Adolescent Same-Sex Romantic Attractions and Relationships: Implications for Substance Use and Abuse

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Objectives. Nationally representative data were used to examine associations of romantic attractions and relationships with substance use and abuse.

Methods. Data from the Add Health Study were examined. Youths reporting same-sex and both-sex romantic attractions and relationships were compared with those reporting opposite-sex attractions. Survey regression and logistic regression were used to control for sample design effects.

Results. In the case of certain outcomes, romantic attraction affected males differently than females. Youths with both-sex attractions were at a somewhat higher risk for substance use and abuse than were heterosexual youths; females with same-sex attractions were also at higher risk for some outcomes. Sexual-minority youths varied little from heterosexual youths in regard to trajectories of substance use and abuse.

Conclusions. These findings highlight the importance of distinguishing between youths with only same-sex attractions and those with both-sex attractions. These findings also call into question previous findings indicating that sexual-minority youths are automatically "at risk." (*Am J Public Health*. 2002;92:198–202)

Substance abuse is a critical problem among youths in the United States.[1] Among the groups believed to be at highest risk are those with same-sex sexual orientations—those who are lesbian, gay, or bisexual (LGB).[2] Most relevant research has been based, however, on nonrepresentative samples of self-identified LGB youths. For example, one study of 154 LGB youths showed that lifetime substance use, as well as symptoms of substance use (dependency of use and trouble with school, friends, and family), was prevalent and frequent.[3]

In another recent study of more than 130 predominantly Black and Hispanic LGB youths, substance use rates appeared to be higher than those present in the general adolescent population.[4] In that study, 63% of participants had used alcohol, 33% had used marijuana, and 14% had used cocaine in the previous 3 months,[5] as compared with corresponding rates for the general adolescent population of 51%, 22%, and 2% (each referring to the previous month).[1]

Several more recent studies have used population-based data to examine associations between same-sex sexual identity or sexual behaviors and substance use and abuse. Data from the 1993 Massachusetts Youth Risk Behavior Survey (YRBS) showed that youths engaging in same-sex sexual behavior were significantly more likely to use alcohol, marijuana, cocaine, and other illegal drugs.[6] Similarly, a study focusing on the 1995 Massachusetts YRBS revealed that self-identified LGB youths were more likely than their peers to begin marijuana and alcohol use early (before the age of 13 years), to have higher lifetime rates of crack/cocaine use, and to report more recent use of tobacco.[7]

A second study involving the same data source showed that the high rates of substance use among LGB youths and youths who were "unsure" of their sexual orientation were associated with increased reports of suicidality among lesbian and bisexual female youths.[8] Finally, data from the 1995 Vermont YRBS showed that male youths engaging in same-sex sexual behaviors were more likely than other sexually active male youths to smoke cigarettes, use tobacco, drink alcohol, and use marijuana at school.[9] In contrast to these results from state-based YRBS samples, a recent community-based study of 106 LGB and 224 "unsure" youths revealed that these young people were not at greater risk for substance abuse than their peers.[10]

Overall, past studies indicate that youths who engage in same-sex sexual behavior or who report an LGB identity are at greater risk for substance use and abuse. We considered the issues of adolescent same-sex sexual orientation and substance use and abuse using data from the first and second waves of the National Longitudinal Study of Adolescent Health (the Add Health Study). The Add Health Study cohort represented the first available national sample in which information about same-sex romantic attractions and relationships and their associations with substance use and abuse was included. As a result, the study provided an opportunity to study trajectories of substance use and abuse behavior among youths reporting same-sex attractions and relationships as well as an opportunity to examine differences between same-sex and both-sex attractions and relationships.

On the basis of past research, we anticipated that same-sex attractions and relationships would be associated with higher rates of substance use and abuse. These higher anticipated rates led us to expect corresponding significant increases in substance use and abuse over time. From the limited past research on adolescent bisexuality,[11] we anticipated that youths attracted to members of both sexes would also report higher initial levels of substance use and abuse and subsequent significant increases. Past research on LGB youths provides little reason to expect higher substance use or abuse rates among gay youths than among lesbian youths, or vice versa.

METHODS

We used data from the in-home sample of the first and second waves of the Add Health

Study. The sampling frame included all US high schools and their largest feeder schools (middle or junior high schools). More than 20 000 adolescents in grades 7 through 12 took part in the in-home survey at wave 1 (1995).[12] One year later, more than 70% of the respondents were reinterviewed at wave 2. Respondents with missing data on measures of romantic attraction or relationships (at wave 1) or our indicators of substance use or abuse (at wave 1 or 2) were excluded from analyses (12.5% of the sample), as were respondents younger than 13 years and older than 18 years (5% of the sample).

Portions of the interviews, including information on romantic attractions and relationships and substance use and abuse, were conducted via an audio computer-aided self-interview method; respondents listened to questions through earphones while recording their responses on a laptop computer. This method has been demonstrated to improve the validity of self-reported sensitive data among adolescents.[13,14]

The wave 1 in-home survey included 2 questions on romantic attraction: "Have you ever had a romantic attraction to a female?" and "Have you ever had a romantic attraction to a male?" The survey also included a measure of romantic relationships. Sex of romantic partners was determined through the following questions: "In the last 18 months, have you had a romantic relationship with anyone?" and "What is their sex?" Information was obtained on 3 romantic relationships during this time period.

We excluded youths who reported no romantic attractions (11.4%); preliminary analyses (not reported here but available upon request) indicated that youths reporting no romantic attractions are at significantly lower risk for substance use and abuse than all other youths. Our analyses compared youths who reported romantic attractions to members of the same sex or members of both sexes and youths who reported romantic attractions only to members of the other sex. We examined 7 indicators of substance use or abuse at wave 1 and changes in indicators between waves 1 and 2. Substance use and abuse measures are described in Table 1.

The Add Health Study allowed for the use of multiple control variables to adjust for differences in family background and school context. We included measures of race and ethnicity (Black, Asian, and Hispanic, with non-Hispanic Whites as the reference group), parental education (education level of the parent with the most years of education), poverty status (dichotomous variable; 1 = current welfare dependency), and intact family status (dichotomous variable; 1 = married parents). We also controlled for respondents' age, whether they attended a private or a public school (dichotomous variable; 1 = private school), and their area of residence (urban, rural, or suburban).

We used SUDAAN to adjust for the clustered sample design of the Add Health study.[15] Ordinary least squares regression was used in analyses of continuous outcomes; in the case of dichotomous outcomes, logistic regression was used. Because of the higher rates of substance use and abuse among male adolescents,[1] we examined males and females separately.

TABLE 1—Indicators of Substance Use and Abuse: Add Health Study, 1995–1996

Indicator	Description
Smoking	Wave 1: smoking (number of cigarettes in past month) calculated as the product of the number of days the respondents reported smoking in the previous 30 days and the number of cigarettes they reported smoking on the days they smoked during that period; change between waves: wave 2 minus wave 1
Intoxication	Wave 1: number of days respondents had gotten drunk (frequency) in the past 12 months (0 = never drank alcohol, 1 = never been drunk, 2 = once a month or less, 3 = 2 to 8 days a month, 4 = every day or almost every day); change between waves: wave 2 minus wave 1
Drinking alone	Respondents were asked whether they had ever drunk alcohol while alone; change between waves: initiating drinking alone between waves 1 and 2
Problems caused by drinking	Average of 4 items measuring whether respondents' drinking caused them problems with their parents, at school, with their friends, and with someone they had been dating in the previous 12 months (0 = never drank or no problem, 1 = once, 2 = twice, 3 = 3–4 times, 4 = 5 or more times); change between waves: wave 2 minus wave 1
Sexual regret from drinking	Respondents were asked whether in the past 12 months they had gotten into a sexual situation because they had been drinking and whether they had later experienced regret (0 = never drank or no problem, 1 = once, 2 = twice, 3 = 3–4 times, 4 = 5 or more times); change between waves: wave 2 minus wave 1
Marijuana use	Number of times respondents reported using marijuana in the previous 30 days (0 = never used, 1 = 1 or 2 times, 2 = 3 or more times); change between waves: wave 2 minus wave 1
Other drug use	Reports of history of use of cocaine in any form, inhalants, or other illegal drugs, such as LSD, PCP, or ecstasy (dichotomous, 1 = yes); change between waves: initiating other drug use between waves 1 and 2

RESULTS

Romantic Attraction

Comparisons of adolescent males across categories of romantic attraction suggest that the differences resided between those with both-sex attractions and those with other-sex attractions (Table 2). Males who reported romantic attractions to members of both sexes were more likely to have higher rates of substance use and problems associated with substance use at wave 1 than those who reported other-sex attractions, but they were no more likely to show increases over time. Males with both-sex attractions smoked more cigarettes, were more likely to have gotten drunk and to have consumed alcohol alone, and were more likely to use illegal drugs, including marijuana.

Among females, there were more differences between those with same-sex and both-sex attractions and those with other-sex attractions. In addition, unlike males, there were differences in terms of increases over

TABLE 2—Romantic Attractions and Substance Use and Abuse: Add Health Study, 1995–1996

	Males	Females
No. of cigarettes[a]		
Same-sex attraction	0.26	0.12
Both-sex attraction	0.16*	0.43***
Increase in no. of cigarettes[a]		
Same-sex attraction	–0.22	–0.32*
Both-sex attraction	–0.00	–0.02
No. of times drunk[a]		
Same-sex attraction	0.18	0.39*
Both-sex attraction	0.19*	0.36***
Increase in times drunk[a]		
Same-sex attraction	0.06	–0.28
Both-sex attraction	–0.18	–0.10
Ever drink alone		
Same-sex attraction	0.82	1.15
Both-sex attraction	1.34*	2.65***
Increased drinking alone[b]		
Same-sex attraction	1.64	1.63
Both-sex attraction	0.73	0.96
No. of problems caused by drinking[a]		
Same-sex attraction	0.12	0.08
Both-sex attraction	0.13**	0.14***
Increase in no. of problems caused by drinking[a]		
Same-sex attraction	–0.01	–0.04
Both-sex attraction	–0.09	–0.04
Sexual situation because of drinking[b]		
Same-sex attraction	1.10	1.11
Both-sex attraction	1.43	1.62
Increase in sexual situations because of drinking[b]		
Same-sex attraction	2.77	1.02
Both-sex attraction	1.38	1.89*
No. of times used marijuana[a]		
Same-sex attraction	0.25	0.40**
Both-sex attraction	0.18*	0.52***
Increase in no. of times used marijuana[a]		
Same-sex attraction	0.07	0.00
Both-sex attraction	–0.01	0.08*
Use drugs[b]		
Same-sex attraction	1.52	2.16**
Both-sex attraction	1.65**	2.97***
Increase in use of drugs[b]		
Same-sex attraction	0.30	1.19
Both-sex attraction	1.24	0.96

[a]Coefficients from ordinary least squares regression models.
[b]Odds ratios from logistic regression models.
*$P \leq .05$; **$P \leq .01$; ***$P \leq .001$.

time between females with other-sex attractions and those with same- and both-sex attractions. Females with same-sex attractions showed increases in cigarette smoking only relative to those with other-sex attractions. At wave 1, they were more likely to have gotten drunk and to have used marijuana and other drugs.

In most cases, females with both-sex attractions exhibited a pattern similar to that seen for males in the same category. In comparison with females reporting other-sex romantic attractions, they smoked more at wave 1 and had higher odds of getting drunk and drinking alone. They were also more likely to have used marijuana and other drugs than their peers with other-sex attractions. In addition, their odds of having been involved in a sexual situation they later regretted because they had been drinking increased over time relative to females with other-sex attractions, as did their likelihood of using marijuana.

Romantic Relationships

Comparisons of adolescents based on their romantic relationships resulted in somewhat different patterns than comparisons based on their romantic attractions (Table 3). Overall, there were fewer differences between those who reported relationships with same-sex partners or with both male and female partners and those who reported relationships only with members of the other sex. In general (with one exception), boys reporting only same-sex relationships were not more at risk for substance use and related problems than those with only other-sex relationships. Overall, male youths with both-sex relationships were more at risk for these outcomes than either of the other groups of male youths. Males in same-sex relationships smoked fewer cigarettes on average at wave 1 than those in other-sex relationships.

Interestingly, youths in relationships with members of both sexes smoked more than those with only same-sex relationships (results not shown). Males with both-sex relationships had a higher number of problems related to alcohol use at wave 1 than males with other-sex relationships, whereas those with same-sex relationships experienced a greater increase in the number of such problems over

TABLE 3—Romantic Relationships and Substance Use and Abuse: Add Health Study, 1995–1996

	Males	Females
No. of cigarettes[a]		
Same-sex relationship	–0.32*	–0.04
Both-sex relationship	0.45	0.019
Increase in no. of cigarettes[a]		
Same-sex relationship	0.09	–0.24
Both-sex relationship	0.19	0.03
No. of times drunk[a]		
Same-sex relationship	0.04	–0.12
Both-sex relationship	0.39	0.18
Increase in times drunk[a]		
Same-sex relationship	0.35	0.02
Both-sex relationship	0.30	–0.08
Ever drink alone[b]		
Same-sex relationship	0.66	1.06
Both-sex relationship	1.57	2.52**
Increased drinking alone[b]		
Same-sex relationship	0.03***	1.51
Both-sex relationship	0.39	3.01
No. of problems caused by drinking[a]		
Same-sex relationship	–0.02*	–0.01
Both-sex relationship	0.23	0.09
Increase in no. of problems caused by drinking[a]		
Same-sex relationship	0.22*	0.11
Both-sex relationship	–0.14	–0.02
Sexual situation because of drinking[b]		
Same-sex relationship	0.49	1.30
Both-sex relationship	1.72	1.62
Increase in sexual situations because of drinking[b]		
Same-sex relationship	1.72	1.50
Both-sex relationship	1.30	2.15
No. of times used marijuana[a]		
Same-sex relationship	0.04	–0.19
Both-sex relationship	0.84***	0.46**
Increase in no. of times used marijuana[a]		
Same-sex relationship	0.02	0.02
Both-sex relationship	0.17	0.02
Use drugs[b]		
Same-sex relationship	1.08	1.53
Both-sex relationship	5.28***	2.13*
Increase in use of drugs[b]		
Same-sex relationship	1.44	
Both-sex relationship	1.91	

[a]Coefficients from ordinary least squares regression models.
[b]Odds ratios from logistic regression models.
*$P \leq .05$; **$P \leq .01$; ***$P \leq .001$.

time. Moreover, youths with same-sex relationships showed a significantly greater increase in problems caused by drinking than did those with both-sex relationships. Male youths reporting same-sex relationships were less likely to have experienced an increase in drinking alone than male youths reporting other- or both-sex relationships (results not shown). Males reporting both-sex relationships were more likely to use both marijuana and other drugs at wave 1 than either those with only other-sex relationships or those with only same-sex relationships.

Comparisons across romantic relationship categories revealed fewer differences among females than males. However, in patterns similar to those found for males, female youths reporting both-sex relationships were at higher risk than those with only other-sex relationships and, with one exception, at higher risk than those with only same-sex relationships. All of the differences were found at wave 1; females did not differ in their trajectories over time across romantic relationship groups. Females with both-sex relationships were more likely to have consumed alcohol alone at wave 1 than were females with other- or same-sex relationships (results not shown). They were also more likely to have used marijuana and other drugs at time 1 than those with only other-sex relationships. In addition, they were more at risk for marijuana use than those with only same-sex relationships at time 1 (results not shown).

DISCUSSION

Past studies of self-identified LGB youths have shown that they are at higher risk than their heterosexual peers for substance use and abuse. In the case of some substance use and abuse indicators, our findings were consistent with past work; however, several caveats are in order. First, we found fewer substance use and abuse differences based on same-sex or both-sex romantic attractions than would be expected from past studies, which have revealed differences among self-identified LGB youths in regard to multiple indicators of substance use and abuse.[6,7]

Second, past studies focusing on state-based, representative samples have not had the power to examine the sex differences found in our study. To our knowledge, only one past study involving a community-based sample of LGB youths[3] reported higher rates of substance abuse among lesbian youths than among gay male youths. The degree to which same- or both-sex sexuality may be a particular risk for substance use and abuse among girls is an important issue in need of further study.

Third, few studies have been able to examine heterogeneity within the area of same-sex adolescent sexuality. We found that the youths who appeared to be at highest risk were those who had romantic attractions to both sexes. This is a particularly important finding given that recent representative studies have combined self-identified lesbian and gay youths with bisexual youths in their samples. Our results question whether most of the sexual orientation effects produced in these past representative studies have been driven by bisexual youths, who in fact have made up the larger portions of LGB youths in these studies.[6,7]

Finally, ours is the first study of which we are aware to examine trajectories of substance use and abuse over time. Given the high prevalence of substance use and abuse revealed in past studies of LGB youths, we expected to find that same- and both-sex romantic attractions would also be associated with significant increases in substance use and abuse over the yearlong study period. Instead, we found only a few instances of increasing substance use or abuse specific to same-sex sexuality, each involving female youths. Again, our results point to the relevance of substance use and abuse among sexual-minority female youths in this sample and the need for more attention to contributing factors.

Ultimately, our findings lead us to question at least in part the general knowledge base on LGB youths, which suggests that such youths are undeniably at risk for problem behaviors and negative emotional and physical health outcomes. The findings of the past 15 years leading to the general assumption that LGB youths are at risk have been based primarily on studies of youths who identify themselves as LGB; it may be that these self-identified youths are those at greatest risk for substance use and abuse. We assume that our study included a range of youths among whom some might identify themselves as LGB and some would not. It is also likely that our study included a wider range of expressions and experiences of sexuality. Ultimately, this broader view of adolescent same-sex sexuality may help us move beyond the view that to be young and LGB is to be "at risk." Certainly, our findings support the need for primary and secondary prevention and intervention in the areas of substance use and abuse for this population, but they also indicate the need to look beyond risks to the factors that protect sexual-minority youths. ■

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Contributors

S.T. Russell conceptualized the study. A.K. Driscoll and N. Truong conducted the analyses. N. Truong wrote the first draft of the literature review; S.T. Russell wrote the introduction and the methods section and revised the literature review. A.K. Driscoll wrote the first draft of the results section; S.T. Russell and A.K. Driscoll revised the findings.

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