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Sexual and Reproductive Health Indicators and Intimate Partner Violence Victimization Among Female Family Planning Clinic Patients Who Have Sex with Women and Men

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Abstract

Background: Sexual minority women are more likely than heterosexual women to have ever experienced intimate partner violence (IPV). Although IPV is associated with sexual risk and poor reproductive health outcomes among US women overall, little is known about whether IPV is related to sexual and reproductive health indicators among sexual minority women in particular.
Methods: Baseline data from a prospective intervention trial were collected from women ages 16–29 years at 24 family planning clinics in western PA ($n = 3,455$). Multivariable logistic regression for clustered survey data was used to compare women who have sex with men only (WSM) and women who have sex with women and men (WSWM) on (1) IPV prevalence and (2) sexual and reproductive health behaviors, outcomes, and services use, controlling for IPV. Finally, we tested the interaction of sexual minority status and IPV.
Results: WSWM were significantly more likely than WSM to report a lifetime history of IPV (adjusted odds ratio (AOR): 3.00; 95% confidence interval (CI): 2.30, 3.09). Controlling for IPV, WSWM reported higher levels of sexual risk behaviors (e.g., unprotected vaginal and anal sex), male-perpetrated reproductive coercion, unwanted pregnancy, and sexually transmitted infection (STI) and pregnancy testing but less contraceptive care seeking. The association between IPV and lifetime STI diagnosis was greater among WSWM than among WSM.
Conclusions: IPV was pervasive and associated with sexual risk and reproductive health indicators among WSWM in this clinic-based setting. Healthcare providers' sexual risk assessment and provision of sexual and reproductive health services should be informed by an understanding of women's sexual histories, including sex of sexual partners and IPV history, in order to help ensure that all women receive the clinical care they need.

Introduction

Approximately one in three US women will experience physical or sexual intimate partner violence (IPV) in their lifetime.[1] Such victimization is associated with unintended pregnancy and sexually transmitted infection (STI) via inconsistent condom use[2–7] and reproductive coercion.[8,9] IPV research has overwhelmingly focused on violence in heterosexual relationships. Recent literature has started to characterize IPV and sexual assault experiences among sexual minority women—those identifying as lesbian or bisexual, women who have sex with women (WSW) and women who have sex with women and men (WSWM)—compared to women identifying as heterosexual and women who have sex with men only (WSM).[10–12] Although research suggests that self-identified bisexual women and WSWM are

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at greatest risk for IPV, additional work is needed to better understand the experiences of these understudied populations, including how exposure to IPV may impact the sexual and reproductive health of bisexual women and WSWM.[12]

Similar to the dearth of literature on sexual orientation and IPV, research on the sexual and reproductive health of sexual minority women is lacking, especially in the reproductive health clinic setting. One nationally representative study of adolescent and young adult US women found that self-identified bisexual women reported an earlier age of first sexual intercourse and a greater number of male sexual partners compared to heterosexual women.[13] Another clinic-based study of adult women found that self-identified lesbian and bisexual women were significantly more likely than heterosexual women to have sex with men who have sex with men (MSM), whereas bisexual women were more likely than self-identified heterosexual and lesbian women to report substance use during sex, an indicator of HIV/STI risk.[14] Other studies of women who have sex with women, regardless of sexual identity, indicate that pregnancy[15] and STIs[16,17] are not uncommon in this population. However, studies are conflicting regarding whether sexual minority women receive similar or fewer clinic-based services for sexual and reproductive health than their heterosexual counterparts,[18–20] indicating that sexual minority women's reproductive and sexual healthcare needs are not well understood, despite evidence of greater sexual risk.

The elevated prevalence of IPV experienced by bisexual women and WSWM[12] suggests that attention is needed as to whether IPV impacts sexual minority women's sexual and reproductive health and care seeking. If sexual minority women with histories of IPV experience poor health above and beyond that of heterosexual women with histories of abuse, clinical interventions targeting IPV may need to be tailored to more comprehensively assess women's sexual histories and acknowledge the unique needs of sexual minority patients. The present study, which addresses this noted gap in the literature, is guided by minority stress theory, which posits that prejudice and discrimination experienced by WSWM impact their risk for psychosocial stress and poor health.[21,22] We additionally use the social determinants of a health[23] framework to be attentive to the impacts of social and economic factors on the health of WSWM, including vulnerability for IPV and poor sexual and reproductive health.

Here, we focused on the reproductive health clinic setting, in which women report a significantly higher prevalence of IPV compared to prevalence estimates in the general population.[8,24] A growing body of research highlights the need to understand women's health in the context of three related but unique facets of their sexual orientation—sexual identity, sexual attraction, and sexual behavior—rather than conflating the experiences of self-identified lesbian and bisexual women and women who have sex with partners of various sexes and genders.[25,26] In the present study, we sought to assess women's experiences of IPV, sexual risk (including pregnancy risk), and care seeking for sexual and reproductive health in the reproductive health clinic setting in relation to one facet of sexual orientation: sexual behavior. We compared WSWM and WSM to understand the contribution of IPV to their sexual and reproductive health and ultimately inform clinic-based interventions with this population.

Materials and Methods

Data

Data were drawn from the baseline survey of a larger longitudinal study of women aged 16–29 years seeking care at 24 (19 rural and 5 urban) family planning clinics in western Pennsylvania ($n = 3{,}682$). This parent study was a cluster randomized controlled trial of a brief safety card intervention to reduce IPV, reproductive coercion, and unintended pregnancy. Upon arrival at the clinic, all women were screened for age eligibility by trained research staff and, if interested, were escorted to a private area in the clinic for informed consent and survey administration. Participants completed these procedures before their visit with the clinician; participants received no intervention prior to data collection. Parental permission was waived for minors, as participants were receiving confidential family planning services. Data were collected via Audio Computer Assisted Self-Interview, a self-administered program that allows participants to complete surveys on a laptop computer, with questions read aloud through headphones. At the conclusion of the survey, participants were offered a resource sheet of local social services and received a $15 prepaid debit card to thank them for their time. All procedures were approved by the Institutional Review Board at the University of Pittsburgh.

Measures

Sexual minority status. As discussed previously, sexual orientation is a multifaceted construct that encompasses women's sexual identity, sexual attraction, and sexual behavior with partners of various sexes and genders.[25] The current study uses only an indicator of women's sexual behavior. Specifically, same-sex sexual behavior was measured with the item, ''Since you started having sex, have your sex partners (including vaginal, oral or anal) been: (1) women only, (2) mostly women, (3) equally men and women, (4) mostly men, (5) men only?''[27] Participants who reported ''equally men and women'' or ''mostly men'' were categorized as ''women who have sex with women and men (WSWM).'' Participants who reported ''men only'' became the reference group (i.e., ''women who have sex with men only [WSM]''). Because the parent study was an intervention trial to reduce incident unintended pregnancy, participants who reported that their sex partners were ''women only'' and ''mostly women'' were skipped out of survey questions relevant to the current analysis and have been removed from the analytic sample.

IPV. The other key predictor, lifetime IPV, was measured via three items modified from the Conflict Tactics Scale-2 (CTS-2)[28] and the Sexual Experiences Survey.[29] Items represented physical abuse, sexual abuse with the use of threats, and sexual abuse without the use of threats. Questions did not specify whether abuse happened in relationships with men or with women.

Sociodemographic characteristics. Single items assessed sociodemographic characteristics, including age, race/ethnicity, and educational attainment. Relationship status was assessed with the single item, ''What is your current relationship status: (1) single, (2) dating more than one person, (3) dating one person/in a serious relationship, (4) married, (5) married with more sex partners than husband.

Sexual risk behavior. Single items assessed recent (past 3 months) vaginal sex and anal sex, where vaginal and anal sex were described as when ''the penis enters the vagina/anus.'' Participants who reported these sexual behaviors were asked separately how often they used a condom for vaginal and anal sex. The survey did not specify male or female condom. Those who indicated that they never, rarely, sometimes, or usually used condoms were recorded as having any unprotected vaginal or anal sex. Lifetime sex trade was assessed with the question, ''Have you ever traded sex or sexual acts in exchange for money, drugs, shelter, gifts, or other resources?''

Behaviors in the context of abusive relationships. Condom nonuse against a participant's will was measured with the item, ''In the past 3 months, how many times have you had sex without a condom when you wanted to use one?'' Participants who indicated that this happened at least once were coded as having experienced the outcome. Male partner–perpetrated reproductive coercion was assessed with a series of 10 items developed by the investigative team and tested in a previous randomized controlled trial.[8,26] Individual items assessed whether participants recently feared asking a partner to use a condom and feared refusing sex (i.e., ''In the past 3 months, have you been afraid to ask your partner to use a condom?'' and ''In the past 3 months, have you been afraid to refuse sex with a sex partner?'').

Sexual and reproductive health. One item was used to assess lifetime history of an STI diagnosis (i.e., ''Have you ever been told by a doctor or other health care professional that you had an STD? By STD we mean, for example, Chlamydia, gonorrhea (also known as the clap), syphilis, herpes, genital warts, Hepatitis B, or HIV?''). Pregnancy was assessed with a question capturing how many times women had ever been pregnant (once vs. two or more); another item assessed unwanted pregnancy (i.e., ''Have you ever been pregnant when you didn't want to be?'').

Care seeking for sexual and reproductive health. Women were asked, ''What is the main reason you are at the health center today?'' Here we focused on ''STD testing/treatment,'' ''pregnancy test/options counseling,'' and ''birth control other than condoms.'' IPV, reproductive coercion, sexual risk, and reproductive health outcomes were modified via cognitive interviewing with women seeking sexual and reproductive healthcare services and have been tested extensively.[8,9,26,30]

Analysis

For the purpose of this analysis, our sample was limited to women who had ever had vaginal, oral, or anal sex, with complete data on IPV and whose partners were equally men and women ($n=57$), mostly men ($n=275$), or exclusively men ($n=3{,}123$), resulting in a sample size of 3,455 women. Women reporting that their lifetime sex partners were mostly ($n=12$) or exclusively women ($n=62$) were skipped out of questions on sexual and reproductive risk for reasons described earlier; thus, these women were excluded from the present analysis. Differences in sociodemographic characteristics between WSWM and WSM were assessed via Wald log-linear chi-square tests for clustered survey data, with statistical significance level at $p<0.05$. Odds of study outcomes among WSWM compared to WSM were assessed via bivariate and multivariable logistic regression models for clustered survey data. Finally, the interaction of sexual minority status and IPV was assessed with a categorical variable representing the various combinations of the two dichotomous variables (i.e., WSWM with IPV history, WSWM without IPV history, WSM with IPV history, and WSM without IPV history). For all study outcomes, an information-theoretic complexity-penalized model goodness-of-fit criterion for clustered survey data (QIC)[31] was used to select between the main-effects model and the model specified to permit interaction among sexual minority status and IPV. All adjusted models controlled for lifetime IPV and sociodemographic characteristics, including age, race/ethnicity, educational attainment, and relationship status. Additional analyses of care-seeking outcomes were conducted to control for IPV and reproductive coercion, given the known association between reproductive coercion and sexual and reproductive healthcare seeking.[32] Statistical analyses were conducted in SAS v9.3 (SAS Institute, Cary, NC).

Results

Sociodemographic characteristics of the sample are presented in Table 1. Almost three- quarters of the participants were between the ages of 16 and 24 years. A majority (80.8%) of the women were white, over half (54.2%) had greater than a high school education, and 59.5% were in a self-defined serious relationship. WSWM tended to be older (12.5% of those 25 to 29 years old compared to 6.9% of those 16 to 20 years old, $p=0.002$) and identify as multiracial/ethnic (23.0% compared to 9.6% white, $p<0.001$). No other differences in sociodemographic characteristics were found. Approximately one in two women (46.5%) reported a lifetime history of IPV. Almost three-quarters (71.7%) of WSWM reported IPV victimization compared to 43.8% of WSM ($p<0.001$). Women with histories of IPV were also older (51.6% of those 25 to 29 years old compared to 41.3% of those 16 to 20 years old, $p=0.007$), more likely to be multiracial/ethnic (55% of multiracial/ethnic women compared to 47.3% of white women, $p=0.003$), and have fewer years of education ($p=0.002$).

Frequencies of all study outcomes are presented in Table 2, with unadjusted and adjusted odds ratios (ORs) presented in Table 3. Multivariable models controlled for lifetime IPV, age, race/ethnicity, educational attainment, and relationship status. Compared to WSM, WSWM were significantly more likely to report recent unprotected vaginal sex with a male partner (adjusted odds ratio [AOR]: 1.55; 95% confidence interval [CI]: 1.14, 2.11), recent unprotected anal sex with a male partner (AOR: 2.60; 95% CI: 1.89, 3.60), and a lifetime history of sex trade (AOR: 7.09; 95% CI: 4.94, 10.19), adjusting for covariates. So too, WSWM had significantly greater adjusted odds of fearing refusing sex (AOR: 2.21; 95% CI: 1.39, 3.53) and were more likely to have experienced recent male- perpetrated reproductive coercion (AOR: 1.75; 95% CI: 1.12, 2.72). WSWM were significantly more likely than WSM to have a history of pregnancy (AOR: 1.32; 95% CI: 1.05, 1.64), been pregnant two or more times (AOR: 1.37; 95% CI: 1.05, 1.80), and report an unwanted pregnancy

Table 1. Demographic Characteristics of Total Sample and Among Women Who Have Sex with Women and Men and Women Who Have Sex with Men Only ($N = 3,455$)

	Total % (n)	*Among WSWM* % (n)	*Among WSM* % (n)
Total sample	100.0 (3,455)	9.6 (332)	90.4 (3,123)
Age			
16–20	36.9 (1,276)	26.5 (88)	38.0 (1,188)
21–24	35.7 (1,233)	38.0 (126)	35.5 (1,107)
25–29	27.4 (946)	35.5 (118)	26.5 (828)
Wald log-linear chi-square *p* value[a]			**0.002**
Race			
White	80.6 (2,785)	81.1 (266)	80.8 (2,519)
Black/African American	13.1 (454)	8.8 (29)	13.6 (425)
Hispanic/Latina	1.5 (52)	1.8 (6)	1.5 (46)
Multiracial	2.9 (100)	7.0 (23)	2.5 (77)
Other	1.6 (55)	1.2 (4)	1.6 (51)
Wald log-linear chi-square *p* value[a]			**0.0007**
Educational attainment			
Less than 12th grade	18.5 (640)	19.5 (64)	18.5 (576)
Finished high school	27.0 (934)	27.4 (90)	27.2 (844)
Some college	33.5 (1,158)	34.7 (114)	33.6 (1,044)
Finished college or grad school	20.4 (706)	18.5 (61)	20.8 (645)
Wald log-linear chi-square *p* value[a]			0.65
Relationship status			
Single/dating more than one person	32.8 (1,134)	35.1 (114)	32.9 (1,020)
In a serious relationship	59.0 (2,038)	58.8 (191)	59.6 (1,847)
Married	7.4 (254)	6.2 (20)	7.6 (234)
Wald log-linear chi-square *p* value[a]			0.44

Percentages may not equal 100%, owing to small amounts of missing data on sociodemographic characteristics. Bolded values refer to p values < 0.05.

[a]Wald log-linear chi-square p values account for clinic clustering.

WSM, women who have sex with men only; WSWM, women who have sex with women and men.

Table 2. Prevalence of Study Outcomes Among the Total Sample and Among Women Who Have Sex with Women and Men and Women Who Have Sex with Men Only ($N = 3,455$)

	Total % (n)	*Among WSWM* % (n)	*Among WSM* % (n)	p *value*[a]
Lifetime IPV	46.5 (1,607)	71.7 (238)	43.8 (1,369)	**<0.001**
Sexual risk behavior				
Unprotected vaginal sex	68.5 (2,368)	78.6 (261)	67.5 (2,107)	**0.001**
Unprotected anal sex	8.5 (295)	19.6 (65)	7.4 (230)	**<0.001**
Sex trade	2.8 (98)	14.5 (48)	1.6 (50)	**<0.001**
Fears/behaviors in the context of intimate relationships				
Condom nonuse against her will	21.8 (752)	25.9 (86)	21.3 (666)	**0.04**
Recent reproductive coercion	5.1 (175)	9.3 (31)	4.6 (144)	**0.006**
Fear asking partner to use a condom	2.3 (79)	4.8 (16)	2.0 (63)	**0.03**
Fear refusing sex	2.6 (91)	6.0 (20)	2.3 (71)	**<0.001**
Sexual and reproductive health				
Lifetime STI	26.7 (921)	48.8 (148)	26.9 (773)	**<0.001**
Lifetime history of pregnancy	36.5 (1,260)	49.1 (163)	35.1 (1,097)	**<0.001**
Been pregnant 2+ times	17.6 (608)	27.1 (90)	16.6 (518)	**<0.001**
Lifetime unwanted pregnancy	22.5 (778)	35.5 (118)	21.1 (660)	**<0.001**
Care seeking				
STI testing/treatment	11.4 (392)	20.8 (69)	10.3 (323)	**<0.001**
Pregnancy testing/options counseling	8.3 (285)	13.9 (46)	7.7 (239)	**<0.001**
Birth control	54.4 (1,880)	44.9 (149)	55.4 (1,731)	**0.001**

Bolded values refer to p values < 0.05.

[a]Wald log-linear chi-square p values account for clinic clustering.

IPV, intimate partner violence; STI, sexually transmitted infection.

Table 3. Unadjusted and Adjusted Odds of Study Outcomes Among Women Who Have Sex with Women and Men Compared to Women WHo Have Sex with Men Only, Controlling for History of Intimate Partner Violence (N=3,455)

	Unadjusted OR (95% CI)	*Adjusted*[a] *OR (95% CI)*
IPV	**3.24 (2.52, 4.18)**	**3.00 (2.30, 3.09)**
Sexual risk behavior		
Unprotected vaginal sex	**1.77 (1.33, 2.36)**	**1.55 (1.14, 2.11)**
Unprotected anal sex	**3.06 (2.27, 4.14)**	**2.60 (1.89, 3.60)**
Sex trade	**10.39 (8.02, 13.47)**	**7.09 (4.94, 10.19)**
Fears/behaviors in the context of intimate relationships		
Condom nonuse against her will	**1.29 (1.04, 1.61)**	1.15 (0.91, 1.44)
Recent reproductive coercion	**2.17 (1.35, 3.49)**	**1.75 (1.12, 2.72)**
Fear asking partner to use a condom	**2.46 (1.17, 5.19)**	2.09 (0.95, 4.61)
Fear refusing sex	**2.76 (1.85, 4.10)**	**2.21 (1.39, 3.53)**
Reproductive health		
Lifetime history of pregnancy	**1.81 (1.41, 2.33)**	**1.32 (1.05, 1.64)**
Been pregnant 2+ times	**1.89 (1.57, 2.28)**	**1.37 (1.05, 1.80)**
Lifetime unwanted pregnancy	**2.06 (1.60, 2.65)**	**1.45 (1.12, 1.88)**
Care seeking		
STI testing/treatment	**2.27 (1.72, 3.01)**	**2.13 (1.55, 2.92)**
Pregnancy testing/options counseling	**1.94 (1.47, 2.57)**	**1.80 (1.43, 2.27)**
Birth control	**0.66 (0.53, 0.81)**	**0.74 (0.59, 0.93)**

Bolded values refer to odds ratios for which confidence intervals do not include 1.
[a]Adjusted for lifetime IPV, age, race, educational attainment, and relationship status and accounts for within-clinic clustering, using logistic regression models for clustered survey data.
CI, confidence interval; OR, odds ratio.

(AOR: 1.45; 95% CI: 1.12, 1.88). Finally, WSWM were more likely to be seeking care at the family planning clinic for STI testing/treatment (AOR: 2.13; 95% CI: 1.55, 2.92) and for pregnancy testing/options counseling (AOR: 1.80; 95% CI: 1.43, 2.27) but were significantly less likely to be seeking care for birth control (AOR: 0.74; 95% CI: 0.59, 0.93) (Table 3). In additional analyses controlling for reproductive coercion, adjusted odds of STI testing/treatment (AOR: 2.06; 95% CI: 1.47, 2.90), pregnancy testing (AOR: 1.74; 95% CI: 1.37, 2.21), and seeking care for birth control (AOR: 0.76; 95% CI: 0.61, 0.94) all remained statistically significant (results not shown) among WSWM (relative to WSM).

The model specified to allow the interaction of sexual minority status and lifetime IPV was the best-fit model for only the lifetime STI diagnosis outcome (Table 4). Compared to the reference group of nonabused WSM, the WSWM with a history of IPV had the highest adjusted odds of a lifetime STI diagnosis (AOR: 4.42; 95% CI: 2.98, 6.56), followed by WSWM with no IPV history (AOR: 2.65; 95% CI: 1.70, 4.13) and WSM with a history of IPV (AOR: 2.29; 95% CI: 1.88, 2.79).

Discussion

Almost 1 in 10 women (9.6%) in this reproductive health clinic sample reported having both male and female sexual partners in their lifetime. Importantly, these women were three times more likely than WSM to report a history of physical or sexual IPV. After accounting for disparate exposure to violence in their relationships, WSWM reported greater sexual risk behavior, including unprotected vaginal and anal sex, compared to WSM only. A previous study found that self-identified bisexual women were more likely to engage in substance use prior to sex,[14] a correlate of condom nonuse. It is possible that similar unmeasured factors are at play, too, among the current sample of WSWM, though we

Table 4. Unadjusted and Adjusted Odds of Lifetime Sexually Transmitted Infection by Sexual Minority Status and Intimate Partner Violence History

	Unadjusted OR (95% CI)	*Adjusted OR (95% CI)*		
	WSWM vs. WSM	*WSWM with IPV history*[a]	*WSWM with no IPV history*[a]	*WSM with IPV history*[a]
Sexual health: lifetime STI	**2.59 (1.95, 3.44)**	**4.42 (2.98, 6.56)**	**2.65 (1.70, 4.13)**	**2.29 (1.88, 2.79)**

Bolded values refer to ORs for which CIs do not include 1.
[a]Compared to nonabused, WSM; adjusted for age, race, educational attainment, and relationship status and accounts for within-clinic clustering, using logistic regression models for clustered survey data.

were not able to assess the context of women's sexual relationships beyond their exposure to IPV. Consistent with exposure to abuse and coercion in their relationships, WSWM were more fearful of refusing sex with their sexual partners and were more likely to report a male partner interfering with their use of contraception or pressuring them to get pregnant. Notably, WSWM had seven times greater odds of reporting a lifetime history of trading sex for money, drugs, or other goods compared to WSM. One potential explanation is that sexual minority status may compromise economic stability, increasing women's likelihood of sex trade. Studies have also found that sexual minority women are more likely to have experienced adverse childhood experiences (e.g., childhood sexual abuse),[33,34] which are associated with sex trade.[35] Despite these potential hypotheses, causal mechanisms underpinning this finding are unclear. After accounting for exposure to IPV, WSWM were also significantly more likely than WSM to report a lifetime history of STI, pregnancy, and unwanted pregnancy. These findings not only emphasize the importance of assessing for IPV among all clients in the reproductive health clinic setting but also underscore the need for increased attention to the sexual and reproductive health of women who have sex with women and men.

In addition to elevated odds of lifetime STIs and pregnancy, current sexual and reproductive health service use patterns among WSWM provide additional important information about the experiences of the women seeking care in this setting. On the day of the survey, WSWM were more likely to be seeking care for STIs or pregnancy testing but less likely to be at the clinic to discuss contraceptive options, despite their history of unwanted pregnancy. Several potential scenarios could explain these findings. Some literature suggests that sexual minority women may prefer receiving care, including for sexual and reproductive health, in an integrated setting rather than in a reproductive health clinic or obstetrician-gynecologist's office.[36] This preference may be related to women's concerns about physicians' lack of knowledge about sexual minority health, perceptions that are corroborated by data from physicians,[37] and previous experiences of discrimination.[36,38] It is also possible that WSWM were more likely to be seeking pregnancy and STI testing but less likely to be seeking contraception, because of coercion they were experiencing in their current relationships, which hindered their ability to use a contraceptive method.

Emerging research continues to highlight the ways that reproductive coercion, specifically, impacts women's sexual and reproductive health,[8,9,39] though studies have not focused on WSWM. We conducted additional analyses controlling for IPV and reproductive coercion and found that the association between WSWM status and care-seeking behavior remained statistically significant. Given the potential complexities of these findings, future work is needed to understand care seeking for pregnancy and STIs among WSWM from both patient and clinician perspectives. Our findings suggest that education for providers in the reproductive healthcare setting must include training on women's sexuality, with an emphasis on training clinicians to feel comfortable asking about sex with both male and female partners and to thoughtfully assess women's need for contraception and STI testing based on a nuanced understanding of their sexual behavior throughout the life course.

History of IPV was an important predictor of risk and poor health for both WSWM and WSM. Controlling for IPV along with other covariates in adjusted models resulted in an attenuation of the estimated association between sexual minority status and study outcomes, though these associations remained statistically significant for all but two outcomes: ''condom non-use against her will'' and ''fear to ask a partner to use a condom.'' Research on IPV, reproductive coercion, and reproductive health has illustrated the ways in which partner-perpetrated physical and sexual violence and coercion impact women's ability to negotiate condom use.[7,40,41] In the current analysis, IPV was an important confounder of the relationship between sexual minority status and health, which further illustrates how powerful IPV can be for women's sexual and reproductive health, regardless of the sex of women's sexual partners. However, the impact of abuse on women's health did differ with respect to lifetime history of an STI diagnosis. Compared to nonabused WSM, WSWM with IPV history had the highest odds of lifetime STI, followed by WSWM with no IPV history and WSM with IPV history. In other words, the impact of IPV on women's STI risk was amplified for WSWM. As described by minority stress theory,[21,22] bisexual and lesbian women or women who have sex with women (regardless of sexual identity) experience stressors unique to their sexual minority status. In some cases, abusive partners may use threats of ''outing'' to control their partners. It is also possible that unmeasured experiences contribute to this increased risk for poor sexual health. Again, sexual minority women use substances more frequently than do heterosexual women and are more likely to have substance-use disorders,[42] exposures that are associated with IPV and sexual risk behavior.[43,44] Additional quantitative and qualitative research is needed to understand the experiences of abuse among WSWM and the mechanisms that increase their risk for poor sexual and reproductive health.

Importantly, this study specifically assessed only one facet of women's sexual orientation—sexual behavior—so it was not possible to assess whether our findings would be similar or different by sexual identity (e.g., gay, lesbian, bisexual, heterosexual) or sexual attraction. Past research has demonstrated conflicting findings based on behavioral vs. identity assessments. One study conducted among adolescent women ages 14–19 seeking care at school-based health centers found that adolescent women who had at least one female sexual partner in their lifetime were more likely to have experienced recent relationship abuse compared to participants who had male sex partners only. These differences were not found when comparing youth by sexual identity. The opposite was true for reproductive health; significant differences in contraceptive nonuse were found by sexual identity (i.e., comparing lesbian, bisexual, and questioning women vs. heterosexual women) but not by sexual behavior.[26] Self-identified lesbian, bisexual, and questioning women were more likely to report contraceptive nonuse compared to their self-identified heterosexual counterparts. Although adolescent women seeking care at school-based health centers are likely different developmentally from women seeking care in family planning clinics, this study suggests that identity, attraction, and behavior do not perfectly overlap,[25,26] highlighting the potential for these facets of women's sexual orientation to differentially impact women's sexual and reproductive health. Future qualitative work is needed to assess

the context of women's relationships and how sexual identity, behavior, and attraction develop and shift over time to inform best-practices for clinicians providing care in the family planning clinic setting.

Results should be interpreted with several limitations in mind. First, these data are cross-sectional, which precludes statements of causality or temporality. These data are generalizable only to women seeking care in reproductive health clinics. Second, because the parent study for which these data were collected was on incident unintended pregnancy, women who indicated that their sex partners were exclusively women or mostly women were excluded from answering questions of interest for the current analysis. Therefore, these findings pertain only to women who report having had an equal number of male and female partners, mostly male partners, or exclusively male partners during their lifetime. Notably, our measures of sexual behavior asked women to reflect on the sex of their sexual partners over their lifetime. We were not able to assess how recently women had had sex with either men or women or the gender of their current sexual partner and therefore cannot comment on how they presented to the clinician on the day of the survey. There are also likely variations within each sexual behavior category, such that women categorized as having sex with ''mostly men,'' for example, may have had one female partner or numerous female partners. We also cannot comment on whether our estimates of same-sex sexual behavior are comparable to those in other studies, given a lack of population-based estimates that are derived from a similar measure of sexual behavior in the past year. Another measurement limitation includes the fact that our study does not assess a broader range of sexual behaviors, such as digital penetration, warranting future work to more comprehensively assess the variety of sexual behavior women may experience and how IPV may be related. Moreover, we did not collect data on IPV perpetrator characteristics and, thus, cannot draw conclusions about the types of relationships in which these women experienced abuse (i.e., in relationships with men or women). However, WSWM in this study were 75% more likely than WSM to report male partner–perpetrated reproductive coercion. This finding indicates that WSWM are more likely than WSM to experience coercion in their relationships with men, which has the potential to impact their reproductive health.

Conclusions

In this reproductive health clinic–based sample, WSWM comprised almost 10% of the patient population and had needs for comprehensive STI and pregnancy testing, counseling, and care. Providers in reproductive health clinic settings should include questions about the sex of current and previous sexual partners to help tailor conversations about sexual risk and sexual and reproductive health needs, with the understanding that many patients have complex histories, including histories of IPV, that likely influence their reason for visiting the clinic at any given time. Future work to contextualize the experiences of WSWM, particularly their experiences of abuse, sexual risk, and sexual and reproductive health service use, is needed to better tailor clinical interventions to improve sexual and reproductive health outcomes in this population.

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References

1. Black M, Basile K, Breiding M, et al. The National Intimate Partner and Sexual Violence Survey (NISVS): 2010 summary report. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, 2011.
2. Coker AL, Derrick C, Lumpkin JL, Aldrich TE, Oldendick R. Help-seeking for intimate partner violence and forced sex in South Carolina. Am J Prev Med 2000;19:316–320.
3. Davila YR, Brackley MH. Mexican and Mexican American women in battered women's shelter: Barriers to condom negotiation for HIV/AIDS prevention. Issues Ment Health Nurs 1999;20:333–355.
4. Decker MR, Silverman JG, Raj A. Dating violence and sexually transmitted disease/HIV testing and diagnosis among adolescent females. Pediatrics 2005;116:e272–276.
5. Gazmararian JA, Petersen R, Spitz AM, Goodwin MM, Saltzman LE, Marks JS. Violence and reproductive health: Current knowledge and future research directions. Matern Child Health J 2000;4:79–84.
6. Hathaway J, Mucci LA, Silverman JG, et al. Health status and health care use of Massachusetts women reporting partner abuse. Am J Prev Med 2000;19:302–307.
7. Wingood GM, DiClemente R. The effects of an abusive primary partner on the condom use and sexual negotiation practices of African-American women. Am J Public Health 1997;87:1016–1018.
8. Miller E, Decker M, McCauley H, et al. Pregnancy coercion, intimate partner violence and unintended pregnancy. Contraception 2010;81:316–322.
9. Miller E, McCauley HL, Tancredi DJ, Decker MR, Anderson H, Silverman JG. Recent reproductive coercion and unintended pregnancy among female family planning clients. Contraception 2014;89:122–128.
10. Balsam KF, Rothblum ED, Beauchaine TP. Victimization over the life span: A comparison of lesbian, gay, bisexual, and heterosexual siblings. J Consult Clin Psychol 2005;73: 477–487.
11. Conron KJ, Mimiaga MJ, Landers SJ. A population-sased study of sexual orientation identity and gender differences in adult health. Am J Public Health 2010;100:1953–1960.
12. Walters M, Chen J, Breiding M. The National Intimate Partner and Sexual Violence Survey (NISVS): 2010 findings on victimization by sexual orientation. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, 2013.
13. Tornello SL, Riskind RG, Patterson CJ. Sexual orientation and sexual and reproductive health among adolescent young women in the United States. J Adolesc Health 2014;54:160–168.
14. Koh AS, Gomez CA, Shade S, Rowley E. Sexual risk factors among self-identified lesbians, bisexual women, and

heterosexual women accessing primary care settings. Sex Transm Dis 2005;32:563–569.
15. Herrick AL, Matthews AK, Garofalo R. Health risk behaviors in an urban sample of young women who have sex with women. J Lesbian Stud 2010;14:80–92.
16. Marrazzo J, Gorgos L. Emerging sexual health issues among women who have sex with women. Curr Infect Dis Rep 2012;14:204–211.
17. Fethers K, Marks C, Mindel A, Estcourt CS. Sexually transmitted infections and risk behaviours in women who have sex with women. Sex Transm Infect 2000;76:345–349.
18. Ostwalt SB, Wyatt TJ. Sexual health behaviors and sexual orientation in a U.S. national sample of college students. Arch Sex Behav 2013;42:1561–1572.
19. Charlton BM, Corliss HL, Missmer SA, et al. Reproductive health screening disparities and sexual orientation in a cohort study of U.S. adolescent and young adult females. J Adolesc Health 2011;49:505–510.
20. Agénor M, Krieger N, Austin SB, Haneuse S, Gottlieb BR. Sexual orientation disparities in Papanicolaou test use among US women: The role of sexual and reproductive health services. Am J Public Health 2014;104:e68–e73.
21. Meyer IH. Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. Psychol Bull 2003;129:674–697.
22. Meyer IH. Prejudice as stress: Conceptual and measurement problems. Am J Public Health 2003;93:262–265.
23. Krieger N. A glossary for social epidemiology. J Epidemiol Community Health 2001;55:693–700.
24. Keeling J, Birch L. The prevalence rates of domestic abuse in women attending a family planning clinic. J Fam Plann Reprod Health Care. 2004;30:113–114.
25. Saewyc EM, Bauer GR, Skay CL, et al. Measuring sexual orientation in adolescent health surveys: Evaluation of eight school-based surveys. J Adolesc Health 2004;35: 345.e1–15.
26. McCauley HL, Dick RN, Tancredi DJ, et al. Differences by sexual minority status in relationship abuse and sexual and reproductive health among adolescent females. J Adolesc Health 2014;55:652–658.
27. Austin SB, Roberts AL, Corliss HL, Molnar BE. Sexual violence victimization history and sexual risk indicators in a community-based urban cohort of ''mostly heterosexual'' and heterosexual young women. Am J Public Health 2008;98:1015–1020.
28. Straus MA, Hamby SL, Boney-McCoy S, Sugarman DB. The revised conflict tactics scales (CTS2): Development and preliminary psychometric data. Journal of Family Issues 1996;17:283–316.
29. Koss MP, Gidycz CA. Sexual experiences survey: Reliability and validity. J Consult Clin Psychol 1985;53: 422–423.
30. Miller E, Decker MR, McCauley HL, et al. A family planning clinic partner violence intervention to reduce risk associated with reproductive coercion. Contraception 2011; 83:274–280.
31. Pan W. Akaike's information criterion in generalized estimating equations. Biometrics 2001;57:120–125.
32. Kazmerski T, McCauley H, Jones K, et al. Use of reproductive and sexual health services among female family planning clinic clients exposed to partner violence and reproductive coercion. Matern Child Health J 2014 Nov. 22: [Epub ahead of print]; DOI: 10.1007/s10995-014-1653-2.
33. Corliss HL, Cochran SD, Mays VM. Reports of parental maltreatment during childhood in a United States population-based survey of homosexual, bisexual, and heterosexual adults. Child Abuse Negl 2002;26:1165–1178.
34. Austin SB, Jun H-J, Jackson B, et al. Disparities in child abuse victimization in lesbian, bisexual, and heterosexual women in the Nurses' Health Study II. Journal of Womens Health (Larchmt) 2008;17:597–606.
35. Cohen M, Deamant C, Barkan S, et al. Domestic violence and childhood sexual abuse in HIV-infected women and women at risk for HIV. Am J Public Health 2000;90: 560–565.
36. Seaver MR, Freund KM, Wright LM, Tjia J, Frayne SM. Healthcare preferences among lesbians: A focus group analysis. J Womens Health (Larchmt) 2008;17:215–225.
37. Abdessamad HM, Yudin MH, Tarasoff LA, Radford KD, Ross LE. Attitudes and knowledge among obstetrician-gynecologists regarding lesbian patients and their health. J Womens Health (Larchmt) 2013;22:85–93.
38. Bjorkman M, Malterud K. Lesbian women's experiences with health care: A qualitative study. Scand J Prim Health Care 2009;27:238–243.
39. Nikolajski C, Miller E, McCauley HL, et al. Race and reproductive coercion: A qualitative assessment. Womens Health Issues 2015 Mar 5: [Epub ahead of print]; DOI: 10.1016/j.whi.2014.12.004.
40. Decker MR, Miller E, McCauley HL, et al. Recent partner violence and sexual and drug-related STI/HIV risk among adolescent and young adult women attending family planning clinics. Sex Transm Infect 2014;90:145–149.
41. Miller E, Decker MR, Reed E, Raj A, Hathaway JE, Silverman JG. Male partner pregnancy-promoting behaviors and adolescent partner violence: Findings from a qualitative study with adolescent females. Ambul Pediatr 2007;7: 360–366.
42. Marshal MP, Sucato G, Stepp SD, et al. Substance use and mental health disparities among sexual minority girls: Results from the Pittsburgh Girls Study. J Pediatr Adolesc Gynecol 2012;25:15–18.
43. Matthews AK, Cho YI, Hughes T, Wilsnack SC, Johnson T, Martin K. The relationships of sexual identity, hazardous drinking, and drinking expectancies with risky sexual behaviors in a community sample of lesbian and bisexual women. J Am Psychiatr Nurses Assoc 2013;19:259–270.
44. Herrick AL, Marshal M, Smith HA, Sucato G, Stall RD. Sex while intoxicated: A meta-analysis comparing heterosexual and sexual minority youth. J Adolesc Health 2011; 48:306–309.

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