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Sexual Behaviors and Partner Characteristics by Sexual Identity Among Adolescent Girls

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A B S T R A C T

Purpose: Data suggest that lesbian and bisexual adolescents engage in risky sexual behaviors at higher rates than heterosexual girls. Whether these findings also apply to girls of other sexual identities is less well understood. Potential differences in risky sexual behaviors reported by lesbian versus bisexual adolescents are also underreported in the literature.
Methods: Data were collected online in 2010–2011 among 2,823 girls, aged 13–18 years, in the United States. Multinomial logistic regression was used to quantify comparisons of sexual behaviors between (1) lesbian; (2) bisexual; and (3) questioning, unsure, or other (QUO) identity; and (0) heterosexual girls. Logistic regression compared lesbian and bisexual adolescents.
Results: Lesbian and bisexual adolescents reported significantly more lifetime and past-year sexual partners than heterosexual girls. Bisexual girls were also more likely to report penile-anal and penile-vaginal sex, whereas lesbians were more likely to report earlier sexual debut for almost all types of sex, as compared to heterosexual girls. Lesbians also were more likely to report infrequent condom use and less likely to have conversations with partners about the use of barriers (e.g., dental dams) before first sex. Relative to lesbians, bisexual girls reported older age at first sex for almost all sexual behaviors and higher lifetime prevalence of recent male partners, penile-vaginal, and penile-anal sex. Few differences were noted between QUO and heterosexual girls.
Conclusions: Sexual minority adolescents are not identical in terms of sexual risk. Providers need to be sensitive to these differences and their implications for health and counseling of patients.

IMPLICATIONS AND CONTRIBUTIONS

Adolescents vary in their sexual risk. Lesbian and bisexual girls report risky sexual behaviors but the patterns differ. Girls who were questioning their identity report behaviors similar to heterosexual girls. Health promotion programs that acknowledge and respect the unique lived experiences of sexual minority adolescent girls are critically needed.

Regional studies in the United States consistently find that sexual minority adolescents (e.g., lesbian, gay, bisexual [LGB], and others who do not identify as completely heterosexual) engage in sexual risk behaviors at higher rates than heterosexual girls: LGB adolescents are more likely to have unprotected penile-vaginal sex [1–4], multiple sexual partners [1,3–6], and sexual partners with high risk for human immunodeficiency virus or other sexually transmitted infections (STIs), including intravenous drug users and gay men [7,8]. For example, in an analysis of data from the Massachusetts Youth Risk Behavior Survey, Goodenow et al. [3] found that half of the lesbian and gay girls in the survey had both male and female partners, whereas one in five had only male partners. Using Youth Risk Behavior Survey

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data from all states and localities with available data on sexual orientation, Rosario et al. [6] found that lesbian and bisexual girls were four times more likely to report multiple sexual partners in the past 3 months, 60% more likely not to have used condoms during last sexual intercourse, and nearly twice as likely to use drugs or alcohol during last intercourse than heterosexual girls. Moreover, these adolescents initiated sex at younger ages than their heterosexual peers [6,8]. Reflective of these elevated risk behaviors, LGB girls have higher rates of pregnancy [3,4,9–11] and STIs [12,13] compared to heterosexual girls.

Although these statistics are concerning, whether they apply equally to all sexual minority girls when compared with heterosexual girls, and whether differences exist between lesbian and bisexual adolescents is unclear. In addition, detailed information about risky non–penile-vaginal sex behaviors, such as anal sex, is lacking. Given the normative sexual development and exploration that occur during adolescence [14], this study aims to contribute to a more nuanced and detailed understanding of the sexual experiences of sexual minority adolescents. Findings have important implications for scientific understanding, preventive interventions, and clinical practice supporting healthy adolescent development.

Methods

Data are from the Teen Health and Technology Study, an online, national survey of LGB and transgender (LGBT) and non-LGBT adolescents, aged 13–18 years, in the United States. The protocol was reviewed and approved by the Chesapeake Institutional Review Board (IRB), the University of New Hampshire IRB, and the Gay, Lesbian & Straight Education Network (GLSEN) Research Ethics Review Committee. Minors provided informed assent, and 18-year-olds provided consent. The IRBs granted a waiver of parental permission to protect participants who could be potentially harmed if their sexual identity was disclosed to their caregivers.

Participants and procedures

Participants were recruited: (1) randomly from the Harris Poll Online (HPOL) opt-in panel or (2) through national outreach by GLSEN, a nonprofit research and advocacy organization focused on ensuring safe schools for all students, including LGB youth. GLSEN efforts included emails to thousands of high school students who had either participated in GLSEN programs previously or had signed up to receive information about GLSEN programs and resources.

The survey questionnaire was self-administered online between August 2010 and January 2011. The median survey length was 23 minutes for HPOL respondents and 34 minutes for GLSEN respondents. The survey was longer for GLSEN participants because of additional LGB-specific questions.

The response rate for the HPOL sample, 7.2%, is comparable with recent surveys [15,16]. The response rate for the GLSEN sample could not be calculated given the denominator (i.e., the number of youth who saw the email invitation) is unknown.

Measures

Sexual identity was assessed by asking, "How would you describe your sexuality or sexual orientation? Please select all that apply." Response options were: gay, lesbian, bisexual, straight/heterosexual, questioning, queer, other, or not sure. Seventeen percent endorsed two or more identities. Consistent with previous studies [17,18], responses were categorized based on a hierarchy of preference on the homoaffiliative continuum in this order: lesbian/gay, bisexual, queer, questioning, unsure, other, and straight/heterosexual. For example, if an individual identified as "gay" and "queer," she was categorized as "lesbian/gay; " if "bisexual" and "questioning," she was categorized as "bisexual." Five categories resulted: straight/heterosexual exclusively (i.e., no additional orientation was marked); bisexual; lesbian/gay; queer; and, questioning, unsure, and other (QUO). The 87 girls who endorsed both queer and lesbian categories were included in the lesbian group; 31 who identified as both queer and bisexual were included in the bisexual group. Because the remaining 13 youth endorsed a specific identity (i.e., queer), rather than more vague identities such as unsure or questioning, we believed combining them with the QUO group would be inappropriate. Please note that in previous publications [19], queer youth were instead grouped with lesbian/gay youth.

Four lifetime sexual behaviors were queried: oral sex, sex that involved a finger or sex toy going into the vagina or anus, penile-vaginal sex, and penile-anal sex. All referred to consensual sex by means of "when you wanted to."

Because of space limitations, details about additional measures are available on request. The survey can be downloaded online [20].

Weighting and data analysis

Data were weighted to approximate the national population of adolescents in the U.S. and to validly combine the two samples as follows: The HPOL general population sample was weighted to the known demographics of 13- to 18-year-old youth [21]. Next, a demographic profile was created for GLSEN youth based on the 5% of HPOL youth who self-identified as LGB. Even with the demographic weight applied, the GLSEN youth differed from the HPOL youth on nine characteristics (e.g., being out to one's parents). As such, a second weight was applied to adjust for these behavioral and attitudinal differences between the two samples. Additional detail has been published elsewhere [22].

Given the focus of the present study, the sample was restricted to cisgender girls (i.e., those who identified both their sex assigned at birth and their gender as female). Of the 3,385 respondents who indicated their sex was "female," 110 were dropped because they did not meet valid data requirements (e.g., responded "do not know" to more than 20% of the main questions). An additional 120 were excluded because they had extreme weights. Another 332 were trimmed because they did not choose "female" as their gender. This resulted in a final analytical sample size of 2,823 (2,102 recruited through HPOL and 721 through GLSEN).

Missing data were imputed using Stata's "impute" command [23] for all variables except the principal outcomes (i.e., ever having had oral sex, vaginal or anal sex with a sex toy or finger, penile-vaginal sex, or penile-anal sex). Imputed values were estimated in a best-set regression. In most cases, less than 8% of the values of a variable were imputed. Exceptions were age at first penile-vaginal sex (8.5%) and age at first penile-anal sex (12.2%).

Differences across sexual identities were examined using multinomial logistic regression, comparing multiple categories to a reference group: (1) lesbian, (2) bisexual, (3) queer, and (4) QUO to (0) heterosexual youth. Logistic regression was used to

Table 1
Weighted demographic characteristics of the 2,823 adolescents in the 2010-2011 national Teen Health and Technology Study (weighted data, except for sample size)

Demographic characteristics	Lesbian (9%, n = 364)	Bisexual (27%, n = 456)	Queer (1%, n = 13)	QUO (5%, n = 148)	Heterosexual (59%, n = 1,842)
	M (SE)	M (SE)	M (SE)	M (SE)	M (SE)
Age	16.1 (.2)*	15.8 (.1)	16.0 (.5)	15.3 (.2)*	15.7 (.05)
	% (n)	% (n)	% (n)	% (n)	% (n)
Hispanic ethnicity	14.5% (48)	18.4% (57)	25.3% (2)	17.2% (19)	18.8% (213)
Race					
White	64.6% (265)	65.8% (321)	66.7% (10)	57.3% (95)	66.2% (1,313)
Black/African American	13.8% (25)	9.9% (25)	8.0% (1)	20.7% (21)	14.6% (230)
Asian/Pacific Islander	3.0% (9)	3.9% (29)	.0% (0)	5.8% (11)*	3.0% (69)
Native American/Alaskan Native	2.8% (5)	3.8% (11)	.0% (0)	1.4% (1)	3.3% (41)
Mixed race	11.1% (40)	11.7% (52)	11.7% (1)	9.4% (14)	7.5% (122)
Other	4.6% (20)	4.9% (18)	13.6% (1)	5.3% (6)	5.4% (67)
Urbanicity					
Urban	27.0% (104)	28.4% (147)	45.6% (6)	29.3% (46)	26.3% (507)
Suburban	34.7% (160)	36.4% (194)	40.7% (6)	33.6% (58)	29.7% (706)
Rural	38.3% (100)	35.2% (115)	13.6% (1)	37.1% (44)	44.1% (629)
Born-again Christian	15.5% (27)*	8.1% (24)***	8.0% (1)	23.0% (32)	29.2% (524)
School type					
Public	91.3% (320)	88.9% (389)	92.7% (12)	87.1% (125)	89.4% (1,592)
Private/parochial	7.4% (34)	6.2% (42)	7.3% (1)	7.0% (13)	7.1% (165)
Home school	1.3% (5)	4.9% (17)	.0% (0)***	5.9% (9)	3.5% (67)
Parent's highest education is high school or less	23.7% (61)	29.3% (101)	11.7% (1)	27.2% (24)	30.2% (380)
Income					
Lower than average	21.9% (70)	35.2% (134)	22.7% (3)	28.1% (34)	27.5% (438)
Average	62.7% (228)	58.0% (259)	54.3% (6)	61.8% (96)	60.8% (1,134)
Higher than average	15.4% (66)	6.8% (63)**	23.0% (4)	10.2% (18)	11.7% (270)

Percentages may not sum to 100% due to rounding. Statistical comparisons based on multinomial logistic regression with heterosexual adolescents as the reference category.
M = means; SE = standard error.
*<.05; **<.01; ***<.001.

compare lesbian and bisexual girls. Estimates were adjusted for survey process variables (i.e., self-reported dishonesty in completing the survey and whether respondent completed the survey alone or with other people in the room) and demographic characteristics that significantly varied by sexual identity. Per Stata's reporting protocol, sample sizes are unweighted data while point estimates (e.g., odds ratios) are weighted.

Results

Most participants identified as heterosexual (65%, n = 1,842; note: all percentages in this paragraph are unweighted). Reflective of the recruitment strategy to oversample sexual minority youth, over a third identified as lesbian (13%, n = 364), bisexual (16%, n = 456), queer (.5%, n = 13), and QUO (5%, n = 148; numbers sum greater than 100% due to rounding).

Demographic characteristics were mostly similar across sexual identities (Table 1; note: all percentages forward in the Results section reflect weighted data). Minor differences were noted for race and income (i.e., one of the three LGB identity groups differed from heterosexual girls). Age and being born-again Christian were significantly different for both lesbian and bisexual adolescents when compared to heterosexual girls. Because of the low sample size (n = 13), queer youth were not included in subsequent analyses.

Lifetime sexual behavior, age at first sex, and lifetime and recent sexual partners

As shown in Table 2, lesbians reported elevated lifetime prevalence rates of low STI risk behaviors (e.g., sex with a finger or sex toy) and were less likely to have engaged in penile-anal sex than heterosexual girls, even after adjusting for underlying differences in demographic characteristics. However, they were just as likely to have ever engaged in penile-vaginal sex and were significantly younger, on average, at first sex than their heterosexual peers. Among those who had ever had sex, lesbians also reported significantly more lifetime and past-year sexual partners than demographically similar heterosexual girls.

Bisexual adolescents reported significantly higher lifetime prevalence rates of all sexual behaviors, as well as more lifetime and past-year sexual partners compared to heterosexual girls. Few significant differences were found between QUO and heterosexual girls.

Comparisons of lesbian and bisexual adolescents indicated that bisexual girls were significantly more likely to have ever had penile-vaginal and penile-anal sex. On the other hand, lesbians initiated sexual behaviors at younger ages on average, including penile-vaginal sex.

Characteristics of most recent sexual partner

As shown in Table 3, lesbians were significantly more likely than demographically similar heterosexual peers to report that the gender of their most recent sexual partner was female and that they engaged in vaginal penetration with a finger or sex toy with this partner. Lesbians were less likely to report that their most recent partner was male or to have engaged in penile-vaginal or penile-anal sex with the most recent partner than heterosexual peers. Nevertheless, 22% of lesbians reported a recent male partner. Furthermore, lesbians were more than six times as likely to report infrequent condom use and 80% less

Table 2
Weighted lifetime prevalence of sexual behaviors among adolescents in the 2010-2011 national Teen Health and Technology Study (N = 2,810)

Sexual behavior	Sexual minority compared to heterosexual adolescents							Bisexual (1) compared to lesbian (0)
	Lesbian (9%, n = 364)		Bisexual (27%, n = 456)		QUO (5%, n = 148)		Heterosexual (59%, n = 1,842)	
Ever engaged in (n = 2,810)	% (n)	aOR (95% CI)	% (n)	aOR (95% CI)	% (n)	aOR (95% CI)	% (n)	aOR (95% CI)
Kissing	66.6% (251)	**1.86 (1.14, 3.03)**	74.4% (318)	**3.21 (2.30, 4.50)**	34.2% (49)	.64 (.42, .98)	48.2% (894)	1.66 (.99, 2.80)
Fondling	57.3% (227)	**3.41 (2.11, 5.51)**	61.3% (282)	**4.69 (3.35, 6.56)**	24.2% (34)	1.05 (.66, 1.65)	26.3% (502)	1.30 (.77, 2.19)
Oral sex	43.3% (152)	**4.04 (2.55, 6.40)**	44.9% (194)	**4.86 (3.39, 6.98)**	17.3% (23)	1.52 (.90, 2.57)	14.5% (264)	1.14 (.69, 1.90)
Vaginal/anal sex with a sex toy or finger	52.3% (172)	**6.46 (4.02, 10.40)**	48.6% (206)	**6.25 (4.37, 8.96)**	20.6% (26)	**1.99 (1.21, 3.29)**	14.3% (267)	.96 (.57, 1.62)
Penile-vaginal sex	17.4% (40)	.81 (.43, 1.55)	36.3% (145)	**2.81 (1.96, 4.02)**	16.9% (20)	1.22 (.69, 2.15)	16.7% (301)	**3.38 (1.71, 6.68)**
Penile-anal sex	1.3% (9)	**.30 (.12, .76)**	13.1% (50)	**4.25 (2.29, 7.88)**	4.7% (5)	1.50 (.55, 4.12)	3.6% (59)	**16.17 (5.70, 45.92)**
Age at first sex among youth who have had sex[a]	M (SE)	aOR (95% CI)	M (SE)	aOR (95% CI)	M (SE)	aOR (95% CI)	M (SE)	aOR (95% CI)
Oral sex (n = 634)	14.3 (.3)	**.60 (.47, .77)**	15.0 (.1)	1.03 (.83, 1.27)	14.9 (.3)	.75 (.51, 1.11)	15.4 (.1)	**1.75 (1.34, 2.28)**
Vaginal/anal sex with a sex toy or finger (n = 675)	14.3 (.3)	**.61 (.48, .78)**	14.8 (.1)	.99 (.80, 1.21)	15.0 (.3)	1.04 (.70, 1.54)	15.3 (.1)	**1.65 (1.27, 2.12)**
Penile-vaginal sex (n = 507)	13.8 (.6)	**.39 (.26, .59)**	15.1 (.2)	.92 (.73, 1.17)	15.1 (.3)	.93 (.64, 1.35)	15.5 (.1)	**2.74 (1.69, 4.44)**
Penile-anal sex (n = 123)	15.0 (.6)	.85 (.38, 1.89)	15.5 (.3)	1.03 (.65, 1.64)	16.0 (.0)	1.14 (.67, 1.95)	15.7 (.2)	1.31 (.63, 2.75)
Number of sexual partners of those who ever had any type of sex (n = 803)	M (SE)	aOR (95% CI)	M (SE)	aOR (95% CI)	M (SE)	aOR (95% CI)	M (SE)	aOR (95% CI)
Lifetime	4.5 (.1)	**1.09 (1.02, 1.17)**	3.4 (.3)	1.07 (1.00, 1.14)	2.2 (.4)	.89 (.66, 1.21)	2.6 (.2)	.98 (.94, 1.02)
Past 12 months	2.9 (1.1)	**1.12 (1.02, 1.25)**	2.7 (.3)	**1.13 (1.03, 1.24)**	1.2 (.2)	.74 (.49, 1.11)	1.7 (.1)	1.01 (.93, 1.09)

Sample sizes are based on unweighted data. Percentages and means are weighted data and unadjusted. Multinomial logistic regression compares (1) lesbian, (2) bisexual, and (3) QUO (i.e., questioning, unsure, or other) to heterosexual. Logistic regression compares lesbian and bisexual adolescents. Odds ratios are adjusted (aOR) for age, being born-again Christian, race, income, and survey process variables (self-reported dishonesty in completing the survey and whether respondent completed the survey alone or with other people in the room). Statistically significant differences ($p < .05$) appear in bold text.
CI = confidence interval; M = mean; SE = standard error.
[a] Ages at initiating kissing and fondling were not collected. Note that due to unstable estimates, the logistic regression models comparing bisexual to lesbian youth adjust for age only.

likely to have discussed the use of barriers before first sex than heterosexual girls, adjusting for underlying differences in demographic characteristics.

Like lesbians, bisexual girls, relative to heterosexual girls, were more likely to report that the gender of their most recent sexual partner was female and with whom they engaged in vaginal penetration with a finger or sex toy. Although significantly less than heterosexual girls, 81% of bisexual girls said their most recent sexual partner was male.

As shown in Table 3, QUO and heterosexual peers did not differ significantly in almost all measures related to their most recent sexual partners.

Compared with lesbians, bisexual girls were more likely to report a male partner, less likely to report a female partner, and more likely to engage in penile-vaginal and penile-anal sex. They were also more likely to discuss barrier usage with their most recent sexual partner before they had sex for the first time and less likely to report inconsistent condom use.

Discussion

In this large national study detailing the sexual behaviors of lesbian, bisexual, QUO, and heterosexually identified girls aged 13–18 years, findings indicate that sexual behaviors and experiences vary by sexual identity. Lesbian and bisexual adolescents both report more lifetime and past-year sexual partners than heterosexual girls. Similar to previous literature [3,24], one in five lesbians' most recent sexual partner was male, as is true for four in five bisexual girls. As perhaps might be expected given this difference, bisexual girls are more likely than lesbians to report that they engaged in penile-vaginal and/or penile-anal sex with their most recent sexual partner. Bisexual girls are also more likely than lesbians to ever have engaged in penile-anal and penile-vaginal sex. Based on the STI risk associated with these behaviors, the data suggest sexual minority youth are not a homogeneous group with respect to their sexual risk. This is the first study, as far as we know, to document this risk differential and, therefore, highlight these differences by sexual identity among sexual minority adolescents.

Lesbians are less likely than bisexual or heterosexual girls to report consistent condom use during sex involving a penis and less likely to talk with their partner about barrier use before their first sexual episode. Perhaps this is because lesbians are less likely to believe that they are at risk for STIs when having sex [7,25–27]. Although lesbians are less likely to report their most recent sexual partner was male (e.g., 17% reported ever having penile-vaginal sex), their reported lack of consistent condom use during recent penile-vaginal or penile-anal sex potentially increases their risk for STI, however. Healthy sexuality and STI prevention programming are needed that teach lesbian girls condom negotiation skills, while also acknowledging the complex pressures and motivations when deciding to have sex.

Both bisexual and lesbian adolescents report elevated rates of risk behavior relative to heterosexual girls in other important dimensions. For example, lesbians appear to initiate penile-vaginal sex at earlier ages than heterosexual

Table 3
Weighted characteristics of most recent sexual partner among adolescents in the 2010-2011 national Teen Health and Technology Study (n = 803)[a]

Sexual behavior	Sexual minority compared to heterosexual adolescents							Bisexual (1) compared to lesbian (0)
	Lesbian (9%, n = 364)		Bisexual (27%, n = 456)		QUO (5%, n = 148)		Heterosexual (59%, n = 1,842)	
	% (n)	aOR (95% CI)	% (n)	aOR (95% CI)	% (n)	aOR (95% CI)	% (n)	aOR (95% CI)
Age of partner								
At least 1 year younger	10.5% (18)	1.0 (RG)	4.2% (11)	1.0 (RG)	6.2% (2)	1.0 (RG)	5.3% (20)	
Within 1 year of age	55.7% (107)	.75 (.22, 2.48)	42.0% (103)	1.31 (.46, 3.76)	45.7% (12)	.86 (.16, 4.74)	42.4% (163)	1.92 (.39, 9.44)
At least 1 year older	33.8% (58)	.34 (.10, 1.22)	53.9% (114)	1.26 (.44, 3.57)	48.2% (13)	.61 (.11, 3.47)	52.3% (182)	4.48 (.87, 23.03)
Gender of partner (multiple responses)								
Male	22.3% (40)	**.002 (.0005, .01)**	81.3% (183)	**.03 (.01, .09)**	92.7% (24)	.12 (.02, .65)	99.1% (360)	**18.48 (7.96, 42.88)**
Female	77.6% (141)	**597.72 (174.26, 2050.16)**	18.8% (45)	**32.74 (10.95, 97.90)**	7.3% (3)	**8.24 (1.55, 43.94)**	.9% (5)	**.05 (.02, .13)**
Transgender	.5% (3)	NC	.0% (0)	NC	.0% (0)	NC	.0% (0)	NC
Concurrent sexual partners	9.5% (14)	1.62 (.51, 5.14)	8.9% (19)	1.52 (.68, 3.41)	3.7% (1)	.33 (.03, 3.27)	6.5% (24)	.88 (.28, 2.72)
Boyfriend/girlfriend	66.8% (126)	.56 (.31, 1.01)	69.0% (157)	.60 (.36, 1.02)	81.7% (22)	1.63 (.40, 6.55)	78.3% (279)	1.10 (.57, 2.12)
Partner STI status (lifetime)								
No	76.0% (144)	1.0 (RG)	72.5% (176)	1.0 (RG)	67.6% (19)	1.0 (RG)	70.1% (262)	1.0 (RG)
Yes	2.9% (7)	.47 (.11, 2.08)	2.7% (8)	.56 (.17, 1.84)	.0% (0)	NC	4.7% (16)	1.11 (.18, 6.74)
Don't know	21.2% (32)	.80 (.39, 1.62)	24.7% (44)	.97 (.56, 1.68)	32.4% (8)	1.34 (.50, 3.57)	25.3% (87)	1.30 (.58, 2.91)
Type of sex (multiple responses)								
Oral sex	71.2% (136)	1.20 (.62, 2.32)	81.6% (177)	**2.43 (1.40, 4.21)**	76.1% (22)	1.88 (.64, 5.53)	64.1% (233)	2.04 (.97, 4.31)
Vaginal/anal sex with a sex toy or finger	95.4% (167)	**13.34 (6.64, 26.78)**	85.1% (189)	**4.05 (2.40, 6.83)**	84.8% (23)	**4.02 (1.15, 14.11)**	61.2% (226)	**.31 (.14, .72)**
Penile-vaginal sex	16.3% (25)	**.05 (.02, .11)**	61.3% (125)	**.51 (.32, .81)**	64.3% (16)	.57 (.20, 1.62)	76.5% (271)	**10.21 (4.36, 23.89)**
Penile-anal sex	.9% (5)	**.08 (.02, .24)**	15.6% (28)	2.07 (.96, 4.47)	12.3% (3)	1.27 (.31, 5.30)	9.6% (29)	**29.35 (7.82, 110.11)**
Indicators of barrier use								
Discussed barriers (condoms, dental dams) before first sex[b]	31.7% (46)	**.17 (.08, .35)**	61.8% (130)	.61 (.37, 1.01)	71.7% (16)	.98 (.36, 2.67)	73.0% (247)	**3.76 (1.69, 8.40)**
General use of condoms half the time or less frequently during penile-vaginal/anal sex[c]	66.2% (20)	**6.59 (2.20, 19.72)**	35.1% (53)	1.36 (.78, 2.38)	36.1% (8)	1.54 (.58, 4.08)	28.2% (83)	**.11 (.03, .45)**[d]

Multinomial logistic regression compares (1) lesbian; (2) bisexual; and (3) QUO (i.e., questioning, unsure, or other) to heterosexual. Logistic regression compares lesbian and bisexual adolescents. Odds are adjusted (aOR) for age, race, being born-again Christian, income, and survey process variables (self-reported dishonesty in completing the survey and whether respondent completed the survey alone or with other people in the room). Statistically significant differences ($p < .05$) appear in bold text.
CI = confidence interval; NC = not calculable due to low cell size; RG = reference group.

[a] Of the 839 girls who reported having any type of sex, 33 declined to answer the number of lifetime sexual partners and were not asked follow-up questions about their most recent partner.

[b] Among the 730 youth who had oral, penile-vaginal or penile-anal sex.

[c] Among the 518 youth who had penile-vaginal and/or penile-anal sex.

[d] Because of model instability, the odds ratio is adjusted for age only.

girls (13.8 vs. 15.5 years, on average, respectively). Bisexual girls are three times more likely to ever have engaged in penile-vaginal sex and four times more likely to have ever engaged in penile-anal sex than heterosexual girls. A number of possible reasons may account for these differences: Sexual minority adolescents may feel internal motivation to confirm the validity of their same-sex identities by engaging in heterosexual activity. They may also or alternatively experience social pressure to adhere to the heterosexual script, to "prove" their heterosexuality, or to hide their same-sex attractions from those around them [4,28]. Both lesbian and bisexual girls may experience or recognize their sexual attractions earlier than heterosexual girls do, in which case, sexual desire might be another explanation. Although speculative, internal motivation or desire may be particularly strong for lesbian adolescents, who may therefore have a harder time dismissing or being distracted from their same-sex attractions. This may explain why they are younger than both bisexual and heterosexual girls when initiating sexual activity. On the other hand, rates of penile-vaginal and penile-anal sex may be higher for bisexual adolescents compared to lesbian and heterosexual girls because, perhaps, they feel greater social pressure to have sex with men, or feel greater sexual pleasure when having sex with men. Unfortunately, the current data are unable to support or refute these hypotheses. More research is needed to contextualize these observed differences in sexual risk behaviors between sexual minority and heterosexual girls, as well as between lesbian and bisexual adolescents.

It is critical to note that adolescence is an important time of self-exploration, including with sexual identity [29–33]. As suggested previously, when girls recognize their same-sex attractions, they may engage in sexual experimentation as a way of exploring and confirming their same-sex feelings and identity. This experimentation may also be an attempt to hide a stigmatized identity while dissimulating a more socially acceptable sexual identity to others. Understanding and accepting one's attractions to girls can be difficult in a society that stigmatizes same-sex activity and reinforces other-sex activity. Health providers need to be aware that sexual experimentation can mean

many things, both positive and negative to youth. Regardless, it can be a gateway to an important conversation about healthy sexuality.

Although outside the scope of the present study's focus on consensual sexual experiences, another potential explanation for the elevated risk behaviors noted for bisexuals and lesbians could be previous experiences with nonconsensual sex and other forms of sexual victimization. These types of experiences are elevated among lesbian and bisexual girls compared to heterosexual girls and are strongly linked to earlier and riskier subsequent consensual sexual behaviors [1,3,4,34]. Sexual abuse is also associated with difficulties negotiating safer sexual practices, including condom use [35,36]. Research has shown that some of the increased sexual risk noted for sexual minority youth can be explained by a history of sexual abuse [1,3,4]. It is thus possible that findings in the present study could also be explained, in part, by concomitant risk of nonconsensual sex for bisexual and lesbian adolescents [1,34]. In addition, lack of access to LGB-relevant resources and services could explain these elevated risk behaviors.

Rates of sexual behaviors for QUO girls are similar to those of heterosexual girls. This may be because QUO youth are still considering their sexual attractions and resulting identity and therefore are not yet acting on their attractions. Interestingly, Ott et al. [37] found that two-thirds of youth who identified as QUO in adolescence ultimately identified as heterosexual in emerging adulthood. Our data are consistent with this finding. It is nonetheless important to track the sexual identity development of QUO youth and not prematurely determine what it may be.

It bears noting that "queer" may be an emerging identity label that lacks consensus among youth and researchers about what it reflects. Little is known about this group for many reasons, including their frequent exclusion in analyses or inclusion with other groups (e.g., gay and lesbian youth). Qualitative research would be helpful in exploring its meaning among those who adopt it.

Limitations

In addition to the limitations noted previously, measurement concerns exist. Discussion about barrier use was measured holistically, rather than separately asking about condoms, dental dams, and other barrier devices. It is possible that having a conversation with a male partner about using a condom is qualitatively different than with a female partner about using a dental dam or condom on a sex toy. Unfortunately, we lack such data. Lack of condom use with sex toys and the sharing of sex toys during sex are associated with STI risk [38–40], but these behaviors were not queried. Additionally, we lack data on other contraception use.

Moreover, sexual identity is but one aspect of sexual orientation [6,29–31], and one that may be fluid or changeable during adolescence when youth may be exploring their unfolding sexual orientation. That is, an adolescent who labels herself lesbian or bisexual or heterosexual at one point in time may change her self-identity at a later point in time. Attraction is another, perhaps more inclusive, measure of sexual orientation that should be investigated further in future studies [29,30,41,42].

We also lack sufficient sample size to examine sexual risk behaviors by gender of partners and the possible important nuances between them. However, findings that relate to penile-vaginal and penile-anal sex implicitly account for partner's sex in the measure and, thus, would likely be unchanged by integrating this analytical nuance. Importantly, too, findings are cross-sectional and therefore cannot speak to causality.

Recruiting truly nationally representative samples is increasingly difficult [15]. These difficulties are magnified when recruiting youth for studies that involve sensitive topics. Although comparable to other surveys [15,16], our response rate is lower than desired. Furthermore, underlying factors related to self-selection in the online panel may have affected the sample's generalizability. For example, it is possible that panel members may be more digitally literate than nonmembers or that GLSEN youth are more publicly out than HPOL sexual minority youth. To address this limitation and to minimize self-selection bias, HPOL participants were randomly recruited from the panel. The study description was purposefully vague so as not to attract youth with specific experiences. Moreover, these potential underlying differences were adjusted in the weighting [43,44].

Additionally, to reflect the complexity of sexual identity, participants were able to choose as many identities as they wanted. These responses were subsequently coded into discrete categories for analysis. Findings might possibly have been different if instead youth were asked to choose one identity with which they identified strongest. Finally, as with all analyses, it is possible that important confounders were not included in the analyses that otherwise might have changed the results.

Implications

Findings have implications for health and, thus, for research, service delivery, and surveillance as well. The sexual identity of girls who test positive for STIs is often assumed to be heterosexual [2], whether true or not. This likely underestimates the true STI risk for sexual minority girls, thereby contributing to a widely held perception among health professionals that lesbians, most particularly, are not at risk for STIs [3]. Health professionals should be mindful of this assumption and the need to counter the current state of human immunodeficiency virus/STI prevention programming for adolescents, which is entirely heterosexually focused [45]. To be appealing to sexual minority young girls, healthy sexuality content must provide identity-inclusive content to engage this vulnerable population and affect behavior in a meaningful and long-lasting way.

Health researchers, professionals, and others working with youth need to be aware that sexual minority adolescents differ in risky sexual behaviors by sexual identity. For example, lesbian youth may be initiating sex earlier and engaging in sexual behaviors that elevate their risk for STIs compared with heterosexual youth. Bisexual girls are more likely to have sex involving a penis as well as to report inconsistent condom use. Evidence of early sexual initiation might necessitate a conversation with the young person to better understand her reasons and motivations. This conversation should be approached in an open manner without a priori assumptions about her sexual identity, even if a history of specific types of sex and sex of partner are known. Such discussion might result, if indicated, in an opportunity to provide concrete recommendations for use of contraceptives and condoms, as well as a more general discussion of healthy sexuality. The health of sexual minority youth, both in the near and distant future, may depend on understanding their risk behaviors and engaging them in health promotion efforts that acknowledge and are respectful of their unique lived experiences.

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