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Racial and Ethnic Differences in Contraceptive Use Among Women Who Desire No Future Children, 2006–2010 National Survey of Family Growth

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Abstract

Objective—To evaluate racial/ethnic differences in contraceptive use among women who do not desire future pregnancy.

Study Design—We used the 2006–2010 National Survey of Family Growth to examine the associations between race/ethnicity and 1) use of any contraceptive method at last heterosexual intercourse and 2) effectiveness of contraceptive method used among women who stated that they did not desire any (more) children. We conducted multivariable logistic regression to assess the

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independent effect of race/ethnicity on these outcomes, adjusting for socio-demographic factors, reproductive characteristics, and indicators of healthcare access and utilization.

Results—The study sample consisted of 2,900 women, aged 15–44 years. The vast majority of women (91.2%) used contraception at last sex, although this varied significantly by race/ethnicity ($p<0.01$). In the fully adjusted model controlling for demographic and reproductive characteristics as well as healthcare access, compared to whites, black women were significantly less likely to use any contraception at last sex (OR: 0.43; 95% CI:0.27–0.73), while there was no significant difference for Hispanic women (OR:0.95; 95% CI:0.52–1.72). Among women who used a method at last sex, the type of contraceptive method varied significantly by race/ethnicity in bivariate analysis ($p<0.01$), although most women (59%) used a highly effective method. In the fully adjusted model, racial/ethnic differences were no longer significant.

Conclusions—In this nationally-representative cohort of women who report that they do not desire (more) children, black women were significantly less likely than white women to use any contraception at last intercourse; this difference did not appear to be due to differential access to healthcare.

Implications—Significant racial/ethnic differences exist in contraceptive use among women who have completed childbearing, which do not appear to be explained by differential socioeconomic status, reproductive characteristics, or utilization of healthcare. Other factors, including social mobility and locus of reproductive control, that may contribute to these variations should be further explored.

Keywords

contraception; disparities; race/ethnicity; unwanted pregnancy

1. Introduction

Over half of all pregnancies in the United States (US) are unintended, with women from racial and ethnic minority groups disproportionately more likely to experience unintended pregnancy [1]. When considering the impact of unintended pregnancy, it is important to take into account that not all unintended pregnancies are equivalent [2, 3]. Conventional measures of unintended pregnancy combine mistimed pregnancy (those that occur sooner than desired) and unwanted pregnancy (those that occur when no children, or no more children, were desired). However, the adverse consequences of mistimed and unwanted pregnancy may differ [4]. Unwanted pregnancies appear to be associated with poorer pregnancy outcomes than mistimed pregnancies, specifically higher risk of pre-term delivery and premature rupture of membranes (PROM) [5, 6]. Women who carry an unwanted pregnancy to term are also more likely to smoke, less likely to breastfeed, have higher rates of depression, and lower perceived levels of support than women carrying a mistimed pregnancy to term [6, 7].

Although much of the literature documenting racial and ethnic disparities in family planning focuses on the occurrence or risk of unintended pregnancy (i.e. both mistimed and unwanted pregnancies), [1, 8–11], black and Hispanic women are also more likely than white women to experience an unwanted pregnancy [2, 12–16]. As unwanted pregnancies are more closely

linked to pre-term delivery and PROM, understanding disparities in unwanted pregnancy may present an opportunity to address well-documented racial/ethnic disparities in adverse perinatal outcomes [17–19].

The most likely proximal cause of observed disparities in unintended pregnancy are racial/ethnic differences in contraceptive use patterns. Racial and ethnic differences in contraceptive use have been documented among women of reproductive age, with studies reporting that black women are more likely than white women to be contraceptive non-users, to use contraception inconsistently, to have more contraceptive failures, and to less frequently use some prescription methods including the contraceptive pill, intrauterine devices (IUDs), and sub-dermal implants [20–26]. However, less is known about disparities in contraceptive use among the subset of women who do not desire any (more) children, and who are therefore at risk of having an *unwanted*, and thus higher risk, pregnancy.

In this study, we use nationally representative data from the 2006–2010 National Survey of Family Growth (NSFG) to examine the relationships between race/ethnicity and contraceptive use among a sample of sexually-active women aged 15–44 who stated that they do not want any (more) children. Further, we assess how socio-demographic factors, reproductive characteristics, and indicators of health care utilization/access may affect these relationships.

2. Materials and Methods

2.1. Data source

We conducted a secondary analysis of nationally-representative, cross-sectional data from the 2006–2010 NSFG. The NSFG is administered by the Centers for Disease Control and Prevention's (CDC) National Center for Health Statistics to provide national estimates on factors affecting reproductive and sexual health. For the 2006–2010 NSFG, a total of 22,682 men and women ages 15–44 years were interviewed from June 2006 to June 2010. Interviews were administered in person by trained female interviewers using computer assistance; the overall survey response rate was 77%. Teens aged 15–19 years, as well as blacks and Hispanics were oversampled to allow for sub-group analyses. Additional sample methodology is described in detail elsewhere [27].

2.2. Study population

For this analysis, we restricted our sample to women aged 15–44 who were at risk of an unwanted pregnancy. Consistent with other studies [2, 15, 21, 22], women were considered at risk for an unwanted pregnancy if they had had heterosexual intercourse within the 3 months prior to the interview; they were not currently pregnant, seeking pregnancy, or less than 3 months postpartum; and answered "No" to the survey question: "Looking to the future, do you, yourself, want to have a baby (another baby) at some time in the future?" Women who underwent contraceptive sterilization or whose partner had undergone vasectomy were included in our sample. Women who reported any history of infertility, including hysterectomy, were excluded.

2.3. Study variables

The primary outcomes of interest were (1) use of any contraceptive method at last heterosexual intercourse and (2) the effectiveness of the type of contraceptive method used among women who used a method at last heterosexual intercourse. Consistent with World Health Organization recommendations, contraceptive methods were categorized as “highly effective” (male or female sterilization, IUD, implant), “moderately effective” (injection, pill, patch, ring), or “less effective” (barrier and behavioral methods including condoms, diaphragms/sponges, spermicide, withdrawal, natural family planning) [28]. For women who used multiple methods, we considered only her most effective method. Women who reported using an method “other” than one of those listed above (n=12) or emergency contraception (n=3) at last sex were excluded from analyses, as it was unclear how these methods may have impacted women’s risk for unwanted pregnancy.

Our key independent variable was self-reported race/ethnicity. We categorized race/ethnicity as non-Hispanic white, non-Hispanic black, Hispanic, and non-Hispanic other (Asian, Pacific Islander, Alaskan native, and Native American). Covariates included demographic characteristics (age, religion, marital/cohabitation status), socio-economic status (SES) (income level, education), reproductive characteristics (parity, prior history of unintended pregnancy) and indicators of healthcare access and utilization (insurance status, receipt of any reproductive health services in the past 12 months).

2.4. Statistical Analysis

We described socio-demographic characteristics of the study sample by race/ethnicity and also by effectiveness of reported contraceptive method using chi-square analyses. We then examined the bivariate associations between all independent variables and each of our outcomes and calculated unadjusted odds ratios (OR) for each pair.

To better understand the role of demographic characteristics, socio-economic status, reproductive characteristics, and healthcare access/utilization in the relationship between race/ethnicity and any contraceptive use, we conducted a series of multivariable logistic regression models in which we sequentially added: 1) demographic factors: age, marital status, religion, 2) socioeconomic status (SES): income level, education, 3) reproductive characteristics: parity, history of prior unintended pregnancy, and 4) indicators of healthcare access and utilization: insurance status, receipt of any reproductive health services in the past 12 months. The ordering of these groups of covariates was based on their increasing likelihood of being modifiable. We then excluded contraceptive non-users and performed the same series of analyses to examine the relationship between race/ethnicity and use of a highly or moderately effective (vs. less effective) contraceptive method. A change of 10% or more in the odds ratio with each serial addition into the model was considered indicative of a confounding effect by the group of variables [29]. Because abortion is underreported in the NSFG [30], we excluded this variable in our main analysis, but instead conducted a secondary analysis including this variable to examine whether reporting a history of abortion impacted our results.

Statistical analyses were conducted using Stata SE software (version 13.0, StataCorp, College Station, TX), using appropriate adjustment for the NSFG's complex sample design. All estimates were weighted to reflect the national household population aged 15–44 years. The University of Pittsburgh Institutional Review Board approved this analysis of the NSFG dataset.

3. Results

3.1. Sample characteristics

Our sample included 2,900 sexually-active women at risk for unwanted pregnancy. Table 1 shows sample characteristics by race/ethnicity. Briefly, 66.0% of the cohort was white, 12.4% was black, and 16.4% Hispanic. There were significant racial/ethnic differences in all of the covariates we assessed ($p<0.01$) with black and Hispanic women being younger than white women, having lower levels of education and income and higher rates of prior unintended pregnancy.

3.2. Any contraceptive use

The vast majority of women (91.2%) used a contraceptive method at last sex, although this varied significantly by race/ethnicity with 93.2% of white women reporting use of any method, compared to 84.7% of black and 90.5% of Hispanic women (Figure 1, $p<0.01$).

Table 2 shows the unadjusted and adjusted odds ratios (aOR) of using a contraceptive method at last heterosexual intercourse. In unadjusted analysis, black women were significantly less likely to use any contraception at last sexual encounter compared to white women [odds ratio (OR): 0.40, 95% confidence interval (CI): 0.26–0.64]. The multivariable models indicated that black women remained significantly less likely to use any contraception after sequentially adjusting for: 1) demographic characteristics (aOR: 0.45, 95% CI: 0.27–0.75); 2) SES (aOR: 0.51, 95% CI: 0.30–0.86); 3) reproductive characteristics (aOR: 0.46, 95% CI: 0.27–0.78); 4) and, finally, healthcare access/utilization (aOR: 0.43, 95% CI: 0.26–0.73).

In contrast, there were no statistically significant differences in contraceptive use between Hispanic and white women in the unadjusted model (OR: 0.70, 95% CI: 0.43–1.13) or in the adjusted models that sequentially added: 1) demographic characteristics (aOR: 0.67, 95% CI: 0.39–1.15); 2) SES (aOR: 0.89, 95% CI: 0.49–1.63); 3) reproductive characteristics (aOR: 0.93, 95%CI: 0.51–1.68); 4) and healthcare access/utilization (aOR: 0.95, 95% CI: 0.52–1.72). The odds ratio point estimate, however, increased by over 10% when SES variables were added to the model, suggesting that SES may confound the association between Hispanic ethnicity and contraceptive use.

3.3. Effectiveness of contraceptive method

Of the 2,624 sexually-active women who used a contraceptive method at last heterosexual intercourse, most (59.0%) used a highly effective method of contraception, while 18.9% used a moderately effective method, and 22.1% used a less effective method. with significant variation by race/ethnicity ($p<0.01$). Among contraceptive users, use of highly

effective methods varied by race/ethnicity, with 55.0% of black and 54.7% of Hispanic women using highly effective methods, compared to 61.2% of white women (Figure 1). There was less variation in use of moderately effective methods with 19.5% of white women, 20.2% black women and 18.6% of Hispanic women reporting use of one of these methods. Black and Hispanic women were more likely than white women to report using a least effective method (24.9% and 26.7% vs. 19.4%, respectively).

Table 3 shows racial and ethnic variation in the use of specific contraceptive methods. With regard to the highly effective methods, permanent methods (male and female) were more commonly used than long-acting reversible methods (52.5% versus 6.5%). A greater proportion of white women relied on vasectomy compared to black and Hispanic women (25.8% versus 3.3% and 8.6%, respectively).

Table 4 shows the unadjusted and adjusted odds of using a highly or moderately effective vs. a less effective contraceptive method among women who used a method at last sex. There were no statistically significant differences between black and white women with regard to use of highly/moderately effective contraception in unadjusted analysis (OR: 0.73, 95% CI: 0.49–1.08) or in any of the adjusted models that sequentially added: 1) demographic characteristics (aOR: 0.81, 95% CI: 0.54–1.20); 2) SES (aOR: 0.83, 95% CI: 0.55–1.25); 3) reproductive characteristics (aOR: 0.76, 95% CI: 0.50–1.14); 4) and finally, healthcare access/utilization (aOR: 0.71, 95% CI: 0.47–1.07).

Hispanic women were significantly less likely to use a highly or moderately effective method than white women in the unadjusted model (OR: 0.66, 95% CI: 0.46–0.93). This disparity, however, was attenuated (by a >10% change in the OR point estimate) after adjusting for: 1) demographic characteristics (aOR: 0.78, 95% CI: 0.54–1.13); and remained non-significant with further adjustment for 2) SES (aOR: 0.81, 95% CI: 0.54–1.21; 3) reproductive characteristics (aOR: 0.75, 95% CI: 0.50–1.11); 4) and healthcare access/utilization (aOR: 0.77, 95% CI: 0.53–1.13).

3.4. Secondary analysis

In bivariate analyses, there were no significant associations between a history of abortion and contraceptive use or the effectiveness of the contraceptive method used. The addition of this variable to our multivariable models did not alter our main findings.

4. Discussion

In this analysis of data from a nationally-representative cohort, most women who did not want any (more) children used contraception at last sex, with the majority using a highly effective method such as sterilization, an IUD, or an implant. However, black women in this population were less likely than whites to use any contraception, even after controlling for socio-demographic factors, reproductive characteristics, and indicators of health care utilization/access.

Our findings are in line with previous literature that has consistently documented that contraceptive non-use is more common among black than white women [20, 21, 31–37].

Our study builds upon existing literature by focusing on a specific subset of women - those who do not desire any (more) children - who may be at particularly high risk for the adverse consequences associated with unwanted pregnancy. One recent study which examined risk of unwanted pregnancy among a nationally-representative population of women aged 35–44 found contraceptive non-users had a three times greater odds of being black [15]. Our findings are consistent with that study and expand on it by documenting that racial and ethnic disparities in contraceptive use persist across the full range of women at risk for unwanted pregnancy. Examining this wider age range is particularly important when investigating racial/ethnic disparities, as women of color are more likely to initiate and end childbearing at earlier ages [38, 39]. Furthermore, our analysis differs from previous reports, which document current contraceptive use at the time of interview [23, 31], by focusing on contraceptive use at the time of most recent sexual activity. Our study also examines the role of potential confounders, including SES and healthcare access, in contributing to observed disparities. Specifically, we found that among women who reported that they do not want any future children, black women had significantly higher odds of contraceptive non-use than white women, and the odds did not change substantially when additional co-variables were included in the model, suggesting that this disparity in contraceptive non-use is not explained simply by differences in measures of socioeconomic status or access to healthcare. Among contraceptive users, there was no statistically significant black-white difference in use of a highly or moderately effective method, and the unadjusted odds were not substantially altered after adjusting for potential confounders.

For Hispanic women, the unadjusted odds for use of any method use was lower, although non-significant, compared to white women and neared 1.0 with sequential adjustments. Further, Hispanic women were significantly less likely than white women to use a highly or moderately effective method in unadjusted analyses but statistical significance was attenuated after adjusting for demographic factors. These findings suggest that disparities in contraceptive use among Hispanic women may be more driven by differences in SES and access to healthcare. Thus, improving access to care may reduce unintended pregnancy rates for Hispanic women, but our study suggests that such approaches are unlikely to improve rates among black women. This is particularly relevant in light of the current emphasis on reducing access barriers to highly effective reversible contraceptives as the primary solution to the public health issue of unintended pregnancy [40, 41]. Instead, a more comprehensive framework that considers a broad range of social and cultural factors including social networks, relationship dynamics, economic and social mobility, locus of reproductive control, and interactions with the healthcare system, including how historical reproductive injustices may shape women’s perceptions of these interactions, may be required to address observed racial disparities in contraceptive use and unintended pregnancy [41–43]. More research is needed to better understand how these factors shape women’s contraceptive behaviors.

There are important limitations to consider in the interpretation of this analysis. SES and health care access variables are incomplete measures. While we used available and commonly used variables that reflect these measures, we are aware that they do not wholly encompass these constructs. Second, we did not assess partners’ reproductive intentions, which may certainly impact women’s contraceptive use, especially when partners have

conflicting pregnancy desires [44]. Third, by focusing on women who explicitly stated that they did not desire any more children, we hoped to minimize the influence of ambivalence on contraceptive use, although we recognize that survey responses may not always accurately capture pregnancy intentions, which are often complex and potentially fluctuating [3, 45]. Fourth, we did not assess frequency of sex in the past 3 months, which could influence method selection (i.e., selection of coitally-dependent methods by women who infrequently have sex). We note that single women had significantly lower odds of using a highly or moderately effective method compared to married women, which may reflect less frequent sexual activity. Finally, our outcomes are self-reported. However, given the short timeframe from when respondents were interviewed (3 months or less), the likelihood of recall bias is small.

In conclusion, in this nationally-representative cohort of sexually-active women who state that they do not want (more) children, we found that black women were significantly less likely to use any contraception than white women. This disparity persisted after adjusting for measures of socio-demographic characteristics, reproductive factors, and healthcare access and utilization. Thus, other factors that may contribute to these variations, including social and cultural norms around pregnancy and contraception, locus of reproductive control, and interactions with the healthcare system, should be further explored.

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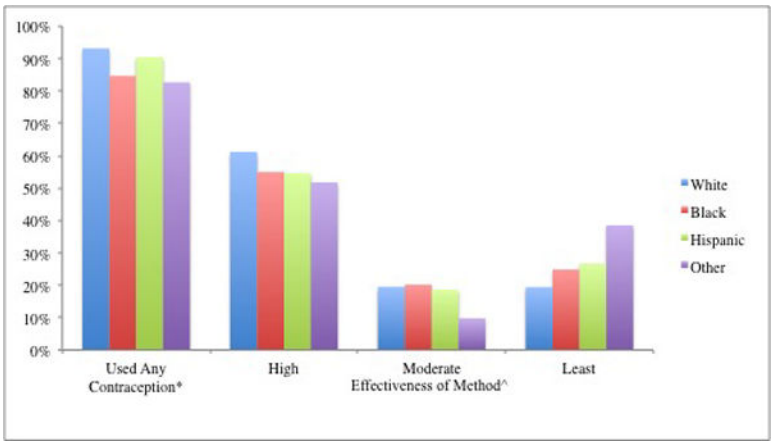

Figure 1.

Contraceptive Use at Last Intercourse; Use and Typical Effectiveness of Method Used (n=2900) *p-value =0.009; ^p-value =0.006; Contraceptive methods were categorized as: highly effective (male or female sterilization, intrauterine device, implant), moderately effective (injectable, pill, patch, ring), or less effective (barrier and behavioral methods including condoms, diaphragms/sponges, spermicide, natural family planning)

Table 1

Socio-demographic Characteristics of Sexually Active Women Who were at Risk of an Unwanted Pregnancy (n=2900)

	Race/Ethnicity				
	White (%) N=1568	**Black (%) N=566**	**Hispanic (%) N=641**	**Other (%) N=125**	***p-value***
Age (years)					<0.001
15–25	6.9	10.3	8.2	1.4	
26–35	28.1	36.5	35.0	21.1	
36–44	65.0	53.2	56.9	77.5	
Insurance status					<0.001
Private	74.3	49.9	40.9	63.2	
Public	10.6	30.6	17.0	7.3	
None	15.1	19.5	42.0	29.5	
Household income, % poverty level[1]					<0.001
<100%	11.6	35.9	34.7	14.8	
100–199%	19.8	25.9	34.3	33.0	
200–299%	20.7	16.5	18.2	16.5	
≥300%	48.0	21.6	12.8	35.7	
Education Level					<0.001
Some High school	10.4	21.0	41.0	5.1	
High school diploma/GED	26.8	36.0	31.3	15.9	
Some college	19.2	20.9	11.9	13.5	
College graduate	43.6	22.0	15.8	65.5	
Parity					<0.001
0 children	13.7	5.5	3.3	2.5	
1–2 children	56.2	51.5	36.8	53.2	
≥3 children	30.1	42.9	59.9	44.3	
Unintended Pregnancy					<0.001
Yes	55.4	77.9	66.5	63.4	
Marital Status					<0.001
Currently married	74.6	44.5	67.0	89.2	
Single but cohabitating	9.8	10.7	15.1	4.4	

	Race/Ethnicity				
	White (%) N=1568	**Black (%) N=566**	**Hispanic (%) N=641**	**Other (%) N=125**	***p-value***
Prior marriage[2]	9.1	16.2	10.5	1.8	
Single	6.5	28.7	7.4	4.5	
Religion					<0.001
None	19.1	10.2	10.8	13.6	
Catholic	18.2	5.4	60.3	19.8	
Protestant	54.9	79.0	23.4	29.1	
Other	7.8	5.4	5.5	37.5	
Receipt of Reproductive Health Services					0.003
Yes	74.3	79.6	62.4	72.0	

[1] Poverty threshold based on 2008–2010 level defined by the US Census Bureau, which takes into account total household income and number.

[2] Prior marriage includes: widowed, separated, divorced

Table 2

Unadjusted and Adjusted Odds of Using a Contraceptive Method at Last Intercourse Among US Women 15–44 Years of Age who do not want (more) children (n=2900)

	Unadjusted OR (95% CI)	Model 1[1] (95% CI)	Model 2[2] (95% CI)	Model 3[3] (95% CI)	Model 4[4] (95% CI)
Race/Ethnicity					
White	Reference	Reference	Reference	Reference	Reference
African-American	**0.40 (0.26, 0.64)**	**0.45 (0.27, 0.75)**	**0.51 (0.30, 0.86)**	**0.46 (0.27, 0.78)**	**0.43 (0.26, 0.73)**
Hispanic	0.70 (0.43, 1.13)	0.67 (0.39, 1.15)	0.89 (0.49, 1.63)	0.93 (0.51, 1.68)	0.95 (0.52, 1.72)
Other	0.35 (0.12, 1.04)	**0.29 (0.10, 0.88)**	**0.29 (0.10, 0.86)**	**0.27 (0.10, 0.78)**	**0.27 (0.10, 0.72)**
Age					
15–25	**1.87 (1.04, 3.37)**	**2.02 (1.05, 3.92)**	**2.36 (1.27, 4.40)**	**2.43 (1.20, 4.93)**	**2.28 (1.11, 4.67)**
26–35	0.93 (0.64, 1.37)	0.96 (0.63, 1.45)	1.02 (0.67, 1.55)	0.98 (0.65, 1.49)	0.97 (0.64, 1.47)
36–44	Reference	Reference	Reference	Reference	Reference
Marital Status					
Currently married	Reference	Reference	Reference	Reference	Reference
Single but cohabitating	0.95 (0.53, 1.69)	0.88 (0.49, 1.58)	1.10 (0.58, 2.07)	1.15 (0.61, 2.17)	1.13 (0.58, 2.21)
Prior marriage[5]	0.69 (0.37, 1.29)	0.73 (0.38, 1.38)	0.85 (0.46, 1.56)	0.84 (0.45, 1.59)	0.83 (0.44, 1.60)
Single	0.80 (0.49, 1.30)	0.83 (0.48, 1.45)	0.97 (0.51, 1.85)	1.17 (0.60, 2.26)	1.16 (0.59, 2.26)
Religion					
None	Reference	Reference	Reference	Reference	Reference
Catholic	0.89 (0.49, 1.60)	0.94 (0.49, 1.80)	0.93 (0.47, 1.85)	0.93 (0.47, 1.84)	0.89 (0.45, 1.75)
Protestant	0.74 (0.48, 1.14)	0.78 (0.49, 1.24)	0.78 (0.48, 1.26)	0.79 (0.49, 1.28)	0.77 (0.48, 1.24)
Other	1.10 (0.42, 2.91)	1.43 (0.48, 4.29)	1.47 (0.47, 4.58)	1.53 (0.51, 4.56)	1.57 (0.52, 4.80)
Household income, (%) of poverty level[6]					
<100	**0.49 (0.29, 0.85)**	-	0.69 (0.33, 1.43)	0.72 (0.37, 1.43)	0.85 (0.41, 1.77)
100–199	0.65 (0.41, 1.05)	-	0.81 (0.47, 1.39)	0.80 (0.46, 1.38)	0.90 (0.50, 1.62)
200–299	1.13 (0.61, 2.11)	-	1.30 (0.69, 2.44)	1.31 (0.72, 2.39)	1.37 (0.76, 2.46)
≥300	Reference		Reference	Reference	Reference
Education Level					
Some High school	0.57 (0.32, 1.02)	-	0.65 (0.29, 1.46)	0.64 (0.29, 1.42)	0.72 (0.34, 1.54)
High school diploma/GED	0.61 (0.35, 1.06)	-	0.67 (0.34, 1.32)	0.64 (0.33, 1.26)	0.67 (0.34, 1.31)

	Unadjusted OR (95% CI)	Model 1[1] (95% CI)	Model 2[2] (95% CI)	Model 3[3] (95% CI)	Model 4[4] (95% CI)
Some college	1.38 (0.75, 2.55)	-	1.52 (0.79, 2.93)	1.50 (0.78, 2.85)	1.54 (0.82, 2.88)
College graduate	Reference	-	Reference	Reference	Reference
Parity					
0 children	Reference	-	-	Reference	Reference
1–2 children	1.93 (0.99, 3.76)	-	-	**2.71 (1.32, 5.54)**	**2.73 (1.33, 5.61)**
≥3 children	0.97 (0.47, 2.01)	-	-	1.62 (0.72, 3.65)	1.66 (0.74, 3.75)
History of Unintended Pregnancy					
No	Reference	-	-	Reference	Reference
Yes	0.92 (0.59, 1.43)	-	-	1.14 (0.72, 1.80)	1.13 (0.72, 1.77)
Receipt of Reproductive Health Services					
No	Reference	-	-	-	Reference
Yes	**1.71 (1.18, 2.47)**	-	-	-	**1.61 (1.08, 2.41)**
Insurance status					
Private	Reference	-	-	-	Reference
Public	0.59 (0.33, 1.05)	-	-	-	0.79 (0.40, 1.56)
None	0.60 (0.33, 1.09)	-	-	-	0.82 (0.42, 1.60)

Model Explanations

[1]Model 1: Adjusted for demographic characteristics (age, marital status, religion)

[2]Model 2: Model 1 + adjusted for socioeconomic status (annual household income, education level)

[3]Model 3: Model 2 + adjusted for reproductive characteristics (parity, prior unintended pregnancy)

[4]Model 4: Model 3 + adjusted for healthcare access/utilization (insurance status, receipt of reproductive healthcare services in past 12 months)

[5]Prior marriage includes: widowed, separated, divorced

[6]Poverty threshold based on 2008–2010 level defined by the US Census Bureau, which takes into account total household income and number.

Bold numbers signify statistical significance with *p*-value <0.05

Table 3

Specific Type of Contraception Used at Last Intercourse among Contraceptive Users (n=2624)

		Race/Ethnicity			
Contraceptive method	**Total (%) N=2624**	**White (%) N=1465**	**Black (%) N=480**	**Hispanic (%) N=570**	**Other (%) N=109**
Highly effective methods					
Female sterilization	32.9	29.8	45.1	38.3	28.9
Partner's vasectomy	19.6	25.8	3.3	8.6	10.2
IUD	6.0	5.4	6.1	7.5	9.0
Implant	0.5	0.3	0.4	0.2	3.7
Moderately effective methods					
Pill	14.8	16.7	11.4	11.2	7.5
Injectable	2.7	1.5	6.2	5.3	2.1
Patch	0.4	0.3	1.2	0.4	0
Ring	1.1	0.9	1.4	1.7	0.1
Least effective methods					
Condom	14.2	11.4	21.1	16.8	27.4
Withdrawal	5.5	5.3	3.4	6.6	9.2
NFP	1.6	1.9	0.3	1.5	1.9
Spermicide	0.5	0.3	0	1.7	0
Diaphragm	0.3	0.4	0	0.1	0
Sponge	0	0	0	0	0

IUD = Intrauterine device; NFP=Natural family planning

Table 4

Unadjusted and Adjusted Odds of Using a Highly or Moderately Effective vs. a Less Effective Contraceptive Method Among Women Who Used a Contraceptive Method at Last Intercourse (n=2624)

	Unadjusted OR (95% CI)	Model 1[1] (95% CI)	Model 2[2] (95% CI)	Model 3[3] (95% CI)	Model 4[4] (95% CI)
Race/Ethnicity					
White	Reference	Reference	Reference	Reference	Reference
African-American	0.73 (0.49, 1.08)	0.81 (0.54, 1.20)	0.83 (0.55, 1.25)	0.76 (0.50, 1.14)	0.71 (0.47, 1.07)
Hispanic	**0.66 (0.46, 0.93)**	0.78 (0.54, 1.13)	0.81 (0.54, 1.21)	0.75 (0.50, 1.11)	0.77 (0.53, 1.13)
Other	**0.38 (0.19, 0.77)**	**0.49 (0.24, 0.97)**	0.50 (0.25, 1.02)	**0.47 (0.23, 0.93)**	**0.45 (0.23, 0.89)**
Age, years					
15–25	0.57 (0.37, 0.87)	0.83 (0.46, 1.49)	0.85 (0.48, 1.50)	1.02 (0.58, 1.80)	0.91 (0.53, 1.57)
26–35	0.94 (0.72, 1.24)	1.01 (0.76, 1.36)	1.03 (0.77, 1.37)	1.04 (0.78, 1.38)	1.00 (0.76, 1.33)
36–44	Reference	Reference	Reference	Reference	Reference
Marital Status					
Currently married	Reference	Reference	Reference	Reference	Reference
Single but cohabitating	1.09 (0.73, 1.62)	1.12 (0.73, 1.71)	1.16 (0.74, 1.82)	1.30 (0.82, 2.03)	1.25 (0.79, 2.00)
Prior marriage[5]	0.84 (0.55, 1.27)	0.78 (0.52, 1.17)	0.81 (0.53, 1.24)	0.87 (0.56, 1.35)	0.84 (0.53, 1.32)
Single	**0.38 (0.27, 0.54)**	**0.37 (0.24, 0.58)**	**0.39 (0.24, 0.61)**	**0.51 (0.32, 0.81)**	**0.51 (0.31, 0.82)**
Religion					
None	Reference	Reference	Reference	Reference	Reference
Catholic	0.90 (0.61, 1.31)	0.82 (0.53, 1.25)	0.81 (0.53, 1.23)	0.75 (0.49, 1.15)	0.72 (0.47, 1.09)
Protestant	**1.54 (1.10, 2.16)**	**1.42 (1.00, 2.01)**	**1.44 (1.02, 2.03)**	1.34 (0.95, 1.89)	1.32 (0.94, 1.86)
Other	**0.55 (0.31, 0.96)**	**0.51 (0.29, 0.92)**	**0.52 (0.29, 0.92)**	**0.48 (0.27, 0.85)**	**0.48 (0.27, 0.87)**
Household income, (%)poverty level[6]					
≥300%	Reference		Reference	Reference	Reference
200–299%	0.98 (0.66, 1.44)	-	1.03 (0.68, 1.56)	0.95 (0.63, 1.43)	0.97 (0.64, 1.45)
100–199%	0.73 (0.54, 1.00)	-	0.85 (0.60, 1.20)	0.75 (0.53, 1.06)	0.82 (0.58, 1.18)
<100%	**0.66 (0.46, 0.95)**	-	0.81 (0.51, 1.28)	0.69 (0.43, 1.08)	0.75 (0.49, 1.16)
Education Level					
College graduate	Reference	-	Reference	Reference	Reference
Some college	0.89 (0.65, 1.24)	-	0.92 (0.66, 1.28)	0.89 (0.63, 1.27)	0.91 (0.65, 1.28)

	Unadjusted OR (95% CI)	Model 1[1] (95% CI)	Model 2[2] (95% CI)	Model 3[3] (95% CI)	Model 4[4] (95% CI)
High school diploma/GED	0.95 (0.68, 1.33)	-	1.00 (0.69, 1.44)	0.97 (0.67, 1.40)	0.99 (0.69, 1.43)
Some High school	0.86 (0.58, 1.26)	-	1.15 (0.72, 1.81)	1.06 (0.66, 1.70)	1.13 (0.70, 1.82)
Parity					
0 children	Reference	-	-	Reference	Reference
1–2 children	**1.99 (1.20, 3.30)**	-	-	**1.89 (1.11, 3.22)**	**1.91 (1.12, 3.26)**
≥3 children	**2.24 (1.38, 3.63)**	-	-	**2.53 (1.45, 4.44)**	**2.64 (1.50, 4.63)**
History of Unintended Pregnancy					
No	Reference	-	-	Reference	Reference
Yes	1.06 (0.78, 1.44)	-	-	0.92 (0.68, 1.26)	0.93 (0.68, 1.26)
Receipt of Reproductive Health Services					
No	Reference	-	-	-	Reference
Yes	**1.61 (1.15, 2.24)**	-	-	-	**1.70 (1.20, 2.39)**
Insurance status					
Private	Reference	-	-	-	Reference
Public	0.79 (0.54, 1.17)	-	-	-	0.95 (0.62, 1.45)
None	0.71 (0.49, 1.03)	-	-	-	0.94 (0.65, 1.36)

Model Explanations

[1]Model 1: Adjusted for demographic characteristics (age, marital status, religion)

[2]Model 2: Model 1 + adjusted for socioeconomic status (annual household income, education level)

[3]Model 3: Model 2 + adjusted for reproductive characteristics (parity, prior unintended pregnancy)

[4]Model 4: Model 3 + adjusted for healthcare access/utilization (insurance status, receipt of reproductive healthcare services in past 12 months)

[5]Prior marriage includes: widowed, separated and divorced

[6]Poverty threshold based on 2008–2010 level defined by the US Census Bureau, which takes into account total household income and number.

Bold numbers signify statistical significance with *p*-value <0.05