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Sexual Intercourse, Abuse and Pregnancy Among Adolescent Women: Does Sexual Orientation Make a Difference?

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Context: Although a limited amount of research has retrospectively explored the childhood and adolescent heterosexual experiences of lesbians, little is known about the prevalence of heterosexual behavior and related risk factors or about pregnancy histories among lesbian and bisexual teenagers.

Methods: A secondary analysis was conducted using responses from a subsample of 3,816 students who completed the 1987 Minnesota Adolescent Health Survey. Behaviors, risk factors and pregnancy histories were compared among adolescents who identified themselves as lesbian or bisexual, as unsure of their sexual orientation and as heterosexual.

Results: Overall, bisexual or lesbian respondents were about as likely as heterosexual women ever to have had intercourse (33% and 29%, respectively), but they had a significantly higher prevalence of pregnancy (12%) and physical or sexual abuse (19-22%) than heterosexual or unsure adolescents. Among sexually experienced respondents, bisexual or lesbian and heterosexual women reported greater use of ineffective contraceptives (12-15% of those who used a method) than unsure adolescents (9%); bisexual or lesbian respondents were the most likely to have frequent intercourse (22%, compared with 15-17% of the other groups). In the sample overall, among those who were sexually experienced and among those who had ever been pregnant, bisexual or lesbian women were the most likely to have engaged in prostitution during the previous year.

Conclusions: Providers of reproductive health care and family planning services should not assume that pregnant teenagers are heterosexual or that adolescents who say they are bisexual, lesbian or unsure of their sexual orientation are not in need of family planning counseling. Further research should explore the interactions between adolescent sexual identity development and sexual risk behaviors.

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The majority of adult lesbian and bisexual women have had heterosexual intercourse at some point in their lives,[1] and at least 30% have been pregnant.[2] Little is known, however, about the childhood and adolescent heterosexual experiences of lesbians[3] or about the prevalence of pregnancy, pregnancy outcomes and risk behaviors related to heterosexual activity among lesbian and bisexual adolescents.[4]

Several reasons may explain why lesbian and bisexual teenagers might have heterosexual experience. One hypothesis is related to forced sexual contact, since sexual abuse, incest and rape are more prevalent among lesbian and bisexual young women than among their heterosexual counterparts.[5] A second hypothesis is that many women may have heterosexual relationships and heterosexual intercourse during their early teenage years, before identifying themselves as lesbian or bisexual during late adolescence or their early 20s.[6] However, the age at which women identify themselves as lesbian or bisexual appears to be declining, at least among some urban populations.[7]

A third hypothesis is based on the stages of an adolescent's acquisition of lesbian or bisexual identity. "Heterosexual immersion" may be one strategy for responding to the identity confusion stage of development: "Some adolescents establish heterosexual involvements in hopes of 'curing' themselves of their homosexual interests....In some cases, an adolescent girl may purposely become pregnant to prove that she isn't lesbian."[8] Researchers have echoed this proposition on the basis of both their own investigations and their clinical experience.[9]

Yet another hypothesis considers social stigma and the risks associated with coming out. A review of the literature and discussion of clinical experience reported that gay, lesbian and bisexual teenagers who reveal their sexual orientation to others often are rejected or abused by family and friends.[10] These teenagers are more likely than their heterosexual peers to drop out of school and run away from or be forced out of their homes. As with most homeless youth, their principal method of survival is prostitution. The researchers further noted that pregnancy among homeless young women is frequent, a finding confirmed by studies of homeless youth throughout the United States and Canada.[11] The association between alienation or stigma and adolescent pregnancy was borne out by a study of presumably heterosexual adolescents that found an elevated risk of pregnancy among those who have low self-esteem and feel powerless, alienated and in little control over their lives.[12]

The purpose of our study was to compare the sexual and pregnancy histories of adolescents who identified themselves as bisexual or lesbian, unsure of their sexual orientation or heterosexual. We expected to find that compared with unsure and heterosexual respondents, bisexual and lesbian adolescents would report an equal or higher prevalence of heterosexual intercourse, a higher prevalence of sexual and physical abuse and running away, and an equal or higher prevalence of pregnancy. Among those who had ever had heterosexual intercourse, we expected that bisexual and lesbian adolescents would report a lower prevalence of contraceptive use and of use of effective contraceptive methods than other young women, and an equal or higher prevalence of frequent intercourse. Among respondents who had ever been pregnant, we expected to find no differences in the lifetime number of pregnancies according to sexual orientation. We also anticipated that bisexual and lesbian adolescents would be more likely to report a history of recent involvement in prostitution than their heterosexual or unsure counterparts.

METHODS

Survey Instrument

Our analysis used data from a subsample of the 36,284 public school students aged 12-19 who participated in the 1987 Minnesota Adolescent Health Survey, a comprehensive, anonymous survey covering young people's health, risk behaviors and protective factors. For the original study, all public schools in the state were stratified by school district size, and a random sample of schools were selected to participate; schools with a high proportion of ethnic minority or low-income students were oversampled. The sample design, psychometrics and secondary analyses of the survey are described in detail elsewhere.[13]

The survey sample closely resembled the population of Minnesota high school students. The Human Subjects Committee of the University of Minnesota granted approval for the original study and for this secondary data analysis. Table 1 provides a listing of questions pertinent to this secondary analysis.

Table 1. Questions from the 1987 Minnesota Adolescent Health Survey used in secondary analysis of sexual behavior, risk factors and pregnancy according to respondents' sexual orientation
Many people say that they have different feelings about themselves when it comes to questions of being attracted to other people. Which of the following best describes your feelings?
100% heterosexual (attracted to/daydream about persons of the opposite sex)
Mostly heterosexual
Bisexual (equally attracted to men and women)
Mostly homosexual
100% homosexual ("gay/lesbian"; attracted to/daydream about persons of the same sex)
Not sure
Have you ever been physically abused or mistreated by anyone in your family or by anyone else?
Have you ever been sexually abused? Sexual abuse is when someone in your family or someone else touches you in a place you did not want to be touched, or does something to you sexually which they shouldn't have done.
Have you ever had sexual intercourse ("gone all the way")?
If yes, how old were you the first time you did it (had intercourse)?
How often do you have sexual intercourse?
How often do you and/or your partner use a birth control method?
What kind of birth control method do you and/or your partner most often use?
How many times have you been pregnant?
What was your decision regarding the pregnancy? If you have been pregnant more than once, refer to your most recent pregnancy.
Keep and raise the baby
Place the baby for adoption
Miscarriage/the baby died
Have an abortion
Baby was placed in foster care
You are pregnant now and not sure what you will do
During the last 12 months, how often have you run away from home?
During the last 12 months, how often have you been involved in prostitution?

CHARACTERISTICS OF THE SAMPLE

The sample for our analysis consisted of 3,816 young women, 182 who identified themselves as bisexual, mostly homosexual or exclusively homosexual (whom we classified as bisexual or lesbian); 1,753 who identified themselves as unsure; and a comparison group of 1,881 who identified themselves as mostly or exclusively heterosexual. Members of the comparison group were matched to bisexual, lesbian and unsure participants according to race or ethnicity and age (categorized as 13 or younger, 14-16 or 17 and older).

While the distribution of respondents according to age and race or ethnicity did not differ among groups (Table 2), other background characteristics showed some variation. On average, unsure adolescents were slightly younger (14.0 years) than heterosexual (14.2) and bisexual or lesbian (14.4) adolescents (not shown); however, an analysis of variance revealed significant age differences only between the unsure and heterosexual groups ($F=8.92$, $df=2$, $p<.001$). All of the adolescents were in high school, and thus older participants (18-19-year-olds) were biased toward students who were below grade level.

Table 2. Percentage distribution of respondents, by selected demographic characteristics, according to sexual orientation

Characteristic	Heterosexual (N=1,881)	Unsure (N=1,753)	Bisexual/lesbian (N=182)
Race/ethnicity			
White	71.1	70.8	72.6
Black	14.6	15.0	11.4
Hispanic	1.5	1.3	3.4
American Indian	3.1	3.2	3.4
Asian/Pacific Islander	9.7	9.8	9.1
$c^2=6.45$, df=8, p=.60			
Age			
=<13	47.5	48.5	39.6
14-16	40.6	40.2	43.4
>=17	11.9	11.3	17.0
$c^2=7.78$, df=4, p=.10			
Parental socioeconomic status			
Low	13.4	24.5	16.5
Middle	52.8	53.2	58.9
High	33.9	22.4	24.7
*$c^2=86.8$, df=4, p<.001**			
Residence			
Metropolitan area	51.7	49.3	54.4
Suburb	15.7	9.6	13.2
Small town	12.7	12.7	11.0
Rural	19.9	27.4	21.4
$c^2=51.8$, df=6, p<.001†			
Total	100.0	100.0	100.0

*Between bisexual/lesbian and heterosexual only, $c^2=5.68$, df=2, p=.10. †Between bisexual/lesbian and heterosexual only,

c^2=1.48, df=3, p>.50.

Heterosexual respondents were the most likely to report that their parents were of high socioeconomic status (34% vs. 22-25%), unsure respondents were the most likely to report low socioeconomic status (25% vs. 13-17%) and bisexual or lesbian respondents were the most likely to report having middle-class parents (59% vs. 53%). When the comparison was restricted to heterosexual and bisexual or lesbian respondents, however, the differences in parental socioeconomic status were not significant.

About half of respondents in each group were from metropolitan areas, but unsure respondents were significantly more likely than the other two groups to live in small towns or rural areas (40% vs. 32-33%), and bisexual or lesbian adolescents were slightly more likely than heterosexual young women to live in metropolitan areas (54% vs. 52%). Again, when we compared only heterosexual and bisexual or lesbian respondents, we found no significant differences in residence.

Although it was clearly necessary to consider unsure adolescents separately from the bisexual or lesbian group because of demographic differences, we combined lesbian and bisexual adolescents in this analysis for several reasons. First, during the process of identity acquisition, adolescents frequently switch their self-identification between gay or lesbian and bisexual.[14] Second, no empirical evidence has yet documented different developmental pathways or issues between adolescents who identify themselves as bisexual and those who identify themselves as gay or lesbian.

Third, only 13 respondents said that they were exclusively homosexual, and it is impossible to determine whether the "mostly homosexual" group would be more likely to consider themselves bisexual or lesbian; consequently, all comparisons between bisexual and lesbian respondents must be interpreted cautiously. Comparisons of bisexual respondents with the combined lesbian groups revealed no significant differences in age, age at first intercourse, physical or sexual abuse history, history of running away, frequency of intercourse, outcome of pregnancy, involvement in prostitution or parental socioeconomic status. However, lesbian respondents were significantly more likely to report having had intercourse, more likely to have ever been pregnant and less likely to be white.

When sexual experience was controlled for, lesbian respondents were still more likely to have ever been pregnant (53% vs. 17%); however, only 35 bisexual adolescents and 10 lesbians responded, and 25% of cells had an expected value less than five. Although the lesbian group may have exerted a disproportionate influence on the responses of the combined group of bisexual and lesbian adolescents, combining the exclusively lesbian, mostly lesbian and bisexual respondents into a single category increased the power of the analysis to detect differences between them and the other groups.

ANALYSES

We conducted three levels of analysis, each with a unique set of covariates. First, we compared all respondents according to whether they had ever been sexually or physically abused, run away, had heterosexual intercourse and been pregnant. Then we compared those who had had intercourse according to their age at first intercourse,

frequency of contraceptive use, choice of effective or ineffective methods and frequency of intercourse. Next, among those who had ever conceived, we examined the lifetime number of pregnancies and the outcome of the most recent pregnancy. At all three levels of analysis, we considered the reported prevalence of recent involvement in prostitution (i.e., within the past year). We also analyzed the prevalence of multiple risk factors according to respondents' sexual orientation. Because the majority of variables were categorical, we used cross-tabulations with chi-square analysis to compare groups.

RESULTS

All Respondents

Bisexual or lesbian respondents were more likely to report a history of physical abuse (19%) than were heterosexual and unsure adolescents (11-12%), and the difference was statistically significant (Table 3). They also were significantly more likely than the other groups to say they had been sexually abused (22% vs. 13-15%). The proportion of young women who had run away from home once or more in the past year did not differ by sexual orientation.

Table 3. Percentage of respondents with selected history or behavioral characteristics, by sexual orientation

Characteristic	Heterosexual	Unsure	Bisexual/lesbian	c^2
All respondents (N=3,816)				
Ever physically abused	11.9	11.4	19.3*,†	9.53 (df=2)
Ever sexually abused	15.3	13.4	22.1*,†	10.43 (df=2)
Recently ran away	10.1	8.2	12.8	2.80 (df=2)
Ever had intercourse	29.3‡	21.6	33.0‡	42.90 (df=4)
Ever pregnant	5.3	6.1	12.3*,†	10.50 (df=2)
Recently engaged in prostitution	0.7	1.4	5.9‡,§	16.70 (df=2)
Sexually experienced respondents (N=990)				
Had first intercourse before age 14	45.0	45.7	62.1**,*†	10.33 (df=4)
Sexually abused	55.8	53.1	60.9	1.18 (df=4)
Not abused	42.1	44.7	59.4	8.13 (df=4)
Use no contraceptive	23.1‡	43.5	29.8‡	41.08 (df=4)
Use ineffective contraceptive(among users)	14.5‡	8.5	12.3‡	41.08 (df=4)
Have sex daily or >=2 times per week	14.8	17.0	22.0‡,§	24.78 (df=6)
Recently engaged in prostitution	1.9	3.4	9.7**	6.30 (df=2)
Ever-pregnant respondents (N=172)				
Have had >=2 pregnancies	9.8	15.1	23.5	2.62 (df=2)

Miscarriage or infant death	19.7	11.9	29.4	3.20 (df=2)
Had an abortion	38.2	31.3	29.4	3.20 (df=2)
Recently engaged in prostitution	5.5	5.4	44.4‡,§	15.37 (df=2)

*Significantly different from heterosexual group at p<.01. †Significantly different from unsure group at p<.01. ‡Significantly different from unsure group at p<.001. §Significantly different from heterosexual group at p<.001. **Significantly different from heterosexual group at p<.05. *†Significantly different from unsure group at p<.05. *Note:* Roughly half of respondents at each level of analysis did not respond to the question about prostitution.

Bisexual or lesbian respondents were about as likely as their heterosexual peers ever to have had intercourse (33% and 29%, respectively), while unsure respondents were significantly less likely to report such experience (22%). However, bisexual or lesbian adolescents reported about twice as great a prevalence of pregnancy (12%) as either unsure or heterosexual young women (5-6%). Additionally, they were significantly more likely to report recent involvement in prostitution (6%) than were women in the other groups (1% of each).

SEXUALLY EXPERIENCED RESPONDENTS

Among respondents who had ever had intercourse, 62% of bisexual or lesbian young women said they had first done so before age 14, compared with 45-46% of the other groups. However, when we controlled for self-reported history of sexual abuse, this difference was no longer statistically significant.

Some 44% of sexually experienced unsure respondents reported no use of contraceptives, compared with 30% of bisexual or lesbian and 23% of heterosexual adolescents. Among those who used any method, the use of ineffective methods (withdrawal or rhythm) was significantly more common among bisexual or lesbian and heterosexual respondents (12% and 15%, respectively) than among those who were unsure about their sexual orientation (9%).

Frequency of intercourse, which affects the risk of pregnancy, also differed significantly among the groups. Bisexual or lesbian respondents were more likely to report engaging in intercourse daily or several times a week (22%) than were their heterosexual or unsure counterparts (15-17%).

Although acts of prostitution do not necessarily include unprotected heterosexual intercourse, when we considered only respondents who had ever had intercourse, recent involvement in prostitution was about five times as common among bisexual or lesbian adolescents (10%) as among their heterosexual peers (2%).

EVER-PREGNANT RESPONDENTS

Some 24% of bisexual or lesbian respondents who had ever been pregnant reported multiple pregnancies. The proportion was lower among those who classified themselves as heterosexual (10%) or unsure (15%), but because only 23 respondents reported more than one pregnancy, this difference did not achieve statistical significance.

Pregnancy outcomes appeared to be poorer for the bisexual or lesbian group than for

other respondents. Five of the 17 bisexual or lesbian adolescents who had been pregnant reported that their most recent pregnancy had ended in a miscarriage or the birth of a baby who died, compared with 15 of the 76 heterosexual respondents and eight of the 67 unsure respondents in this category. This high prevalence of poor outcomes is of concern, although group differences were not statistically significant. An additional five bisexual or lesbian respondents, 21 unsure young women and 29 heterosexual adolescents reported that their most recent pregnancy had ended in abortion; these differences also were not statistically significant.

Among respondents who reported at least one pregnancy, group differences for recent involvement in prostitution were startling. Some 44% of these bisexual or lesbian young women had engaged in prostitution in the past 12 months, compared with only 5-6% of unsure and heterosexual adolescents.

MULTIPLE RISK FACTORS

Although the majority of respondents had no risk factors related to intercourse, sizable proportions of each group had three or more risk factors (Table 4). Bisexual and lesbian respondents were significantly more likely than other women to report 3-4 risk factors (15% compared with 8-10%) or 5-7 risk factors (7% vs. 2%).

Table 4. Percentage distribution of respondents, by number of risk factors related to sexual intercourse, according to sexual orientation

Number of risk factors	Heterosexual	Unsure	Bisexual/lesbian
0	59.4	67.9	56.9
1-2	28.4	22.4	25.8
3-4	10.1	7.9	14.8
5-7	2.1	1.8	6.6
Total	100.0	100.0	100.0

c^2=55.4, df=6, p<.00001

Note: Possible risk factors are ever having been sexually or physically abused, having run away in the past year, ever having had intercourse, having first had sex by age 14, having frequent sexual intercourse, using no contraceptive, having recently engaged in prostitution, ever having been pregnant and having had more than one pregnancy.

The 13 respondents who identified themselves as exclusively lesbian reported an even more troubling level of risk factors (Table 5). Although statistical analyses could not be done because of the small sample size, and the findings cannot be generalized to all adolescents who identify themselves as lesbian, these 13 young women illustrate issues for exclusively lesbian teenagers that remain relatively unexplored in the literature.

Table 5. Number of respondents identifying themselves as exclusively lesbian who reported sexual risk factors, by risk factor (N=13)

Risk factor	No.
Ever physically abused	5
Ever sexually abused	5
Recently engaged in prostitution	2
Ever had intercourse	9
Had first intercourse before age 14	7

Have frequent intercourse	4
Ever pregnant	6
One pregnancy	3
>1 pregnancy	3
Miscarriage or infant death*	3
>1 risk factor	10

*Outcome of most recent pregnancy. *Note:* Some respondents did not answer all questions.

DISCUSSION

The results of this analysis supported most of our hypotheses. In sum, the findings suggest that adolescent women who identify themselves as lesbian, bisexual or unsure of their sexual orientation may be at increased risk of pregnancy, repeat pregnancy, adverse pregnancy outcomes and poor contraceptive practice.

One of the strengths of this study is the sampling process. Research into sexual orientation has long been limited by the difficulty of locating bisexual and gay or lesbian study participants by using random methods.[15] However, because of the large size of the original survey sample, it was possible to locate a relatively large sample of bisexual, lesbian and unsure adolescents within the general school population. Furthermore, because this sample may have included both young women who have publicly identified themselves as bisexual or lesbian and those who have not disclosed their sexual orientation, it is more likely to be representative of bisexual and lesbian adolescents than are convenience or clinic samples consisting exclusively of publicly self-identified bisexual and lesbian respondents.

However, the study has a number of limitations. First, as a secondary data analysis, it was limited to the data gathered by the primary study, which was a cross-sectional survey. The development of awareness of one's sexual orientation and the acquisition of a stable sexual identity are complex processes that evolve through adolescence.[16] Therefore, many respondents who were unsure of their sexual orientation will eventually define themselves as bisexual, lesbian or heterosexual, while some who considered themselves to have a particular sexual orientation may change the way they identify themselves as they move through adolescence.

Furthermore, particularly among the younger adolescents, those who said that they were not sure may have been unsure of what the question meant, rather than unsure of their orientation. The differences in responses by the unsure adolescents may be related to slightly younger age, and the size of this group did not allow us to disaggregate comparisons by age. While age is only a rough proxy for developmental stage, the range of ages among respondents (12-19 years) may mask developmental differences in risk behaviors and pregnancy histories.

The small size of the bisexual or lesbian subsample raises issues of statistical power, especially given the relatively low prevalence of some events, such as pregnancy and involvement in prostitution. Because many of the data were categorical, we conducted a post hoc power analysis for binomial proportions.[17] With a subsample of 182, the power to detect a significant 5% difference in proportions with an expected prevalence of 10% or less (5% confidence level, two-tailed test) was 79%, just under the

commonly accepted level of 80%. Therefore, for some of the analyses, there may not have been adequate power to detect significant differences.

The nature of the study design and the questions asked made it impossible to ascertain when these adolescents identified themselves as bisexual or lesbian (i.e., before or after first sexual intercourse or first pregnancy), whether pregnancy had been intentional, whether early sexual debut was due to sexual abuse, the type of sexual abuse and the age at which it occurred, or even whether sexual intercourse was consensual for these young women. For that matter, it is also impossible to determine whether the respondents interpreted "intercourse" as heterosexual intercourse or same-gender sexual activity.

The possibility of underreporting is always present, particularly when respondents are asked about sensitive issues such as sexual orientation, sexual behaviors and pregnancy outcomes; it is also possible that lesbian and bisexual youth are more willing than their heterosexual peers to report sensitive issues. However, we examined the pattern of missing responses for the questions included in our analysis and found no significant differences by sexual orientation.

Since this was a school-based survey, its findings cannot be generalized to out-of-school youth. Young women who become pregnant, who are homeless or who are involved in prostitution are at risk of dropping out of school; therefore, a school-based sample might not include those adolescents of all orientations who are at greatest risk. Furthermore, runaway and homeless youth are disproportionately gay, lesbian or bisexual;[18] consequently, this school-based sample may not well represent the risks for the majority of gay, lesbian and bisexual youth.

A final concern is the age of the data, which were collected in 1987. Changes in society in the past decade may have affected both the proportion of adolescents identifying themselves as bisexual or lesbian and the risk factors related to acquisition of these often stigmatized identities. However, this data set is the largest, most comprehensive one available that includes previously validated, multidimensional questions on sexual orientation and sexual behaviors, and that asks all respondents, regardless of age, about their sexual behavior and pregnancy history.

Indeed, the trend in recent national and statewide school-based surveys of health and risk behaviors has been to reduce the number of questions about sexual behavior and orientation, or to restrict such questions to older grades; the 1996 National Longitudinal Study of Adolescent Health,[19] for example, asks key sexual behavior questions only of respondents older than 14. Yet, given the prevalence of sexual behaviors that occurred before age 14 among young women in this sample, as well as recent research showing that urban gay, lesbian and bisexual adolescents identify themselves as such at even earlier ages,[20] restricting questions about sexual behavior to older students may distort the picture of health risks for very young adolescents. Our analysis creates a foundation for analyses of other large data sets now becoming available, to allow researchers to document change over time. In addition, the original survey offers a standard for future studies that explore the experiences of adolescents enrolled in school.

Our findings demonstrate that clinicians who provide reproductive health and family

planning services should not assume that their pregnant adolescent clients are heterosexual or that adolescents who identify themselves as lesbian or bisexual do not require family planning counseling. Clinicians should include appropriate questions about sexual orientation as part of a comprehensive psychosocial assessment of all adolescent women.

The findings also highlight a need for health interventions that target lesbian and bisexual young women to prevent further sexual and physical violence, as well as reduce risky sexual behaviors and adverse health outcomes. Clinicians who work with adolescents need to be aware of the multiple psychosocial and health risks facing bisexual and lesbian youth, including increased risks of physical and sexual abuse, early sexual debut, frequent sexual intercourse, participation in prostitution for survival and ineffective contraceptive use.

Further research should particularly explore the interactions between adolescents' sexual identity development and sexual risk behaviors. Specifically, our analysis should be replicated with larger data sets, as well as among regional and ethnic populations of adolescents. Likewise, the pregnancy involvement of gay and bisexual adolescent males has yet to be fully examined. While large-scale surveys are appropriate to monitor trends in sexual risk behaviors among lesbian and bisexual adolescents, it is also important to explore these issues in greater depth through qualitative methods, to help guide interventions.

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