

Sexual Identity, Partner Gender, and Sexual Health Among Adolescent Girls in the United States

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Sexual minority adolescent girls in the United States and Canada have been found to suffer from a number of sexual and reproductive health disparities.^{1,2} However, previous research in this area has consisted of only a handful of studies, and these investigations have generally focused on regional or convenience samples.² Thus, there is a need for studies of large, national samples.

It is also unclear which sexual minority girls are most at risk. Studies have generally lacked the sample size necessary to differentiate between lesbian and bisexual girls.^{3–5} Moreover, the sexual minority umbrella includes girls whose sexual behaviors might vary considerably, particularly because their sexual identity and behavior do not always coincide. For example, in a study representative of Massachusetts high school students, more than half of all girls self-identifying as lesbians reported sexual experiences with both male and female partners.⁶

Much previous research on adolescent sexual health has focused on sexual identity, often collapsing girls who identify as lesbian, bisexual, or “mostly heterosexual” into a single category and comparing them with girls identifying as heterosexual. These comparisons have shown that girls self-identifying as sexual minorities have higher rates of alcohol or drug use during sex,^{3–5} lower rates of birth control or condom use during sex with male partners,^{4,5,7} and similar⁸ or higher^{5,7} rates of pregnancy. In other words, adolescent girls who identify as lesbian, bisexual, or mostly heterosexual, as a group, experience greater sexual health risks and more negative reproductive outcomes than do heterosexual girls.

However, a sexual history that includes both female and male partners may be a stronger sexual health indicator than self-identification as lesbian or bisexual.⁶ Some research in this area has compared girls who report male partners only with girls who report both female and male partners (i.e., those who are

Objectives. We examined associations between adolescent girls’ sexual identity and the gender of their sexual partners, on one hand, and their reports of sexual health behaviors and reproductive health outcomes, on the other.

Methods. We analyzed weighted data from pooled Youth Risk Behavior Surveys (2005 and 2007) representative of 13 US jurisdictions, focusing on sexually experienced girls in 8th through 12th grade (weighted n = 6879.56). We used logistic regression with hierarchical linear modeling to examine the strength of associations between reports about sexual orientation and sexual and reproductive health.

Results. Sexual minority girls consistently reported riskier behaviors than did other girls. Lesbian girls’ reports of risky sexual behaviors (e.g., sex under the influence of drugs or alcohol) and negative reproductive health outcomes (e.g., pregnancy) were similar to those of bisexual girls. Partner gender and sexual identity were similarly strong predictors of all of the sexual behaviors and reproductive health outcomes we examined.

Conclusions. Many sexual minority girls, whether categorized according to sexual identity or partner gender, are vulnerable to sexual and reproductive health risks. Attention to these risks is needed to help sexual minority girls receive necessary services. (*Am J Public Health.* 2014;104:1957–1963. doi:10.2105/AJPH.2014.302037)

bisexually experienced), excluding girls with female partners only. These studies have shown that rates of condom use during sex with male partners among bisexually experienced girls are similar to⁶ or lower than^{9,10} rates among girls who report only male partners. Also, these investigations have shown that rates of pregnancy are higher among bisexually experienced girls.^{6,10} Only 1 published study included a group of girls with female partners only.⁶ In this study, bisexually experienced girls were more likely than girls with male or female partners only to report using alcohol or drugs during their most recent sexual encounter.⁶

In summary, bisexually experienced adolescent girls seem to have greater sexual health risks and more negative reproductive outcomes than do heterosexually experienced girls, and bisexual girls may experience greater risks than girls with female partners only. However, further research is needed.

As a result of these sexual, reproductive, and other health risks, the American Academy of Pediatrics recommended in 2004 that care providers discuss sexual orientation with their

adolescent patients.¹¹ However, data from a 2005 survey suggest that few of the academy’s members routinely discuss sexual orientation with patients during preventive care visits.¹² Furthermore, it is unclear what questions care providers should ask to identify at-risk sexual minority girls. The American Academy of Pediatrics and others have suggested possible patient interview questions that address sexual identity, sexual attraction, romantic behavior, or sexual behavior.^{11,13} It is unclear, however, which of these types of questions would best predict sexual risk and reproductive health outcomes.

In this context, reliable information from large-scale surveys could be useful. We used Youth Risk Behavior Survey (YRBS) data from 13 US jurisdictions to assess several hypotheses. Our initial hypothesis was that girls who self-identified as lesbian or bisexual would report more risky sexual behaviors and more negative reproductive outcomes than would girls who self-identified as heterosexual. Similarly, we hypothesized that sexual and reproductive health differences would also occur as

a function of partner gender. Specifically, we hypothesized that girls who reported engaging in sex with both male and female partners would report more risky sexual behavior and more negative reproductive health outcomes than would girls who reported male partners only. Further, although girls with only female partners are not at risk for adolescent pregnancy, we hypothesized that they would report more risky sexual behaviors than girls with male partners only. Finally, we hypothesized that partner gender would be a stronger predictor of sexual and reproductive health outcomes than sexual identity.

METHODS

We analyzed pooled data from the 2005 and 2007 versions of the YRBS, focusing on jurisdictions in which the surveys included one or more measures of sexual orientation. These data, adjusted with sampling weights, were derived from schools in the 13 jurisdictions (Boston, MA; Chicago, IL; Connecticut; Delaware; Maine; Massachusetts; New York City, NY; San Diego, CA; San Francisco, CA; Vermont; Rhode Island; Wisconsin; and Milwaukee, WI) that measured sexual identity or gender of sexual partners.

Boys (weighted $n = 17\,890.09$), girls in the seventh grade (weighted $n = 51.00$), and girls who reported never having engaged in sexual intercourse (weighted $n = 9193.20$) were excluded from our analyses. Sexual identity was associated with reports of having engaged in sexual intercourse ($\chi^2_3 = 231.52$; $P < .001$). Fully 58% of girls in the sample as a whole, 59% of girls who self-identified as heterosexual, and 65% of girls who reported that they were uncertain of their sexual identity indicated that they had never engaged in sexual intercourse. However, only 31% of girls who identified as bisexual and 31% of girls who identified as lesbian reported that they had not engaged in sexual intercourse. The final (weighted) sample consisted of 6879.56 girls in grades 8 through 12 who reported having engaged in sexual intercourse. These girls reported sexual contact with only male partners, only female partners, or both male and female partners (Table 1).

All measures, including demographic characteristics and sexual orientation, were

assessed via self-report. Measurement and pooling of sexual orientation and race/ethnicity items are described elsewhere.¹⁴ Our analyses included 2 measures of sexual orientation: an item measuring sexual identity and an item measuring partner gender. The San Francisco survey excluded the partner gender item, and the Connecticut, San Diego, Wisconsin, and Milwaukee surveys excluded the sexual identity item. In our weighted sample, 1534.70 girls were missing sexual identity data, and 852.58 girls were missing data on partner gender. We excluded girls with missing data from our analyses on a pairwise basis.

Measures

Participants were asked about their sexual identity as follows: “Which of the following best describes you?” (heterosexual/gay or lesbian/bisexual/not sure). In Delaware in 2005, a none of the above response option was also included. In most jurisdictions, the following question was used to determine partner gender: “During your life, with whom have you had sexual contact?” (have never had sexual contact, female partners, male partners, or female and male partners). The wording of this prompt varied slightly in several jurisdictions, as described elsewhere,¹⁴ but each focused on the lifetime period and the key term sexual contact, and each included the same response options.

We focused on 5 single-item measures of sexual health behaviors and reproductive health outcomes, and we transformed these measures into dichotomous variables. We coded riskier behaviors and less healthy outcomes as 1.

In addition, participants were asked “Did you drink alcohol or use drugs before you had sexual intercourse the last time?” and “The last time you had sexual intercourse, did you or your partner use a condom?” Response options to both questions were yes, no, and “I have never had sexual intercourse.” We recoded alcohol or drug use during sexual experiences as no (0) or yes (1), and we recoded condom use as yes (0) or no (1).

Participants were asked about pregnancy prevention as follows: “The last time you had sexual intercourse, what one method did you or your partner use to prevent pregnancy? (select only one response).” Response options

for most jurisdictions were birth control pills, condoms, Depo-Provera (injectable birth control), withdrawal, some other method, “I have never had sexual intercourse,” “No method was used to prevent pregnancy,” and “not sure.” However, in Massachusetts and Boston in 2007, response options were birth control pills, path, ring, or shot (Depo-Provera); emergency contraception; condoms; withdrawal; some other method; “I have never had sexual intercourse”; “No method was used to prevent pregnancy”; and “not sure.” We recoded those who used any method of pregnancy prevention as 0 and those who did not use pregnancy prevention as 1. Responses indicating that some other method was used and “not sure” responses were excluded. However, when we recoded withdrawal, some other method, and “not sure” responses as 1, the results remained consistent.

Participants were asked “How many times have you been pregnant or gotten someone pregnant?” Response options were 0 times, 1 time, 2 or more times, and “not sure.” We recoded reports of lifetime pregnancies as none (0) or 1 or more (1). Only the Boston, Delaware, Massachusetts, New York City, San Diego, and San Francisco surveys included this item.

Finally, participants were asked “During your life, with how many people have you had sexual intercourse?” Response options were “I have never had sexual intercourse,” 1 person, 2 people, 3 people, 4 people, 5 people, and 6 or more people. We categorized girls according to whether they reported a number of lifetime sexual partners in the top quartile, including both sexually experienced and inexperienced girls. Because girls in the 75th percentile reported 2 lifetime sexual partners, we coded this variable as 1 partner (0) or 2 or more partners (1).

Statistical Analysis

We used R version 2.15.1 in conducting our analyses.¹⁵ Calculation of design effects, methods for accounting for the clustering of the data, the approach to pooling and analyzing the data, and characteristics of the sample by jurisdiction are described in detail elsewhere.¹⁴ We briefly describe these analyses here.

Because we used hierarchical linear modeling to account for differences at the jurisdiction

TABLE 1—Weighted Demographic Characteristics of Sexually Active Adolescent Girls, by Sexual Identity and Gender of Sexual Partners: Pooled Youth Risk Behavior Survey Data Set, United States, 2005 and 2007

	Sexual Identity ^a				Partner Gender ^b			P
	Heterosexual	Lesbian	Bisexual	P	Male Partners Only	Female Partners Only	Both Male and Female Partners	
Age, y								
Weighted no.	4703.24	72.96	442.07		5323.57	163.95	517.13	
Unweighted no.	9888	165	993		11 122	334	1099	
Mean (95% CI)	16.24 (16.22, 16.26)	16.27 (16.07, 16.47)	16.05 (15.98, 16.12)	<.001	16.27 (16.25, 16.29)	16.04 (15.90, 16.18)	16.15 (16.09, 16.22)	<.001
Race/ethnicity								
Weighted no.	4621.11	72.18	434.93		5239.03	160.98	509.85	
Unweighted no.	9756	162	981		10 991	326	1085	
%				.01				<.001
White	34	19	36		39	29	41	
Black	32	43	26		32	41	25	
Hispanic	25	32	29		24	21	24	
Other/mixed	7	6	10		5	7	9	
Partner gender^b								
Weighted no.	4366.41	67.44	404.66		5330.81	164.67	518.10	
Unweighted no.	9317	154	928		11 131	335	1103	
%				<.001 ^c				...
Male partners only	95	25	37		100	...	...
Female partners only	2	34	4		...	100	...	
Both male and female partners	3	40	58		...	...	100	
Sexual identity^a								
Weighted no.	4710.16	73.72	442.23		4394.76	130.60	407.49	
Unweighted no.	9897	167	994		9456	274	892	
%				...				<.001 ^c
Heterosexual	100	...	...		95	68	28	
Lesbian	...	100	...		0	18	7	
Bisexual	...	...	100		3	13	58	

Note. CI = confidence interval. The 13 Youth Risk Behavior Survey jurisdictions were Boston, MA; Chicago, IL; Connecticut; Delaware; Maine; Massachusetts; New York, NY; San Diego, CA; San Francisco, CA; Vermont; Rhode Island; Wisconsin; and Milwaukee, WI.

^aThe Connecticut, San Diego, Wisconsin, and Milwaukee surveys excluded this item.

^bThe San Francisco survey excluded this item.

^cGirls who self-identified as “not sure” were excluded from analyses of sexual identity but included in analyses of partner gender.

level, we adjusted the relative weights to alter the effective sample size. This adjustment compensated for nonresponse and for oversampling of Hispanic and Black students. We estimated design effects by computing standard errors in 2 ways: assuming a simple random sample and accounting for the complex design via Taylor series linearization estimation. The ratio of these standard errors is the design factor. Averaging the design factor across all variables yielded an average root design effect. The YRBS sampling weights provided by the Centers for Disease Control and Prevention

were then divided by the squared design factor, which reduced the sampling weight as a function of the overall design effect.

We conducted a series of logistic regression analyses to predict sexual health behaviors and reproductive health outcomes from sexual orientation after control for jurisdiction, age, and race/ethnicity. We conducted several versions of each model to compare each pair of sexual identity or partner gender groups. Analyses of condom use, pregnancy prevention, and lifetime pregnancies excluded girls who reported female partners only. Analyses of

reports of 2 or more lifetime sexual partners excluded girls who reported both male and female partners. In all of the logistic regression analyses, we used hierarchical linear modeling to account for clustering of the data, with jurisdiction entered at level 2 in each model.

RESULTS

We hypothesized that sexual minority girls would report more risky sexual behaviors than would girls who identified as heterosexual or reported male partners only, regardless of

TABLE 2—Weighted Risk Factor Percentages Among Sexually Active Adolescent Girls, by Sexual Identity and Gender of Sexual Partners: Pooled Youth Risk Behavior Survey Data Set, United States, 2005 and 2007

Variable	Sexual Identity ^a			HLM Results and Significance ^c	Partner Gender ^b			HLM Results and Significance ^c
	Heterosexual	Lesbian	Bisexual		Male Partners Only	Female Partners Only	Bisexually Active	
Alcohol/drugs used during most recent sex								
Weighted no.	4679.03	72.23	440.42	...	5330.81	164.08	516.09	...
Unweighted no.	9848	164	988	...	11 077	334	1098	...
%	13	27	25	B > H***; L > H***; L = B, NS	14	23	28	B > M***; F > M***; F = B, NS
≥ 2 lifetime sex partners								
Weighted no.	4653.07	73.30	434.31	...	5278.04	162.42	...	...
Unweighted no.	9790	164	975	...	11 031	328	...	...
%	58	80	76	L > H***; B > H**; L = B, NS	57	59	...	F > M*
No condom used during most recent sex ^d								
Weighted no.	4184.80	44.20	382.19	...	5216.50	...	503.95	...
Unweighted no.	8993	81	870	...	10 923	...	1070	...
%	33	50	44	B > H***; L > H***; L > B*	65	...	52	M > B***
No pregnancy prevention used during most recent sex ^d								
Weighted no.	3694.99	39.86	333.19	...	4708.53	...	449.74	...
Unweighted no.	8049	72	773	...	9951	...	958	...
%	14	33	21	B > H***; L > H***; L > B***	14	...	23	B > M***
Ever been pregnant ^{d,e}								
Weighted no.	3022.64	33.97	274.46	...	3271.52	...	309.76	...
Unweighted no.	5102	45	468	...	5510	...	551	...
%	14	27	19	B > H**; H = L, NS; L = B, NS	13	...	20	B > M***

Note. B = bisexual (sexual identity column) or bisexually active (partner gender column); F = female partners only; H = heterosexual; HLM = hierarchical linear modeling; L = lesbian; M = male partners only. The 13 Youth Risk Behavior Survey jurisdictions were Boston, MA; Chicago, IL; Connecticut; Delaware; Maine; Massachusetts; New York, NY; San Diego, CA; San Francisco, CA; Vermont; Rhode Island; Wisconsin; and Milwaukee, WI.

^aThe Connecticut, San Diego, Wisconsin, and Milwaukee surveys excluded this item.

^bThe San Francisco survey excluded this item.

^cDifferences in jurisdiction, age, and race/ethnicity (White vs non-White) were controlled. Significance indicators were Bonferroni corrected for 6 tests per outcome variable.

^dCondom use, pregnancy prevention, and pregnancy analyses excluded girls who reported female partners only.

^eOnly the Boston, Delaware, Massachusetts, New York City, San Diego, and San Francisco surveys included this item.

* $P < .01$; ** $P < .002$; *** $P < .001$.

sexual orientation dimension. We also hypothesized that partner gender would be a stronger predictor of sexual and reproductive health outcomes than would sexual identity. Results were consistent with the first but not the second hypothesis.

Demographic Characteristics

An analysis of variance revealed that age varied significantly as a function of sexual identity ($P < .005$) and partner gender ($P < .005$; Table 1). Lesbian and heterosexual participants were, on average, older than bisexual participants. Girls with only male partners were, on average, older than girls with

only female partners. However, mean ages differed by less than 3 months.

Reports of sexual identity ($P = .01$) and partner gender ($P < .005$) also varied as a function of race/ethnicity (Table 1). Girls who self-identified as Black were more likely than their peers who self-identified as White to identify themselves as lesbian or to report only female partners.

As expected, groups of heterosexual, bisexual, and lesbian girls exhibited different partner gender patterns ($P < .005$), and girls with only male, only female, or both male and female sexual partners exhibited different sexual identity patterns ($P < .005$; Table 1). Most heterosexual girls (95%) reported a sexual

history of only male partners, whereas the largest groups of lesbian (40%) and bisexual (58%) girls reported a sexual history of both male and female partners. Similarly, most girls who reported only male partners identified as heterosexual (95%), and most girls who reported both male and female sexual partners identified as bisexual (58%). Notably, however, most girls who reported only female partners (68%) identified as heterosexual.

Sexual Identity, Partner Gender, and Sexual Health Behaviors

Overall, both lesbian and bisexual girls reported riskier sexual health behaviors and

TABLE 3—Adjusted Odds Ratios for Likelihood of Risky Sexual Behaviors as a Function of Sexual Identity and Partner Gender: Pooled Youth Risk Behavior Survey Data Set, United States, 2005 and 2007

Reference/Comparison	Alcohol/Drugs During Most Recent Sex, AOR (95% CI)	≥ 2 Lifetime Partners, AOR (95% CI)	No Condom During Most Recent Sex, ^a AOR (95% CI)	No Pregnancy Prevention During Most Recent Sex, ^a AOR (95% CI)	Ever Been Pregnant, ^{a,b} AOR (95% CI)
Sexual identity^c					
Heterosexual/bisexual	2.10 (1.79, 2.45)	2.70 (2.31, 3.15)	1.57 (1.36, 1.81)	1.81 (1.51, 2.19)	1.49 (1.16, 1.92)
Heterosexual/lesbian	3.16 (2.24, 4.45)	1.81 (1.28, 2.56)	2.58 (1.64, 4.07)	4.72 (2.81, 7.95)	1.04 (0.46, 2.37)
Lesbian/bisexual	0.67 (0.46, 0.98)	1.46 (1.00, 2.13)	0.57 (0.36, 0.93)	0.38 (0.22, 0.66)	1.25 (0.54, 2.92)
Partner gender^d					
Male partners only/both male and female partners	2.62 (2.27, 3.02)	...	1.90 (1.67, 2.16)	2.18 (1.86, 2.56)	1.75 (1.39, 2.19)
Male partners only/female partners only	1.87 (1.43, 2.44)	1.42 (1.12, 1.79)	...	...	...
Female partners only/both male and female partners	1.39 (1.03, 1.86)	...	...	...	...

Note. AOR = adjusted odds ratio; CI = confidence interval. Odds ratio calculations controlled for age, race/ethnicity (White vs non-White), and jurisdiction. The 13 Youth Risk Behavior Survey jurisdictions were Boston, MA; Chicago, IL; Connecticut; Delaware; Maine; Massachusetts; New York, NY; San Diego, CA; San Francisco, CA; Vermont; Rhode Island; Wisconsin; and Milwaukee, WI.

^aCondom use, pregnancy prevention, and pregnancy analyses excluded girls who reported female partners only.

^bOnly the Boston, Delaware, Massachusetts, New York City, San Diego, and San Francisco surveys included this item.

^cThe Connecticut, San Diego, Wisconsin, and Milwaukee surveys excluded this item.

^dThe San Francisco survey excluded this item.

more negative reproductive outcomes than did their heterosexual peers. Lesbian girls' reports of risky sexual and reproductive health behaviors were similar to those of bisexual girls, and in some case they reported potentially riskier behaviors than bisexual girls (Tables 2 and 3).

Bisexual girls and girls with both male and female partners were more likely than heterosexual girls and girls with only male partners to report that they used alcohol or drugs during their most recent sexual encounter but did not use a condom or any other pregnancy prevention method. In addition, bisexual girls were more likely than their heterosexual peers to report that they had ever been pregnant and that they had had 2 or more sexual partners (Tables 2 and 3).

Lesbian girls were also more likely than heterosexual girls to report that they used alcohol or drugs during their most recent sexual encounter but did not use a condom or other pregnancy prevention method. In addition, lesbian girls were more likely than their heterosexual peers to report that they had had 2 or more sexual partners. Lesbian girls and heterosexual girls were equally likely to report that they had ever been pregnant (Tables 2 and 3).

Pregnancy rates, prevalence of alcohol or drug use during the most recent sexual

encounter, and likelihood of having had 2 or more sexual partners were similar between lesbian girls and bisexual girls. However, bisexual girls were more likely than their lesbian peers to have used condoms or other pregnancy prevention methods during their most recent sexual encounter (Tables 2 and 3).

Sexual Identity, Partner Gender, and Adjusted Odds Ratios

Many of the adjusted odds ratios were moderate to strong in size,¹⁶ even after control for group differences in age, race/ethnicity (White vs non-White), and jurisdiction (Table 3). Lesbian girls were more than 3 times as likely as their heterosexual peers to report using alcohol or drugs and failing to use pregnancy prevention during their most recent sexual encounter. Bisexual girls were almost 3 times more likely than heterosexual girls to report 2 or more lifetime sexual partners. Girls with both male and female partners were almost 3 times as likely as girls with male partners only to report using alcohol or drugs during their most recent sexual encounter.

In all comparisons, the direction and significance of effects were similar regardless of sexual orientation dimension (sexual identity or partner gender). Furthermore, for each

outcome, the 95% confidence intervals around the adjusted odds ratios for sexual identity consistently overlapped with the 95% confidence intervals around the adjusted odds ratios for partner gender (Table 3). We conclude that partner gender and sexual identity were similarly strong predictors of all of the sexual and reproductive health outcomes we studied. In summary, regardless of sexual orientation dimension, sexual minority girls reported riskier sexual behaviors than did their heterosexual peers.

DISCUSSION

In pooled YRBS data from 13 US jurisdictions, we found the strongest evidence to date that sexual minority girls experience substantial sexual and reproductive health disparities. As hypothesized, sexual minority girls reported riskier sexual behaviors, such as sex under the influence of drugs or alcohol, than did heterosexual girls or girls who reported male sexual partners only. Sexual minority girls also reported riskier reproductive health behaviors and more negative reproductive outcomes, including adolescent pregnancy. These findings were remarkably consistent regardless of whether sexual orientation was defined on the basis of sexual identity or partner gender.

Our findings are generally consistent with results based on smaller samples.³⁻¹⁰ Notably, the pooled YRBS sample allowed us to evaluate outcomes among girls with only female partners. We found, for the first time, that girls with female partners only were more likely than girls with male partners only to report that they were under the influence of alcohol or drugs during their most recent sexual encounter. This finding suggests that even girls who have not engaged in sexual intercourse with male partners may experience heightened sexual risk. The mere fact that sexual minority participants reported more sexual behaviors under the influence does not necessarily mean that they were engaging in risky sexual behaviors.^{17,18} This result is concerning, however, because engaging in sexual behaviors under the influence of drugs or alcohol may increase one's risk of contracting sexually transmitted infections.¹⁹

It is likely that our estimates of health disparities are conservative. Of the respondents who self-identified as heterosexual, 65% reported being sexually inexperienced, whereas only 31% of lesbian and bisexual girls reported being sexually inexperienced. When our findings are considered against the background of the entire pooled sample of girls, differences between groups are even more dramatic. For example, only 6% of all heterosexual girls but fully 18% of bisexual girls and 20% of lesbian girls reported that they had used drugs or alcohol prior to a recent sexual encounter.

Disparities such as those studied here affect a large number of girls. Estimates based on national probability samples suggest that many girls in the United States report bisexual identities, bisexual patterns of attraction, and bisexual behaviors.²⁰ Researchers have suggested several potential explanations, including cultural pressures promoting performative bisexuality (also termed "bisexual chic"²¹) and increasing cultural acceptance of bisexual young women.²² Regardless, it is noteworthy that those who report bisexual identities, patterns of attraction, or behaviors constitute the majority of all sexual minority girls.¹⁸

Contrary to our hypotheses, partner gender and sexual identity were equally strong predictors of sexual health outcomes. This finding is consistent with previous research suggesting

that sexual minority identity is a risk factor for negative health outcomes.^{3-5,8} However, it is at odds with results from a previous study showing that behaviorally bisexual girls were at higher risk than girls with only female partners.⁶ Future research should include assessments of both sexual identity and sexual behaviors.

There are several reasons to expect partner gender to be associated with sexual risk taking and reproductive health outcomes. Sex with male partners carries risks, such as pregnancy, that sex with female partners does not. Girls with both male and female partners, relative to girls with male partners only, may be more likely to engage in intercourse with a male partner without feeling sexual desire for him. For example, girls with both male and female partners may be more likely than other girls to report being forced by a man to have sexual intercourse.⁹ Girls who have sex with female partners have also been described as more likely than other girls to live away from their parents before the age of 18 years,²³ placing them at greater risk for using sex work for survival and experiencing forced sex.²⁴

Furthermore, some have suggested that girls who have sex with female partners may also engage in sex with male partners to pass as heterosexual or to attempt to rid themselves of same-sex desires.⁴ This might contribute to higher rates of pregnancy among girls with both male and female partners than among girls with male partners only. In summary, it is not surprising that partner gender would be associated with sexual risk taking and reproductive health outcomes.

However, there are also reasons to expect that sexual identity might be strongly associated with these outcomes. First, owing at least in part to higher levels of victimization, adolescents who self-identify as lesbian, gay, or bisexual are more likely to misuse drugs and alcohol than are their heterosexual peers.^{2,25} This victimization may also encourage sexual risk taking, either directly or as a result of substance misuse. Second, adolescents who have already rejected mainstream identities may be more likely to reject other mainstream conventions, engaging in sex with more partners than do their peers.⁴

Our findings have clear implications for policy and practice. Interventions targeting

sexual minority adolescent girls' sexual and reproductive health are needed. However, we are unaware of the existence of any such interventions. Our findings also suggest that awareness of adolescent girls' sexual identity and the gender (or genders) of their sexual partners may help providers care for their patients. For example, training for care providers regarding how and at what ages to interview girls about sexual orientation could be valuable.

Limitations and Strengths

Our study has limitations. First, the sample was not representative of all adolescent girls living in the United States; instead, it was representative of girls enrolled in grades 8 through 12 in schools located in specific jurisdictions. As a result of pregnancy-related school dropout, our estimates of pregnancy rates may be lower than actual rates, and pregnancy data were available in only 6 of the 13 jurisdictions, yielding a smaller sample for these analyses. Second, the cross-sectional, correlational design makes inferences about causality difficult. Risky sexual behavior could influence sexual identity or partner gender, or a third variable might influence both identity and behavior.

Third, because we focused on sexually experienced girls, our study lacked the statistical power to evaluate interactions between sexual orientation, race, and ethnicity. Fourth, the YRBS did not include detailed information about sexual activity between girls and their partners. We excluded girls who reported sexual contact with female partners but not "sexual intercourse" from our study because it was impossible to know the extent of this sexual contact. Therefore, girls who labeled sex between female partners as sexual intercourse were probably overrepresented within this sample.

Fifth, participants were not asked to report the gender of their most recent sexual partner. If participants who had a history of both male and female sexual partners interpreted the item about contraception during their most recent sexual intercourse as including sexual activity with a female partner, then reports of no contraception use may not consistently indicate risk. Sixth, the YRBS did not include information about the context of sexual activity during

substance use. It remains unclear whether substance use during one's most recent sexual encounter indicates that the sex was risky.^{17,18} Further research is needed to clarify the role of context in sexual minority girls' sexual behaviors. For example, it will be important to understand how often sexual minority girls' intercourse with male partners takes place in the context of forced sex or survival sex. Thus, our findings, although important, also suggest questions for future research.

Our study also has several important strengths. The pooled YRBS data set has many virtues, including a sufficiently large sample to assess outcomes for bisexual and lesbian girls separately, representative sampling within jurisdictions from which participants were drawn, and a racially and ethnically diverse sample. Because YRBS data were collected in schools, response rates were high. Furthermore, we examined both sexual identity and partner gender as predictors of risky sexual behaviors and reproductive health outcomes. These strengths bolster our confidence in the findings.

Conclusions

A large and important body of research has demonstrated that sexual minority adolescent boys experience higher levels of sexual risk than do their heterosexual peers.² As a result, many sexual minority boys receive prevention and intervention services. Our findings emphasize that many sexual minority girls are also vulnerable to sexual and reproductive health risks.¹ Attention to these risks can help sexual minority girls improve their sexual and reproductive health. ■

About the Authors

At the time of the study, Rachel G. Riskind, Samantha L. Tornello, and Charlotte J. Patterson were with the Department of Psychology, University of Virginia, Charlottesville. Brendan C. Younger was a private consultant in Charlottesville, VA.

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Contributors

R. G. Riskind, S. L. Tornello, and C. J. Patterson conceptualized the study. R. G. Riskind and B. C. Younger conducted the statistical analyses. R. G. Riskind wrote the

first draft of the article. All of the authors contributed to the analysis plan and edited the article.

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Human Participant Protection

No protocol approval was necessary because Youth Risk Behavior Survey data are de-identified and are publicly available.

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