Race and Other Sociodemographic Differences in Sex and Contraceptive Use Among Young Women*

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ABSTRACT

This paper examines race and other sociodemographic differences in young women's sex and contraceptive behaviors, using new, longitudinal data from a weekly journal-based study of about 1000 18-19 year old women that spans two and half years. We use these dynamic data to investigate hypotheses about the dynamic processes in sex and contraceptive use and investigate both race and other sociodemographic characteristics simultaneously, to explore whether race differences are net of other sociodemographic characteristics, and vice-versa. We find that net of other sociodemographic characteristics, African American women had sex less frequently than non-African American women but did not differ in terms of the frequency by which they formed or remained in relationships or in terms of their frequency of contraceptive use or consistency of use. African American women used more effective methods for pregnancy prevention (i.e., birth control pills) less frequently and used less effective methods (i.e., condoms) more frequently. We also find that net of race, more disadvantaged women had fewer and longer relationships (i.e., more serious) and were using less effective methods (i.e., condoms) more frequently than more advantaged women.

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African-American women have higher pregnancy rates than white women, regardless of how they are measured. Although teen pregnancies have declined dramatically among all racial and ethnic groups in the United States since their peak in the early 1990s, substantial racial disparities in teen pregnancy persist (Kost and Henshaw 2012; Martinez et al. 2011; Manlove et al. 2013). The pregnancy rate for black teens is nearly three times as high as the rate for non-Hispanic white teens (Martinez et al. 2011), and the abortion rate for black teens is four times higher than for white teens (Kost and Henshaw 2012). Black women have their first baby, on average, much earlier than white women (20.9 versus 24.1; Martinez et al. 2012). Black women have more children, on average, than white women (2.4 versus 2.2; Martinez et al. 2012).

We focus here on sex and contraception, the main proximate determinants of pregnancy. In addition, we focus on a particularly important period of the life course: early emerging adulthood. Developmental scientists have emphasized the importance of this distinct developmental period – from ages 18 to 25. We analyze data for the early part of this period, from age 18 or 19, through age 20 or 21. The vast majority of young women are at risk for pregnancy by age 20, with 43% having sex before this age (Martinez et al. 2012). Further, this is the point at which experiences begin to diverge sharply – the transition from publically-funded mandatory education to voluntary, often privately funded expensive post-secondary school. Before this period, despite important differences in school quality, there is dramatically less variance in daily behavior, educational opportunity, and work experience.

We use data from a new, unique longitudinal study: the Relationship Dynamics and Social Life (RDSL) study. The RDSL study collected weekly data about young women's

relationships, sex, and contraceptive behaviors. We have learned a great deal about sex and contraceptive use from existing longitudinal studies, such as Add Health, Fragile Families, and the National Survey of Families and Households, as well as from the nationally representative cross-sectional National Survey of Family Growth. However, we still know less about how sex and contraceptive use change over time. Many hypotheses about dynamic aspects of both sex and contraception have been forwarded – for example, that poor women have longer and more serious relationships at younger ages, which contributes to their risk of early pregnancy (Edin and Kefalas, 2005), or that African-American women discontinue their contraceptive methods more frequently than others (Trussell and Vaughan 1999; Hammerslough 1984). These dynamic hypotheses require dynamic data.

The present study contributes in two important ways to our understanding of these proximate determinants of pregnancy. First, we include a rich set of measures of both sex and contraceptive use. Using a full record, with weekly precision, of relationships and sexual intercourse, we construct several measures that precisely summarize behavior over a period of time. Second, because our data are dynamic – precise to the week – we also examine *changes* in behavior over a specific time period. Specifically, we analyze number of different partners, length of relationships, and contraceptive method switching.

To our knowledge, no study to date has simultaneously investigated race and other sociodemographic differences, with the goal of understanding them separately and in tandem, in such a thorough set of measures of the important proximate determinants of pregnancy. This is important because sex and contraceptive use vary substantially across other sociodemographic indicators (e.g., socioeconomic status), and race differences in these sociodemographic characteristics may *produce* what appear to be race differences, but are not specifically related to

race. Our data are particularly useful for this aspect of our analyses for two main reasons. First, the geographic area is the same for all respondents. Thus, observed race differences cannot be attributed to well-known regional variation in where blacks and whites tend to live. Second, there is a good deal of variation in sociodemographic characteristics *within* each race group in the sample. The county in which the data were collected was specifically chosen because it contains both middle-class and poorer blacks, as well as both middle-class and poorer whites.

Overall, the present study makes three main contributions to our knowledge of race and other sociodemographic differences in sex and contraceptive use. First, we use dynamic data to investigate hypotheses about a rich set of measures of the dynamic processes in sex and contraceptive use. Second, we examine these processes at a particularly important time, early emerging adulthood. Third, we examine both race and other sociodemographic characteristics simultaneously, to explore whether race differences are net of other sociodemographic characteristics, and vice-versa.

BACKGROUND

We hypothesize that three broad sets of factors may lead to race differences in sex and contraceptive use: (1) family-related experiences of both young women *and* their mothers, (2) economic opportunity and attainment, and (3) the legacy of discrimination, medical experimentation, and forced sterilization on low socioeconomic status (SES), African-American, and other minority populations in the U.S.

Family-related experiences

Young women with disadvantaged sociodemographic backgrounds – e.g., teen mothers, single mothers, or poverty – have earlier sex, less contraceptive use at first sex, more casual relationships at first sex, more forced sex, and older partners than their otherwise similar peers

(Martinez et al. 2011). The research literature has described many mechanisms that link these experiences to early sex, less contraceptive use, and subsequently higher rates of teen and young adult pregnancy. For example, some suggest that young women see their mothers or women in their neighborhoods as role models and imitate their behavior (Axinn and Thornton 1996; Brewster 1994; Newcomer and Udry 1994; Thornton and Camburn 1987). Others describe a link between lower levels of parental supervision and earlier and riskier sexual behavior in these disadvantaged households (DiClemente et al. 2001; Metzler et al., 1994; Thomson, Hanson, and McLanahan 1994; Ramirez-Valles et al. 1998). Parental closeness and parenting styles are also thought to play a role in encouraging or discouraging these behaviors (Miller 2002; Moore and Chase-Lansdale 2001).

Further, we know that African-American women are more likely than their white peers to experience these types of sociodemographic disadvantage, with younger mothers, more family instability, and lower family income (Casper and Bianchi 2002). These same mechanisms may put African-American woman at risk of early sex and less contraceptive use – role modeling, parental supervision, and parenting styles.

Further, some evidence suggests that even though African-American women have sex earlier than their peers, they are actually more negative about sex (Barber et al. 2011; Martinez et al. 2011). It may be that even though they are not more desirous of sex, the paucity of young African-American men who are employed and not incarcerated (Wilson and Neckerman 1986; Lopoo and Western 2005) makes African-American women more willing to have sex than they might otherwise be. This is suggested by sex ratio theory (Guttentag and Secord 1983; Tucker and Mitchell-Kernan 1995) as well as by an empirical study of young African-American women who *themselves* said that gender imbalance was a reason they tolerated refusal to use condoms

and non-monogamous sexual behavior in their male partners (Ferguson et al. 2006). Thus, net of sociodemographic characteristics, young African-American women may have distinct behaviors related to sex and contraception than their otherwise similar white peers.

Finally, in the U.S., African Americans grow up in substantially more religious families than whites. The vast majority belong to historically black churches (e.g., Baptist) or evangelical churches (Chatters et al. 2009). Religious doctrine is generally negative about premarital sex, and religious young people delay first sex, are more likely to avoid premarital sex, and have fewer sexual partners (Manlove et al. 2006, 2008). Religious doctrine also tends to be negative toward contraception, but evidence is mixed about whether religion affects contraceptive use among those young people who have sex (Manlove 2006, 2008).

Economic opportunity and attainment

African-American women have less education, lower employment rates, and fewer opportunities for both education and employment, due to poverty, lower quality early education, labor market discrimination, and disadvantaged neighborhoods (Avery and Rendall 2002; Conley 1999; Isaacs 2007; Oliver and Shapiro 2006; Orr 2003; Proctor and Dalaker 2002). It is unclear whether these socioeconomic experiences underlie differences between African-American and white women's sex and contraception behaviors.

We do know that there are important links between socioeconomic disadvantage, on the one hand, and sex and contraception, on the other. Uncertainty about family formation, particularly the long-term chances of a marriage surviving, is high for American women. It is particularly high for poor women. Uncertainty and instability are endemic to concentrated poverty (Gottschalk and Moffitt 2009; Western et al. 2012). Poor women can expect their relationships, cohabitations, and marriages to dissolve at a higher rate (Copen et al. 2012;

Sullivan et al. 2000); to experience more intimate partner violence (Jewkes 2002); to move from residence to residence (Pavao et al. 2007); to have more health problems (Mirowsky et al. 2000; Robert and House 2000; Williams and Collins 1995); and to live in poorer quality environments (Kirby 2008; Wilson 1987). Young women with these experiences may have less motivation to avoid sex and to use contraception, but may also be more motivated to seek out these experiences as an escape from a harsh life with their family of origin. Edin and Kefalas (2005) describe young women who perceive the potential for stability in a path of early sex, lack of contraception, and early parenthood. And Burton and Tucker (2009) elegantly describe this unreliability and insecurity in the lives of poor African-American women – intermittent, low-wage employment and few alternatives (e.g., rich husbands), lead to transient living conditions, anxiety about serious relationships, and fear of death.

Poverty itself may affect contraceptive use, as poor women are less likely to have insurance to cover its costs (Ebrahim et al. 2009). But there may be race differences that are net of poverty – provider bias in contraceptive counseling (Dehlendorf et al. 2010), and discrimination (Smedley et al. 2006), which may affect specific method choice.

Different opportunity costs among sociodemographic groups may also lead to differences in sex and contraception. Fewer opportunities in terms of education and careers may lead disadvantaged women to perceive fewer personal negative consequences of early sex, and sex without contraception, than their more advantaged peers. Armstrong and Hamilton's (2013) in-depth study of class and sexual behavior suggests that poor women are more interested in serious romantic relationships and marriage at a young age, in part because they lack the educational and career aspirations and opportunities that translate into the motivation to delay these relationships, and in part because many of them have already formed serious romantic relationships at a young

age. They suggest that young women with higher academic aspirations delay family-formation in explicit recognition that their opportunity costs of marriage would be high. Strong preferences for delaying childbearing translate into contraceptive use and vigilance, given that the vast majority of young women have had sex by their early twenties (Finer and Philbin 2013).

Further, previous research suggests race differences that may be net of other sociodemographic differences. East (1998) suggested the importance of culture in determining young women's perceptions of the appropriate age for family-related transitions (East 1998). And Anderson (1990), Wilson (1996), and others have argued that structural disadvantages among African-Americans – such as fewer churches, lower quality schools, fewer neighborhood associations, and less cohesive neighborhood networks in general – may lead to a set of "ghetto-related" behaviors. Statistical analyses suggest that, indeed, the neighborhood economic conditions of African Americans explains a substantial amount of variance in nonmarital pregnancy (South and Baumer 2000) and attitudes related to early sex (Browning and Burrington 2006). However, important race differences remained net of economic factors. Thus, although we recognize that poverty may explain many of the race differences in sex and contraception, some differences may be race-specific.

Legacy of medical experimentation and forced sterilization

Several potential reasons that there may be race-based differences in attitudes related to pregnancy focus not on socioeconomic explanations, but instead on race itself. One important and visible issue for African-Americans' attitudes toward health care in general, and perhaps contraception in particular, is the Tuskegee Syphilis Study – probably the most well-known example of unethical medical experimentation in the United States (Reverby 2009). Operated by the U.S. Public Health Service from 1932 through the 1970s, nearly 400 black men in the poorest

county in Alabama were enrolled in a research study and told that they were being treated for "bad blood." In fact, they had late-stage syphilis, and were never treated for the disease. By the end of the study, 28 men had died directly of the disease, another 100 died of complications of syphilis, and 40 wives were infected. Public discourse about the study remains; President Clinton offered an apology to the men, their families, and the African-American community.

Another set of abuses took place in Puerto Rico – contraceptive pill trials held in Rio Piedras in the 1950s (Ramirez de Arellano et al. 1983) and the massive forced sterilization of Puerto Rican women between 1930 and 1970 (Gibson-Rosado 1993; Hoerlein 2001; Presser 1969). In Rio Piedras, 500 women were given high levels of progesterone without knowing it was an experimental pill; two women died during the study. A U.S. federal law enacted in 1937 funded the sterilization of Puerto Rican women, and specifically suggested it for the "unfit," in response to a depressed economy.

Finally, the involuntary sterilization of women receiving public assistance in the U.S. has been publically documented as recently as the 1970s (Malat 2000; Morgan 2004; Roberts 2000; and Boonstra et al. 2000). The issue of whether poor women should bear children is at the heart of ongoing welfare debates (e.g., see Jencks 2001), and is disproportionately felt by minorities, who disproportionately receive public assistance. These debates harken back to the eugenics movement, whose goal was to "improve the inborn qualities of a race" (Galton 1904) through selective breeding and sterilization. Eugenics was popular in the United States in the late 19th and early 20th century, prior to World War II (Osborn 1937). Race and class were used to determine who was "fit" to reproduce (Stubblefield 2007). Margaret Sanger, an important leader in the U.S. birth control movement, was closely tied to the eugenicists (Chesler 2007).

This legacy – from Tuskegee to Rio Piedras to eugenics in the U.S. birth control

movement – has led to conspiracy beliefs about contraception (and medical professionals in general {e.g., see Schnittker 2004}) among African-American women and men. These conspiracy beliefs – for example, that birth control is a government plot to keep black fertility down – are passed from generation to generation, even if the specific experiences leading to those beliefs occurred prior to the lifetimes of today's young women. Many studies in the 1970s documented these beliefs (e.g., Darity and Turner 1972; Farrell and Dawkins 1979). But more recent studies have documented their existence, as well (Thorburn and Bogart 2005). Recently, nationally representative data demonstrated a strong race difference in these perceptions (Rocca and Harper 2012). We expect these conspiracy beliefs to translate to less contraceptive as, as well as particular avoidance of contraceptive methods that require interaction with a health provider (e.g., birth control pills, other hormonal methods).

HYPOTHESES

Variance in pregnancy rates must be explained by the proximate determinants: exposure to sexual intercourse and contraceptive use. Thus, because they have higher rates of teen and early pregnancy, African-American women and women from more disadvantaged backgrounds must either have more sex or less contraceptive use. There has been substantial research linking both race and other sociodemographic characteristics to some aspects of sex and contraception – particularly age at first sex, contraceptive use at first sex, and contraceptive use at most recent sex. However, both sex and contraception have multiple dimensions, some of which are dynamic and can only be examined with dynamic data. Sexual behavior varies in terms of the age at first sex (which determines the length of the period at risk of pregnancy), number of distinct partners, and frequency of intercourse. Contraceptive use varies in terms of whether any method is used, whether it is used correctly, whether it is used consistently, and the effectiveness of the specific

type of method used (Kirby 2007). In this paper, we examine multiple behavioral components of sex and contraceptive use, determining whether and where key race and other sociodemographic differentials exist, and whether they explain race differences. Thus, because of our focus on the proximate determinants of sex and contraception, and our focus on factors that can explain higher pregnancy rates, we look for the following among African-American and/or more disadvantaged groups in our analyses:

1. Relationships: more serious relationships and more frequent sex within relationships.
2. Contraceptive Use: less frequent and less consistent contraceptive use.
3. Contraceptive Methods: less effective methods.
4. Instability in Contraceptive Use: more discontinuation, more different methods, and more method switches.

DATA AND METHODS

Data

The RDSL study began with a representative, random, population-based sample of 1,003 young women, ages 18-19, residing in a Michigan county, who were followed for two and a half years. The sampling frame was the Michigan Department of State driver's license and Personal Identification Card (PID) database. Comparison of the driver's license and PID data by zip code to 2000 census-based projections revealed 96% agreement between the frame count and the projections for this population (study investigators' calculations).

The RDSL study focused on women ages 18 to 22 because these ages are characterized by the highest rates of unintended pregnancy, which is the research focus of the RDSL study. This particular county in Michigan was chosen because of the racial/ethnic and socioeconomic variation of individuals within a single geographic area (i.e., poor African Americans, poor

Whites, middle-class African Americans, and middle-class Whites). A nearby, geographically concentrated sample also allowed for maximum investigator involvement.

The first component of data collection was a baseline face-to-face survey interview conducted between March 2008 and July 2009, assessing sociodemographic characteristics, attitudes, relationship characteristics and history, contraceptive use, and pregnancy history. The most innovative aspect of the RDSL study design was the second component of data collection – dynamic, prospective measurement of pregnancy desires and pregnancy, as well as relationship characteristics such as commitment, sex, and contraceptive use, collected in a weekly journal format. At the conclusion of the baseline interview, respondents were invited to participate in the journal-based survey every week for two and a half years.

Of the 1,003 women who completed the baseline interview, 95% participated in the weekly journal (N=953). 92% reported regular access to the Internet and usually completed the journal online each week. The remaining 8% called in to the Survey Research Center's phone lab to complete their weekly journals. In addition, respondents were allowed to switch mode (from internet to phone and vice versa) at any time, for any duration (i.e., one week or more). Respondents were paid $1 per weekly journal with $5 bonuses for on-time completion of five weekly journals in a row.

The journal portion of the study concluded in January 2012, resulting in 57,602 weekly journals. At the conclusion of the study, 84% of baseline survey respondents had participated in the journal study for at least 6 months, 79% for at least 12 months, and 75% for at least 18 months. Journals that were completed less than 14 days after the prior journal adjusted the referenced period to between the current journal and prior journal. In other words, there is no missing data for these journals. If the journal occurred at 14 days or later, the reference period is

the prior week only. We refer to the period between journals as a week, as shorthand, even though it may vary from 5 to 13 days.

We restrict our analyses to respondents who completed journals during the first 12 months of the study, when response rates remained quite high. In analyses of contraceptive use, we eliminate the small number of weeks in which the respondents were pregnant – less than one percent of the weeks in which they reported sex (N=934 weeks). In addition, 17 respondents were excluded entirely because they were pregnant during all of the weeks they contributed during the first 12 months. An additional 7 respondents were not included in our analytic sample because they only completed one journal in the first 12 months of the study. We also conducted sensitivity analyses for the contraception models that excluded weeks in which the respondent had a strong desire to become pregnant (and no desire to avoid pregnancy). The results did not differ from those presented. This results in 946 respondents who contributed 27,763 weeks of data. In addition, because we have multiple outcomes in our models, the specific analytic sample depends on the outcome. We describe the specific sample for each outcome below.

Measures

Outcomes – Relationships, Sex, and Contraception

In every weekly journal, respondents identified their most important partner during the past week. Note that "partner" refers to anyone the respondent considers "special" or "romantic", *or* anyone she has had sexual contact with during the prior week, which could include a texting "pen-pal", a one-night stand, a fiancée, or anything in-between. Thus, we say "in a relationship" where characteristics of that relationship may vary widely. Respondents provided initials for new partners and chose prior partners from a list of previously provided initials. Thus, the data include a continuous record of the respondent's entire relationship history during the study

period. Table 1 presents the distributions of these outcomes for the full sample and separately by race.

Proportion of time in a relationship was calculated by dividing the number of weeks in which the respondent identified a partner by the total number of weeks during the first 12 months. On average, white women were in a relationship slightly more than two-thirds of the year (mean=0.69), and African American women were in a relationship slightly less of the year (mean=0.65; $p<.10$).

In each week the respondent identified a partner of any type, she was asked whether she had sexual intercourse ("…did you have sexual intercourse with ___? By sexual intercourse, we mean when a man puts his penis into a woman's vagina."). We compute the *proportion of weeks in which sex occurred* among only those weeks when a respondent identified a partner. On average, white women had sex in slightly more than half of the weeks they reported a partner (mean=0.55), with African American women having sex less than half the weeks (mean=0.46; $p<.001$).

Total number of partners was calculated by counting the number of unique partners reported during the first 12 months. On average, respondents had two partners during the year (mean=2.09); this did not significantly differ by race.

Average length of relationships (in months) was calculated by summing the number of days with each unique partner, converting this to months, and dividing by the number of partners. On average, the relationships lasted over a year (mean=15.92); this did not significantly differ by race.

Each week, each respondent was asked "did you use or do anything that can help people avoid becoming pregnant, even if you did not use it to keep from getting pregnant yourself." At a

later point in the interview, if they reported sexual intercourse in the prior week, respondents were asked whether they had used a condom, withdrawal, or any other coital-specific method. *Proportion of weeks any contraception was used* was calculated only in the weeks in which sex occurred, because some of the methods are only used during sex (condoms, withdrawal). On average, women used some type of contraception almost 90% of the time they were having sex (mean=0.89); this did not significantly differ by race.

Respondents were also asked, "…since the last interview, did you or your partner use some method of birth control every time you had intercourse (even if you are not trying to prevent pregnancy)?" *Proportion of weeks contraception was used consistently* was calculated only in weeks that *any* contraception was used. On average, white contraceptors reported consistent contraceptive use slightly more than three-quarters of the time (mean=0.77), which is higher than African-American contraceptors, who used contraception consistently slightly more than two-thirds of the time (mean=0.69; $p<.001$).

Specific contraceptive method used was based on several questions each week about non-coital and coital-specific methods. Respondents who answered affirmatively to using any method were asked about specific non-coital methods: birth control pills, birth control patch, NuvaRing, Depo-Provera or any other type of contraceptive shot, implant such as Implanon or another contraceptive implant, IUD, or rhythm ("avoided having sex because you thought it was a time of month you could get pregnant"). Respondents who reported having sex during the past week, were also asked whether they used a condom, diaphragm or cervical cap, spermicide, a female condom, or withdrawal ("did your partner withdraw before ejaculating").

We used the following mutually exclusive categories: (a) *IUD, implant, or Depo-Provera* (referred to as *LARC* hereafter), (b) *birth control pills, birth control patch, or NuvaRing* (referred

to as *Pill* as a shorthand, because this category is dominated by pill use), (c) *condom* (male or female), and (d) *withdrawal*.[1] For weeks in which multiple methods were used, we coded that week as the more effective method for pregnancy prevention (e.g., weeks of condom and birth control pills were coded as Pill), therefore weeks in which a condom was used, for instance, are weeks in which a condom only or a condom with a less effective method was used. (We discuss dual method use below.)

Proportion of weeks used for each specific method was calculated by dividing the number of weeks in which the respondent or her partner used each specific type of contraceptive method by the number of weeks in which any contraceptive method was used.

LARC is used infrequently in this age group. On average, contraceptors used a *LARC* method about 10% of the time (mean=0.09) and among those who ever used LARC, they did so about 60% of the time (mean=0.59). African American contraceptors used LARC a slightly higher proportion of the time than white contraceptors (mean=0.12 and 0.07, respectively), but there was no race difference in frequency among LARC users.

Pills were the most frequently used method among white contraceptors, but not among African-Americans. On average, white contraceptors used the Pill nearly half of the time (mean=0.45), and African-American contraceptors used it only one-quarter of the time (mean=0.25; $p<.001$). Even among pill users, white women used the pill a higher proportion of the time (mean=0.70) than African-American women (mean=0.64; $p<.10$).

[1] Preliminary analyses included separate categories for each method type but the results did not differ for the methods included in *LARC* or for those included in *Pill*, therefore they were combined for the sake of parsimony. Weeks in which only an "other" method was reported (e.g., spermicide only) or the specific method used was not provided were excluded due to small sample sizes.

Condoms were the most frequently used method among African-American contraceptors. On average, women used *condoms* about one-third of the time they were using any method (mean=0.35) and among condom users, they did so more than half of the time (mean=0.58). (Recall that because the type of contraceptive method used was coded based on the most effective method, this category includes a condom *only* or a condom combined with a less effective method). African-American women used condoms more than white women overall (means=0.47 and 0.29, respectively; $p<.001$), even among just those women who were condom users (means=0.67 and 0.52, respectively; $p<.001$).

Withdrawal is a less frequently used method in this age group – fewer than 20% of weeks among both white and African-American women. And withdrawal users themselves use this method less frequently than those who use other methods (mean=0.44). (Again, recall that because the type of contraceptive method used was coded based on the most effective method, this includes withdrawal *only* or withdrawal combined with rhythm). African-American women used withdrawal marginally less frequently than white women overall (means=0.15 and 0.19, respectively), but there is no significant race difference in frequency among withdrawal users.

We coded *dual method use* as weeks in which the respondent reported using a hormonal method *and* a condom. Although sexually transmitted infections (STIs) are not our focus in this paper, dual method use is important because it combines one the most effective common methods for preventing pregnancy (hormonal methods) with the most effective method for preventing STIs. Proportion of weeks using a dual method was calculated only among those weeks in which any contraception was used. On average, contraceptors used a dual method almost one-quarter of the time (mean=0.23) and among dual method users, they did so almost half of the time (mean=0.46). African American contraceptors were dual method users less

frequently than white contraceptors (mean=0.20 and 0.24, respectively), but there was no race difference in frequency among dual method users.

Number of contraceptive use "spells" is a count of the distinct periods of contraceptive use for each contraceptor. If a respondent uses no method, then uses condoms for three weeks, stops using condoms, and begins using the pill, that would be two separate spells. On average, women had slightly over one spell (mean=1.29); this did not significantly differ by race.

Number of different methods was calculated by counting the number of unique methods used regardless of how long it was used or in how many different spells. On average, contraceptors used more than one method (mean=1.76); the number of methods did not significantly differ by race.

Number of method switches differs from number of different methods in that a pattern of, for instance, pills, condoms, pills, and condoms, was counted as two different *methods* but three method *switches*. On average, contraceptors switched methods at least once (mean=1.76); this did not significantly differ by race.

Individual Characteristics

The present study focuses on race and other sociodemographic characteristics. Table 1 presents the distributions of these focal characteristics and other measures included in the models among the full sample and separately by race. Race was measured with the following question: "Which of the following groups describe your racial background? Please select one or more groups: American Indian or Alaska Native, Asian, Native Hawaiian or Other Pacific Islander, Black or African American, or White." The vast majority of those who did not select "Black or

African American" selected "White".[2] In all, 34% percent of the sample reported their race as African American. A preceding question about Hispanic ethnicity yielded 77 Latinas, who were coded according to their answer to the race question – 27 selected African American, 50 selected another race. We recognize that race is more complex than can be indicated by this static dichotomous variable. For the statistical descriptions presented here, we use these simplified categories. We hope that this study will motivate further research on how contraceptive use may differ *within* racial groups, or depend on individuals' racial identities, which may be highly contextualized over time and space.

Childhood sociodemographic measures included religious importance, respondent's mother was a teen parent, respondent grew up in a two parent household, and family received public assistance when the respondent was growing up. For the question "How important if at all is your religious faith to you?" response choices ranged from 1 (not at all important) to 4 (more important than anything else). Reducing responses to two categories, 43% chose not at all or somewhat important, and 57% chose very important or more important than anything else. Respondents were asked, "How old was your biological mother when she had her first child?" Over a third (37%) reported their mother had been a teen parent. In response to questions about primary childhood residence, 52% of respondents reported growing up with two parents (either two biological or one biological and one step-parent), and 48% reported growing up with one biological parent only (no step-parent) or in another arrangement (e.g., with grandparents, an aunt, etc.). Respondents were asked, "While you were growing up, did your family ever receive public assistance?" Over a third (37%) reported public assistance during childhood.

[2] 19 selected American Indian or Alaska Native and 8 selected Asian, Native Hawaiian, or Other Pacific Islander. As a shorthand, we refer to this category as "White."

Current measures included public assistance, education, and employment. In the Computer-Assisted Self-Interview (CASI) portion of the baseline interview, respondents used a laptop computer to enter their responses (without the interviewer's assistance) to the question: "Are you currently receiving public assistance from any of the following sources? WIC (Women, Infants and Children Program), FIP (Family Independence Program), Cash welfare, or Food stamps." In all, 26% of respondents reported receiving at least one category of public assistance and 74% reported no type of public assistance. Because respondents were sampled at age 18 or 19, many were still enrolled in high school and few had completed any post-secondary education by the baseline interview. Respondents reported the following to a series of questions assessing their current educational enrollment and achievement: 8% had not completed high school or a GED and were not enrolled in school, 22% had graduated from high school but were not enrolled in post-secondary education, 14% were still enrolled in high school, 56% were enrolled in a 2- or4-year college or a vocational, technical or other school.[3] In response to a question about employment, 50% reported "currently working for pay."[4]

For all variables, African-American women in the sample experienced more disadvantage than white women. These differences are substantial and statistically significant.

Four baseline measures of adolescent experiences with sex and pregnancy that referred to the respondent's past were included as controls. In other words, we are controlling for these early experiences and examining sex and contraception *net of* whether, for instance, they had an early

[3] Preliminary analyses included separate categories for 2-year college, vocational, technical, or other school versus 4-year college but the results did not differ for the two categories of post-secondary education, therefore they were combined for the sake of parsimony.

[4] Preliminary analyses included separate categories for full-time versus part-time employment but the results did not differ for the two categories of employment, therefore they were combined for the sake of parsimony.

sexual debut. In response to the question, "How old were you the first time you had sexual intercourse?" 51% reported they were 16 or younger, and 49% were older than 16 or had not yet had sexual intercourse. When asked, "With how many total partners have you had sexual intercourse?" 40% reported one partner or had not yet had sexual intercourse, and 60% reported two or more sexual partners. When asked, "Have you ever had sexual intercourse without using some method of birth control such as condoms, pills, or another method?" 48% answered affirmatively and 52% had never had sex without birth control (including those who had never had sex). In response to "How many times have you been pregnant in your life?" 26% reported at least one prior pregnancy. African-American women in the sample experienced riskier sexual experiences in their adolescence, and also higher rates of teen pregnancy, which are consistent with the literature (Martinez et al. 2011).

Analytic Strategy

A series of OLS regression models for each outcome was conducted using Stata/SE 12.0. Extensive model building was conducted to examine the extent of race differences in contraceptive use that are net of other sociodemographic differences. We first ran a model that included race only, then we added childhood sociodemographic characteristics, then we added current sociodemographic characteristics, and finally we added adolescent experiences related to pregnancy. We also ran additional models that excluded race in order to examine the extent to which these other sociodemographic differences were net of race differences. In these different versions of the model, the coefficients for the other sociodemographic characteristics remained quite stable, regardless of what other variables were included in the model. The coefficient for race, however, varied dramatically depending on whether the other sociodemographic characteristics and adolescent experiences with sex and pregnancy were included in the models.

Thus, we present two models for each outcome: Model 1 includes race only and Model 2 adds the other sociodemographic characteristics and adolescent experiences with sex and pregnancy. (The results from the additional model building described are available from the authors.)

RESULTS

Table 2 presents the results from OLS regression models of the *proportion of time in a relationship, proportion of weeks in which sex occurred*, total *number of partners*, and the *average length of relationships*. This table examines whether African-American women have more partners and more serious (longer) relationships, and whether they have sex more frequently within those relationships than white women (Hypothesis 1).

In fact, African-American women spent significantly *less* time in a relationship than non-African-American women (Model 1), and this difference was net of other sociodemographic characteristics and adolescent experiences with sex and pregnancy (Model 2). Among those women who spent any time in a relationship, African-American women also had sex significantly *less* frequently (Model 1), and this significant difference was also net of other sociodemographic characteristics and adolescent experiences with sex and pregnancy (Model 2). African-American women, however, did not significantly differ from other women in terms of the total number of partners, or the average length of their relationships (Models 1 and 2), regardless of whether we consider other sociodemographic characteristics and adolescent experiences with sex and pregnancy (Model 1).

Women who reported a high level of religious importance in their lives did not spend less time in a relationship, or have fewer partners or shorter relationships than the less religious. However, if they were in a relationship, they had sex significantly less of the time. Women who grew up in a two-parent family had longer relationships than their peers from other family types.

Women who were currently receiving public assistance had significantly fewer and longer relationships. Women who were enrolled in college had more partners, and those still enrolled in high school had more partners and shorter relationships. Women who were employed spent more time in relationships than those who were not employed, and they also had significantly longer relationships. Women who had an earlier age at first sex, more sexual partners during adolescence, and ever had sex without birth control, spent significantly more time in relationships and had sex more frequently. In addition, women who had sex earlier had longer relationships, but those who had more partners during adolescence had shorter relationships and only slightly more partners than those with fewer prior partners. Lastly, those who had a pregnancy during adolescence had longer relationships.

Overall, these models suggest substantial race differences in time spent in relationships and frequency of sex, but these differences put African-American women at *lower* risk of pregnancy, contrary to our hypothesis. Other sociodemographic characteristics are more closely related to the total number of partners and the average length of relationships, with more disadvantaged women (public assistance, not enrolled in college at 18/19, and employed at 18/19) being associated with fewer partners and longer relationships. Finally, adolescent experiences with sex and pregnancy are strongly related to the subsequent amount of time spent in a relationship, frequency of sex, total number of partners, and average relationship length, with risky behavior in adolescence associated with more time in more serious (longer) relationships (with the exception of more than two sex partners during adolescence, which is associated with shorter relationships).

Table 3 presents the results from OLS regression models of contraceptive use – the *proportion of time any contraception was used* and the *proportion of time contraception was*

used consistently. Recall that we hypothesized that African-American women use less contraception and use it less consistently. Actually, African American women did *not* use contraception less than their non-African American peers (Models 1 and 2). However, when they *did* use contraception, African American women used it less consistently than non-African Americans (Model 1), which is consistent with our hypothesis. However, this difference is largely due to differences in other sociodemographic characteristics and adolescent experiences with sex and pregnancy (Model 2). Women from more disadvantaged backgrounds (public assistance, not enrolled in college at 18/19) used contraception less frequently and less consistently. Employed women used contraception more frequently and consistently. And young women with risky sexual experiences and pregnancy in adolescence used contraception less frequently and less consistently.

Table 4 presents the results from OLS regression models of the *proportion of weeks used each specific method* (LARC, Pill, Condom, or Withdrawal), to investigate Hypothesis 4 that African-American women use less effective methods. African-American women used LARC and condoms more frequently, and Birth Control Pills and withdrawal less frequently, than white women (Model 1). They also used a combination of condoms and a hormonal method (dual method use) less frequently. Each of these differences is explained, in part, by other sociodemographic characteristics and adolescent experiences with sex and pregnancy. Overall, women from more advantaged backgrounds more frequently used pills, withdrawal, or a combination of condoms and a hormonal method (dual method use). Women from less advantaged backgrounds more frequently used LARC and condoms (alone). Those who had sex before age 16 more frequently used pills and less frequently used condoms; those with multiple partners more frequently used LARC and less frequently used pills; those who previously had

sex without birth control used *all* methods less frequently except withdrawal; and those with prior pregnancies more frequently used LARC and less frequently used pills.

Table 5 investigates whether African-American women discontinue or switch methods more frequently than white women. Recall that we conceptualize this in three different ways. First, the number of "spells," where a period of using a specific method, followed by some time using no method, and then going back to the specific method counts as two spells. Second, the total number of distinct methods, where each specific method is counted regardless of how many times it is used or how long it is used. And, third, the number of switches between methods, where using a specific method, trying a different method, and going back to the original method is counted as two switches.

Ignoring differences in other sociodemographic characteristics and adolescent experiences with sex and pregnancy, overall African-American women did not have more contraceptive use "spells," did not use more different methods, and did not switch methods more frequently (Model 1). However, once we account for other sociodemographic characteristics adolescent experiences with sex and pregnancy, race differences in the number of methods and the number of switches are marginally significant. This is because young women with more partners, sex without birth control, and prior pregnancies use more methods and/or have more method switches than their less sexually experienced peers. And, young women who are unemployed switch methods more frequently. However, because African-American women are more likely to have had these experiences, and their overall level of different methods and method switches are slightly lower, these race differences approach significance when we consider them net of these experiences. In other words, given their adolescent experiences with

sex and pregnancy, and lower employment rates, African-American women use fewer methods and switch methods less frequently than we would expect.

DISCUSSION

This paper examines race and other sociodemographic differences in young women's sex and contraceptive behaviors, using new, longitudinal data from a weekly journal-based study of about 1000 18-19 year old women that spans two and half years. We contribute to the understanding of these proximate determinants of pregnancy in three important ways. First, we use dynamic data to investigate hypotheses about a rich set of measures of the dynamic processes in sex and contraceptive use. Second, we examine these processes at a particularly important time, early emerging adulthood. Third, we examine both race and other sociodemographic characteristics simultaneously, to explore whether race differences are net of other sociodemographic characteristics, and vice-versa.

We find that net of other sociodemographic characteristics and early experiences with sex and pregnancy, African American women had sex less frequently than non-African American women but did not differ in terms of the frequency by which they formed or remained in relationships or in terms of their frequency of contraceptive use or consistency of use. African American women used more effective methods for pregnancy prevention (i.e., birth control pills) less frequently and used less effective methods for pregnancy prevention (i.e., condoms) more frequently. We also find that net of race and early experiences with sex and pregnancy, more disadvantaged women had fewer and longer relationships (and thus potentially more serious) and were using less effective methods for pregnancy prevention (i.e., condoms) more frequently than more advantaged women. In the final paper, we will provide a more fully developed discussion section.

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Table 1. Descriptive Statistics of Measures Used in the Analyses (N=946; 27,763 weeks; except where noted)

	Total Population				White		African American		
	Proportion/ Mean	SD	Min	Max	Proportion/ Mean	SD	Proportion/ Mean	SD	p<.05
Race									
African American	0.34		0	1					
Sociodemographic Characteristics									
High religious importance	0.57		0	1	0.44		0.83		***
Biological mother less than 20 years old at first birth	0.37		0	1	0.27		0.54		***
Grew up with two parents (both bio or bio/step)	0.52		0	1	0.65		0.28		***
Childhood public assistance	0.37		0	1	0.29		0.52		***
Receiving public assistance at age 18/19	0.26		0	1	0.19		0.42		***
Education									
Not enrolled and dropped out	0.08		0	1	0.08		0.09		
Not enrolled but graduated high school	0.22		0	1	0.23		0.18		***
Enrolled in high school	0.14		0	1	0.12		0.17		
Enrolled in post-secondary school	0.56		0	1	0.57		0.56		
Employed	0.50		0	1	0.56		0.37		***
Adolescent Experiences with Sex and Pregnancy									
Age at first sex 16 years or less	0.51		0	1	0.46		0.62		***
2 or more sex partners by age 18/19	0.60		0	1	0.55		0.69		***
Ever had sex without birth control by age 18/19	0.48		0	1	0.42		0.59		***
Any pregnancies before age 18/19	0.26		0	1	0.19		0.38		***
Relationships and Sex									
Proportion of weeks in a relationship	0.68	0.37	0	1	0.69	0.37	0.65	0.35	+
Proportion of weeks in which sex occurred[a]	0.52	0.36	0	1	0.55	0.37	0.46	0.34	***
Total number of partners[a]	2.09	1.69	1	14	2.08	1.72	2.12	1.63	
Average length of relationships[a]	15.92	17.62	0.21	115.15	15.57	16.31	16.57	19.88	
Contraceptive Use									
Proportion of weeks any contraception was used[b]	0.89	0.24	0	1	0.90	0.23	0.89	0.24	
Proportion of weeks contraception was used consistently[c]	0.74	0.34	0	1	0.77	0.32	0.69	0.35	***
Specific Contraceptive Method Use									
Proportion of weeks using LARC[d]	0.09	0.25	0	1	0.07	0.23	0.12	0.28	***
among only those who ever used LARC (N=99)	0.59	0.34	0.05	1	0.60	0.36	0.58	0.33	
Proportion of weeks using the Pill[d]	0.38	0.42	0	1	0.45	0.42	0.25	0.38	***
among only those who ever used the Pill (N=372)	0.69	0.33	0.02	1	0.70	0.32	0.65	0.33	
Proportion of weeks using a Condom[d]	0.35	0.39	0	1	0.29	0.37	0.47	0.42	***
among only those who ever used a Condom (N=402)	0.58	0.35	0.02	1	0.52	0.34	0.67	0.33	***
Proportion of weeks using Withdrawal	0.17	0.30	0	1	0.19	0.31	0.15	0.28	+
among only those who ever used Withdrawal (N=264)	0.44	0.33	0.02	1	0.45	0.34	0.41	0.32	
Proportion of weeks using a Dual method	0.23	0.33	0	1	0.24	0.34	0.20	0.31	*
among only those who ever used a Dual method (N=325)	0.46	0.34	0.02	1	0.46	0.34	0.48	0.31	
Instability in Contraceptive Use									
Number of contraceptive use spells[c]	1.29	0.77	1	6	1.31	0.80	1.26	0.70	
Number of different contraceptive methods[d]	1.76	0.82	1	4	1.78	0.81	1.72	0.84	
Number of contraceptive method switches[d]	1.55	2.18	0	15	1.61	2.18	1.43	2.17	

Note: LARC includes IUD, implant, or Depo-Provera. Pill includes Pill, Patch, or Ring. Dual Method Use includes LARC or Pill and Condom.
+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001 (one-tailed tests).

[a] Computed only among weeks in which a partner was reported (N=877 women; 17,649 weeks)

[b] Computed only among weeks in which sex occurred (N=684; 8,800 weeks)

[c] Computed only among weeks in which any contraception was used (N=667; 7,850 weeks)

[d] Computed only among respondents who reported the specific type of contraception used (i.e., not missing) (N=663; 7,794 weeks)

Table 2. Regression Results of Relationships and Sex on Race and Socioedemographic Characteristics

	Proportion of Time in a Relationship		Proportion of Weeks in which Sex Occurred		Total Number of Partners		Average Length of Relationships	
	M1	M2	M1	M2	M1	M2	M1	M2
Race								
African American (ref: white)	-0.04 +	-0.07 **	-0.09 ***	-0.11 ***	0.03	0.13	1.00	0.85
	(0.03)	(0.03)	(0.03)	(0.03)	(0.12)	(0.14)	(1.25)	(1.45)
Sociodemographic Characteristics								
High religious importance		-0.01		-0.07 **		-0.12		-1.57
		(0.02)		(0.02)		(0.12)		(1.26)
Biological mother less than 20 years old at first birth		0.00		0.02		-0.05		-0.04
		(0.02)		(0.02)		(0.13)		(1.27)
Grew up with two parents (both bio or bio/step)		0.01		0.03		-0.09		2.42 *
		(0.03)		(0.02)		(0.13)		(1.30)
Childhood public assistance		-0.03		0.00		-0.18 +		0.98
		(0.03)		(0.02)		(0.13)		(1.32)
Receiving public assistance at age 18/19		0.00		-0.01		-0.40 **		4.48 **
		(0.03)		(0.03)		(0.16)		(1.60)
School Enrollment (ref: Not enrolled, graduated HS)								
Not enrolled, dropped out of high school		-0.03		-0.02		-0.04		0.13
		(0.05)		(0.04)		(0.23)		(2.35)
Enrolled in high school		-0.01		-0.01		0.28 +		-3.11 +
		(0.04)		(0.04)		(0.20)		(2.05)
Enrolled in postsecondary education		-0.01		-0.03		0.25 *		-0.97
		(0.03)		(0.03)		(0.15)		(1.49)
Employed		0.05 *		0.01		-0.19 +		2.44 *
		(0.02)		(0.02)		(0.12)		(1.21)
Adolescent experiences with Sex and Pregnancy								
Age at first sex 16 years or less		0.06 *		0.11 ***		-0.02		6.47 ***
		(0.03)		(0.03)		(0.15)		(1.50)
2 or more sex partners by age 18/19		0.11 ***		0.20 ***		0.41 **		-7.40 ***
		(0.03)		(0.03)		(0.15)		(1.56)
Ever had sex without birth control by age 18/19		0.14 ***		0.12 ***		-0.06		1.99 +
		(0.03)		(0.03)		(0.14)		(1.42)
Any pregnancies before age 18/19		0.05		-0.03		-0.20		5.11 ***
		(0.03) +		(0.03)		(0.16)		(1.62)
Constant	0.69 ***	0.53 ***	0.55 ***	0.36 ***	2.08 ***	2.12 ***	15.57 ***	12.16 ***
	(0.01)	(0.04)	(0.02)	(0.04)	(0.07)	(0.21)	(0.74)	(2.13)
N	946		877		877		877	

Note: Standard errors in parentheses.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001 (one-tailed tests).

Table 3. Regression Results of Any Contraceptive Use and Consistency of Contraceptive Use on Race and Sociodemographic Characteristics

	Proportion of Time Any Contraception was Used		Proportion of Time Contraception Was Used Consistently	
	M1	M2	M1	M2
Race				
African American (ref: white)	-0.01	0.02	-0.07 **	-0.03
	(0.02)	(0.02)	(0.03)	(0.03)
Sociodemographic Characteristics				
High religious importance		0.00		-0.01
		(0.02)		(0.03)
Biological mother less than 20 years old at first birth		0.01		-0.03
		(0.02)		(0.03)
Grew up with two parents (both bio or bio/step)		0.00		-0.01
		(0.02)		(0.03)
Childhood public assistance		-0.04 *		-0.01
		(0.02)		(0.03)
Receiving public assistance at age 18/19		-0.03		0.02
		(0.02)		(0.03)
School Enrollment (ref: Not enrolled, graduated HS)				
Not enrolled, dropped out of high school		-0.03		0.01
		(0.04)		(0.05)
Enrolled in high school		-0.01		0.04
		(0.03)		(0.04)
Enrolled in postsecondary education		0.05 *		0.05 *
		(0.02)		(0.03)
Employed		0.03 *		0.09 ***
		(0.02)		(0.03)
Adolescent experiences with Sex and Pregnancy				
Age at first sex 16 years or less		-0.01		0.04 +
		(0.02)		(0.03)
2 or more sex partners by age 18/19		-0.01		-0.09 **
		(0.02)		(0.03)
Ever had sex without birth control by age 18/19		-0.03 +		-0.10 ***
		(0.02)		(0.03)
Any pregnancies before age 18/19		-0.01		-0.05 +
		(0.02)		(0.03)
Constant	0.90 ***	0.90 ***	0.77 ***	0.80 ***
	(0.01)	(0.03)	(0.02)	(0.05)
N	684		667	

Note: Standard errors in parentheses.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001 (one-tailed tests).

Table 4. Regression Results of Specific Contraceptive Method Use on Race and Sociodemographic Characteristics

	Proportion of LARC Weeks		Proportion of Pill Weeks		Proportion of Condom Weeks		Proportion of Withdrawal Weeks		Proportion of Dual Method Use Weeks	
	M1	M2	M1	M2	M1	M2	M1	M2	M1	M2
Race										
African American (ref: white)	0.05 **	0.03	-0.20 ***	-0.12 **	0.18 ***	0.15 ***	-0.04 +	-0.06 *	-0.05 *	-0.02
	(0.02)	(0.02)	(0.03)	(0.04)	(0.03)	(0.04)	(0.02)	(0.03)	(0.03)	(0.03)
Sociodemographic Characteristics										
High religious importance		-0.02		0.02		-0.02		0.01		0.02
		(0.02)		(0.03)		(0.03)		(0.03)		(0.03)
Biological mother less than 20 years old at first birth		-0.01		-0.08 *		0.09 **		0.00		-0.07 **
		(0.02)		(0.03)		(0.03)		(0.02)		(0.03)
Grew up with two parents (both bio or bio/step)		-0.01		0.09 **		-0.09 **		0.00		0.00
		(0.02)		(0.03)		(0.03)		(0.03)		(0.03)
Childhood public assistance		0.03 +		-0.01		-0.04		0.01		0.02
		(0.02)		(0.03)		(0.03)		(0.03)		(0.03)
Receiving public assistance at age 18/19		0.03		-0.02		0.04		-0.05 +		0.04
		(0.03)		(0.04)		(0.04)		(0.03)		(0.03)
School Enrollment (ref: Not enrolled, graduated HS)										
Not enrolled, dropped out of high school		0.00		0.00		-0.03		0.03		0.05
		(0.04)		(0.06)		(0.06)		(0.05)		(0.05)
Enrolled in high school		0.03		0.03		-0.09 *		0.03		0.07 +
		(0.03)		(0.05)		(0.05)		(0.04)		(0.04)
Enrolled in postsecondary education		0.01		0.08 *		-0.09 **		0.00		0.03
		(0.02)		(0.04)		(0.04)		(0.03)		(0.03)
Employed		-0.02		0.07 *		-0.03		-0.02		0.05 *
		(0.02)		(0.03)		(0.03)		(0.02)		(0.03)
Adolescent experiences with Sex and Pregnancy										
Age at first sex 16 years or less		0.01		0.08 *		-0.07 *		-0.02		-0.01
		(0.02)		(0.04)		(0.04)		(0.03)		(0.03)
2 or more sex partners by age 18/19		0.05 *		0.00		-0.08 *		0.03		0.03
		(0.03)		(0.04)		(0.04)		(0.03)		(0.03)
Ever had sex without birth control by age 18/19		-0.05 *		-0.12 ***		0.03		0.14 ***		-0.18 ***
		(0.02)		(0.04)		(0.03)		(0.03)		(0.03)
Any pregnancies before age 18/19		0.10 ***		-0.07 *		-0.03		0.01		0.02
		(0.03)		(0.04)		(0.04)		(0.03)		(0.03)
Constant	0.07 ***	0.03	0.45 ***	0.36 ***	0.29 ***	0.50 ***	0.19 ***	0.12 **	0.24 ***	0.25 ***
	(0.01)	(0.04)	(0.02)	(0.06)	(0.02)	(0.06)	(0.01)	(0.04)	(0.02)	(0.05)
N	663		663		663		663		663	

Note: Standard errors in parentheses. LARC includes IUD, implant, or Depo-Provera. Pill includes Pill, Patch, or Ring. Dual Method Use includes LARC or Pill and Condom.
+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001 (one-tailed tests).

Table 5. Regression Results of Instability in Contraceptive Use on Race and Sociodemographic Characteristics

	Number of Contraceptive Use Spells		Number of Different Contraceptive Methods		Number of Contraceptive Method Switches	
	M1	M2	M1	M2	M1	M2
Race						
African American (ref: white)	-0.05	-0.07	-0.06	-0.13 +	-0.18	-0.34 +
	(0.06)	(0.08)	(0.07)	(0.08)	(0.18)	(0.21)
Sociodemographic Characteristics						
High religious importance		0.00		-0.06		-0.08
		(0.07)		(0.07)		(0.19)
Biological mother less than 20 years old at first birth		0.02		0.02		0.20
		(0.06)		(0.07)		(0.18)
Grew up with two parents (both bio or bio/step)		0.05		-0.06		-0.01
		(0.07)		(0.07)		(0.19)
Childhood public assistance		0.10 +		0.03		0.04
		(0.07)		(0.07)		(0.19)
Receiving public assistance at age 18/19		-0.10		-0.06		-0.23
		(0.08)		(0.09)		(0.24)
School Enrollment (ref: Not enrolled, graduated HS)						
Not enrolled, dropped out of high school		-0.04		-0.07		0.04
		(0.12)		(0.13)		(0.35)
Enrolled in high school		-0.02		0.08		0.29
		(0.11)		(0.11)		(0.30)
Enrolled in postsecondary education		-0.10		0.11 +		0.23
		(0.08)		(0.08)		(0.22)
Employed		0.03		-0.08		-0.34 *
		(0.06)		(0.07)		(0.18)
Adolescent experiences with Sex and Pregnancy						
Age at first sex 16 years or less		0.16 *		0.00		-0.03
		(0.07)		(0.08)		(0.21)
2 or more sex partners by age 18/19		0.09		0.10		0.33 +
		(0.08)		(0.09)		(0.23)
Ever had sex without birth control by age 18/19		0.09		0.10 +		0.26
		(0.07)		(0.08)		(0.20)
Any pregnancies before age 18/19		0.04		0.16 *		0.16
		(0.08)		(0.09)		(0.23)
Constant	1.31 ***	1.09 ***	1.78 ***	1.66 ***	1.61 ***	1.28 ***
	(0.04)	(0.11)	(0.04)	(0.12)	(0.10)	(0.32)
N	667		663		663	

Note: Standard errors in parentheses.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001 (one-tailed tests).