GENERAL GYNECOLOGY

Racial/ethnic disparities in contraceptive use: variation by age and women's reproductive experiences

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OBJECTIVE: Disparities in unintended pregnancy in the United States are related, in part, to black and Hispanic women being overall less likely to use effective contraceptive methods. However, the fact that these same groups are more likely to use female sterilization, a highly effective method, suggests there may be variability in disparities in contraceptive use across a woman's life course. We sought to assess the relationship between race/ethnicity and contraceptive use in a nationally representative sample and to approximate a life course perspective by examining effect modification on these disparities by women's age, parity, and history of unintended pregnancy.

STUDY DESIGN: We conducted an analysis of the 2006 through 2010 National Survey of Family Growth to determine the association between race/ethnicity and: (1) use of any method; (2) use of a highly or moderately effective method among women using contraception; and (3) use of a highly effective method among women using contraception. We then performed analyses to assess interactions between race/ethnicity and age, parity, and history of unintended pregnancy.

RESULTS: Our sample included 7214 females aged 15-44 years. Compared to whites, blacks were less likely to use any contraceptive method (adjusted odds ratio, 0.65); and blacks and Hispanics were less likely to use a highly or moderately effective method (adjusted odds ratio, 0.49 and 0.57, respectively). Interaction analyses revealed that racial/ethnic disparities in contraceptive use varied by women's age, with younger women having more prominent disparities.

CONCLUSION: Interventions designed to address disparities in unintended pregnancy should focus on improving contraceptive use among younger women.

Key words: contraception, disparities, race/ethnicity

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Nearly half of all pregnancies in the United States are unintended.[1] There are prominent racial and ethnic disparities in unintended pregnancy rates, with black and Hispanic women having a significantly higher rate of unintended pregnancy than white women.[1,2] Unintended pregnancy is directly related to use of contraception as well as to the type of contraceptive method used, with hormonal methods being superior to barrier methods for pregnancy prevention and sterilization, intrauterine devices (IUDs), and implants being the most effective.[3,4]

Black women have been found to have higher rates of contraceptive nonuse than whites in analyses using a variety of data sets,[5-8] and similarly both blacks and Hispanics have been found to be more likely than white women to use condoms, a lower efficacy method.[7,9,10] While this suggests that racial/ethnic differences in contraceptive patterns may underlie differences in unintended pregnancies, cross-sectional studies have also found a countervailing trend, in that female sterilization, a highly effective method, is used more commonly as a contraceptive method by black and Hispanic women.[7,11] As sterilization is used more often by older women[7,12] and by those who have completed childbearing, while younger women and women with lower parity are more likely to use condoms or

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no method at all,[7] these trends raise the question of whether racial/ethnic disparities in use of contraception vary over women's life course. Understanding how racial/ethnic differences in overall contraceptive use, as well as in the type of method used, vary across age and reproductive experiences may provide insight into factors that shape contraceptive behavior. In addition, this understanding can help to guide interventions designed to address disparities in contraceptive use and, ultimately, unintended pregnancy through identifying which women are at highest risk.

We used data from the 2006-2010 cycle of the National Survey of Family Growth (NSFG) to analyze patterns of contraceptive use by race/ethnicity with regard to both overall use and the effectiveness of the method used, as well as to assess how the relationship between race/ethnicity and contraceptive use was modified by age and reproductive experiences.

Materials and Methods

Study design

We conducted a secondary analysis of cross-sectional data collected in the 2006-2010 NSFG. The NSFG is conducted by the National Center for Health Statistics, Department of Health and Human Services. The purpose of the survey is to provide nationally representative data on factors affecting men's and women's reproductive health.

Study sample

The NSFG uses a national probability sample designed to represent males and females aged 15-44 years in the household population of all 50 states and the District of Columbia. For the 2006-2010 NSFG, face-to-face interviews were conducted from June 2006 through June 2010. Blacks, Hispanics, and individuals aged 15-24 years were oversampled; the overall response rate was 77%. A more complete description of the sampling methods for 2006 through 2010 cycle of the NSFG is described elsewhere.[12]

The study population for the 2006-2010 NSFG included 12,279 women and 10,403 men for a total sample size of 22,692. For this analysis, we included only data from female participants who were at risk for unintended pregnancy. Women were considered at risk for unintended pregnancy if they had had sexual intercourse with a man in the 3 months prior to interview and were not pregnant, trying to get pregnant, or postpartum at the time of interview. We excluded women who reported that they or their partners were infertile as well as women who were using contraception in the 3 months prior to the interview but were not sexually active during that period.

Study variables

We sought to examine the relationship between race/ethnicity and current use of any contraceptive method (defined as use in the month of the interview) as well as type of method (categorized by clinical effectiveness). The effectiveness of contraceptive methods were categorized based on the World Health Organization recommendations.[13] Accordingly, we considered barrier methods (ie, condoms, diaphragms/sponges, spermicides) to be less effective and hormonal methods (pills, patch, ring, and injectables) to be moderately effective. IUDs, implants, and male or female sterilization were considered to be highly effective. For the main analysis, withdrawal and natural family planning methods were considered as "no method," due to our desire to focus on the use or nonuse of modern contraceptive methods. Women who reported using emergency contraception alone (n = 8) were also classified as not using a method, as this form of pregnancy prevention is not designed for ongoing use. If a woman reported >1 type of method in the month of interview, we used the most effective method for our analysis. We examined several contraceptive use outcomes, including: (1) use of any method; (2) use of a highly or moderately effective method among women using contraception; and (3) use of a highly effective method among women using contraception.

The key independent variable of interest was self-reported race/ethnicity. Insurance status, income, education level, marital status, and religion were included as control variables. Age, parity, and history of unintended pregnancy (pregnancies that were either "unwanted" or occurred "too soon") [11] were examined in more detail as potential moderators of the associations between race/ethnicity and contraceptive use.

Statistical analysis

We examined sociodemographic characteristics of the study sample by effectiveness of their reported current contraceptive method (no method, less effective, moderately effective, and highly effective) using χ^2 analysis. We then conducted multivariate logistic regression analyses, in which we controlled for all covariates for each of our 3 outcomes. We tested for interactions between race/ethnicity and each of 3 potential effect modifiers (age, parity, and history of unintended pregnancy). Given the potential for colinearity between our proposed effect modifiers, for outcomes in which >1 interaction was identified, we examined the relative importance of these interactions by constructing a model in which all significant interactions were included. Those interaction terms with a P value of < .1 in these combined models were considered to be significant interactions. We then conducted stratified analyses for those variables that demonstrated significant interactions including all other covariates.

As history of abortion is known to be underreported in the NSFG,[14] we did not include this in the primary model, but performed a sensitivity analysis to determine whether inclusion of this variable affected the association of other covariates with the outcomes in the multivariate models. We also performed a second sensitivity analysis in which we included natural family planning methods, withdrawal, and emergency contraception as less-effective methods.

Statistical analyses for this project were conducted using software (SAS, version 9.2; SAS Institute Inc, Cary, NC), utilizing appropriate modifications for the NSFG's complex sample design. All percentages shown have been weighted to reflect national estimates. This study was approved by the University of Pittsburgh Institutional Review Board.