ELSEVIER

Contraception 88 (2013) 532 – 538

Contraception

Original research article

Racial and ethnic differences in men's knowledge and attitudes about contraception☆

Sonya Borrero[a,b,*], Amy Farkas[c], Christine Dehlendorf[d,e], Corinne H. Rocca[e]

[a]Center for Research on Health Care, University of Pittsburgh, Pittsburgh, PA, USA
[b]Center for Health Equity, Research, and Promotion, VA Pittsburgh Healthcare System, Pittsburgh, PA, USA
[c]University of Pittsburgh Medical Center, Pittsburgh, PA, USA
[d]Department of Family and Community Medicine, University of California San Francisco, San Francisco, CA, USA
[e]Bixby Center for Global Reproductive Health, Department of Obstetrics, Gynecology, and Reproductive Sciences, University of California San Francisco, San Francisco, CA, USA

Received 1 February 2013; revised 8 April 2013; accepted 11 April 2013

Abstract

Background: Little is known about racial/ethnic differences in men's contraceptive knowledge and attitudes.
Study Design: We used multivariable logistic regression to examine racial/ethnic differences in contraceptive knowledge and attitudes among 903 men aged 18–29 in the 2009 National Survey of Reproductive and Contraceptive Knowledge.
Results: Black and Hispanic men were less likely than Whites to have heard of most contraceptive methods, including female and male sterilization, and also had lower knowledge about hormonal and long-acting reversible methods. They were less likely to know that pills are ineffective when 2–3 pills are missed [Blacks: adjusted odds ratio (aOR)=0.42; Hispanics: aOR=0.53] and that fertility was not delayed after stopping the pill (Blacks: aOR=0.52; Hispanics: aOR=0.27). Hispanics were less likely to know that nulliparous women can use the intrauterine device (aOR=0.47). Condom knowledge was similar by race/ethnicity, but Blacks were less likely to view condoms as a hassle than Whites (aOR=0.46).
Conclusions: Efforts to educate men, especially men of color, about contraceptive methods are needed.
Published by Elsevier Inc.

Keywords: Race; Disparities; Men; Contraception; Attitudes; Knowledge

1. Introduction

Racial and ethnic disparities in reproductive health persist in the US. Black and Hispanics experience poorer reproductive health outcomes, including higher rates of unintended pregnancy and abortion [1–3]. These disparities are explained in part by differences in contraceptive use as Black and Hispanic women are less likely to use any contraceptive method compared to White women [4]. Black and Hispanic women also have different patterns of contraceptive use; they are less likely to use oral contraceptive pills (OCPs) than White women and more likely to use condoms and the contraceptive injection [4–6]. The reasons underlying these differences are not fully understood but are likely multifactorial, including racial differences in cultural norms and attitudes toward pregnancy, contraception and parenthood as well as access to and education about contraception [7–12].

One area that remains underexplored is how male partners contribute to racial differences in contraceptive use. Evidence is emerging that men play a key role in the reproductive and family planning choices of women [13,14]. An analysis of the 2006 National Couple's Survey found that a man's method preferences were associated with the method of contraception used by his partner [15], results which are consistent with prior analyses from the 1990s [16–19]. Other studies conducted among predominantly Hispanic populations have found that women were more likely to use contraception and less likely to discontinue use if their

☆ Conflict of Interest: No conflict of interest, financial or other, exists for any of the authors.

* Corresponding author. Center for Research on Health Care, University of Pittsburgh, 230 McKee Place, Suite 600, Pittsburgh, PA 15213, USA. Tel.: +1 412 692 4841; fax: +1 412 692 4838.
E-mail address: borrerosp@upmc.edu (S. Borrero).

0010-7824/$ – see front matter. Published by Elsevier Inc.
http://dx.doi.org/10.1016/j.contraception.2013.04.002

partner was involved in contraceptive decision making [20,21]. In addition, research has shown that the more men know about contraception, the more likely their partners are to use more effective contraception, such as hormonal or long-acting reversible methods [22].

Although men's preferences, knowledge and level of involvement influence their partners' contraceptive use, little is known about whether there are racial and ethnic differences in men's contraceptive knowledge and attitudes. Considering that most couples in the US are race concordant [23], differences in men's contraceptive knowledge and attitudes may contribute to differential contraceptive use. Qualitative research conducted among ethnically diverse samples of men has suggested that some men have limited knowledge about method efficacy and proper use and hold negative attitudes toward hormonal contraception [24–26]. However, no studies to our knowledge have quantitatively evaluated racial and ethnic differences in men's contraceptive knowledge and attitudes. To address this gap, we used nationally representative data from the 2009 National Survey of Reproductive and Contraceptive Knowledge (NSRCK) to describe young men's contraceptive knowledge and attitudes and examine differences by race and ethnicity.

2. Materials and methods

2.1. Study sample

We analyzed data from the 903 men participating in the 2009 NSRCK. The survey, conducted among unmarried US men and women aged 18–29 years, was commissioned by the National Campaign to Prevent Teenage and Unplanned Pregnancy and conducted by the Guttmacher Institute [27]. The survey was designed to provide nationally representative data on a range of factors thought to influence use of contraception and affect risk of unplanned pregnancy. Data were collected between September 2008 and April of 2009 using a dual-frame sampling design with three components: random digital dial for landline telephone numbers, a random sample of cell phone numbers and a targeted sample of listed numbers. Surveys were conducted over the telephone in English or Spanish. A total of 1800 participants (897 women and 903 men) were interviewed. Blacks and Hispanics were oversampled in order to allow for subgroup analyses.

2.2. Measures

2.2.1. Contraceptive knowledge

Awareness of contraceptive methods was assessed with items asking whether respondents had ever heard of each method, ranging from female sterilization to natural family planning. In addition, a series of true/false questions was asked to assess understanding of correct use, effectiveness and facts about specific methods including intrauterine devices (IUDs), the contraceptive injection, combined hormonal methods (pill, ring, patch) and condoms.

2.2.2. Reproductive and contraceptive attitudes

We examined a series of questions about attitudes thought to impact contraceptive use: likelihood of side effects with hormonal methods, attitudes about condom use, mistrust of the medical system and the government in promoting contraception and attitudes about pregnancy. Attitudes were assessed with 4- or 5-point Likert scale; however, we collapsed response categories into dichotomous versions for each item.

Perceptions about side effects were assessed by asking respondents to rate the likelihood (*extremely* or *quite likely* vs. *slightly* or *not at all likely*) that a woman would experience different side effects if she used a hormonal method.

Attitude toward condom use was assessed with a single item asking whether the participant believed condoms are a "hassle to use" (*strongly* or *somewhat agree* vs. *somewhat* or *strongly disagree*).

Mistrust of the medical system was assessed by determining whether the participant strongly or somewhat agreed with the following statements: (a) "the government makes certain that birth control methods are safe before they come onto the market"; (2) "the government is trying to limit Blacks and other minority populations by encouraging the use of birth control"; (3) "the government and public health institutions use poor and minority people as guinea pigs to try out new birth control methods"; and (4) "drug companies don't care if birth control is safe, they just want people to use it so they can make money."

Attitudes about pregnancy were assessed with six items. Respondents indicated how important it is for them to avoid pregnancy right now (*very important* vs. *somewhat important*, *a little important*, or *not at all important*) and how they would feel if a partner became pregnant today (*very upset* vs. *a little upset*, *a little pleased*, *very pleased* or *would not care*). In addition, respondents were asked their level of agreement (*strongly agree* vs. *somewhat agree*, *neither*, *somewhat disagree* or *strongly disagree*) with the following statements: "I have all the information I need to avoid an unplanned pregnancy" and "Pregnancy is something that should be planned." We also assessed whether the participants strongly or somewhat agreed with the statements: "It does not matter whether you use birth control or not; when it is your time to get pregnant, it will happen" and "It is mainly a woman's responsibility to make decisions about birth control."

2.2.3. Social and demographic variables

Our primary independent variable was self-reported race/ethnicity (non-Hispanic White, non-Hispanic Black, Hispanic and other). We also assessed age, whether the participant had any children, sexual activity, nativity, insurance status and whether the participant had ever obtained sexual healthcare from a provider.

It has been well-documented that Black and Hispanic individuals in the US are more likely than Whites to be

socioeconomically disadvantaged [23]. To address the potential for confounding by socioeconomic status (SES), we included individual and community level proxies for SES. On the individual level, because our sample included participants who had not yet completed their education, we created a four-category variable indicating whether the participant was in school and/or highest education level completed. To capture community SES, we used a continuous measure of neighborhood poverty, defined as the percentage of families in the respondent's zip code living below 100% of the poverty threshold, derived from the 2005–2009 American Community Survey data of income by zip code.

2.3. Analysis

We assessed differences in sociodemographic characteristics by race/ethnicity, using bivariable regression models, with White race as the reference category. Linear, logistic or multinomial logistic models were used as appropriate, depending on the coding of the characteristic.

To assess whether knowledge items regarding each contraceptive method and set of attitudinal items could be combined into reliable scales, we evaluated the Kuder–Richardson Formula coefficient for scales of dichotomous items [28]; however, because scales showed low reliability, we investigated each knowledge and attitude item individually. We used a series of bivariable logistic regression models to examine whether responses to each knowledge and attitude item differed by race/ethnicity. We then used multivariable logistic regression models to assess whether responses to each item differed by race/ethnicity after adjusting for covariables, including age, sexual activity, education, neighborhood poverty, insurance status and visit to a doctor for sexual health. We excluded covariables that were strongly correlated with others (had a child) or that did not have sufficient variability within each racial/ethnic group (nativity). We repeated analyses of attitudes using ordinal logistic regression with the full Likert scale items; because results were unchanged, we present results of analyses with dichotomous items to facilitate reporting. Multiple imputations were performed to account for missing data, particularly on neighborhood poverty. Analyses included men in the other race category; however, we do not report results for this heterogenous group.

Stata version 12.0 was used for analyses (College Station, TX, USA).We accounted for the oversampling of Blacks and Hispanics in the survey using appropriate survey weights. Results are reported at the $p<.05$ level.

3. Results

3.1. Sample characteristics

A total of 903 men were included in the analysis: 60.6% were non-Hispanic White, 11.8% were non-Hispanic Black, 19.8% were Hispanic and 7.8% were of "other" race (Table 1). The mean age of participants was 22.7. Nearly 14% of participants had fathered a child; Black men were more likely to have fathered a child compared to White men (28% vs. 12%). Compared to White men, Black and Hispanic men had lower educational attainment and lived

Table 1
Social and demographic characteristics of the study sample, male participants in the NSRCK, by race/ethnicity (n=903)

Characteristics	Total (100.0%)	White (60.6%)	Black (11.8%)	Hispanic (19.8%)	Other (7.8%)
Mean age (years)	22.7	22.6	23.3	22.4	22.9
Has a child	13.6	11.7	27.9**	14.1	5.6
Sexual activity[a]					
Sex in last 12 months (ref)	77.4	74.3	87.8	86.2	63.9
Sex ever but not in last 12 months	9.7	11.6	4.2*	9.4	4.6
Never had sex	12.8	14.1	8.0	4.5***	31.5**
Education[a]					
≤High school, not in school (ref)	36.3	31.5	44.6	53.8	16.5
≤High school, in school	12.1	11.3	13.3	15.2	9.2
Some college, not in school	12.1	13.8	11.2	7.6**	12.1
Some college, in school or college graduate	39.4	43.5	30.9*	23.5***	62.2*
Mean percentage of families in neighborhood living below 100% poverty line	15.7	13.7	19.7***	18.8***	16.3
Foreign born	14.6	1.9	5.9	44.2***	50.7***
Insurance in last 12 months					
Private	66.0	75.4	67.6	35.7	66.5
Medicaid, other or none	34.0	24.6	32.4	64.3***	33.5
Ever visited a doctor for sexual health	40.2	37.9	48.1	48.6	24.9

White is the reference race/ethnicity category.

* $p<.05$.

** $p<.01$.

*** $p<.001$.

[a] The first response category served as the reference category for multinomial logistic regression models.

in higher poverty neighborhoods. Hispanic men were less likely to have private health insurance than White men (36% vs. 75%). Overall, 40% of men had ever seen a provider for sexual health care, and this proportion did not vary by race or ethnicity.

3.2. Knowledge

Among all men, awareness of contraceptive methods varied depending on the method. While 99% and 95% of men had heard of condoms and pills, respectively, only 64% had heard of IUDs, and 37% had heard of the implant (Table 2). Awareness of male sterilization (88%) was more common than awareness of female sterilization (58%). Method-specific knowledge varied by item as well, with higher levels of knowledge about condoms than about long-acting and hormonal methods. For example, 97% of men knew that a condom cannot be reused, and 94% knew that condoms expire. However, only 45% knew that IUDs could be used by nulliparous women. Twenty-three percent of men

Table 2
Percentage distribution of men's responses to selected measures of contraceptive knowledge by race/ethnicity and aORs for racial/ethnic differences

Knowledge	Total	White	Black (vs. White)		Hispanic (vs. White)	
	%	%	%	aOR[a]	%	aOR[a]
Awareness of methods (% who had heard of method)						
Female sterilization	58.3	65.6	41.0***	0.38**	49.7**	0.58*
Male sterilization	88.2	95.1	84.4*	0.34*	70.5***	0.21***
Implant	36.6	40.2	32.3	0.71	27.9*	0.63
IUD	64.5	71.8	55.7*	0.50*	51.0***	0.54*
Injection	68.7	74.0	67.9	0.53	61.3*	0.40***
OCPs	94.5	98.8	92.6**	0.16**	85.0***	0.11***
Patch	80.5	86.4	82.1	0.73	69.8***	0.39**
Ring	75.5	82.6	63.3**	0.39**	64.4***	0.50*
Condom	99.1	99.8	97.7*	[b]	97.9*	[b]
Female barrier	85.4	91.0	87.4	0.82	77.3**	0.50
Natural family planning	53.3	55.9	49.0	0.87	49.0	0.98
Emergency contraception	87.5	94.6	79.1***	0.26**	77.6***	0.32*
Contraceptive knowledge (% who answer correctly)						
IUDs						
All IUDs are banned in the US (F)	53.3	62.5	39.9**	0.41**	38.3***	0.46**
Young women can use the IUD even if she has never been pregnant (T)	44.6	51.3	37.7	0.58	30.9**	0.47**
Women with IUDs cannot use tampons (F)	43.4	52.5	30.6**	0.40**	27.9***	0.41**
To obtain an IUD, a woman must have an operation (F)	32.0	37.9	21.2*	0.42*	24.2*	0.58
IUDs can move around in a woman's body (F)	29.4	32.9	24.9	0.67	21.6*	0.68
Long-acting methods cannot be removed early (F)	47.8	54.2	34.5**	0.44**	39.3*	0.63
Injectables						
A woman using Depo-Provera must get a shot every 3 months (T)	55.4	62.7	49.7	0.43**	42.9**	0.38***
Even if the woman is late in getting her shot she is still protected for another 3 months (F)	45.1	50.7	42.5	0.55	35.9*	0.41**
OCPs						
OCPs are effective even if a woman misses them for 2 or 3 days (F)	72.4	78.5	61.8**	0.42**	62.7**	0.53*
Women should take a break from the pill every couple of years (F)	34.7	35.6	44.0	1.09	29.6	0.66
If a woman is having side effects with the pill, switching to a new brand may help (T)	71.2	81.0	61.0**	0.40**	55.6***	0.42**
OCPs decrease the risk of some cancers (T)	20.1	21.4	17.0	0.63	20.4	0.86
After a woman stops the pill, she is unable to get pregnant for 2 months (F)	70.5	79.9	67.8*	0.52*	48.6***	0.27***
In order to get OCPs, a woman must have a pelvic examination (F)	22.6	22.5	18.8	0.93	20.5	1.23
Vaginal ring						
Woman using the birth control ring must have it inserted by a health care provider (F)	30.5	36.9	22.6	0.49	19.1**	0.50*
Condoms						
It is okay to use the same condom more than once (F)	97.0	97.8	96.9	0.80	95.7	0.69
Condoms have an expiration date (T)	94.1	94.6	94.1	0.92	95.7	1.63
When putting on a condom, it is important to leave room at the tip (T)	86.4	86.6	88.3	1.23	85.7	1.12
It is okay to use Vaseline as a lubricant with a condom (F)	56.7	59.5	54.4	0.84	52.9	0.72
Wearing two condoms provides extra protection (F)	69.8	72.0	69.7	0.98	68.1	1.07

Asterisks shown for the percentages represent the bivariable comparisons to White men, and the asterisks shown for the aORs represent the multivariable comparisons to White men.

* p<.05.

** p<.01.

*** p<.001.

[a] Separate regression models were run for each attitudinal outcome, adjusting for age, sexual activity, education, neighborhood poverty level, insurance status and ever seen a health care provider.

[b] We did not conduct multivariable analyses for awareness of condoms because awareness was high across groups.

incorrectly thought that women must have a pelvic examination to obtain pills, and only 20% knew that pills decrease the risk of some cancers.

Results from bivariable and multivariable analyses assessing differences in contraceptive knowledge by race and ethnicity are also shown in Table 2. Black and Hispanic men were less likely to have heard of many contraceptive methods compared to White men. In multivariable analyses, Black and Hispanic men were less likely than White men to have heard of female and male sterilization, the IUD, the injectable, OCPs, the vaginal ring and emergency contraception. Hispanics were also less likely than Whites to have heard of the patch.

For many of the true/false knowledge items, we also found lower knowledge among Black and Hispanic men compared to White men. For example, in multivariable analyses, Black and Hispanic men were significantly less likely than White men to know that IUDs are not banned in the US [adjusted odds ratios (aORs): 0.41 and 0.46, respectively] and that women were unprotected from pregnancy after missing a contraceptive injection (aORs: 0.55 and 041, respectively). Black and Hispanic men were also less likely to know that pills are ineffective if a woman misses them for 2–3 days (aORs: 0.42 and 0.53, respectively) and that fertility is not delayed after stopping the pill (aORs: 0.52 and 0.27, respectively). Black men were less likely to know that IUDs do not require an operation for insertion (aOR: 0.42) and that long-acting methods can be removed early (aOR: 0.44). Hispanic men were less likely than White men to know that that nulliparous woman can use the IUD (aOR: 0.47) and that the ring does not need to be inserted by a doctor (aOR: 0.50). There were no statistically significant racial/ethnic differences in condom knowledge.

3.3. Attitudes

Among all men in the sample, 79% of men agreed that the government makes sure that birth control is safe, yet 46% of men agreed that drug companies do not care about safety and just want to make money (Table 3). Over 63% of men strongly agreed that they had the information they need to avoid pregnancy, but 51% of men agreed that birth control is the woman's responsibility.

Bivariable and multivariable analyses assessing racial and ethnic differences in contraceptive attitudes are also shown in Table 3. Significant differences in multivariable analyses were that Black men were less likely than Whites to view condoms as a hassle to use (aOR: 0.46) and more likely to believe that the government attempts to limit minorities by promoting birth control (aOR: 2.02). In addition, Hispanic

Table 3
Percentage distribution of men's responses to selected measures of contraceptive attitudes by race/ethnicity and aORs for racial/ethnic differences

Attitudes	Total	White	Black (vs. White)		Hispanic (vs. White)	
	%	%	%	aOR [a]	%	aOR [a]
Side effects						
Using hormones, a woman is extremely/quite likely to…						
…gain weight	40.5	35.2	52.2*	1.73	50.9**	1.60
…have reduced desire for sex	13.4	11.0	21.7*	2.06	14.7	1.30
…have a serious health problem like cancer	31.8	25.4	34.9	1.47	44.8***	1.79
…have mood swings	47.5	45.5	52.5	1.37	52.7	1.15
Condoms						
Somewhat/strongly agree that condoms are a hassle to use	30.4	26.5	18.0	0.46*	47.5***	1.59
Mistrust						
Somewhat/strongly agree that…						
…the government makes sure birth control is safe	78.5	79.4	68.8	0.54	81.9	1.24
…the government uses minorities to test new birth control methods	31.5	26.6	36.9	1.42	40.0*	1.19
…the government is trying to limit minorities by encouraging them to use birth control	30.1	23.6	42.1**	2.02*	42.6***	1.60
…drug companies do not care about safety, they just want to make money	45.9	43.5	55.3	1.49	47.0	0.91
Pregnancy						
Very important to avoid pregnancy	73.4	75.1	68.9	0.67	67.4	0.66
Very upset if a partner became pregnant	20.1	24.0	18.3	0.87	10.6**	0.54
Strongly agrees that he has the information he needs to avoid pregnancy	63.2	67.2	57.0	0.62	63.6	0.82
Strongly agrees that pregnancies should be planned	74.0	70.0	74.1	1.26	84.6**	2.26*
Strongly/Somewhat agrees that when it is time to get pregnant, it will happen	39.8	34.7	47.3	1.54	46.2*	1.25
Strongly/Somewhat agrees that birth control is the woman's responsibility	50.6	46.6	47.1	0.95	65.9***	1.44

Asterisks shown for the percentages represent the bivariable comparisons to White men, and the asterisks shown for the aORs represent the multivariable comparisons to White men.

* p<.05.

** p<.01.

*** p<.001.

[a] Separate regression models were run for each attitudinal outcome, adjusting for age, sexual activity, education, neighborhood poverty level, insurance status and ever seen a health care provider.

men were more likely than Whites to believe that pregnancy should be planned (aOR: 2.26).

4. Discussion

In this nationally representative study of unmarried men aged 18–29 years, we found that men across all racial/ethnic groups had substantial knowledge deficits with regard to awareness of the full range of available contraceptive methods as well as correct understanding about the use, effectiveness and facts about specific methods. In addition, we found that Black and Hispanic men had significantly lower levels of awareness and knowledge of contraceptive methods than White men, particularly of the most effective methods.

Misunderstandings about the correct use and safety of effective contraceptive methods could compromise proper use. For example, Black and Hispanic men were less likely to know that women were unprotected from pregnancy after missing a contraceptive injection and that OCPs were ineffective with multiple missed doses. These misperceptions could lower the likelihood of using a backup form of contraception, such as a condom, or of encouraging partners to use emergency contraception, if needed. Black and Hispanic men were also more likely to perceive barriers to use of methods, such as incorrectly believing that IUDs are banned in the US, that IUDs cannot be removed before their period of efficacy has elapsed, that IUDs cannot be used in nulliparous women and that the ring has to be inserted by a physician. Such perceived obstacles, as well as a lack of awareness of different contraceptive methods, may preclude men of color from suggesting or encouraging use of these methods for their female partners.

Qualitative research has illustrated how misconceptions and lack of knowledge about contraceptive methods among young men can lead to decreased use. One study of Puerto Rican and Black youth found that men had very limited knowledge of hormonal contraception and, therefore, felt more comfortable with condom use [24]. Another study of White, Black and Hispanic men found significant confusion about how various hormonal methods (including the patch, ring and injection) prevent pregnancy and beliefs that hormonal contraception was "unnatural" [25]. Some of these men reported persuading their partners to forego the use of hormonal contraception.

The only item for which we found more favorable attitudes among Blacks than Whites was that Black men were less likely to view condoms as a hassle to use. This is consistent with another study among Black Americans aged 15–44, which found that Black men rated condoms more favorably than OCPs, implants, injectables and sterilization on several dimensions (including harmful/beneficial, difficult/easy, safe/dangerous and moral/immoral) [29]. We also found that condoms were the only method for which there were no racial and ethnic differences in knowledge. While favorable attitudes toward and a high level of knowledge about condoms are, in general, reassuring findings, as condoms are currently the best and only method effective in preventing sexually transmitted diseases, greater comfort and familiarity with condoms compared to other methods may lead to use of this method instead of (rather than in addition to) other contraceptive methods that are far more effective for pregnancy prevention.

Men across all racial and ethnic groups had limited awareness of highly effective reversible contraception (IUDs and implants). Although use of these methods is increasing in the US, rates remain relatively low at approximately 8.5% among contraceptive users [30]. Given that men influence specific method use of their female partners [20–22] and want to play an active role in family planning [31,32], enhancing men's awareness and knowledge of highly effective, reversible methods might improve use among their female partners.

We were somewhat surprised to find that men across racial and ethnic groups were more likely to have heard of male sterilization than female sterilization. In the US, male sterilization is used much less frequently than female sterilization, and the rates are especially low among Black and Hispanic men (4% for each group) compared to White men (14%) [33]. Clearly, contraceptive decision making is shaped by more than simply awareness and knowledge about methods; it is a multidimensional process that involves both partners' preferences, social and cultural norms regarding fertility, patient–provider communication and health care utilization.

Another unanticipated finding was that Hispanic men were more likely than White men to strongly feel that pregnancies should be planned given that unintended pregnancies are more prevalent among Hispanics than Whites [2] and that, in bivariate analyses, Hispanic men were less likely than Whites to report that they would be very upset if a partner became pregnant and more likely to agree that "when it is time to get pregnant, it will happen," suggesting perhaps a more fatalistic attitude toward conception. Further research is needed to explore how conceptualization about pregnancy planning translates into contraceptive behavior across diverse populations.

Several limitations of this study are important to consider. First, it is possible that the individual items we assessed did not fully capture contraceptive knowledge and attitudes. Second, it is possible that there was residual confounding by SES as our measures were limited, in particular the use of zip codes to capture community level SES. Third, due to the cross-sectional nature of these data, we were unable to assess the relationship of knowledge and attitudes with subsequent contraceptive use. Finally, our results may not be generalizable to married men or men younger than 18 and older than 29. Despite these limitations, our study uses data from the first survey to collect nationally representative data on such a broad range of contraceptive knowledge and attitude items and, therefore, provides new insight about US men's contraceptive knowledge and attitudes.

Given the deficits in contraceptive knowledge observed among all men, the significant racial and ethnic disparities found and the role that men can play in their partner's contraceptive choices, there is a need to educate men, and particularly men of color, about effective contraceptive methods. Campaigns aimed at reducing unintended pregnancy should include men in their educational efforts with a particular focus on highly effective contraceptive methods such as implants and IUDs. Health care providers should also engage men in contraceptive counseling rather than limiting such discussions to female patients. Improving Black and Hispanic men's awareness of and knowledge about hormonal contraception methods and highly effective methods may help to reduce racial and ethnic disparities in contraceptive use and subsequent unintended pregnancy.

Acknowledgments/Notes

This work was supported by grant numbers 1R21HD068736-01A1 and K23HD067197 from the Eunice Kennedy Shriver National Institute of Child Health & Human Development and the National Campaign to Prevent Teenage and Unplanned Pregnancy. The content is solely the responsibility of the authors and does not necessarily represent the official views of the Eunice Kennedy Shriver National Institute of Child Health & Human Development or the National Institutes of Health.

References

[1] Centers for Disease Control and Prevention. Abortion surveillance: United States, 2008. Morb Mortal Wkly Rep 2011;60:1–2.
[2] Finer L, Zolna M. Unintended pregnancy in the United States: incidence and disparities, 2006. Contraception 2011;84:478–85.
[3] Hamilton BE, Ventura SJ. Birth rates for U.S. teenagers reach historic lows for all age and ethnic groups. National Center for Health Statistics. Statistics 2012;89:1–8.
[4] Jones J, Mosher W, Daniels K. Current contraceptive use in the United States, 2006–2010, and changes in patterns of use since 1995. Natl Health Stat Rep 2012;60:1–26.
[5] Dehlendorf C, Foster D, de Bocanegra H, Brindis C, Bradsberry M, Darney P. Race, ethnicity and differences in contraception among low-income women: methods received by Family PACT Clients, California, 2011–2007. Perspect Sex Reprod Health 2011;43:181–7.
[6] Frost JJ, Darroch JE. Factors associated with contraceptive choice and inconsistent method use, United States, 2004. Perspect Sex Reprod Health 2008;40:94–04.
[7] Dehlendorf C, Rodriguez MI, Levy K, Borrero S, Steinauer J. Disparities in family planning. Am J Obstet Gynecol 2010;202: 214–20.
[8] Gilliam ML, Davis SD, Neustadt AB, Levey EJ. Contraceptive attitudes among inner-city African American female adolescents: barriers to effective hormonal contraceptive use. J Pediatr Adolesc Gynecol 2009;22:97–04.
[9] Gilliam ML, Warden M, Goldstein C, Tapia B. Concerns about contraceptive side effects among young Latinas: a focus-group approach. Contraception 2004;70:299–305.
[10] Guendelman S, Denny C, Mauldon J, Chetkovich C. Perceptions of hormonal contraceptive safety and side effects among low-income Latina and non-Latina women. Matern Child Health J 2000;4: 233–9.
[11] Sangi-Haghpeykar H, Ali N, Posner S, Poindexter AN. Disparities in contraceptive knowledge, attitude and use between Hispanic and non-Hispanic whites. Contraception 2006;74:125–32.
[12] Schwarz EB, Lohr PA, Gold MA, Gerbert B. Prevalence and correlates of ambivalence towards pregnancy among nonpregnant women. Contraception 2007;75:305–10.
[13] Cox S, Posner S, Sangi-Haghpeykar H. Who's responsible? Correlates of partner involvement in contraceptive decision making. Women Health Iss 2010;20:254–9.
[14] Kavanaugh M, Lindberg L, Frost J. Factors influencing partners' involvement in women's contraceptive services. Contraception 2012;85:83–90.
[15] Grady W, Klepinger D, Billy J, Cubbins L. The role of relationship power in couple decisions about contraception in the US. J Biosoc Sci 2010;42:307–23.
[16] Gerrard M, Breda C, Gibbons F. Gender effects in couples' sexual decision making and contraceptive use. J Appl Soc Psychol 1990;20:449–64.
[17] Miller W, Pasta D. The relative influence of husbands and wives on the choice and use of oral contraception, a diaphragm, and condoms. J Appl Soc Psychol 1996;29:1749–74.
[18] Miller W, Shain R, Pasta D. Tubal sterilization or vasectomy: how do married couples make the choice? Fertil Steril 1991:278–84.
[19] Severy L, Silver S. Two reasonable people: joint decision making in contraceptive choice and use. Adv Popul 1993;1:207–27.
[20] Harvey S, Henderson J, Carillas A. Factors associated with effective contraceptive use among a sample of Latina women. Women Health 2008;85:83–90.
[21] Kerns J, Westhoff C, Morroni C, Murphy PA. Partner influence on early discontinuation of the pill in a predominantly Hispanic population. Perspect Sex Reprod Health 2003;35:256–60.
[22] Frost J, Duberstein L, Finer L. Young adult's contraceptive knowledge, norms and attitudes: associations with risk of unintended pregnancy. Perspect Sex Reprod Health 2012;44:107–16.
[23] U.S. Bureau of the Census. Available at: www.census.gov. Accessed May 7, 2013.
[24] Carter M, Bergdall A, Henry-Moss D, Hatfield-Timajchy K, Hock-Long L. A qualitative study of contraceptive understanding among young adults. Contraception 2012;86:543–50.
[25] Merkh RD, Whittaker PG, Baker K, Hock-Long L, Armstrong K. Young unmarried men's understanding of female hormonal contraception. Contraception 2009;79:228–35.
[26] Raine T, Gard J, Boyer C, et al. Contraceptive decision-making in sexual relationships: young men's experiences, attitudes and values. Cult Health Sex 2010;12:373–86.
[27] Kaye K, Suellentrop K, Sloup C. The fog zone: how misperceptions, magical thinking, and ambivalence put young adults at risk for unplanned pregnancy. Washington, DC: The National Campaign to Prevent Teen and Unplanned Pregnancy; 2009.
[28] Kuder G, Richardson M. The theory of the estimation of test reliabilty. Psychometrika 1937;2:151–60.
[29] Thorburn S. Attitudes toward contraceptive methods among African-American men and women: similarities and differences. Women Health Iss 2007;17:29–36.
[30] Finer L, Jerman J, Kavanaugh M. Changes in use of long-acting contraceptive methods in the U.S., 2007–2009. Fertil Steril 2012;98: 893–7.
[31] Fortunati M, Henderson J, Amory J, Smith J, Walsh T. Racial differences in vasectomy utilization in the United States: data from the National Survey of Family Growth. Urology 2009;74:1020–4.
[32] Shih G, Dube K, Dehlendorf C. "We never thought of a vasectomy": a qualitative study of men and women's counseling around sterilization. Contraception 2012 [Epub ahead of print].
[33] Eisenberg ML, Henderson JT, Amory JK, Smith JF, Walsh TJ. Racial differences in vasectomy utilization in the United States: data from the national survey of family growth. Urology 2009;74:1020–4.