



Cohabitation and Contraceptive Use in the United States: A Focus on Race and Ethnicity

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Abstract

While cohabitation has been increasing and a growing context to have and raise children, there has been little attention to one of the key determinants of fertility and effective contraceptive use. Drawing data from the 2013–2015 National Survey of Family Growth ($N=2285$), we provide a contemporary portrait of contraceptive use among cohabiting American women. Specifically, we were guided by two main goals. First, we compared cohabiting and married women's contraceptive use patterns and the variation by race and ethnicity. Second, we focused solely on cohabiting unions; and examined the racial and ethnic variation among cohabiting women. We found that cohabiting women are more likely to use effective methods of contraception than married women. Nonetheless, our findings point to the fact that white cohabiting women are driving the higher patterns of contraceptive use among cohabiting women. Indeed, a further examination of the variation among women in cohabiting relationships shows that black cohabitators are less likely to use effective contraception in cohabiting relationships, compared to whites. Our findings contribute to understanding the reproductive behaviors among a growing set of couples, cohabitators.

Keywords Cohabitation · Contraceptive use · Race and ethnicity · United States

Introduction

Cohabitation has dramatically altered American family life, with three-quarters of Americans having spent time in a cohabiting union (Kennedy and Bumpass 2008; Manning and Stykes 2015). In addition, cohabitation has become a common context for having and raising children (Musick and Michelmore 2015) with about 26% of cohabitators having a child together (Guzzo 2017a). While these family patterns are

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well established, there is wide variation according to race and ethnicity. For example, black and Hispanic children have higher risks of experiencing parental cohabitation than white children (Lichter 2012; Kim and Raley 2015). A key proximate determinant of fertility—contraceptive use—produces these fertility differentials (Bachrach 1987; Sweeney 2010); but there has been little attention to racial and ethnic patterns of contraceptive use among cohabiting women, especially during the last decade.

Researchers have consistently shown that there are racial and ethnic variations in patterns of contraceptive use (Sweeney and Raley 2014; Daniels and Daugherty 2015; Jacobs and Stanfors 2013; Jones et al. 2012). White and Hispanic women have the highest prevalence of contraceptive use compared to black women. For example, in 2014, the use of long-acting reversible contraceptive methods such as IUDs and contraceptive implants is greater among Hispanic (15%) and black (12%) contraceptive women, and lower (11%) among white women (Kavanaugh and Jerman 2018). Despite these important racial and ethnic variations, there is limited evidence about whether there are racial and ethnic patterns in contraceptive use among cohabiting and married women. Sweeney (2010) reported that in 2002, the racial and ethnic patterns of contraceptive use were similar for cohabiting and married women.

To provide a contemporary portrait of contraceptive use variation in contraceptive use among cohabiting black, white, and Hispanic women, we drew data from the 2013–2015 National Survey of Family Growth (NSFG). These data allow us to keep pace with the changing levels of cohabitation by providing the opportunity to analyze recently collected nationally representative data. Specifically, our analysis has two main objectives. First, we compare cohabiting and married women's contraceptive use patterns with attention to racial and ethnic similarities and differences. Second, we consider patterns of contraceptive use among cohabiting women. Prior studies that focus on overall union status patterns mask key race and ethnic differentials in contraceptive use among women in cohabiting unions. Most of the recent studies on racial and ethnic differentials in effective contraceptive use have focused on never-married single young adult women (see Moreau et al. 2013; Choi and Hamilton 2016; England et al. 2016; Hayford and Guzzo 2013). We extend and update prior research by contrasting the racial and ethnic differences in contraceptive use patterns between cohabiting and married women; as well as examining the patterns among cohabiting women. As such, we focus on race and ethnicity because of evidence that contraceptive use and childbearing, especially in cohabiting unions, varies fundamentally by race and ethnicity (see Sweeney and Raley 2014; Osborne et al. 2007). Given that the increase in nonmarital fertility is largely due to births to cohabiting women (Lichter et al. 2014; Manning et al. 2014), this study has the potential to inform policy efforts to reduce nonmarital fertility by focusing on the primary determinant to fertility, effective contraceptive use.

Background

Cohabitation and Contraceptive Use

Cohabitation has become an acceptable context for childbearing and childrearing and studies show the increasing rate at which children are being raised in cohabiting

unions. The NSFG finds that a large majority—about 75%—of American women report it would be all right to have children while cohabiting (Stykes 2015), and about two-thirds of children born to cohabiting women are planned (Guzzo 2017b). The share of unplanned births among cohabiting women is lower on average than the share among single women, and higher than married women (Rajan et al. 2017; Sweeney and Raley 2014). Evidence from the NSFG indicates that most of the rise in nonmarital childbearing has been due to increases among cohabiting women with about 60 percent of all nonmarital births now occurring in cohabiting unions (Lichter et al. 2014; Manning et al. 2014).

A key factor determining fertility within cohabiting unions is contraceptive use. At the bivariate level between 1995 and 2010 of the NSFG, the levels of contraceptive use in cohabiting unions are on par with those in marriages (Sweeney et al. 2015). Cohabiting women rely on highly effective reversible methods (i.e., pill or IUDs), while their married counterparts use both reversible and irreversible (sterilization) methods (Sweeney et al. 2015; Eeckhaut et al. 2014). However, after accounting for age and parity, Sweeney et al. (2015) report that in 1995 and in the 2006–2010 periods, cohabiting women are more likely than married women to use effective methods of contraception. This partly explains the lower levels of childbearing among cohabitators compared to their married counterparts.

These overall patterns mask potentially significant racial and ethnic variation in contraceptive use among cohabiting and married women. Analyses based on the NSFG show there was a substantial increase in cohabitation between 1987 and 2013 for both white and Hispanic women (by 100% and 113%, respectively), while the share of black women cohabiting has leveled off (Manning and Stykes 2015). Coinciding with these patterns, there has been larger increase in fertility within cohabiting unions among whites and Hispanics than among blacks (Bumpass and Lu 2000; Kennedy and Bumpass 2008; Manning et al. 2015). Only one in five white cohabiting couples in the 2006–2008 NSFG have children together (18%), while nearly half (47%) of black cohabiting couples and 43% of Hispanic couples do so (Cohen 2011). Yet, there is scant research on white, black, and Hispanic differentials in contraceptive use. Sweeney (2010) reports that between 1982 and 2002 in the NSFG there were no racial and ethnic differences in the patterns of contraceptive use between cohabiting and married women. These patterns have not been documented since 2002. In this paper, we update and extend the work of Sweeney (2010) by examining whether the racial and ethnic patterns of contraceptive use between cohabiting and married women have been sustained. Given the race–ethnic differentials in the growth and levels of cohabitation, we expect new race–ethnic gaps in contraceptive use.

There is extremely little quantitative research on the patterns and variation in contraceptive use among women within cohabiting unions. Cohabitation does not operate in the same manner for everyone. Based on prior work using the Fragile Families longitudinal data, we expect there to be differentials among cohabitators according to race and ethnicity (Osborne et al. 2007). The bulk of the quantitative analyses (especially from the NSFG) are limited to single, unmarried women and find that compared to their white counterparts, black and Hispanic unmarried women are less likely to use effective birth control method (Choi and Hamilton 2016; Schnieder

2017). They do not include cohabiting women in their analyses, but we expect a similar pattern to exist for cohabiting women. The few available qualitative studies have reported that contraceptive use among cohabitators is dependent on the duration of the union; and that cohabitators in longer relationships or who have marital intentions were less effective contraceptors (Sassler and Miller 2014; Reed et al. 2014). Nonetheless, these studies did not consider the racial and ethnic variations among cohabiting couples.

Race–Ethnic Differences in Contraceptive use

Previous research identified four main sources of racial and ethnic differentials in contraceptive use for cohabiting and married women: (1) age and parity; (2) relationship stability (or union duration); (3) socio-economic resources; (4) and religiosity

Age and Parity

Most studies of contraceptive use control for age and parity of women as these are key factors predicting birth intentions. Prior research using the NSFG showed that there are strong positive correlations between age and parity and effective contraceptive use (Kavanaugh et al. 2015; Sweeney et al. 2015; Eeckhaut et al. 2014; Godecker et al. 2001; Jones et al. 2002). However, parity may affect contraceptive use differently for cohabiting and married women. Generally, married women (because they are older on average) tend to have more children than cohabiting women. This means that married women more often may be at the end of their reproductive careers and hence are more likely to use effective contraceptive methods, compared to cohabiting women (Jones et al. 2012; Eeckhaut et al. 2014). Despite the significant positive association between parity and effective contraceptive use (Sweeney 2010; Frost et al. 2007), cohabiting women with children may still be less likely to use an effective birth control method because their births are more often unintended and mistimed than births to married women (Finer and Zolna 2011; Hayford and Guzzo 2013).

Concerning race and ethnicity, there is a sharp variation in parity across race and ethnicity. Generally, white women have lower parity or fewer number of children than black and Hispanic women (Sweeney and Raley 2014; Gibson-Davis and Rackin 2014; Choi and Hamilton 2016). Specifically, white cohabiting women are less likely to have children compared to black and Hispanic cohabiting women (Lichter et al. 2016; Cherlin et al. 2016; Wu 2008; Manning 2001). Thus, assessments of racial and ethnic variation in contraceptive use require attention to parity.

Relationship Duration

Cohabitation is more fragile than marriage (Brown et al. 2006; Lichter et al. 2016), with cohabiting unions more likely to dissolve than marriages. Relationship stability or union duration is an important predictor of contraceptive use (Manning et al. 2009), because duration of a relationship determines women's anticipation, and

adequate protection for sex (Sweeney and Raley 2014). Recent studies using the NSFG have shown a positive significant association between union duration and effective contraceptive use (see Sweeney et al. 2015), when adjusting for race and ethnicity (Sweeney and Raley 2014). Hence, cohabiting women may be less likely to use effective methods given their shorter relationship horizon. Further, black and Hispanic women experience higher rates of union dissolution compared to whites (Sweeney 2016; Hummer and Hamilton 2010; Lichter and Qian 2008; Cherlin 1998). Consequently, these shorter union durations may mean less effective contraceptive use for racial minority women.

Socioeconomic Resources

With regard to economic resources, studies using the NSFG have consistently shown married women to have relatively higher educational attainment than cohabiting women (Sweeney 2016; Hiekel and Castro-Martín 2014). At the same time, economic resources are important predictors of contraceptive use (Kost et al. 2008; Kavanaugh et al. 2015; Daniels and Daugherty 2015; Sweeney 2010; Ranjit et al. 2001). This means that, married women may be more likely to practice effective contraceptive use compared to cohabiting women (Sweeney et al. 2015).

Generally, blacks and Hispanics in cohabiting and married unions have fewer economic resources, compared to their white counterparts. Researchers find economic barriers to effective contraceptive use among whites, blacks and Hispanics (Dehlendorf et al. 2011). Related to union status, married women have higher economic resources than cohabiting women across racial and ethnic groups, but the gap is greatest among whites (Schwartz and Han 2014; Schneider 2011). As a result, it is important to account for socioeconomic factors as they may help explain union status differentials as well as racial and ethnic disparities in contraceptive use. In this study, we measured economic resources using two main indicators: education and health insurance status. Highly educated women are more likely to use effective methods of contraception than women with less education (see Musick et al. 2009). However, because white women tend to be more highly educated than other racial groups, we expect they are more likely to use effective methods of contraception than other racial groups. In the case of health insurance, more generally, women with private and public health insurance are more likely to report using effective methods of contraception than those lacking health insurance; with white women more likely to be insured than black and Hispanic women (Daniels and Daugherty 2015; Culwell and Feinglass 2007).

Religiosity

Cohabiting women are less likely to report being very religious compared to married women (Fehring and Ohlendorf 2007). For example, in terms of church attendance, Mahoney et al. (2015), using the NSFG, report that religious attendance is highest among married women, with nearly half (49%) attending religious services at least 2 or 3 times a month and only 23% of cohabiting women attend religious services 2

or 3 times a month or more frequently. With regard to contraceptive use, very religious women are less likely to use effective methods of contraception, compared to women who considered themselves as less religious (Fehring and Ohlendorf 2007; Hayford and Morgan 2008; Montgomery 1996). Higher levels of religious attendance may mean women have a more traditional family attitude towards childbearing (Prettner and Strulik 2017; Hayford and Morgan 2008; Montgomery and Casterline 1996), this may be particularly important among traditional Catholics who may be more negatively oriented toward artificial methods of contraception. Furthermore, black and Hispanics are more likely to be very religious compared to whites (Schieman 2010; Chatters et al. 2009; Wuthnow 2003), so we expect religiosity to be an important factor that may help explain racial and ethnic differences in effective contraceptive use.

Current Investigation

While most children in the United States are born into cohabiting or marital unions, little research attention has focused on race and ethnic differences in a key determinant of fertility, contraceptive use. Our work addresses two key research questions. Our first research question examines whether the different patterns of contraceptive use between cohabiting and married women vary according to race and ethnicity. Overall, we expect cohabiting and married women to share similar levels of effective contraceptive use, but we anticipate a gap may remain for white women but not blacks and Hispanics. We assess whether the union status and racial and ethnic variations in effective contraceptive use persist with the inclusion of age parity, relationship duration, education, health insurance and religiosity. By testing interaction terms, we determine whether union status operates in a similar manner for blacks, whites and Hispanics. Our second goal focuses solely on cohabiting unions; and examines races and ethnic variation among cohabiting women. We consider to what extent age, parity, relationship duration, and socioeconomic characteristics explain these racial and ethnic patterns. Among cohabiting women, we expect white cohabiting women to be more likely to use effect contraception than their black and Hispanic counterparts.

Data and Methods

We use data from the 2013–2015 NSFG, conducted by the National Center for Health Statistics, which interviewed a national probability sample of 5699 women aged 15–44. The 2013–2015 NSFG is the most recent cycle. The 2013–2015 NSFG is particularly appropriate for the current analyses for two reasons: (1) It included detailed information on contraceptive use and self-reported union status at the time of the interview. (2) It provides the most updated contraceptive use behaviors of American women. Thus, these data ensure an accurate analysis of how cohabitation and contraceptive use vary among white, black, and Hispanic women in a cohabiting or marital relationship.

The analytic sample is composed of 2285 women who were either married ($n=1523$; 67%) or cohabiting ($n=762$; 33%) at the time of the interview. This sample excludes 3052 (54%) women who were single, divorced/separated or widowed at interview. Based on previous studies, an additional 411 women (7% of the original sample) who identify their race and ethnicity as anything other than non-Hispanic white, non-Hispanic black, or Hispanic were also excluded (see Sweeney 2010; Kim and Raley 2015; Choi and Hamilton 2016). In all the analyses and descriptive statistics, we adjusted for the complex sample design of the NSFG using STATA svy routines with probability sampling weights.

Dependent Variable

The dependent variable for this study is effective contraceptive use. To measure this variable, respondents in heterosexual unions were asked whether they were using any birth control method (and the specific method used) to prevent pregnancy prior to the interview. Consistent with prior work, current contraceptive use was coded as a binary variable: Women were coded 1 if they used an effective contraceptive method ($n=1226$, 54%) and 0 for those who used *other* or no method. ($n=1059$, 46%). We defined “effective” contraceptive methods in accordance with Sweeney (2010): to include male and female sterilization, pill, intrauterine vice, and other hormonal methods. We focused on the “effective” methods because of their meaningful reduction in the risks of an unintended pregnancy, compared to other methods (Gibbs 2014; Sweeney 2010). In addition, because effective contraceptive methods do not require any specific intervention at the time of intercourse, these contraceptive methods are particularly important for cohabiting and married women as they are presumed to be having regular intercourse with their intimate partners (Sweeney 2010; Sweeney and Raley 2014).

Independent Variables

The two focal variables are union status and race/ethnicity. Current *union status* of the woman is the main independent variable in these analyses. We measure it as a dichotomous variable: women who were cohabiting ($n=762$, 33%) and those who were married ($n=1523$, 67%) at interview. The questions about relationships in the NSFG are framed as heterosexual relationships so the analysis excludes individuals in same-sex relationships. *Race and ethnicity* is measured using three categories: Hispanic ($n=629$, 22%), non-Hispanic white ($n=1349$, 68%), and non-Hispanic black ($n=307$, 10%) coded as a series of dummy variables. Due to small sample sizes, women who reported as belonging to “other” racial backgrounds were excluded.

The following set of independent variables are included as key set of confounding variables. The *age* of the woman is measured as a continuous variable and the mean value is 33 years. *Parity*, measured as a continuous variable, is defined as the number of children of the woman at the time of the survey (Sweeney 2010); and in our sample, the average parity was approximately two children. *Union duration* is

based on the women's report of the month and year the couple began living together as cohabiting or married partners and was computed as a continuous variable using month and year of interview. At the time of interview, cohabiting women had a mean union duration of approximately 4 years; while married women had a mean union duration of approximately 10 years. We use education as the basic indicator of socio-economic resources¹. Women's *education* is recoded into four categories: less than high school (14%), high school (21%), some college (23%), and college degree or more (42%). We measured *health insurance status* as a three-category dummy variable: private health insurance, public health insurance, and no health insurance. *Religiosity* is measured as an ordinal variable, indicating the frequency of religious attendance with responses ranging from never (1) to more than once a week (7).

Analytical Strategy

At the first stage, we present a descriptive analysis showing the distribution of respondents across the dependent and independent variables with reports of percentages and means (Table 1). We then estimate logistic regression models to predict the likelihood of using an effective contraceptive method. In Table 2, the first model includes union status, race/ethnicity, age, parity, and union duration. Model 1 includes the basic demographic indicators and allows us to partly replicate Sweeney (2010) who argued that controlling for these variables, cohabitators were more effective contraceptive users than married women. For the second model, we add woman's educational level, health insurance status and religiosity. Prior contraceptive use studies informed our decision on the inclusion of these variables (see Choi and Hamilton 2016; Kim and Raley 2015; Hayford and Morgan 2008). We present the predicted probabilities of effective contraceptive use according to union status and race/ethnicity (Fig. 1). The predicted probabilities allow us to test for the hypothesis that there are race and ethnic differences in the patterns of contraceptive use among contemporary cohabiting women. We arrive at these estimations based on interaction terms that were added to Model 2 in Table 2. However, the model with interaction terms was not shown in the analyses, but is the basis of Fig. 1. In Table 3, we limit our focus to cohabiting couples and present a first model, including the basic demographic measures used in prior work, race and ethnicity, age, parity and union duration. The second model includes educational attainment, health insurance status, and religiosity.

¹ We excluded the income and employment status of women (important indicators of socio-economic status) because they were highly correlated with education. The results are similar with the inclusion of income and employment.

Table 1 Distribution of dependent and independent variables by union status

	Cohabiting	Married	Total
<i>Dependent variable</i>			
Contraceptive use			
Effective	54	54	54
Less effective	46	46	46
<i>Independent variables</i>			
Race/ethnicity			
Hispanic	23	22	22
White	63 ^a	70	68
Black	13 ^a	8	10
Age (mean)	29 ^a	35	33
Parity			
0	39 ^a	20	25
1	24 ^a	20	21
2	17 ^a	33	29
3 or more	20 ^a	28	25
Union duration (mean)	4 ^a	10	8
Educational attainment			
Less than high school	20 ^a	11	14
High school	26 ^a	20	21
Some college	26	22	23
College	28 ^a	47	42
Health insurance			
Private	46 ^a	73	65
Public	31 ^a	14	19
No insurance	23 ^a	14	16
Religiosity (mean)	3 ^a	4	4
N	762	1523	2285

Source: 2013–2015 National Survey of Family Growth

Note: All values were weighted. Percentages or means reported depending on the nature of the variable

^aSignificant differences between cohabiting and married women at $p < 0.05$, based on t test

Results

The distribution of the dependent and independent variables are shown in Table 1 for the entire sample and separately by union status. Supplementary analysis of row percentage distribution of the independent variables is presented in Appendix. Table 1 shows that similar shares (54%) of women in cohabiting and married unions, approximately 5 out of 10 women, use effective contraception. The less effective category includes women who did not use any method of contraception and similar shares of cohabiting and married women did not use any contraception method at interview, 26% and 28%, respectively (results not shown).

Table 2 Logistic regression predicting effective contraceptive use

Independent variables	Model 1		Model 2	
	OR	SE	OR	SE
Union status (ref. married)				
Cohabiting	1.45	0.25*	1.41	0.24*
Race/ethnicity (ref. White)				
Hispanic	0.69	0.10*	0.73	0.10*
Black	0.62	0.10**	0.65	0.10**
Parity (ref. No birth)				
1	0.78	0.13	0.79	0.14
2	2.68	0.51***	2.82	0.54***
3 or more	3.16	0.66***	3.41	0.76***
Age	1.01	0.01	1.01	0.01
Union duration	1.00	0.01	1.00	0.01
Education (ref. High school)				
Less than high school			0.99	0.19
Some college			1.47	0.26*
College			0.99	0.18
Health insurance (No insurance)				
Private			1.10	0.17
Public			0.96	0.15
Religiosity			0.97	0.03
N	2285		2285	

Note: All values are weighted and reference category in parentheses

Source: 2013–2015 National Survey of Family Growth

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

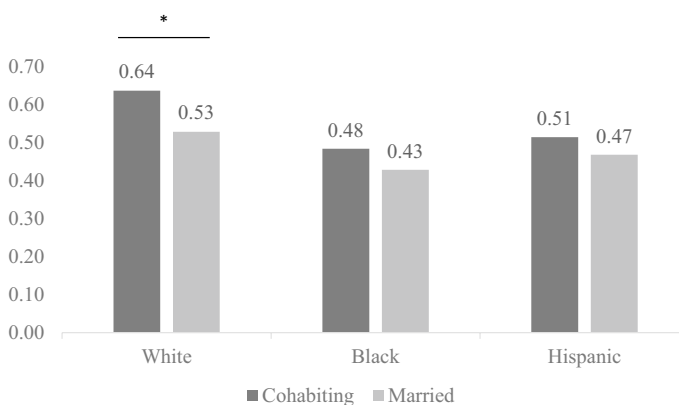


Fig. 1 Weighted predicted probabilities of effective contraceptive use across race and ethnicity. Notes: * $p < 0.05$. Predicted probabilities are based on a model that adds interaction terms of race/ethnicity and union status to Model 2 in Table 2 (model not shown). Source: 2013–2015 National Survey of Family Growth

Table 3 Logistic regression predicting effective contraceptive use among cohabiting women

Independent variables	Model 1		Model 2	
	OR	SE	OR	SE
Race/ethnicity (ref. White)				
Hispanic	0.67	0.18	0.65	0.20
Black	0.55	0.16*	0.50	0.15*
Parity (ref. no birth)				
1	1.43	0.42	1.52	0.51
2	2.67	0.81**	3.17	1.07**
3 or more	5.13	1.86***	6.78	2.74***
Age	0.99	0.02	0.98	0.02
Union duration	0.95	0.02*	0.95	0.02 [#]
Education (ref. high school)				
Less than high school			1.03	0.35
Some college			1.81	0.57 [#]
College			1.00	0.39
Health insurance (No insurance)				
Private			1.36	0.32
Public			1.01	0.25
Religiosity			1.04	0.06
N	762		762	

Note: All values are weighted; reference category in parentheses

Source: 2013–2015 National Survey of family growth

[#] $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

The characteristics of the sample of married and cohabiting women are consistent with prior studies. Regarding race and ethnicity, similar shares of cohabiting (23%) and married (22%) are Hispanic. Smaller shares of cohabiting women are white (63%) than married women (70%). Larger share of blacks were cohabiting (13%) than married (8%). (In addition, Table 4 in the Appendix shows that substantially greater shares of white women are married (74%) than black women (60%).) Cohabiting women (29) are significantly younger than married women (35) at the time of the interview. A greater share of cohabiting women have no children (39%), compared to married women (20%). Married women have higher parity than cohabiting women. For example, 28% of married women had three or more births in contrast to 20% of cohabiting women. Consistent with previous studies, marital unions are more stable than cohabiting unions. Married unions are 6 years longer than cohabiting unions (10 years vs. 4 years). Married women have higher educational levels than cohabiting women. Nearly one-half of married women had a college degree, in contrast to 28% of cohabiting women. The majority of women had health insurance and the most common type of health insurance was private insurance (65%) rather than public insurance (19%). Among cohabiting women only 46% have private insurance in contrast to 73% of

Table 4 Row percentage distribution of independent variables by union status

	Cohabiting	Married	Total
Race/ethnicity			
Hispanic	30	70	100
White	26 ^a	74	100
Black	40 ^a	60	100
Parity			
0	44 ^a	56	100
1	33 ^a	67	100
2	17 ^a	83	100
3 or more	22 ^a	78	100
Educational attainment			
Less high school	41 ^a	59	100
High school	35 ^a	65	100
Some college	33	67	100
College	19 ^a	81	100
Health insurance status			
Private	20 ^a	80	100
Public	48 ^a	52	100
No health insurance	40 ^a	60	100
Total	29	71	100
<i>N</i>	762	1523	2285

Source: 2013–2015 National Survey of Family Growth

Note: All values were weighted

^aSignificant differences between cohabiting and married women at $p < 0.05$, based on t-test

married women. Cohabiting women more often have public insurance (31%) than married women (14%). In addition, cohabitators are more often uninsured (23%) than married (14%). Consistent with prior studies, cohabiting women report lower levels of religiosity than married women.

Table 2 shows two logistic regression models, with married as the reference category for union status, predicting the likelihood of effective contraceptive use. The first model included union status, race/ethnicity, age, parity, and union duration. The second model added women's educational level and religiosity. In addition, a third model (not shown) tests interactions for union status and race/ethnicity. Our fundamental question is whether union status and racial and ethnic variation in effective contraceptive use persist with the inclusion of age, parity, relationship duration, education, health insurance status, and religiosity; and whether union status operates in a similar manner for blacks, whites and Hispanics.

In the first model (Table 2), cohabiting women have significantly higher chances of using effective contraceptive methods than married women, controlling for race/ethnicity, parity, age and union duration. Cohabitators are 45% more

likely to use an effective contraceptive method than married women, net other factors. Consistent with previous studies, race and ethnicity was significantly associated with effective contraceptive use, with whites having higher chances of using an effective method than the other racial minorities. Specifically, Model 1 shows that compared to whites, Hispanics are 69% as likely as whites to use effective contraceptive method. Similarly, blacks are 62% less likely to use an effective contraception, compared to whites. For parity, consistent with prior studies, Model 1 continues to show that higher parity is associated with higher odds of effective contraceptive use. For example, compared to women with zero parity, those with two children are 168% more likely to use an effective contraceptive method. Similarly, women with three or more births are 216% more likely to use an effective contraceptive method, compared to women without any children. Age and union duration are not significantly associated with effective contraceptive use. It should be noted that age and union are not significant in the bivariate model (table not shown).

Model 2 (of Table 2) adds education, health insurance status, and religiosity to assess whether the significant association between union status and effective contraceptive use are due to higher education levels, private health insurance, and greater religiosity of married women. Model 2 also indicates that there is a strong positive association between cohabitation and effective contraceptive use, net other factors. In this second model, cohabitators are 41% more likely to use effective contraceptive methods. The significant association between race/ethnicity and effective contraceptive use persists with the inclusion of education, health insurance, and religiosity with lower odds of effective use among black and Hispanic women than their white counterparts. Model 2 shows that women who had attended *some* college are 47% more likely to use effective method of contraception, compared to those who graduated high school. Relative to women with college or high school certificate, literature is not clear concerning reasons for a significant relationship between women with *some* college education and effective contraceptive use. However, the interpretation we are drawing from this finding is that, women with “some” college level of education might still have aspirations for higher education and delaying childbearing. This suggests that women with “some” college versus a high school degree are more likely to use effective contraception. Nevertheless, we were unable to determine whether women with some college education were enrolled at the time of the study. There is no statistically significant association between health insurance status and effective contraceptive use, even at the bivariate level. Similarly, religiosity does not have any significant association with effective contraceptive use (the bivariate model also indicates a similar finding).

We next determine whether the association between union status and effective contraceptive use differs according to race/ethnicity. To illustrate the findings, we estimate the predicted probabilities of effective contraceptive use according to union status and race/ethnicity relying on the estimates from a model that adds the interaction terms for union status and race/ethnicity (Fig. 1). Cohabiting women appear to have higher chances of using effective contraception than married women across all race and ethnic groups, but this difference was only significant among whites. Among whites, the probability of effective contraceptive use was significantly

higher among cohabiting than married women (0.64 vs. 0.53, respectively). Further, regardless of union status, whites reported significantly higher probabilities of effective contraceptive use. Among racial minorities, the predicted probabilities of using an effective method did not differ by union status. Thus, largely, whites drive the union status differential that we report in Table 2. This contrasts with previous research, which finds that in 2002 union status, operates in the same manner for race/ethnic groups (Sweeney 2010).

Although Table 2 shows that cohabiting women are more likely to use effective method than married, we believe that not all cohabiting women use effective contraceptive methods. In fact, Table 1 shows that about 54% of cohabiting women use less-effective contraceptive methods. Consequently, the second key research question was to assess variations in effective contraceptive use among cohabiting women (Table 3). In the first model of Table 3, black cohabiting women are significantly (45%) less likely to use effective contraceptive methods compared to their white cohabiting counterparts. Hispanics cohabiting women have lower odds of effective contraceptive use compared to their white counterparts, although not statistically significant. Cohabiting women with two and three or more births are more likely to use effective contraceptive method (167%, 413% respectively), compared to women without a child. Age was significantly and negatively associated with effective contraceptive use. Model 1 also shows union duration is negatively associated with effective contraceptive use. The second model includes the education, health insurance, and religiosity measures. Except for cohabiting women who had *some* college education, educational level of cohabiting women is not associated with effective contraceptive use. Cohabiting women who had some college education are 81% more likely to use effective method, compared to high school graduate cohabitators. The health insurance status and religiosity of cohabiting women are not significant predictors of using effective contraceptive methods.

Discussion

This study examines the relationship between cohabitation and effective contraceptive use; and how this relationship varies by race and ethnicity. While the racial and ethnic differentials in childbearing are well established, few studies have considered racial and ethnic variation in the patterns of effective contraceptive use for married and cohabiting women. Our work builds on Sweeney's (2010) study by providing a contemporary portrait of contraceptive use variations among cohabiting black, white, and Hispanic women; and considering how they compare with their married counterparts.

Our findings reveal new patterns of effective contraceptive use among American women. At the bivariate level, effective contraceptive use levels do not differ for cohabiting and married women. However, there are clear differentials according to demographic indicators for cohabiting and married women indicating it is important to consider effective contraceptive use net of age, race, parity, and union duration. The study shows that cohabiting women are more likely to use effective contraceptive methods than married women. This finding is consistent with previous work

that shows that cohabiting women are more likely to use effective contraception compared to their married counterparts (see Sweeney et al. 2015; Eeckhaut et al. 2014). Given that cohabitation is increasingly a family context to have children, we anticipated that our study relying on the 2013–2015 period might result in a narrower union status gap than research based on earlier time periods. However, there remains a substantial differential in effective contraceptive use for cohabiting and married women. Thus, cohabitation has not become completely similar to marriage in its patterns of contraceptive behavior in contemporary America. More generally, the reproductive behaviors, contraceptive use, fertility, and birth intentions, of cohabitators are distinct from married couples (Bachrach 1987; Guzzo 2017a; Lichter et al. 2014; Edin and Kefalas 2011; Sassler and Miller 2014).

The race and ethnic differentials in family behavior (Sweeney and Raley 2014) and contraceptive use (Choi and Hamilton 2016) guided us to examine whether the union status patterns of contraceptive use are similar for white, black and Hispanic women. Among white women, cohabitators are more effective contraceptive users than married women. While blacks and Hispanic cohabiting and married women share similar odds of effective contraceptive use. Thus, race/ethnic differentials in effective contraceptive use are masked when examining all women together. Perhaps white cohabitators are more effective contraceptors because they consider cohabitation as a temporary relationship, which leads to marriage; on the contrary, cohabitation is viewed more as an alternative to marriage for blacks and Hispanic women (see Manning and Landale 1996; Hayford et al. 2014; Lichter et al. 2016). These findings are consistent with the higher childbearing rates for black and Hispanic cohabiting women.

Not all cohabiting women are using effective contraceptive methods, about half (54%) of cohabiting women are using less-effective birth control methods. We find that Hispanic and white cohabitators share similar odds of using effective methods. Black cohabiting women are less likely to use effective contraceptive methods compared to their white counterparts. These patterns are reflected in the odds of having children in cohabiting unions with greater levels among black women (Cohen 2011; Lichter et al. 2014; Hayford et al. 2014). These results demonstrate the importance of distinguishing race and ethnic groups in studies of cohabitation and reproduction. The explanations for these differences may rest on structural constraints as well as distinct cultural and social scripts for childbearing and union formation. Further research into potential reasons for racial/ethnic differences could benefit from in-depth qualitative or ethnographic studies. There are some qualitative studies on contraceptive use among cohabiting couples (see Sassler and Miller 2014; Reed et al. 2014) and single (England et al. 2016) that set important groundwork, but a focus on the mechanism underlying these differences is warranted.

While we provide some new insights into contraceptive use patterns, there were some limitations to this study. First, this study relied on a static measure of current union status. The study could not address contraceptive use at the time of the union transitions. Research on union transitions and contraceptive behaviors will provide an important lens on potential selection into cohabitation or marriage based on fertility. We also could not address whether women were already using contraceptives before their transition to their current unions. This is particularly important

for cohabiting women because of the fragile nature of their unions, and the racial and ethnic variations in the stability of cohabiting unions. Second, this study relied on responses from only women. A couple-based study may advance our understanding of contraceptive use patterns and decisions according to union status. Third, while the U.S. is an industrialized western society, the racially diverse nature of the country compared to other developed countries makes it difficult to generalize the findings to other developed countries. This is especially true for western and northern European countries, which have high levels of cohabitation and childbearing in cohabiting unions (see Kiernan 2001; Perelli-Harris et al. 2010). Finally, we cannot assess the reasons for effective contraceptive use. For example, some women may not use effective methods of contraception in an effort to conceive a child or women may not be using effective methods due to infertility issues. Unfortunately, we cannot determine the rationale for specific method selection at the time of interview. Certainly, more attention to the reasons for the use of varying methods of contraception and the racial/ethnic variation in motivations deserves more research attention.

Taken together, this study provides a basis to understand the fertility patterns observed among cohabiting women. As cohabitation becomes an increasingly acceptable family context to have and raise children, we expect that the distinctions in contraceptive use will diminish. However, not all women share these views so we may continue to observe differentials in contraceptive use for different subgroups of women. Assessments of fertility behaviors will remain important signals of the place of the cohabitation in the American family system.

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Appendix

See Table 4.

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