

Family Connectedness and Sexual Risk-Taking Among Urban Youth Attending Alternative High Schools

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CONTEXT: Youth in alternative high schools engage in risky sexual behavior at higher rates than do their peers in regular schools, placing themselves at an increased risk of sexually transmitted disease and unintended pregnancy. Family connectedness is associated with reduced adolescent sexual risk-taking, although this association has not been tested among alternative school youth.

METHODS: A sample of 976 urban, predominantly minority alternative high school students in Houston, Texas, were surveyed in 2000–2002. Survey data were analyzed using logistic regression to determine whether family connectedness is related to sexual risk-taking.

RESULTS: Overall, 68% of students reported ever having had sex. Of sexually experienced students, 74% reported having had sex in the past three months and 29% reported ever having been involved in a pregnancy. The higher students scored on a scale of perceived family connectedness, the less likely they were to report ever having had sex, recently having had unprotected sex and having been involved in a pregnancy (odds ratio, 0.97 per unit increase for each outcome). Among females, higher perceived family connectedness was associated with reduced odds of ever having had sex or having initiated sex prior to age 13 (0.96 for each); males who perceived higher family connectedness had reduced odds of having been involved in a pregnancy (0.93).

CONCLUSIONS: Family connectedness may be a protective factor related to sexual risk-taking, even among high-risk youth. Including activities that acknowledge the influence of family relationships and facilitate positive parent-child relationships may increase the efficacy of programs for reducing sexual risk-taking among alternative school youth.

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Approximately one-half of all new HIV infections in the United States occur among persons younger than 25.¹ Nearly four million new sexually transmitted infection (STI) cases each year occur among adolescents.² Minority youth are disproportionately affected by STIs: For example, as of 2001, 71% of AIDS cases reported among 13–19-year-olds were among black and Hispanic youth, although blacks and Hispanics make up only 30% of that age-group.³

Teenagers who attend alternative high schools are at increased risk for engaging in risky sexual behaviors compared with students who attend regular high schools. Students are admitted to alternative high schools for a variety of reasons, such as poor academic performance or school attendance, disruptive behavior, substance abuse, pregnancy or contact with the juvenile justice system. Approximately 280,000 students nationwide attend alternative high schools; 88% of these students have ever had sexual intercourse, compared with 46% of students in regular high schools. In addition, alternative school students are more likely than their peers at regular schools to have initiated intercourse at an early age and used alcohol or drugs at last intercourse, and less likely to have used condoms at last intercourse.⁴

Safer Choices 2 is an HIV, STI and pregnancy prevention program currently being evaluated in 10 inner-city alternative schools in Houston, Texas. During needs as-

essment interviews, alternative school personnel and representatives from local community organizations identified the impact of living in dysfunctional families and the lack of positive parental support as the primary factors differentiating alternative high school students from those in regular high schools. Issues of concern included the prevalence of single-parent families, problems with parental substance use or incarceration, and the overburdening of students with adult responsibilities.

In this article, we seek to increase the understanding of protective factors among alternative school youth by examining the relationship between family connectedness and sexual risk-taking. The hypothesis to be tested here is that alternative school students who perceive higher levels of family connectedness engage in lower levels of sexual risk-taking than students who perceive lower levels of family connectedness. By providing a better understanding of the role that family connectedness plays in influencing teenage sexual behavior, this article will assist practitioners in developing interventions for high-risk youth that more adequately address the social contexts in which they live.

FAMILY CONNECTEDNESS AND TEENAGERS' BEHAVIOR

The influence of family connectedness—also referred to as family or parental closeness, warmth, support or responsiveness—on adolescent behavior has been well documented

in theoretical and empirical literature. A recent synthesis of more than 300 major research findings on the parenting of adolescents conducted by the Center for Health Communication at the Harvard School of Public Health concluded that parent-child connectedness and specific parenting practices—such as monitoring, guidance and open communication—represented the central ways in which parents influence healthy adolescent development.⁵

More specifically, the Minnesota Student Survey, which included more than 120,000 sixth, ninth and 12th graders, found consistent negative correlations between family connectedness and sexual activity, as well as suicide risk, substance use, delinquency and unhealthy weight loss.⁶ Similarly, results from the first wave of the National Longitudinal Study of Adolescent Health (Add Health), conducted among more than 12,000 adolescents in grades 7–12, found high parent-family connectedness to be protective against every health risk behavior measured, including early sexual debut.⁷ In addition, a review of 18 studies dating from 1980 to 1998 found that positive parental connectedness was related to decreased risk of adolescent pregnancy in all racial and ethnic populations.⁸ Several more recent studies have also found protective associations between family connectedness and adolescent sexual risk-taking.⁹

However, the majority of these previous studies were conducted among adolescents recruited from regular middle schools or high schools. To the best of our knowledge, no reported study has examined the relationship between family connectedness and sexual risk-taking among alternative school youth. Given the prevalence of family disruption in these youths' lives, it is important to examine whether the associations demonstrated among youth in regular schools holds true among alternative school youth as well. Studies from the literature on resiliency theory indicate that family factors may have positive influences—even on youth at high risk for negative outcomes.¹⁰

METHODS

Data

We present analyses of baseline survey data from the Safer Choices 2 program, which includes stand-alone schools (i.e., not programs within regular schools) that serve students at risk of not graduating (those referred for academic or behavioral problems). The data were collected from November 2000 to February 2001 and from November 2001 to February 2002. We recruited seventh- to 12th-grade students, and we had a target sample size of 50 students per school for each round of data collection, yielding an overall target sample size of 1,000 students. The student population was predominantly from inner-city, minority and low-income households. Reasons why individual students were enrolled in each school were not available for analysis. The data collection yielded a cross-sectional sample of 976 students.

Prior to data collection, research staff met with school personnel to determine logistics for student recruitment.

Active parental and student consent were secured prior to survey administration. Teachers sent informed-consent packets to parents via the students several weeks before the survey took place; a second and third round of information and consent forms were sent home to nonrespondents. To increase participation rates, we gave students a five-dollar gift certificate for returning the consent form and another for answering the survey. The study received approval from the University of Texas Health Science Center at Houston Committee for the Protection for Human Subjects.

The survey was administered using an audio computer-assisted self-interview program. The use of computers for data collection is an effective and reliable method for obtaining confidential information, such as data on sexual risk-taking. For example, adolescents are more likely to disclose sensitive information, such as sexual experience, when using computer-assisted questionnaires than when using other modes of survey administration (e.g., pencil and paper or in-person interviews).¹¹ The use of this methodology also overcomes problems that youth might have with an inability to read surveys.

Students took the surveys in a quiet school location (e.g., library, empty classroom or conference room) during regular school hours. Data collection staff provided students with a brief overview of how to use the computer, and students completed practice items to become familiar with question and response formats. The computers were equipped with headphones to maintain privacy, and respondents were able to ask questions of the data collection staff if they needed to. As each question appeared on the monitor, the student also heard it through the headphones and received a prompt to select the appropriate response. Staff informed students that their participation was voluntary and that neither parents nor teachers would see their responses. To protect confidentiality, we assigned a unique identification number to each respondent, and none of the data files used in analyses contained individual identifiers.

Measures

The Safer Choices 2 student questionnaire contained items taken from the original Safer Choices survey, the national Youth Risk Behavior Survey and Add Health.¹² Items assessed demographic characteristics, sexuality-related psychosocial factors and sexual behaviors. All measures were extensively pilot-tested and used among multiethnic, urban-dwelling public school student populations.

• **Sexual behavior.** Students were asked if they had ever had sexual intercourse, or sex. Sex was defined as when “a boy puts his penis into a partner’s vagina or anus (butt).” Students who indicated they had ever had sex were asked to report their age at first sexual intercourse and to answer questions regarding sexual behavior in the last three months: whether they had had sex, how many times they had had sex without using a condom and their number of sexual partners. Students who reported ever having had sex were asked how many times they had been pregnant or had gotten someone pregnant.

TABLE 1. Percentage distribution of youth attending 10 alternative schools, by selected characteristics, Houston, Texas, 2000–2002

Characteristic	% (N=976)
Sex	
Female	58.0
Male	42.0
Race/ethnicity	
Hispanic	58.0
Black	31.1
Other	10.9
Age	
12–14	25.7
15–16	37.6
17–20	36.6
Grade in school†	
7–8	22.9
9	28.9
10	19.5
11	14.9
12	13.0
Family structure	
Both biological parents	27.2
Single biological parent only	39.4
Single biological parent and another adult	10.7
Other relative	11.0
Nonrelative/live alone	11.8
Total	100.0

†Six students had missing data for grade level, and two students reported that their school does not use grades.

• **Family connectedness.** Family connectedness was measured using responses to 14 statements such as “Our family members feel very close to each other,” “I prefer being with my friends rather than being with my family” and “My parents are usually not interested in what I say or do.” Responses were scored on a four-point scale ranging from zero (strongly agree) to three (strongly disagree); six items were reverse-coded so that in all cases, a high score reflected high family connectedness. Scores for all 14 items were totaled, forming a scale of family connectedness¹³ with a good reliability (Cronbach’s alpha, 0.87). Family connectedness scale scores were analyzed as a continuous variable, with possible values ranging from zero to 42.

• **Covariates.** The analysis included gender, age, race or ethnicity, and family structure—all recognized covariates of adolescent sexual behavior.¹⁴ In logistic regression analysis, age was examined as a continuous variable, ranging from 12 to 20. Race or ethnicity was categorized as Hispanic, black or other; the “other” category included non-Hispanic white, Asian, Pacific Islander and Native American students.

Family structure was measured by the question “Who do you live with most of the time?” Students were given a list of possible responses and were asked to check all individuals that applied. For analytic purposes, the variable was collapsed into five discrete categories: living with two biological parents; living with one biological parent only; living with one biological parent and another adult (a stepparent or the parent’s partner); living with another relative (a grandparent, aunt, uncle or sibling); and living with a nonrelative (a fos-

ter parent, spouse, partner or other individual) or alone.

Additional variables were included as potential covariates in preliminary analyses: primary caregiver’s educational level, student’s marital status, perceived socioeconomic status and grades (i.e., A,B,C,D or F) in school. However, these variables did not contribute significantly in univariate analysis and were excluded from further analyses.

Analysis

For descriptive analyses, we examined specific sexual risk behaviors as dichotomous variables: whether students had ever had sex; had been sexually active in the past three months; had initiated sex before age 13; recently had had sex without using a condom; and had ever been pregnant or impregnated a partner. For these behaviors, we used chi-square analyses to determine significant differences by gender. For descriptive analysis of family connectedness, we used a one-sample t-test to analyze differences by gender; analysis of variance was used to examine differences by race and ethnicity, age-group and family structure. All descriptive analyses were conducted using SPSS for Windows 11.0.

We conducted logistic regression analyses to examine the association between students’ perception of family connectedness and self-reported sexual behavior (as measured, again, by dichotomous variable), controlling for the recognized covariates. For all outcomes except for sexual experience, only students who reported being sexually experienced were included.

Analysis of each outcome followed a two-step process. Univariate analyses examined each dependent variable’s relationship with the independent variable (family connectedness) and with each covariate, while multivariate models adjusted for all covariates.¹⁵ Age was omitted as a covariate for age of sexual initiation because of collinearity. We conducted goodness of fit tests on the final multivariate logistic models; all such tests were nonsignificant.¹⁶ Furthermore, separate analyses were conducted for males and females to examine potential gender differences in the association between family connectedness and sexual behavior. All regression analyses were conducted in Stata 7.

RESULTS

Of the 976 students in the sample, 58% were female; the same proportion were Hispanic, 31% were black and the remainder were of other races or ethnicities (Table 1). Three-

TABLE 2. Percentage of youth attending alternative schools, by selected sexual risk-taking behaviors, according to gender

Behavior	Total	Female	Male	χ^2
Ever had sex	67.5	63.4	73.3	10.64***
Sexually active†	74.1	73.1	75.3	0.39
Had sex before age 13†	21.8	15.2	29.7	19.77***
Had sex without a condom‡	56.1	62.5	48.9	8.79**
Ever involved in a pregnancy†	28.5	17.7	10.8	5.97*

*p<.05. **p<.01. ***p<.001. †Among students who reported ever having had sex. ‡Among students who had had sex in the past three months.

quarters of students were at least 15 years old, and half were in grades 9–10. Twenty-seven percent reported living with both biological parents, 39% with one biological parent only, 11% with one biological parent and another adult, 11% with another relative and 12% with a nonrelative or alone.

Overall, two-thirds (68%) of students reported that they had ever had sex (Table 2); a significantly greater proportion of males than of females had ever had sex (73% vs. 63%). Three out of four sexually experienced youth reported having had sex within the last three months; no significant difference was found according to gender. A significantly greater proportion of males than of females reported having initiated sex before age 13 (30% vs. 15%), and a greater proportion of females than of males had had sex without a condom within the past three months (63% vs. 49%). Twenty-nine percent of students had ever been pregnant or impregnated a partner; a greater proportion of females than of males reported ever having been involved in a pregnancy (18% vs. 11%).

The perceived family connectedness scale ranged from zero to 42; 17% of youth scored 20 or lower, 32% scored 21–30 and 51% scored 31–42. Males had a significantly higher level of perceived family connectedness than females, with a mean score of 30.9 compared with 28.1 (Table 3). Nonblack, non-Hispanic students had significantly lower family connectedness scores than did black and Hispanic youth. Youth living with both biological parents or one biological parent and another adult reported higher family connectedness than youth living with other relatives, with nonrelatives or alone. No significant differences by age were found.

TABLE 3. Mean family connectedness score (and standard deviation) among youth attending alternative schools, by selected characteristics

Characteristic	Mean
Sex	
Female (range, 1–42)	28.1 (9.04)
Male (range, 10–42)	30.9 (7.08)
$t_{(971)} = -5.13^{***}$	
Race/ethnicity	
Hispanic (range, 1–42)	29.5 (8.14)
Black (range, 3–42)	29.9 (8.30)
Other (range, 3–42)	26.1 (9.18)
$F_{(2, 970)} = 8.95^{***}$	
Age	
12–14 (range, 6–42)	29.5 (7.85)
15–16 (range, 1–42)	28.6 (8.69)
17–20 (range, 2–42)	29.9 (8.40)
$F_{(2, 969)} = 2.32$	
Family structure	
Both biological parents (range, 2–42)	30.4 (7.98)
Single biological parent only (range, 3–42)	29.4 (8.31)
Single biological parent and another adult (range, 1–42)	30.0 (8.64)
Other relative (range, 6–42)	27.6 (8.90)
Nonrelative/live alone (range, 6–42)	27.5 (8.36)
$F_{(4, 971)} = 3.74^{***}$	

*** $p < .001$. Note: The family connectedness scale ranges from zero to 42, with higher values reflecting higher perceived family connectedness.

TABLE 4. Adjusted odds ratios (and 95% confidence intervals) from logistic regression analyses assessing the relationship between increasing family connectedness and the risk of adolescents' engaging in sexual risk-taking behaviors, by gender

Behavior	Total	Female	Male
Ever had sex	0.97 (0.95–0.99)**	0.96 (0.94–0.99)**	0.99 (0.95–1.03)
Sexually active†	0.99 (0.97–1.01)	0.99 (0.96–1.01)	0.99 (0.96–1.03)
Had sex before age 13†	0.98 (0.95–1.01)	0.96 (0.92–0.99)**	1.01 (0.97–1.04)
Had sex without a condom‡	0.97 (0.95–1.00)*	0.97 (0.94–1.00)	0.98 (0.94–1.02)
Ever involved in a pregnancy†	0.97 (0.95–0.99)*	0.99 (0.96–1.01)	0.93 (0.89–0.97)**

* $p < 0.05$. ** $p < 0.01$. †Among students who reported ever having had sex. ‡Among students who had had sex in the past three months. Note: Odds ratios are per unit increase, adjusted for age, gender, race or ethnicity and family structure.

Table 4 presents the data from logistic regression analyses measuring the risk of students' engaging in sexual risk-taking behavior per unit increase on the family connectedness scale, adjusted for covariates. Students who perceived having greater family connectedness were significantly less likely than those with lower perceived family connectedness to report that they had ever had sex, had recently had sex without a condom and had been involved in a pregnancy (odds ratio, 0.97 for each). Thus, for every one-point increase in the family connectedness score, the odds of each risk behavior decreased by 3%. Among females, higher perceived family connectedness was significantly associated with a reduced likelihood of being sexually experienced and having initiated sex before the age of 13 (0.96 for each); among males, higher perception of family connectedness was significantly associated with a reduced likelihood of having impregnated a partner (0.93).

DISCUSSION

The data presented in this article are consistent with findings from national surveys showing that youth attending alternative schools engage in greater sexual risk behaviors than do their peers in regular schools. In our sample, 68% of students had ever had sex, and 74% of those were currently sexually active; by comparison, the proportions are 46% and 33%, respectively, among regular high school students.¹⁷

However, the findings from our study also suggest that students' perception of family connectedness may be a protective factor related to sexual risk-taking, even among high-risk youth. Alternative school students who perceived high levels of family connectedness were significantly less likely than those who perceived lower family connectedness to have ever had sex, had sex without a condom in the past three months and ever been involved in a pregnancy. Furthermore, our findings suggest that for alternative school youth, family connectedness among young women may be associated with not becoming sexually active or not initiating sexual intercourse at an early age, whereas among males, any protective influence may focus on effective use of protection against pregnancy.

The overall findings are consistent with results from studies conducted among students attending regular middle schools and high schools. Add Health found that teenagers who felt highly connected to their parents were far more likely to delay sexual activity than their peers. In addition, those

who felt highly satisfied with their relationship with their mother were more likely than others to use contraceptives and less likely to become involved in a pregnancy.¹⁸

The current findings are also consistent with previous studies conducted exclusively among minority youth that found that closeness of mother-daughter relationships was strongly associated with daughters' not having intercourse; that close family relationships were related to later age at first intercourse; and that the quality of mother-teenager relationships was negatively related to ever having had intercourse and to frequency of intercourse, and was positively related to consistency of contraceptive use among sexually active teenagers.¹⁹

Although our results are encouraging, several methodological limitations should be noted. The study was restricted to a single population—namely, students attending 10 alternative schools in Houston. Therefore, discretion is required in generalizing the results to broader populations of alternative school students. In addition, the parental consent requirement for participation in the study may have introduced selection bias toward students in good parent-child relationships. However, scores for family connectedness ranged from one to the maximum of 42, and 17% of students scored 20 or lower, which suggests that the sample was not restricted to students with high perceptions of family connectedness. Furthermore, data were self-reported, although several approaches were used to create a safe environment for completing the questionnaires.

A factor that may contribute bias in the analyses focusing on pregnancy outcomes is that female students who are pregnant or parenting may be specifically referred to alternative schools or may self-select to attend alternative schools that provide child-care facilities on-site. None of the participating schools, however, specifically served pregnant or parenting teenagers, and only two of the 10 provided on-site child-care facilities; therefore, the sample probably did not overrepresent youth who were attending alternative schools because of pregnancy or parenting status.

Finally, since the research utilized a cross-sectional design, no causal associations can be made. It is as possible that becoming sexually active leads to lower perceived family connectedness as it is possible that higher family connectedness delays sexual activity. However, the overall direction of findings reported here is in keeping with longitudinal studies that have demonstrated the protective influence of family connectedness.²⁰

National recognition regarding the importance of quality parent-child relationships for reducing risky adolescent sexual behavior is growing. In 2001, the surgeon general released a call to action that touched upon the role that quality parent-child relationships and parental supervision and monitoring can play in reducing risky adolescent sexual behavior.²¹ Furthermore, the National Campaign to Prevent Teen Pregnancy has launched several nationwide education campaigns, including a campaign targeted toward providing Hispanic parents with skills and knowledge regarding pregnancy prevention.²²

Additional research is required to examine social, cultural and logistic factors that would facilitate effective parent-child interventions for alternative school youth. Our experience working with this population suggests that parents of alternative school youth may be extremely hard to reach and that traditional educational formats, such as group interventions, would have limited impact. Alternative approaches shown to be effective for reducing adolescent substance use and violent behavior, such as distribution of booklets or newsletters,²³ or interpersonal interventions (e.g., home visits from lay health workers) may be more effective. The home visit model has been used successfully by Planned Parenthood in McAllen, Texas, where trained community members provide outreach to their Hispanic peers with information on sexual health and parent-child communication.²⁴

The fact that family connectedness may be protective against sexual risk-taking, even among high-risk youth, is encouraging. Inclusion of activities that acknowledge the influence of family relationships and that facilitate positive parent-child relationships may assist practitioners in developing effective HIV, STI and pregnancy prevention programs for alternative school youth.

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