our survey item may have unintentionally combined those who believed contraception impacted fertility but were not concerned about it with those who did not believe it did, potentially making our estimates of the association of concern and nonuse conservative.

Moreover, our study exclusively examined community college populations in California and Texas, offering insights into their distinct reproductive health and contraception needs. However, the observed attitudes and behaviors within this sample may not fully represent broader demographic groups, limiting the generalizability of our findings.

This secondary analysis is derived from a randomized controlled trial, and data from a nationally representative sample of sexually active young people may yield different results. While the Demographic and Health Surveys have recently included fear of infertility as a reason for nonuse of contraception, nationally representative surveys in the United States have yet to incorporate a similar measure.

5. Conclusions

In a study of sexually active community college students, concern that contraception affects future fertility was associated with not using contraception, including hormonal methods. Racial and ethnic disparities in these concerns may be related to experiences of racism, reproductive coercion including forced sterilization [40,41], and consequential medical distrust among Black, Indigenous, and people of color, as well as immigrant populations [27,28]. Health care providers and organizations must address contraceptive use disparities by providing unbiased and patient-centered education and care, both in community and clinic settings. Health care visits present an opportunity to address common concerns about how contraception may impact future fertility and to offer adequate resources to address young people's concerns.

Declaration of Competing Interest

The authors declare they have no competing interests.

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