

Sexual Discordance and Sexual Partnering Among Heterosexual Women

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Received: 10 May 2013 / Revised: 11 January 2014 / Accepted: 17 January 2014 / Published online: 10 April 2014
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Abstract This study examined characteristics of self-identified heterosexual women who were concordant or discordant in their sexual behavior and the association of discordance and sexual partnering among those aged 15–44 years from the 2006–2010 National Survey of Family Growth ($n = 7,353$). Sexual concordance was defined as reporting a heterosexual identity and no female partners in the past year; discordance was reporting a heterosexual identity and having at least one female partner in the past year. Sexual partnering was defined as being concurrent, serially monogamous or monogamous with a male partner in the previous year. Polytomous logistic regression models evaluated the association between sexual discordance and sexual partnering. Among self-identified heterosexual, sexually active women, 11.2 % reported ever having had a same sex partner. Heterosexually discordant women who had both male and female partners in the previous year were 5.5 times as likely to report having a concurrent relationship (95 % CI 2.77–11.09) and 2.4 times as likely to report engaging in serially monogamous relationships (95 % CI 1.19–4.97) with male partners.

Discordance between heterosexual identity and same sex behavior is a factor in risky behaviors. Women who have sex with women and men may act as bridges for the transmission of STDs, particularly to their female partners. Sexual education should include information inclusive of non-heteronormative behaviors and identities to provide sexual minorities with the tools and information they need. Clinical guidelines should ensure that all women are offered counseling and screening for reproductive and sexual health.

Keywords Sexual orientation · Same sex partners · Sexual concurrency · Serial monogamy

Introduction

Discordant sexual identity and behavior occurs when a person reports one sexual identity (e.g., heterosexual) but different sexual behaviors (e.g., same sex or bisexual behaviors). People may have discordant identity and behavior for many reasons, including internalized heterosexism (Szymanski, Kashubeck-West, & Meyer, 2008), homophobia (Frost & Meyer, 2009), or simply not perceiving themselves as homosexual. Societal pressures such as heteronormativity may increase discordant sexual identity and behavior. Heteronormativity is a construct that endorses heterosexual partnering as the norm for society (Rich, 2004; Warner, 1991). Sexual minorities may feel discrimination, stigmatization, and intense pressure to present an outwardly heterosexual orientation (Sandfort & Dodge, 2008; Siegel & Schrimshaw, 2000) while still engaging with same sex partners. Among women, little research has been done to describe this phenomenon although some qualitative studies have examined concepts like “heteroflexibility” (Marrazzo, Coffey, & Bingham, 2005) and the theoretical exploration of a supposed “plasticity”

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of female sexual attraction and behavior (Baumeister, 2000; Diamond, 2007).

More men than women self-identify as homosexual or bisexual yet more women report same sex activity. Previous studies in the U.S. estimate that 2–4 % of men and 1–2 % of women self-identify as homosexual (Gates, 2010; Xu, Sternberg, & Markowitz, 2010a, 2010b). Estimates of lifetime same-sex behavior among women range from 8 to 20 % in the United States. In the most recent round of the U.S. National Survey of Family Growth (NSFG 2006–2010), some form of same-sex sexual behavior was reported by 12.0 % of women aged 25–44 over their lifetime, twice the proportion reported among men in this age group (Chandra, Mosher, Copen, & Sionean, 2011). The trend existed among younger women too, with nearly 2.0 % of boys and 10.0 % of girls aged 15–17 years reporting any lifetime same-sex sexual behavior.

The number of women reporting either sexual minority identities or discordant sex behavior has increased. In the 2002 NSFG, 4.4 % of American women 15–44 years of age reported having a female sex partner in the previous 12 months (Chandra, Martinez, Mosher, Abma, & Jones, 2005); by the current round, 12.0 % of women 15–44 years of age reported having had a female sexual partner in the past year (Chandra et al., 2011).

Compared to women who have sex with men only, women who have sex with women (including those who have sex with women and men) are unduly affected by a variety of psychosocial and physical health issues (Conron, Mimiaga, & Landers, 2010; Mayer et al., 2008). Women who have sex with women are disproportionately affected by mood disorders and increased psychological distress (Ayala & Coleman, 2000; Bostwick, Hughes, & Johnson, 2005; Case et al., 2004; Gilman et al., 2001). Compared to women who have sex with men only, women who have sex with women are more likely to abuse alcohol and illicit substances (Burgard, Cochran, & Mays, 2005; Cochran, Ackerman, Mays, & Ross, 2004; Cochran, Keenan, Schober, & Mays, 2000; Drabble, Midanik, & Trocki, 2005) and have higher rates of tobacco use and longer histories as smokers (Burgard et al., 2005; Gruskin, Greenwood, Matevia, Pollack, & Bye, 2007; Tang et al., 2004). Contrary to traditionally held beliefs, women who have sex with women are also at risk of contracting STDs (Marrazzo et al., 1998; Tao, 2008). Up to 44 % of women who have sex with women have a lifetime history of one or more STDs (Eaton et al., 2008; Fethers, Marks, Mindel, & Estcourt, 2000; Marrazzo et al., 1998; Singh, Fine, & Marrazzo, 2011). While women who self-report as bisexual are at the highest risk for acquiring these STDs, even more so than women who have sex with men only, women who have sex with women are less likely to be counseled to have Papanicolaou tests or other clinical screening for STDs, including HIV (Gorgos & Marrazzo, 2011; Marrazzo, 2004; Marrazzo, Koutsky, Kiviat, Kuypers, & Stine, 2002; Marrazzo, Thomas, Fiedler, Ringwood, & Fredricks, 2010).

Despite growing evidence of increasing numbers of American women reporting that they engage in both opposite sex and

same sex behavior, existing studies have inconsistently used varying parameters for definitions of sexuality asking about lifetime experience but current orientation identity or attraction (Schmidt, 2010; Thompson & Morgan, 2008). Others have focused only on specific sub-populations of Americans (Chae & Ayala, 2010; Thompson & Morgan, 2008) or have had relatively small sample sizes (Thompson & Morgan, 2008). There is a small body of literature that has documented that women who self-identify as lesbian but are also sexually active with men have riskier sexual behaviors. However, there is scant information on associations between a discordant sexual orientation identity and same sex behavior among adult women who self-identify as heterosexual.

Using a nationally-representative sample, we examined the association between discordant heterosexual sexual orientation identity and same-sex sexual behavior and prevalence of risky behaviors among women, including sexual partnering behaviors with men. We hypothesized that discordance between heterosexual orientation identity and actual sexual behaviors would result in elevated risk behaviors, including risky sexual partnering with men, as compared to sexually concordant women.

Method

This study was exempt for review by the Virginia Commonwealth University Institutional Review Board because the public use data file did not contain personal identifiers.

Participants

The study used data from the continuous 2006–2010 cycle of the NSFG. The NSFG collects data on reproductive health among men and women 15–44 years of age who live in civilian households in the United States. The NSFG sampling framework has been described in detail elsewhere (Lepkowski, Mosher, Davis, Groves, & Van Hoewyk, 2010). Trained women interviewers conducted in-person interviews in the participant's home using both computer assisted personal interview (CAPI) technology and audio computer assisted self-interviewing (ACASI).

By June 2010, over 22,600 interviews had been completed in 110 primary sampling units. The public use data files released in January 2012 included more than 12,000 interviews of women (Lepkowski et al., 2010). The sample included women, ages 15–44 years, who self-identified as heterosexual or “straight” and reported being sexually active in the previous 12 months. Bisexual and homosexual women who reported sexual behaviors concordant with those identities and homosexual women who reported opposite behaviors were excluded. Women who did not report a sexual orientation identity were also excluded. There were 1,004 women ineligible due to non-heterosexual identity, 2,404 ineligible because they did not report a sexual partner in the previous year, and 29 because they had missing values for

discordant or concordant behavior in the prior 12 months. An additional 1,489 participants were excluded due to missing data on key variables; the largest single contributor to this group were missing values related to consistent condom use ($n = 582$). The remaining 7,353 women were eligible.

Measures

Demographic Characteristics

Demographic variables of interest included: age in years at the time of interview (categorized as 15–20, 21–24, 25–30, 31–34, and 35–44); race/ethnicity (defined as White, non-Hispanic, African-American, non-Hispanic, Hispanic, and Other); relationship status (defined as “never married,” “formerly married, widowed, or separated,” and “currently married/cohabitating”); educational attainment (categorized as “less than high school education not currently enrolled,” “less than high school education but still enrolled,” “high school graduate or GED holder,” and “at least some college or more”); income level, measured as percent of federal poverty level (FPL) was categorized as “below 100 % FPL,” “100–199 % FPL,” and “greater than or equal to 200 % FPL”), U.S. nativity (defined as yes or no), and urbanicity (defined as living in center city of a metropolitan area [MSA], living outside a city but within an MSA or outside an MSA).

Sexuality

Sexuality was assessed by using two different measures: self-identified sexual orientation and sexual behavior in the past 12 months. Sexual orientation identity was assessed by asking participants how they would describe themselves: “Do you think of yourself as heterosexual or straight; homosexual, gay, or lesbian; bisexual; or something else?” Sexual behavior was assessed by asking participants: (1) whether they had had any sexual experience with a female partner in their lifetime, (2) the number of female partners over their lifetime, (3) whether they had had “any sexual experience” with a female partner in the past 12 months, and (4) the number of female partners over the past 12 months.

Based on these responses, women were categorized as: self-reported heterosexual identity with concordant sexual behavior (concordant) or self-reported heterosexual orientation with discordant sexual behavior (discordant). To be consistent with the measure of sexual identity at the time of interview, only sexual activity reported in the 12 months prior to interview was considered in the definition of current discordance/concordance.

Sexual Behaviors

Age at sexual debut was measured by three categories: less than 15 years of age, 15–17 years of age, and 18 years or older. Number of sex partners in the past 12 months (categorized as 1

partner, 2 partners or 3 or more partners) and lifetime number of sexual partners (categorized as ≤ 5 and ≥ 6) was also assessed. Other sexual behaviors included consistent condom use with male partner(s) (defined always, inconsistent use, or never used a condom), reporting exchanging sex for money, drugs or shelter in the past year (dichotomous ever/never), and having sex with a high-risk male (i.e., non-monogamous male partner, MSM, injecting drug user or known HIV positive). Treatment for STDs in the past 12 months was examined as a proxy indicator for high risk sexual behavior.

Opposite Sex Sexual Partnerships

Each woman was asked the number of opposite sex partners they had had vaginal sex with in the previous 12 months. For up to three discrete opposite sex partners reported, the date in months and year of first and last sexual intercourse were asked and, except for any partners identified as currently married to or cohabitating with, whether or not the partner was “current.” The ACASI part of the interview also asked how many male and female partners they had (over lifetime and in the prior 12 months) as well as types of sexual activity engaged in (oral, vaginal or anal).

Sexual partnerships were classified into three categories: monogamy, serial monogamy, and concurrency. Monogamy was defined as reporting one opposite sex partner over the course of the previous 12 months. Serial monogamy was defined as more than one opposite sex partner over the past 12 months but with no overlap of first/last sex dates of any other partners. Concurrency was defined as more than one opposite sex partner in the past 12 months with an overlap of current partner first sex date and previous partner(s) last sex date. Only women reporting at least one male sex partner in the previous year were analyzed for sexual partnership type since partnering dates were only recorded for opposite sex partners. We calculated the gaps for serial monogamists as number of months between first sexual intercourse with most recent partner and last sex with previous partner and first sex with second to last partner and last sex with third to last partner where applicable.

Risky Behaviors

Binge drinking in the past 12 months was classified as reporting having had five or more drinks within a couple of hours during the last 12 months. Illicit drug use was analyzed as a dichotomous variable with any use—either injecting or non-injecting reported in the past year versus no use.

Procedure

All analyses accounted for the complex sampling design and weighting of the NSFG (Lepkowski et al., 2010) using SAS-callable SUDAAN version 11. We first estimated the prevalence

of discordant sexuality among heterosexual women. Weighted percentages were reported. Then, we compared sociodemographics, sexual behaviors and norms, and risky behaviors for discordant and concordant sexuality among all women using chi square tests with an α of .05. We then conducted polytomous logistic regression to account for the three level sexual concurrency outcome variable. Multivariable analyses were used to assess the association between sexual discordance and sexual partnering behaviors and poor health behaviors adjusting for potential confounders. Crude and adjusted odds ratios and 95 % confidence intervals (CI) were reported.

Results

Among all heterosexual women, 11.2 % reported ever having had a same sex partner. Table 1 shows the characteristics of the sample stratified by concordant or discordant sexual identity and partnering in the previous 12 months. The majority of self-identified heterosexual women (98.2 %) did not report same sex behavior in the previous year. The majority of women in the discordant group reported having one female sex partner in the past 12 months (51.7 %), 39.0 % reported having two female sex partners, and 9.3 % reported having three or more. The distribution of number of sex partners in the past year who were men also differed by discordant group, with women reporting sexual discordance reporting more sex partners who were men in the past year.

The discordant group was younger relative to the concordant group. Sexually concordant women were more likely than the discordant group to be currently married or cohabitating with a male. There were no significant differences in the trend across racial or ethnic groups, income, or urbanicity. Those with higher education were more likely than those with less education to report discordant behavior. A higher proportion of sexually discordant women reported being U.S. born than those who were concordant (95.0 vs. 84.9 %).

Risky Behaviors

There was a disproportionate distribution risk behaviors among discordant versus concordant women. Among concordant women, close to half reported binge drinking of alcohol in the past year (41.8 %) and 15.8 % reported any illicit drug use in the past year. Among discordant women, the proportions reporting these behavior were uniformly higher: 80.0 % reported binge drinking of alcohol in the past year and 52.9 % reported any illicit drug use in the past year.

Sexual Behavior

Median age of sexual debut was younger for those reporting discordance (15.1 vs. 16.2 years). The trend among sexually

discordant women was for a younger age of sexual debut as compared to the trend for concordant women: 26.2 % of discordant women had a debut under the age of 15 whereas 14.1 % of concordant women did; 64.4 % of discordant women had an average debut as compared to 47.2 % of concordant women; and 9.4 % of discordant women had a debut at 18 or older whereas 38.7 % of concordant women did.

The total number of lifetime opposite sex partners was greater among those reporting discordance (median: 8.4) than those reporting concordance (median: 3.8). Of heterosexual women reporting ever having a female partner ($n = 744$), most reported only one partner with slightly higher proportions of concordant (67.1 %) than discordant women (49.5 %). There was a greater percentage of discordant women reporting 2–4 lifetime partners versus those currently concordant (39.4 vs. 30.0 %). Nearly one out of 10 discordant women reported five or more ever female partners as compared to less than 1 % (0.3 %) of concordant women. The majority of discordant women (51.7 %) reported only one female partner in the previous year; about 10.0 % reported either just two partners and the final 10.0 % reported three or more female partners in the past year.

Sexual Identity Discordance and Adult Sexual Partnering Relationships

Table 2 shows the association between sexual identity discordance and adult sexual partnering patterns. A crude analysis revealed that discordant identity and behavior was associated with both concurrency (crude odds ratio [cOR] 8.7; 95 % CI 4.9–15.5) and serial monogamy (cOR 3.7; 95 % CI 2.0–6.8) with male partners in the previous year. After adjusting for age, ethnicity, marital status, income, education, living in a metropolitan area, U.S. nativity, age at sexual debut, and number of lifetime partners, the association was still very strong. Heterosexually discordant women were 7.9 times as likely to report having a concurrent relationship with their male partners in the previous year (95 % CI 4.1–15.2) than concordant women. They were also 3.4 times as likely to report engaging in serially monogamous relationships with men over the previous year (95 % CI 1.7–6.8) than their concordant peers. The mean gap length for women reporting serial monogamy with male partners was 3.5 months between partners ($SD = 2.4$). The gap was not significantly different for discordant women in comparison to concordant women.

Table 3 shows the greater prevalence of risk behaviors among those who were discordant versus their concordant peers. Women reporting a discordant identity and partnering behavior were more likely than their concordant peers to engage in more risky sexual practices with men. Discordant women were more likely to report ever engaging in anal sex with a man, $\chi^2(1) = 27.3, p < .0001$ and having had a high risk male partner in the previous year, $\chi^2(1) = 14.6, p < .0001$. Rates for having been treated for an STD in the previous year were different

Table 1 Characteristics of women by sexual identity and behavior concordance/discordance in the past 12 months

	Sexually discordant heterosexual (<i>n</i> = 190) (1.8 %)	Sexually concordant heterosexual (<i>n</i> = 8,590) (98.2 %)	
	Weighted percentage ^a		<i>p</i>
Sociodemographic variables			
Age at time of interview			<.0001
15–20 years of age	29.2	10.5	
21–24 years of age	28.2	13.2	
25–29 years of age	8.4	19.5	
30–34 years of age	16.5	17.3	
35–39 years of age	11.9	20.0	
40–44 years of age	5.2	19.4	
Race/ethnicity			ns
White, non-Hispanic	66.6	62.6	
African-American, non-Hispanic	17.2	14.1	
Hispanic	11.9	17.0	
Other, non-Hispanic	4.3	6.3	
Marital status			.0002
Currently married or cohabitating	44.0	66.2	
Formerly married	5.4	8.5	
Never married	50.6	25.3	
Highest level of education			.0044
Less than high school but currently in school	9.6	3.5	
Less than high school NOT currently in school	18.9	15.0	
High school graduate	31.3	24.5	
At least some college	40.2	57.0	
Income level			.0590
<100 % federal poverty level	25.0	20.3	
100–199 % federal poverty level	33.5	22.8	
≥200 % federal poverty level	41.6	56.9	
US born	95.0	84.9	<.0001
Urbanicity			ns
MSA, center city	35.5	31.5	
MSA, outside center city	41.1	47.7	
Non-MSA	23.1	20.8	
Sexual history variables			
Age at sexual debut			<.0001
<15 years	26.2	14.1	
15–17 years	64.4	47.2	
18+ years	9.4	38.7	
5 or more lifetime male partners	69.5	44.4	<.0001
3 or more male partners in previous 12 months	25.1	4.0	<.0001
Ever had a female partner over lifetime	100.0	8.9	na
Total # of lifetime female partners			na
None	0	91.1	
1	51.7	6.0	
2–4	39.0	2.7	
5 or more	9.3	0.3	

^a Percentages may not total to 100 % owing to rounding

Table 2 Association between sexual discordance and sexual partnering in the past 12 months among heterosexual women

Sexual identity	Sexual partnering	Weighted percentage with outcome	Crude odds ratio (95 % CI)	Sociodemographic adjusted odds ratio (95 % CI) ^a	Fully adjusted odds ratio (95 % CI) ^b
Discordant sexuality	Concurrency	31.3	8.7 (4.9–15.5)	7.12 (3.48–14.56)	5.54 (2.77–11.09)
Concordant sexuality	Concurrency	5.8	1.00	1.00	1.00
Discordant sexuality	Serial monogamy	13.6	3.7 (2.0–6.8)	2.85 (1.30–6.21)	2.43 (1.19–4.97)
Concordant sexuality	Serial monogamy	5.9	1.00	1.00	1.00

^a Adjusted for age, ethnicity, marital status, income, education, living in metropolitan area, and U.S. born

^b Adjusted for age, ethnicity, marital status, income, education, living in metropolitan area, U.S. born, age at first sexual intercourse, and number of lifetime male partners

Table 3 Other risky behaviors among heterosexual women with concordant or discordant sexual partnering behavior

	Sexually discordant heterosexual (<i>n</i> = 190)	Sexually concordant heterosexual (<i>n</i> = 8,590)	<i>p</i>
	Weighted percentages		
Anal sex	66.3	35.2	<.0001
High risk male partner	39.5	10.6	<.0001
Exchange sex for drugs or money	3.3	0.5	ns
No condom at last sex	35.6	25.6	ns
Inconsistent condom use past year	74.6	61.9	ns
Binge drinking ^a	80.0	41.8	.0001
Any illicit drug use over the past 12 months ^b	52.9	15.8	<.0001

^a “Binge drinking” was defined as having five or more alcoholic drinks over the course of a few hours

^b Illicit drug use was defined as any consumption of marijuana, cocaine, crack, or heroin, by any route

between sexually concordant and discordant women, but not significant, $\chi^2(1) = 3.6$, $p = .0597$. Engaging in sex for drugs or money in the past 12 months and not using a condom at last vaginal intercourse were not statistically significant, $\chi^2(1) = 1.8$, and, $\chi^2(1) < 1$, respectively.

Discussion

The estimates of prevalence of both discordant sexual identity and behavior among American women were in line with previous studies (Chandra et al., 2011; Marrazzo, 2000; Mosher, Chandra, & Jones, 2005; Schmidt, 2010). Our findings were consistent with the notion that while some women may exclusively self-report a heterosexual identity, it is possible for them to have non-concordant partners at the same time, as well as to move from sexual orientation identity categories over time (Baumeister, 2000; Diamond, 2003, 2007; Thompson & Morgan, 2008; Vrangalova & Savin-Williams, 2012). There is a growing acceptance of female same-sex sexuality, couched in the theory that female sexuality is malleable (Baumeister, 2000; Diamond, 2007). This fluidity may have far reaching implications for women’s sexual health. As Levant, Rankin, Hall, Smalley, and Williams (2012) have suggested, “when sexual norms are in a state of flux...women may receive conflicting messages

about appropriate sexual behavior.” Relative to heterosexual women who reported only male partners in the past year, heterosexually discordant women who had both male and female partners in the previous year had an increased odds of concurrent relationships with their male partners and had increased odds of engaging in serially monogamous relationships with men over the previous year.

Our results supported our hypothesis that women who self-identify as heterosexual but who have recent sexual activity with other women would have increased sexual partnering risks, especially with their male partners. Our findings give rise to concern about other potential risk factors like injecting drug use, unprotected heterosexual sex, male injecting drug users, or exchanging sex for drugs or money (Marrazzo, 2000; Skinner, Stokes, Kirlew, Kavanagh, & Forster, 1996) among women who self-identify as heterosexual but report recent sexual partnerships with women.

Our data were also consistent with a small but compelling body of literature that has documented that women who self-identify as “lesbian,” but who are also sexually active with men, often demonstrate increased sexual risk-taking behavior (Marrazzo, 2004). In two previous studies among women attending STD clinics, bisexual women had an increase in HIV-related risk behavior, including sex with gay or bisexual men, use of injection drugs and crack cocaine, and exchange of sex for drugs or

money (Bevier, Chiasson, Heffernan, & Castro, 1995; Marrazzo, Koutsky, & Handsfield, 2001). Our results confirmed that for heterosexually self-identified but same-sex active women, prevalence of these risky behaviors was, in fact, higher than their concordant peers.

Concurrency modeling predicts that temporally overlapping sexual partnerships increase the risk of transmission from the person who practices it and raises the risk of acquisition to the partners of that person. The person practicing concurrency has an increased risk simply because of their increased number of sexual partners, not by the temporal overlap (Morris, 2001). Therefore, the risk of interest is actually that for the partner. In terms of STD transmission, the concept of concurrency is critical in that it highlights the fact that those characteristically thought of as “low risk,” including those with only one partner and women who have sex with women, may be actually be at an elevated risk if they are linked to a larger sexual network (Morris & Kretzschmar, 1995). Women who have sex with women and also men may act as bridges for the transmission of STDs. For women who partner with discordant heterosexual women, concurrent sexual partnering with men of that partner may unknowingly place that at higher risk for acquiring STDs. For women who have sex with women who maintain a monogamous relationship to a concurrent yet discordant female partner, unawareness of their partners, behavior may actually decrease concern for implementing safer sex practices and place them at risk for STD acquisition. Our data did not capture risky sexual behaviors between women beyond numbers of partners; however, our results strongly suggest that women who are discordant have riskier behavior in general as well as more concurrent partnerships with their male partners.

Given the length of the interval between partnerships, serial monogamy may also introduce risk: smaller gaps make serial partnering as likely a transmitter of STI as concurrent ones (Kraut-Becher & Aral, 2003). The average time gap for serial monogamy in the U.S. is about 60 days (Foxman, Newman, Percha, Holmes, & Aral, 2006). Our study supported this finding with over 88% reporting gaps of 6 months or less and 61.7% reporting gaps of 3 months or less; more than one out of five reported a gap of a month or less among serial monogamists. Although discordant women did not have significantly different gaps than concordant women, all of these average gaps would put the serial relationships within the infectious period of chlamydia, gonorrhea, syphilis, HSV, HPV, and HIV infections (Foxman et al., 2006).

Considerations and Strengths

The analyses had some limitations that ought be considered. All information was self-reported. Since some of the behaviors asked about are stigmatized, there is potential for under-reporting. However, to limit information bias and under-reporting, both CAPI and ACASI were employed. The use of computer-

assisted methods in order to enhance response rates and accuracy are well supported in the literature (Kissinger et al., 1999; Morrison-Beedy, Carey, & Tu, 2006). Further, the use of ACASI has been shown to improve reporting when asking especially sensitive questions, much like those asked in this survey (Morrison-Beedy et al., 2006). Another possibility for bias due to misclassification or missing data comes from the limited sexual orientation identities presented for participants from which to choose. Previous literature has illustrated that, to some people, sexual orientation labels are off-putting or even irrelevant to their sexuality (Savin-Williams, 2008). Only participants who self-identified as “heterosexual or straight” were included in the analysis.

In terms of sexual partnering, the temporal overlap of opposite sex partners is not perfectly measured. Because only month and year were reported, it is possible that actual temporal overlap did not occur (e.g., if a relationship stopped in the beginning of the month and a second one only began in the end of the month). If this was the case, more partnerships would be misclassified as “concurrent” than truly were. However, in previous studies comparing the accuracy of using similar date comparison methods of determining concurrency versus a direct question if the woman had been concurrent, relatively high agreement was found between the two types of measures so this approach is likely to provide a good estimate of the true prevalence of concurrency (Adimora et al., 2004; Adimora, Schoenbach, Taylor, Khan, & Schwartz, 2011). Nevertheless, the estimates were similar for sexually concurrency and serial monogamy.

Finally, the sequence of questions related to sexual activity, age of sexual debut, and the dates of partnership to determine sexual partnering only captured opposite sex partnerships. By defining “sex” as penile–vaginal intercourse only, women who engaged in other types of same or opposite sexual practices would be excluded. Age of sexual debut was only captured as age at which first intercourse occurred with a male partner. This definition would exclude any other types of earlier sexual experience, including oral or anal sex with an opposite or same sex partner. This could potentially misclassify some earlier debuting women as later initiators of sexual activity. The questions capturing dates of partnership only asked about opposite sex partners so we were unable to quantify potential overlap of female partners, or more risky, overlap of male and female partners over the past year.

This study also had a number of strengths. It was a large, nationally representative population-based study. Oversampling of minority groups provides confidence that sufficient numbers of minorities were included in the analyses. The use of sampling weights helps to account for non-response bias and other issues in sampling which improves the extent to which results can be generalized to the general U.S. population. In addition, the response rate for the 2006–2010 NSFG was excellent at 77% which permits generalizability of the results to the household civilian population of women. Further, while most previous

studies used lifetime ever same sex but current sexual identity and attraction (which disjoins the temporality of a true discordant identity) (Schmidt, 2010), we analyzed sexual behavior ever as well as in the previous year.

Previous studies have had a limited look at opposite sex partner risks. We have extended the literature by including risky sexual partnering practices with male partners, including ever having anal sex with a man, adding two condom use measures, determining if the participants had high risk male partner(s), measuring if there was an exchange of sex for money or drugs with a man in the past year, and examining the relationship with first male sexual partner. This is also the first study that examined the prevalence of sexual partnering behaviors of heterosexually identified but behaviorally bisexual or lesbian women with their male partners.

Conclusions

This study has several important public health implications. In terms of clinical practice, health care providers and counselors should not assume that if their patients are married, living with or reporting a current relationship with a man that they are only engaged in heterosexual activity. For women who do report female partners, clinicians should be aware that there are still potential risks for acquiring or transmitting STDs and that these women should be availed necessary screening and treatment. Women who partner with women need to be made aware of the potential for increased risk of STDs including HIV, especially if their female partner also has male partner(s).

From a policy perspective, these results suggest that sex education must not assume an “either/or” heteronormative model to presenting youth with information on reproductive and sexual health. Youth must be counselled on the wide expression of sexualities and the potential risks of engaging in behaviors perhaps not traditionally considered as dangerous (i.e., women who have sex with women partnering). Effective education must not only include information on safer sex or limiting partners but also needs to address the concomitant issues of drug and alcohol use, stigma against sexual minorities, and changing societal norms vis-a-vis sexual identities or what “sex” is.

Recent research shows that heteronormative attitudes about what “counts” as sex (typically limited to penile penetration of the anus or vagina) are actually increasing among younger generations (Bersamin, Fisher, Walker, Hill, & Grube, 2007; Bogart, Cecil, Wagstaff, Pinkerton, & Abramson, 2000). These attitudes in turn have made other intimate activities, like oral sex, to be considered less risky or even more casual. This disconnect may be due to the focus on sexual education programs in school on abstinence from penile–vaginal sex and pregnancy prevention and the near absence of information and risks associated with other behaviors. This traditional approach also devalues non-heteronormative behaviors and orientation identities, leaving

sexual minorities with little information or skills to navigate their own sexual maturation. These considerations need to be accounted for in designing sexual health guidelines for women in general and sexual education programming for youth.

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