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Non-Heterosexuality, Relationships, and Young Women's Contraceptive Behavior

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Abstract Non-heterosexual young women have a higher rate of unintended pregnancy than their heterosexual peers, but their fertility behaviors are understudied. We use longitudinal data from the Relationship Dynamics and Social Life study to investigate mechanisms contributing to non-heterosexual women's higher pregnancy risk. These data include weekly reports of relationships, sex, and contraceptive use over 30 months. We compare the relationships and fertility behaviors of three groups: exclusively heterosexual (consistent heterosexual behavior, identity, and attraction); mostly heterosexual (heterosexual identity with same-sex behavior and/or same-sex attraction); and LGBTQ (any non-heterosexual identity). We find that mostly heterosexual and LGBTQ women behave differently from exclusively heterosexual women in ways likely to elevate their risk of unintended pregnancy: more distinct partners during the study period, more sexual intercourse with men, less frequent contraceptive use, less use of a dual method (condom plus hormonal method), and more gaps in contraceptive coverage. Mostly heterosexual women resemble LGBTQ women in their contraceptive behavior but have significantly more intercourse with men, which may increase their pregnancy risk relative to both LGBTQ and exclusively heterosexual women. We conclude by considering implications for LGBTQ health and the measurement of sexual minority populations.

Keywords Relationships · Contraception · Sexuality · Non-heterosexual young women

Introduction

Non-heterosexual young women have a higher rate of unintended pregnancy than their heterosexual peers (Charlton et al. 2013; Coker et al. 2010; Goodenow et al. 2008;

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Saewyc 2011; Saewyc et al. 2004). On its face, this is a deeply counterintuitive finding. Questions on non-heterosexual behavior, identity, and attraction have not been included in demographic surveys until recently, reflecting an assumption that heterosexuality is implicit in the core demographic topics of fertility and family formation. Although men's same-sex behavior has been studied for decades (primarily by public health researchers surveilling risk of HIV and other sexually transmitted infections among "men who have sex with men"), non-heterosexual women have received far less attention.[1] Several developments have motivated demographers to begin including sexuality measures in surveys, including the recognition that there are sufficient numbers of LGBTQ individuals to capture in a representative survey (Black et al. 2000; Copen et al. 2016), mounting evidence that sexual minorities experience a range of social and health disparities in comparison with their heterosexual peers (Institute of Medicine (IOM) 2011; National Institute on Minority Health and Health Disparities (NIMHHD) 2016; U.S. Department of Health and Human Services (USDHHS) 2014a), and progressive cultural strides toward LGBTQ rights and inclusion (Flores 2014; Powell et al. 2012). In response to calls from the IOM, the National Institutes of Health (NIH), and the USDHHS for more and better data on sexual minorities (such as the decennial Healthy People goals), new data collection efforts are underway. The proliferation of survey questions about sexuality has resulted in inconsistencies in conceptualization and measurement (Sell 1997), leading to efforts to synthesize past approaches and establish best practices (Badgett 2009).

The historical lack of attention to non-heterosexuality in demography may reflect an assumption that non-heterosexual women are not at risk of pregnancy or sexually transmitted infections. In fact, lesbian and bisexual young women frequently do have sexual intercourse with men (Copen et al. 2016; Diamond 2008a, b) and have a higher risk of teenage pregnancy and some sexually transmitted infections than their straight peers (Coker et al. 2010; Morgan 2014; Saewyc 2011; Saewyc et al. 2004). A higher rate of pregnancy could result from differential exposure to sexual intercourse, differential use of contraception, or both (Bongaarts 1978), but further research is required to identify the key mechanism(s) of pregnancy for non-heterosexual young women.

In this study, we use population-based, longitudinal survey data from the Relationship Dynamics and Social Life (RDSL) study to investigate these proximate determinants of pregnancy among heterosexual and non-heterosexual young women. RDSL data are uniquely suited to this purpose: they combine detailed measures of sexuality that include behavior, identity, and attraction with weekly information about women's intimate relationships, sexual intercourse, and contraceptive use over a period of 30 months. Our findings contribute to research on LGBTQ health disparities—particularly, young women's reproductive health—by identifying specific mechanisms for non-heterosexual young women's greater risk of unintended pregnancy. This study also contributes to the vibrant conversation on improving the measurement of non-heterosexuality within and beyond demography (Black et al. 2000; Gates 2011; Laumann et al. 1994; Li et al. 2014; Powell et al. 2012).

[1] By "non-heterosexual," we mean people who are attracted to or have had experience with same-sex partners, or people who identify as lesbian, gay, bisexual, or *not* straight.

Background

Unintended pregnancy rates among young women in the United States have fallen in recent decades but remain high overall (particularly within disadvantaged groups) and relative to other industrialized countries (Finer and Zolna 2013; National Campaign to Prevent Teen and Unplanned Pregnancy 2015). Unintended pregnancy is associated with health and social outcomes, including maternal well-being, quality of parent-child relationships, and resources available to children (Barber and East 2009, 2011; Barber et al. 1999; Gipson et al. 2008; Sonfield et al. 2011). Non-heterosexual young women have a higher risk of pregnancy than their heterosexual peers, a finding that has been replicated using several data sets (Charlton et al. 2013; Coker et al. 2010; Goodenow et al. 2008; Saewyc 2011; Saewyc et al. 2004). Despite demographers' interest in unintended pregnancy, non-heterosexual women's fertility behaviors have not received much scholarly attention. Here, we review relevant sexualities and demographic research to propose hypotheses about non-heterosexual young women's relationships and contraceptive behavior.

What does the existing scholarship tell us about non-heterosexuality among young women? Same-sex romantic and sexual behavior is common (Chandra et al. 2011; Diamond 2008a, b), with nearly one in five women ages 18–24 reporting any same-sex sexual contact (Copen et al. 2016). Women with same-sex experiences may not necessarily identify as lesbian or bisexual (Copen et al. 2016; Diamond 2008a, b; Savin-Williams and Vrangalova 2013). Sexual behavior, identity, and attraction are three related but not necessarily concordant dimensions of sexuality, and best practices for survey research include measuring them separately (Badgett 2009). In the National Survey of Family Growth (NSFG) (women ages 18–44), 84.7 % of those attracted "mostly to the opposite sex" said they were "heterosexual or straight," and 88.6 % of women identifying as "homosexual, gay, or lesbian" or "bisexual" reported ever having vaginal intercourse with an opposite-sex partner (Copen et al. 2016). These nationally representative data show different patterns of behavior, identity, and attraction by age, gender, race, and socioeconomic status (Copen et al. 2016): for example, the lifetime prevalence of same-sex behavior among women may be highest among women with the lowest educational attainment (Chandra et al. 2011). Sexuality research disproportionately relies on convenience samples of white and middle-class women attending selective residential colleges and universities (Allison and Risman 2014; Rupp et al. 2014) and may not reflect the experiences of less-privileged women. Inclusion of non-heterosexuality measures in population-based surveys will improve the generalizability of sexuality research to more diverse groups of women.

Research findings about young women's non-heterosexuality are fundamentally shaped by the operationalization of sexuality, the language used in questionnaires, and the choice of comparison groups. These choices vary considerably across studies and research traditions (for a summary of past approaches, see Savin-Williams and Vrangalova 2013 and Sell 1997). Any classification system involves simplification, and no set of sexuality questions or labels is universally accepted. Young women who have same-sex experiences may consider themselves "straight" or "not heterosexual," or they may reject labels altogether (Diamond 2008a, b; Savin-Williams and Vrangalova 2013). "Bisexual" may imply "equal, continuous, or simultaneous attraction to both men and women" and thus does not fit many women's subjective experiences

(Tabatabai 2015:26). "Bisexual" can also have negative connotations of indecision or confusion about one's sexuality, promiscuity, or inability to be monogamous, both in popular culture and lesbian subcultures (Rust 2000).

The influential concept of "sexual fluidity" comes from developmental psychologist Lisa Diamond's efforts to provide better scientific understandings of bisexuality (Diamond 2008a, b). Sexual fluidity is now the paradigmatic way of conceptualizing young women's non-heterosexuality across the social sciences. The model posits that women have both a stable underlying orientation and a varying capacity for fluidity, meaning that some women may be more responsive to contexts and relationships that facilitate same-sex erotic feelings, which may be short-lasting or enduring (Diamond 2008a, b). Sexualities scholars have also drawn attention to the phenomenon of "straight girls kissing," in which straight-identified young women "hook up," typically in the context of college party culture, for the titillation of men (Budnick 2016; Hamilton 2007; Rupp and Taylor 2010). These insights from the sexualities literature guide our measurement and analytical decisions.

How might non-heterosexual women's intimate partnerships and contraceptive practices vary from those of their heterosexual peers? The theoretical work of sexuality researchers across the social sciences, described earlier, provides some context for the apparent paradox that non-heterosexual young women are at greater risk of pregnancy. Research has suggested that these women have earlier sexual debut (Coker et al. 2010), more male sexual partners and more female sexual partners (Coker et al. 2010; Tornello et al. 2014), and more frequent intercourse with male partners (Saewyc et al. 1999). In this study, we use 30 months of weekly data to compare the relationships of non-heterosexual and heterosexual young women. We hypothesize that non-heterosexual women will report a greater number of relationships and more overall time in relationships because they may consider both men and women as possible partners.

Given our hypothesis that non-heterosexual women will differ in their relationships, we also expect them to differ in their contraceptive use because relationship context predicts contraception. Relationship type and duration are related to seriousness and stability of relationships as well as sexual frequency (Schwartz et al. 2013); participating in more "dating activities" with a sexual partner is associated with greater contraceptive use (Pearson and Wilkinson 2013); and young people with more sexual relationships are less likely to report using contraception consistently (Manlove et al. 2007). Relatively few studies have examined non-heterosexual women's contraceptive behavior directly; however, non-heterosexual women's elevated risk of unintended pregnancy provides *implicit* evidence of contraceptive nonuse or inconsistent use.

We propose several possible explanations for nonuse or inconsistent use: lower expectation of sexual intercourse with men, less frequent intercourse with men, or cognitive dissonance when considering their contraceptive needs. Although many non-heterosexual young women have at least occasional sexual intercourse with men (Chandra et al. 2011; Copen et al. 2016), they may expect to do so less frequently than their heterosexual counterparts. For heterosexual women, infrequent intercourse is a known risk factor for nonuse of contraception and reliance on less-effective methods (Frost et al. 2007). Infrequent intercourse may predict non-heterosexual women's contraceptive behavior for similar reasons. Instances of intercourse may not be planned, and women may not already be using a hormonal method or have condoms on hand. Even if intercourse is planned, women may not feel that the effort and expense of using a

hormonal method is justified if intercourse is infrequent. Finally, if non-heterosexual women experience cognitive dissonance around their sexual orientation and contraceptive planning needs, they may be less likely to use a hormonal method or carry condoms, leading to less overall contraceptive use and less consistent contraceptive use.

Research on contraceptive use among non-heterosexual women typically treats them as one analytic category. However, the few studies distinguishing among sexual minority young women have suggested that mechanisms for differences in contraceptive behavior (e.g., frequency and expectation of sexual intercourse) may vary within this group. For instance, in a study of women's HIV risk behavior, respondents who are "not sure" of their sexual identity are less likely than lesbian or bisexual women to use condoms when having sexual intercourse with men (Goodenow et al. 2008). In one of the few studies to consider non-heterosexual women's use of hormonal methods, Charlton et al. (2013) showed that lesbians are *less* likely to have ever used hormonal contraception, whereas other sexual minority women (bisexual women, mostly heterosexual women, and heterosexually identified women reporting same-sex experiences) are *more* likely to have ever used a hormonal method. Nevertheless, all sexual minority women in their study remain at greater risk of pregnancy than heterosexual women. In other words, non-heterosexual women's greater likelihood of trying a hormonal contraceptive method may be negated by some combination of more frequent sexual intercourse or riskier contraceptive behaviors not captured in these data: nonuse of contraception, inconsistent use, or reliance on nonhormonal methods. A high proportion of unintended pregnancies occur among women who report some contraceptive use around the time of conception (Finer and Henshaw 2006). Therefore, these dimensions of contraceptive behavior are highly consequential for pregnancy risk yet are notoriously difficult to measure and rarely available to survey researchers.

In the present study, we use unique longitudinal data (weekly observations over a period of 30 months) that permit us to consider many dimensions of contraceptive use among both heterosexual and non-heterosexual women. We identify a heterogeneous group of non-heterosexual women (including lesbian and bisexual-identified women, "straight girls kissing," and straight-identified women enacting sexual fluidity). We compare these women with exclusively heterosexual women, and we also explore differences *among* non-heterosexual women. We hypothesize that both groups of non-heterosexual women will use contraception less frequently and less consistently than heterosexual women, will be less likely to use hormonal methods in general, and will be less likely to use a dual method (a hormonal method with condoms).

Data and Methods

Data

We use data from the Relationship Dynamics and Social Life (RDSL) study, a longitudinal demographic survey project. The RDSL study follows a sample of 18- to 19-year-old women residing in an economically and racially diverse Michigan

county. Respondents were randomly selected from the Michigan Department of State's driver's license and Personal Identification Card (PID) database, and were eligible to participate in a baseline interview if their permanent address was still within the study county at the time of the baseline interview.[2] Baseline interviews were conducted on a rolling basis from March 2008 to July 2009: 1,003 women completed a baseline interview, for a response rate of 83 % and a cooperation rate of 94 %. These interviews were conducted in person by a professional interviewer, lasted approximately one hour, and included questions about sociodemographic characteristics, attitudes, relationship characteristics and history, contraceptive use, and pregnancy history. After completing the baseline interview, 992 (99 %) women enrolled in a weekly follow-up study lasting 30 months. Each week, respondents completed a five-minute survey about their pregnancy experiences, pregnancy desire, relationships, sexual behavior, and contraceptive use during the previous week. These surveys could be submitted online or by telephone. Participants were issued a reloadable debit card and given $1 for every completed weekly journal survey, with a $5 bonus for completing five journals in a row on time (Gatny et al. 2009). Women who did not submit a journal for more than 60 days were offered an additional $10 incentive to return to the study. More than 75 % of respondents submitted at least 18 months of journal data, and the modal time between journals was eight days.

Over the course of the journal study, respondents were also invited to participate in three supplemental surveys exploring some pregnancy-related topic in greater depth. The Social Life Journal Supplement (SLJS), conducted in April–May 2010, included questions on same-sex romantic and sexual behavior, attraction, and non-heterosexual identity. The incentive for participation in the SLJS was $20, which was increased to $30 shortly before the deadline. Of the 992 women who enrolled in the follow-up study, 590 (59 %) completed the SLJS, and 579 answered the three questions we use to construct our measures of sexuality.[3] Together, these respondents contributed a total of 47,806 weekly journals. (See Table 1 for sample characteristics.)

Sexuality Measures

The RDSL study is primarily focused on unintended pregnancy and thus does not include questions pertaining to same-sex sexuality in either the baseline interview or the weekly survey instrument (e.g., the survey did not ask whether the respondent's partner was a man or a woman). However, some lesbian-identified respondents contacted the investigators regarding the apparent heterosexual focus of the study. These responses, in part, motivated us to write sexuality measures for inclusion in the SLJS. The sexuality questions in the SLJS query respondents about separate dimensions of sexuality (behavior, identity, and

[2] Barber et al. (2011) estimated 96 % agreement between the Michigan Department of State database and the projected number of 18- and 19-year-old women in the county based on the 2000 census. Please see Barber et al. (2011) for additional technical details about the design and implementation of RDSL.

[3] See Table 5 in the appendix for a comparison of our analytic sample, the full RDSL sample, and women aged 18/19 in the nationally representative National Survey of Family Growth sample. We discuss differences between these samples and the potential effect of selection bias on our results in greater detail in the Discussion section.

Table 1 Sample characteristics (n = 579)

	Min.	Max.	Mean	SD
Sexuality				
Exclusively heterosexual	0.00	1.00	0.63	—
Mostly heterosexual	0.00	1.00	0.20	—
LGBTQ	0.00	1.00	0.16	—
Sociodemographic characteristics				
Black	0.00	1.00	0.27	—
High religious importance	0.00	1.00	0.56	—
Childhood disadvantage scale	0.00	3.00	1.04	1.00
High school GPA	0.00	4.17	3.21	0.56
Public assistance at age 18/19	0.00	1.00	0.21	—
Employed at age 18/19	0.00	1.00	0.51	—
Relationships				
Proportion of weeks respondent reported a partner	0.00	1.00	0.65	0.35
Average relationship duration (weeks)[a,b]	0.86	574.12	83.88	91.62
Number of partners[a]	1.00	23.00	3.39	3.12
Sex and Contraception[c]				
Proportion of weeks respondent reported sexual intercourse	0.00	1.00	0.38	0.33
Proportion of weeks with any contraceptive use[d]	0.00	1.00	0.89	0.22
Proportion of weeks with consistent contraceptive use[e,f]	0.00	1.00	0.76	0.29
Proportion of weeks with dual method use[f,g]	0.00	1.00	0.19	0.27
Number of gaps in contraceptive use while sexually active[f]	0.00	13.00	0.86	1.68
Contraceptive Method[h]				
Proportion of weeks with LARC use[f]	0.00	1.00	0.09	0.23
Proportion of weeks with pill/patch/ring use[f]	0.00	1.00	0.39	0.40
Proportion of weeks with condom use[f]	0.00	1.00	0.33	0.36
Proportion of weeks with withdrawal use[f]	0.00	1.00	0.18	0.28

[a] Among women who ever had an intimate partner (n = 555).

[b] Relationship durations are estimated in days and converted to weeks. Relationships are assumed to begin during interval before the first journal mentioning the partner and end during interval after the last journal mentioning the partner. Durations are calculated from midpoints of these intervals.

[c] During weeks at risk of unintended pregnancy (not currently pregnant; does not desire pregnancy) (n = 578 women; 45,145 weeks).

[d] During weeks with sexual intercourse (n = 464 women; 14,693 weeks).

[e] Consistent use: use of some method at each instance of intercourse.

[f] During weeks with sexual intercourse and contraceptive use (n = 458 women; 12,999 weeks).

[g] Use of condoms with a hormonal method.

[h] Categories are mutually exclusive and give priority to the most effective method used in a given week.

attraction). Our questions correspond to those asked in the NSFG and National Longitudinal Survey of Adolescent to Adult Health (Add Health) but include response options informed by sexualities research showing that young people increasingly reject labels and state that their sexual orientation is not

predominately defined by their partner's gender (Coleman-Fountain 2014; Diamond 2008a, b; Savin-Williams and Vragalova 2013).[4]

Sexuality questions were prefaced with, "These next questions are about your sexuality" and displayed together to ensure that respondents understood that they were being asked about *romantic and sexual* behavior, identity, and attraction (as opposed to platonic friendship). The question measuring non-heterosexual *behavior* reads, "Have you ever had physical or emotional contact, such as kissing dating, spending time together, sex, or activities with a woman?" This question mirrors the way respondents are asked about relationships in the main RDSL study, and is meant to be broad enough to capture a range of romantic and sexual experiences. More than one-quarter (28 %) of the sample answered, "Yes." The question measuring non-heterosexual *attraction* reads, "When I think about who I am romantically and sexually attracted to, it is . . . ," and the response options include "Always women," "Usually women, but sometimes men," "A person's gender isn't really important when it comes to who I'm attracted to," "Usually men, but sometimes women," or "Always men." More than one-fifth (22 %) of respondents chose answers other than "Always men." We code anyone who chose one of the first four categories as having same-sex attraction. Finally, the question measuring non-heterosexual *identity* reads, "Please choose the description that best fits how you think about yourself . . . ," and the response options include, "Lesbian, gay, or queer," "Bisexual," "Straight," and "I don't label myself in this way." Slightly more than 16 % of respondents selected a response other than "Straight." We collapse this measure into a dichotomous variable wherein any answer other than "Straight" indicates non-heterosexual identity.[5] Across all three sexuality questions, 37 % provided any non-heterosexual response. By including a full range of response options, we are able to capture a wider range of non-heterosexuality (and thus a larger and more diverse group of people), allowing us to explore differences within this heterogeneous population.

Based on their responses to these sexuality questions, we organize all respondents into one of three mutually exclusive groups.[6] The first group (*exclusively heterosexual*, 63 %) includes women who identified as straight, were only attracted to men, and had never engaged in same-sex sexual or romantic behavior. The second group (*mostly heterosexual,* 20 %) includes women who identify as straight but report same-sex attraction, same-sex behavior, or both. The third group (*LGBTQ*, 16 %) includes women who do not identify as straight.[7]

[4] Some notable differences between NSFG and RDSL question wording produce different prevalences of non-heterosexuality. (NSFG prevalences describe women ages 18–24; see Copen et al. 2016). The NSFG *behavior* measure specifies sex (19.4 % report a lifetime history of any sex with a female partner), and the RDSL measure captures a broader range of romantic and sexual behavior. The NSFG *identity* question limits response options to heterosexual/straight, homosexual/gay, or bisexual (10.5 % report anything other than straight). The NSFG *attraction* question includes response options for "only" men/women, "mostly" men/women, and "equally" men/women (24.1 % report anything other than "only the opposite sex"), while the RDSL measure includes a more open-ended response option. RDSL measurement choices are informed by sexualities research (Diamond 2008a, b) and community-specific recommendations for language choice (Badgett 2009) and are designed to capture a broad range of non-heterosexual people and practices.

[5] As a sensitivity check, we conduct a version of analyses excluding respondents who answered, "I don't label myself in this way." These results are comparable with those presented here.

[6] The diversity of terms used in research on sexual minorities reflects the inherent complexity of sexuality as well as the foci and priorities of different research traditions. We have used terms that clearly and consistently identify our three analytic groups, reflect meaningful distinctions among our respondents, and are common in research on sexuality and popular discourse (Coleman-Fountain 2014; Diamond 2008a, b; Savin-Williams and Vrangalova 2013).

[7] The prevalence of non-heterosexual identity in the RDSL sample is comparable with the prevalence of non-heterosexual identity in the Add Health sample (15 %) (Savin-Williams and Ream 2007).

Sociodemographic Characteristics

The following analyses include controls for sociodemographic characteristics that are associated with sexuality in nationally representative surveys and may also influence relationships and contraceptive behavior. These are measured in the baseline interview (at age 18/19) and include race, religiosity, several indicators of economic disadvantage, and education. Nonwhite racial identity, high religiosity, and economic disadvantage are negatively associated with both LGBTQ identification[8] (Chandra et al. 2011, 2013; Copen et al. 2016) and contraceptive use (Jones et al. 2012; Kusunoki et al. 2016). In the NSFG, low educational attainment is associated with a higher lifetime prevalence of same-sex sexual behavior (Chandra et al. 2011, 2013); low educational attainment is also associated with a lower likelihood of using contraception, a lower age at first birth, and a higher likelihood that a pregnancy is unintended (Kravdal and Rindfuss 2008; Musick et al. 2009).

In RDSL, *race* is measured with the 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." We create a dichotomous black/nonblack variable based on this measure because the number of respondents in our analytic sample identifying as American Indian/Alaska Native, Asian, or Native Hawaiian/Pacific Islander is too small for separate analyses of these groups to be feasible.[9] We recognize that the measurement of race and ethnicity is complex, and more research is needed to investigate differences in sexuality within racially diverse samples. We construct a scale of *childhood disadvantage* based on three dichotomous indicators: (1) whether the respondent's mother had a live birth as a teenager, (2) whether the respondent grew up in some living arrangement other than a two-parent household, and (3) whether the respondent's family received public assistance during her childhood. We code all three measures so that a value of 1 indicates disadvantage, and a value of 0 indicates advantage; we take the sum of these three measures to create the scale.[10] *Religious importance* was measured with the question, "How important if at all is your religious faith to you—would you say not important, somewhat important, very important, or more important than anything else?" We collapse this variable into a dichotomous indicator of high religiosity in which respondents describing their religious faith as "very important" or "more important than anything else" are coded 1, and all other respondents are coded 0.

We control for *high school grade point average* (GPA) instead of a more direct measure of educational attainment because at the time of the baseline interview, a majority of respondents had not yet completed their education: 13 % were still enrolled in high school, and another 65 % were attending a wide range of two-year or four-year postsecondary institutions. Finally, we include an indicator of *employment*, including both part-time and full-time work. Employment indicates access to financial resources that may facilitate contraceptive use and serves as an (imperfect) proxy for health insurance coverage, which is not available in these data.

[8] These associations could result from sociodemographic differences in behavior, identity, and attraction but could also result from differences in young women's willingness to disclose non-heterosexuality to a researcher.

[9] Hispanic ethnicity is assessed in a separate question. Our sample includes 19 Hispanic black women and 28 Hispanic white women whom we categorize as black and nonblack, respectively. The "Other" groups are combined with white respondents as part of the nonblack category because they more closely resemble white women.

[10] Results do not change appreciably when these three variables are included as separate predictors.

Relationship Outcomes

Our analytic outcomes include relationship characteristics and contraceptive behaviors that may influence the risk of pregnancy. Each weekly journal includes a sequence of questions designed to elicit the widest possible range of partnerships, including women having casual sex, women having sex with a romantic partner, and women with romantic partners who are not currently having sex. Respondents are asked whether they had a "special romantic relationship with anyone" and whether they had "physical or emotional contact, such as kissing, dating, spending time together, sex, or other activities with a partner" since the previous journal. We consider a respondent to be in a relationship in a given week if she (1) reports being "in a special romantic relationship," (2) reports having "physical or emotional contact, such as kissing, dating, spending time together, sex, or other activities with a partner," or (3) reports having sexual intercourse that week, even if she answers negatively to (1) and (2). We calculate the *proportion of partnered weeks* by summing the number of weeks in which a woman has a partner and dividing by her total number of journals submitted. Our use of the terms "relationship," "partner," and "partnered weeks" does not necessarily reflect the seriousness of a relationship or how the respondent might describe her relationship *status* during that week; rather, we use these terms to indicate the presence of any serious or casual intimate, romantic, or sexual partner. The question text does not specify the gender of the partner, so this question may capture both men and women.

Each time a new partner is reported, respondents are asked, "Is this a partner you have talked about in a previous interview?" If so, they are asked to select that partner's initials from a list of all her partners from the journal study period. If the partner is new, respondents are asked to supply the new partner's initials. Thus, we can count the *number of unique partners* that a woman ever mentioned during the study. We also calculate respondents' *average duration of relationships in weeks.* The RDSL data include a variable that uses weekly partner reports to estimate the duration of each relationship in days. We convert these estimated relationship durations from days to weeks, and divide each woman's total weeks spent in relationships by her number of unique partners during the study period to obtain her average relationship duration. Relationships are assumed to begin at the midpoint of the interval before the first journal in which the partner is reported and are assumed to end at the midpoint of the interval after the last journal in which the partner is reported. For respondents who were in a relationship at the very beginning of the study, time spent in that relationship prior to the study counts toward the total.[11] In cases where weeks with a specific partner are not consecutive (i.e., a couple broke up and got back together later in the study), all weeks spent with that partner are counted as one relationship.

Sexual Intercourse

Sexual activity is measured at every journal. Respondents are asked about sexual intercourse with their current partner ("Did you have sexual intercourse with [*partner*]? By sexual intercourse, we mean when a man puts his penis into a woman's vagina") and also about

[11] A respondent in a long-term relationship at baseline who stayed with that partner for much or all of the journal study could have a very high value on average relationship duration. Results do not change when long relationship outliers ($n = 6$) are excluded.

sexual intercourse with other partners ("Did you have sexual intercourse with anyone other than [*partner*]?"). We are confident that this measure captures heterosexual contact, based on supplementary analyses of qualitative interviews with a subsample of non-heterosexual RDSL respondents. These women indicate that they report only heterosexual penetrative contact when answering a question about "sexual intercourse" with the included definition, as opposed to a more general question about "sex," which might elicit reports of a broader range of sexual practices.[12] We focus on heterosexual intercourse in our analyses of sexual behavior because we are concerned with behavior influencing women's risk of unintended pregnancy. For the same reason, analyses of sexual behavior exclude weeks in which women are already pregnant or indicate strong desire to become pregnant.[13]

We calculate the *proportion of weeks with sexual intercourse* by dividing the number of weeks in which a respondent has sex by her total number of weeks (excluding pregnant and strongly pronatal weeks). Because women are at risk of pregnancy only when they have intercourse with men, we also use the survey question about heterosexual sexual intercourse to define the analytic sample for our analyses of contraceptive behavior.

Contraceptive Behavior

Summary measures of contraceptive behaviors are constructed from a series of questions in the weekly journal. All contraceptive outcomes are based on weeks in which women report sexual intercourse and are at risk of unintended pregnancy (not already pregnant and do not report strong desire to become pregnant; $n = 464$ women, with 14,693 journal weeks). Each week, respondents are 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?" Respondents are asked follow-up questions about particular methods, including intrauterine devices (IUDs), implants, Depo-Provera, oral contraceptive pills, contraceptive patch, Nuva-Ring, condoms (male and female), diaphragm, spermicide, and withdrawal. Respondents are coded as contraceptive users that week if they answered affirmatively to any of these questions. Respondents who used contraception in a given week are also asked about contraceptive consistency: "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?)"

We calculate the *proportion of weeks with any contraceptive use* by summing the number of weeks in which a woman used some method of contraception and dividing by her total number of sexual intercourse weeks. Among all weeks with any contraceptive use, we calculate women's *proportion of weeks with consistent use* (use of some method at every instance of intercourse), *proportion of weeks using specific methods*,[14]

[12] This is consistent with an analysis of sexual behavior among college women that found that some lesbian and bisexual women reported having "penetrative sex" with women (Ford and England 2015). The authors hypothesized that this could be sex with fingers or toys, and called for researchers to include unambiguous definitions of sex in survey language.

[13] Women were already pregnant in 1,923 journal weeks (4.1 % of weeks in the analytic sample). Women reported strong pregnancy desire in 738 journal weeks (1.5 % of weeks in the analytic sample). When these weeks are excluded, the analytic sample decreases from 579 to 578 women because one woman reported strong pregnancy desire in all journals. These 578 women contributed 47,068 eligible weeks.

[14] We categorize each use week as LARC (long-acting reversible contraception: includes IUD, implant, and Depo-Provera), pill/patch/ring, condoms, or withdrawal. Categories are mutually exclusive and give priority to the most effective method used in a given week.

and *proportion of weeks with dual method use* (condoms with any hormonal method). Finally, we count the *number of gaps in contraceptive use while sexually active*.

Analytic Method

We estimate a series of Poisson regression models predicting the relationship and contraceptive outcomes measured as counts (number of partners and number of gaps in contraceptive use). For all other relationship, sexual intercourse, and contraceptive use outcomes, we estimate a series of ordinary least squares (OLS) regression models.[15] We regress each outcome on sexuality (with exclusively heterosexual women as the reference group), controlling for potential social and demographic confounders, including baseline race, religiosity, childhood disadvantage, receipt of public assistance, high school GPA, and employment.[16] To correct for observation bias, Poisson models of count data also include a control for the number of journals used to construct the outcome. For all models, we conduct Wald tests to check whether differences between the mostly heterosexual and LGBTQ women are significant.

Results

Relationship Outcomes

Compared with exclusively heterosexual women, mostly heterosexual women and LGBTQ women report having a partner in a significantly higher proportion of weeks (see Table 2). Mostly heterosexual women have partners in 12 % more of their weeks, and LGBTQ women have partners in 10 % more of their weeks. The difference *between* mostly heterosexual women and LGBTQ women in the proportion of weeks with a partner is not statistically significant. Sexuality is not a significant predictor of average relationship duration but is significantly associated with the number of partners reported during the 30 months of the journal study. Relative to exclusively heterosexual women, mostly heterosexual women report an average of 0.31 more partners, and LGBTQ women report 0.15 more partners. The difference between mostly heterosexual and LGBTQ women is significant.

Sexual Intercourse and Contraceptive Outcomes

Table 3 displays regression results for sexual intercourse and contraceptive use while at risk of unintended pregnancy. LGBTQ women have sexual intercourse in a higher proportion of weeks than exclusively heterosexual women; mostly heterosexual women have sexual intercourse in a higher proportion of weeks than exclusively heterosexual

[15] OLS regression may yield illogical estimates when the outcome is a proportion. Thus, we conducted a version of analyses using generalized linear models (GLM) with a binomial error distribution, which is appropriate when the outcome is bounded from [0,1] and both endpoints are valid values (Papke and Wooldridge 1996). This method produced nearly identical results and the same substantive conclusions, so we present the OLS models for ease of interpretation. (GLM results are not shown; available upon request.)

[16] We ran all models with and without controls. We present only the version with controls because the sexuality coefficients do not change appreciably when controls are added.

women *and* LGBTQ women. The difference between mostly heterosexual and exclusively heterosexual women is twice as large as the difference between LGBTQ and exclusively heterosexual women: 16 % versus 7 %.

Both groups of non-heterosexual women use contraception in a lower proportion of their sexual intercourse weeks than exclusively heterosexual women. Mostly heterosexual women use some method of contraception in 5 % fewer of their sexual intercourse weeks than exclusively heterosexual women, and LGBTQ women use contraception in 9 % fewer weeks. Within contraceptive use weeks, mostly heterosexual women use a dual method (condoms plus a hormonal method) in 6 % fewer weeks, and LGBTQ women use a dual method in 8 % fewer weeks. Finally, both groups of non-heterosexual women experience more gaps in contraceptive use during the study period than their exclusively heterosexual peers. Mostly heterosexual and LGBTQ

Table 2 OLS and Poisson regression models predicting relationship characteristics

	OLS Regression Models Predicting…		
	Proportion of Weeks Respondent Reported a Partner[a]	Average Relationship Duration (weeks)[b]	Poisson Regression Model Predicting Number of Partners[b,c]
Sexuality (ref. = exclusively heterosexual)			
Mostly heterosexual	0.12***	–7.87	**0.31****
	(0.04)	(9.78)	**(0.06)**
LGBTQ	0.10**	–6.41	**0.15****
	(0.04)	(10.92)	**(0.07)**
Sociodemographic Characteristics			
Black	–0.12**	–20.06*	0.31***
	(0.04)	(9.96)	(0.06)
High religious importance	0.01	–6.61	–0.19***
	(0.03)	(8.44)	(0.05)
Childhood disadvantage scale	0.02	0.52	–0.05*
	(0.02)	(4.51)	(0.03)
Public assistance at age 18/19	0.05	42.08***	–0.16**
	(0.04)	(10.22)	(0.07)
High school GPA	0.01	0.94	0.03
	(0.03)	(7.11)	(0.04)
Employed at age 18/19	0.07**	14.54*	–0.02
	(0.03)	(7.86)	(0.05)
R^2	.06	.05	—

Notes: Standard errors are shown in parentheses. Coefficients for mostly heterosexual and LGBTQ groups are in bold if significantly different ($p < .05$) from each another.

[a] Questions about partners do not specify the gender of the partner.

[b] Among women who ever reported a partner (n = 555 women; 29,621 weeks).

[c] Model controls for number of journal weeks.

*$p < .05$; **$p < .01$; ***$p < .001$ (one-tailed tests)

women are not significantly different from each other in their contraceptive use, contraceptive consistency, dual method use, or number of gaps in use. Among contraceptive users, sexuality is not associated with consistent use.

Table 4 presents results for use of specific methods during contraceptive use weeks. Sexuality does not predict the proportion of use weeks in which women used long-acting reversible contraceptive (LARC) methods, pill/patch/ring, condoms, or withdrawal.

Discussion

In our study, we find that young women have relationships of similar *duration* regardless of their sexuality, but that mostly heterosexual and LGBTQ women have *more* relationships and spend fewer weeks without a partner. We also find that mostly heterosexual and LGBTQ women differ from exclusively heterosexual women in ways that put them at greater risk of unintended pregnancy: sexual intercourse in a higher proportion of weeks, contraceptive use in a lower proportion of sexually active weeks, less use of a dual contraceptive method, and more gaps in contraceptive use while sexually active. Mostly heterosexual women appear to be particularly at risk: although their contraceptive behavior is comparable with that of LGBTQ women, their proportion of weeks with sexual intercourse—and thus exposure to the risk of pregnancy—is much greater.

Relationships are closely connected to sex, contraceptive use, and unintended pregnancy. Existing research supports two opposing explanations of mostly heterosexual and LGBTQ women's less frequent contraceptive use: many relationships (Manlove et al. 2007) or infrequent relationships (Frost et al. 2007). We find that non-heterosexual women report more partners and report sexual intercourse with men in a higher proportion of weeks, which supports the first interpretation. Although we cannot distinguish between male and female partners in the data, understanding the broader relationship context guides our interpretation of results about sex and contraception. We close with a discussion of implications of these findings, limitations of the present study, and priorities for further research.

Our findings are a meaningful contribution to research on non-heterosexual women's fertility. Previous research has established that sexual minority women are at higher risk of unintended pregnancy than their exclusively heterosexual peers (Charlton et al. 2013; Coker et al. 2010; Goodenow et al. 2008; Saewyc 2011; Saewyc et al. 2004). We build on this research by investigating specific behavioral mechanisms contributing to this pattern. We are able to do so because of the innovative nature of the RDSL data: we have weekly measures of sexual intercourse and contraceptive behavior over a period of 30 months. Dynamic, intensive measurement of fertility behaviors over time produces richer information about women's sexual intercourse and contraceptive use than is available in most demographic surveys. We are able to consider many separate dimensions of contraceptive use that affect women's pregnancy risk (e.g., any use, consistency of use, method selection). Weekly measures of pregnancy and pregnancy desire allow us to focus on women's sexual and contraceptive behavior during the specific weeks in which they are actually at risk of unintended pregnancy. Finally, our nuanced, multidimensional measures of sexuality allow us to distinguish between groups of non-heterosexual women, an explicit priority for researchers concerned with advancing the demography of sexuality (Baumle 2013; Saewyc 2011; Savin-Williams and Vrangalova 2013).

Table 3 OLS and Poisson regression models predicting sex and contraception while at risk of unintended pregnancy

	OLS Models Predicting Proportion of Weeks With...				Poisson Model Predicting Number of Gaps in Contraceptive Use While Sexually Active[f]
	Sexual Intercourse[a]	Any Contraceptive Use[b]	Consistent Contraceptive Use[c,d]	Dual Method Use[c,e]	
Sexuality (ref. = exclusively heterosexual)					
Mostly heterosexual	**0.16*****	–0.05*	–0.04	–0.06*	0.37**
	(0.03)	(0.02)	(0.03)	(0.03)	(0.12)
LGBTQ	**0.07***	–0.09***	–0.03	–0.08**	0.50***
	(0.04)	(0.03)	(0.04)	(0.04)	(0.13)
Sociodemographic Characteristics					
Black	–0.08**	0.02	0.01	–0.01	0.02
	(0.03)	(0.02)	(0.03)	(0.03)	(0.13)
High religious importance	–0.05*	–0.01	–0.04	0.02	0.17
	(0.03)	(0.02)	(0.03)	(0.03)	(0.11)
Childhood disadvantage scale	0.03*	–0.03**	–0.05***	–0.03*	0.18***
	(0.02)	(0.01)	(0.02)	(0.01)	(0.06)
Public assistance at age 18/19	0.05	–0.03	0.02	0.04	0.18
	(0.04)	(0.02)	(0.03)	(0.03)	(0.13)
High school GPA	–0.04*	0.04**	0.09***	0.03	–0.43***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.08)
Employed at age 18/19	0.09***	0.03	0.04	0.03	0.15
	(0.03)	(0.02)	(0.03)	(0.03)	(0.10)
R^2	.11	.09	.09	.05	—

Notes: Standard errors are shown in parentheses. Analyses exclude weeks in which the respondent is pregnant or reports strong desire to become pregnant. Coefficients for mostly heterosexual and LGBTQ groups are in bold if significantly different ($p < .05$) from each other.

[a] Sex is defined in question text as heterosexual penetration: *"Did you have sexual intercourse with___? By sexual intercourse, we mean when a man puts his penis into a woman's vagina"* (n = 578 women; 45,145 weeks).

[b] During weeks with heterosexual intercourse (n = 464 women; 14,693 weeks).

[c] During weeks with heterosexual intercourse and contraceptive use: (n = 458 women; 12,999 weeks).

[d] Use of some method at every instance of intercourse.

[e] Use of condoms with a hormonal method.

[f] Among women who ever had heterosexual intercourse and used contraception (n = 464 women). Model controls for number of journal weeks with intercourse.

*$p < .05$; **$p < .01$; ***$p < .001$ (one-tailed tests)

Limitations

Inclusion of sexuality measures in demographic surveys is a positive development that will enable future research on non-heterosexuality using nationally

Table 4 OLS models predicting use of specific methods among contraceptive users

	Proportion of Contraceptive Use Weeks in Which Women Used…			
	LARC	Pill/Patch/Ring	Condoms	Withdrawal
Sexuality (ref. = exclusively heterosexual)				
Mostly heterosexual	0.03	0.01	–0.05	0.01
	(0.03)	(0.04)	(0.04)	(0.03)
LGBTQ	–0.04	–0.01	0.02	0.03
	(0.03)	(0.05)	(0.05)	(0.04)
Sociodemographic Characteristics				
Black	0.03	–0.11**	0.11**	–0.03
	(0.03)	(0.04)	(0.04)	(0.03)
High religious importance	–0.02	0.02	0.00	0.00
	(0.02)	(0.04)	(0.04)	(0.03)
Childhood disadvantage scale	0.01	–0.06***	0.03*	0.02
	(0.01)	(0.02)	(0.02)	(0.02)
Public assistance at age 18/19	0.11***	–0.07	–0.03	–0.01
	(0.03)	(0.04)	(0.04)	(0.03)
High school GPA	–0.01	0.11***	–0.03	–0.07***
	(0.02)	(0.03)	(0.03)	(0.02)
Employed at age 18/19	0.01	0.1**	–0.07*	–0.03
	(0.02)	(0.04)	(0.03)	(0.03)
R^2	.06	.15	.06	.04

Notes: Standard errors are shown in parentheses. Categories are mutually exclusive and give priority to the most effective method used in a given week. Calculated for weeks in which women had heterosexual intercourse and reported contraceptive use (n = 458 women; 12,999 weeks).

*$p < .05$; **$p < .01$; ***$p < .001$ (one-tailed tests)

representative data. The present analysis relies on a subset of the RDSL sample, which is designed to be representative of young women in one Michigan county. Thus, the generalizability of our findings depends on the extent to which SLJS respondents represent the full RDSL sample as well as the extent to which our study site in Michigan represents the nation. Potential for selection bias exists on both levels.

We do not suspect Michigan to be an outlier with respect to sex, contraception, or pregnancy. Michigan falls near the national averages on teen pregnancy, age at first sex, and contraceptive use (see Lesthaeghe and Neidert 2006). In Table 5 in the appendix, we compare our analytic sample with the full RDSL sample and to women aged 18/19 in the nationally representative 2006–2010 NSFG sample. Compared with RDSL respondents in general, women in our analytic sample are less likely to be black, to be the child of a teen mother, to receive public assistance during childhood or at age 18/19, to be sexually experienced, or to have had a prior pregnancy or birth.

Compared with their peers in the NSFG,[17] women in our analytic sample are more likely to be black, less likely to receive public assistance at age 18/19, and less likely to have had a sexual debut at age 16 or younger. Socioeconomic advantage is associated with a lower risk of unintended pregnancy (Finer and Zolna 2013). The relationship between women's socioeconomic status and non-heterosexuality is less straightforward and is informed by a comparatively smaller body of scholarship. Most research on LGBTQ identification has been conducted among college women (Diamond 2008a, b), but in the 2006–2008 NSFG, women with the lowest levels of educational attainment were found to have the highest lifetime prevalence of same-sex behavior (Chandra et al. 2011). In the most recent update, Copen and colleagues (2016) found no statistically significant relationship between education and non-heterosexuality. Lesbian and bisexual women are more likely to have a lower income (below 300 % of the poverty line), to be unemployed, and to lack health insurance (Conron et al. 2010). On balance, differences among our analytic sample, the full RDSL sample, and the NSFG sample indicate that our analytic sample is comparatively advantaged. Thus, our estimates of risky sexual and contraceptive behavior and non-heterosexuality are likely to be conservative.

The prevalence of non-heterosexuality in our sample is higher than in the NSFG (see footnote 4), but these differences are likely attributable to question wording, and should not be interpreted to mean that Michigan is uniquely accepting of non-heterosexuality. Michigan is fairly conservative on LGBTQ issues: voters banned same-sex marriage in 2004, neither the state nor the county extends legal protections against work or housing discrimination on the basis of sexual orientation (Bauermeister et al. 2013), and GLSEN (previously the Gay, Lesbian and Straight Education Network) has documented unsupportive school environments for LGBTQ youth in its National School Climate Survey (GLSEN 2014). In other words, non-heterosexuality remains stigmatized in Michigan. To the extent that the atmosphere for LGBTQ people in Michigan affects respondents' willingness to report non-heterosexuality, this social desirability bias would be more likely to result in underestimates of non-heterosexuality than overestimates. Although our regional sample remains a limitation of this study, the likely direction of selection bias is toward the null hypothesis.

The need to minimize the burden on respondents imposed practical limitations on the number of topics that could be measured in the weekly journal. For instance, we have a weekly measure of any sexual intercourse, but we are not able to count every *individual* instance of sexual intercourse, which is consequential for pregnancy risk. Nevertheless, we are able to look at many dimensions of sexual and contraceptive behavior with a level of precision not possible in other demographic surveys. Finally, our measure of sex with women was added in response to participant feedback midway through the study as part of a one-time supplemental survey. Thus, our measure of women's sexual behavior with women is a lifetime measure, and we have only longitudinal data about sexual intercourse

[17] Weighted proportions among women aged 18/19 in the 2006–2010 NSFG (authors' tabulations).

with men. We are confident that our longitudinal measure captures only sexual intercourse with men because the questionnaire precisely defines sex as "when a man puts his penis in a woman's vagina." Thus, the contribution of our study is to advance understanding of non-heterosexual young women's sexual and contraceptive behavior with men, which are key proximate determinants of pregnancy.

Implications

This study has several important implications for fertility research, LGBTQ health disparities, and the measurement of sexual minority populations. We compare non-heterosexual women with heterosexual women while recognizing that different groups of non-heterosexual women may differ from one another in their overall risk of pregnancy and their pathways to higher risk. This approach may be fruitful for scholars working to understand other health disparities within the diverse LGBTQ community, such as higher rates of mental health (Cochran et al. 2003; Roberts et al. 2012), substance abuse (Corliss et al. 2011), sexually transmitted infections (Saewyc 2011), and lower use of preventative healthcare (Diamant et al. 2000). Similar to the case of unintended pregnancy, these disparities are visible in population-level health research, but we have a limited understanding of the reasons for them or how they might vary within the LGBTQ community (IOM 2011; Kapadia and Landers 2013). This literature is only beginning to probe distinctions among sexual minority women and is finding consequential differences within this group (Fredriksen-Goldsen et al. 2010). For instance, non-heterosexual identity and behavior are consistently correlated with health disparities (for a decennial review, see Saewyc 2011), with worse outcomes for bisexual women versus lesbians (Coker et al. 2010; Durso and Meyer 2013), and for women "unsure" of their sexual identity versus bisexual women (Goodenow et al. 2008). Thus, continuing to include multidimensional sexuality measures in health research is key to understanding these disparities and developing appropriate interventions.

The USDHHS publishes a decennial Healthy People initiative establishing priorities for improving health and monitoring progress on research, evaluation, and data collection. The Healthy People 2020 goals include LGBTQ health as an objective for the first time (now appearing alongside objectives to improve family planning and reproductive health) (USDHHS 2014a; b), and the director of the NIH recently designated sexual and gender minorities as a "health disparity population" for research purposes (NIMHHD 2016). To make progress toward these goals, it is essential to know which members of the LGBTQ population to target with specific health interventions. This concern has motivated an extraordinary push for patient disclosure ("coming out") in healthcare settings (Bradford et al. 2012; Makadon 2011): the USDHHS currently mandates the inclusion of questions about sexual orientation and gender identity in electronic health records (EHRs) (Cahill et al. 2015), but disclosure may be counterproductive and even harmful. Research on the consequences of disclosure focuses predominantly on individuals identifying as "homosexual." Bisexual women—who have more risk factors and worse health outcomes—disclose less frequently than do lesbian women (Durso and Meyer 2013), and there is

almost no research on consequences of disclosure among those with discordance between sexual behavior, identity, and attraction (St. Pierre 2012). Additionally, this intervention does not propose how to integrate individual responses into patient care or consider potential harm of disclosure in certain communities. Disclosure itself does not necessarily lead to improvements in care, with some patients fearing and/or perceiving worse care and discrimination following disclosure (Hiestand et al. 2007). Disclosure may invite or reinforce clinician assumptions about a patient's contraceptive needs based on her stated sexual orientation or current partner; our findings indicate that many non-heterosexual women are at risk of pregnancy and need high-quality contraceptive care, with mostly heterosexual women (straight-identified with same-sex behavior or attraction) at particularly high risk.

Monitoring progress toward the Healthy People goals will require some consensus about the measurement of sexuality. Without consistent measurement, it is difficult to replicate previous research findings, compare results across studies, or distinguish real reductions in health disparities from artifacts of measurement. Question wording is paramount: we included an unambiguous definition when asking about heterosexual penetrative sexual intercourse, and thus can be confident in the validity of this measure. The specificity of our weekly measure of heterosexual intercourse also increases our confidence that our one-time measure of *same-sex* behavior captures sexual encounters not reported elsewhere. Longitudinal measurement of same-sex behavior is ideal, but our study demonstrates that even one-time measures can be informative when carefully designed. These one-time measures of same-sex behavior and attraction and sexual identity were incorporated into a supplemental survey during the study period in an effort to be responsive to issues raised by respondents. This may not always be practical in survey research, but it enabled us to conduct research on a topic that respondents themselves identified as important.

The measurement of sexuality is necessarily complicated, but inconsistency within and across disciplines limits the progression of research on non-heterosexual people. Demographers should continue to measure multiple dimensions of sexuality (including behavior, identity, and attraction) and consult sexualities scholarship when constructing response options. This investment optimizes the usefulness of the resulting data for secondary users. Scholarship on non-heterosexuality in population-based research is in its infancy relative to core demographic topics such as fertility and family formation, and a lack of suitable data has impeded important research about the lives of non-heterosexual people across many domains (Badgett 2009; USDHHS 2014a). Theoretically informed and unambiguous sexuality measurement in the RDSL study allows us to examine non-heterosexual young women's relationships, sexual behavior, and contraceptive use, which have important implications for unintended pregnancy. Our study also demonstrates the value of including nuanced sexuality measures in social surveys in order to advance scholarly understanding of sexuality in the social world.

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Appendix

Table 5 Comparison of analytic sample, full RDSL sample, and NSFG sample on sociodemographic characteristics and sexual history

	RDSL: Analytic Sample (n = 579)[a]	RDSL: Full Sample (n = 1,003)	NSFG: Women Aged 18/19 (n = 988)[b]
Sociodemographic Characteristics			
African American	0.27	0.34	0.16
Highly religious[c]	0.56	0.58	0.45
Mother was teen mom	0.31	0.37	0.29
Childhood public assistance[d]	0.33	0.37	—
Two-parent household[e]	0.60	0.52	0.57
Public assistance at age 18/19	0.21	0.27	0.31
Employed at age 18/19	0.51	0.50	0.53
High school GPA[d]	3.21	3.11	—
Sexual History at Age 18/19			
Ever had sexual intercourse	0.70	0.77	0.64
Had intercourse at or before age 16	0.44	0.51	0.60
Ever pregnant	0.19	0.26	0.19
Ever had a live birth	0.09	0.14	0.13

[a] Respondents who answered all three sexuality questions in the Social Life Journal Supplement (SLJS). Sociodemographic characteristics and sexual history were measured at the time of the baseline interview (age 18/19).

[b] Weighted proportions among women aged 18/19 in the 2006–2010 National Survey of Family Growth (authors' tabulations).

[c] RDSL: "How important if at all is your religious faith to you—Would you say not important, somewhat important, very important, or more important than anything else?" This question was asked of all respondents; "highly religious" indicates an answer of "very important" or "more important than anything else." NSFG: "Currently, how important is religion in your daily life? Would you say it is very important, somewhat important, or not important?" This question was asked of women reporting some religious affiliation other than "none"; "highly religious" indicates an answer of "very important."

[d] Not available in 2006–2010 NSFG.

[e] RDSL version indicates whether respondent lived in a two-parent household during the "majority of the time when you were growing up." NSFG version indicates whether respondent lived with two biological or adoptive parents from birth until age 18.

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