

Environmental, Social, and Personal Correlates of Having Ever Had Sexual Intercourse Among American Indian Youths

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About half of the 9th- through 12th-grade students in the United States report that they have had sexual intercourse at least once. Reports of such experience increase with age: 33% of the 9th-grade respondents and 62% of the 12th-grade respondents to the 2003 Youth Risk Behavior Survey reported having ever had sexual intercourse.¹ This prevalence suggests that sexual intercourse may be biologically and developmentally normal behavior, especially for older youths. Of concern is that adolescents are at high risk for some of the negative health consequences of intercourse: sexually transmitted infections and unintended pregnancy. Of the 19 million new sexually transmitted infection cases in the United States every year, more than half occur to people aged 15 to 24 years.² And, although teen pregnancy, teen childbearing, and teen abortion rates have been decreasing in the United States for a decade, these rates remain among the highest in the developed world.³ About 80% of pregnancies to those aged 15 to 19 years are unintended (i.e., mistimed or unwanted); such pregnancies to adolescents account for one quarter of all the unintended pregnancies in the United States.⁴ Data from the Pregnancy Risk Assessment Monitoring System from 17 states indicate that 66% to 84% of all childbirths to adolescents are unintended.⁵

There are racial disparities in the distribution of the negative consequences of sexual intercourse for youths: the rates of adolescent pregnancy, childbearing, and sexually transmitted infections for African American and American Indian youths are higher than those of White youths. For example, the rate of adolescent births among American Indians (69/1000) is higher than the national rate (49/1000); one fifth of all births to American Indian women in the United States are to women younger than 20 years at delivery,

Objectives. We examined the correlates of having ever had sexual intercourse among American Indians aged 13 to 18 years in Minnesota.

Methods. To assess key environmental, social, and individual correlates of sexual experience, we analyzed data from 4135 American Indian youths who participated in the 1998 and 2001 Minnesota Student Surveys.

Results. Forty-two percent of those aged 13 to 15 years and 69% of those aged 16 to 18 years reported that they had ever had sexual intercourse. Correlates of sexual experience varied by age and gender. School connections had the strongest negative associations with sexual experience in young girls, and living with a father had negative associations with sexual experience for younger, but not older, youths. Sexual experience was most strongly and positively associated with risk behaviors such as substance use, violence exposure, and violence perpetuation.

Conclusions. The strongest correlates of sexual experience for American Indian youths were high-risk behaviors and exposure to violence. Future work is needed to develop and employ measures that reflect youth assets and that specifically reflect the experiences of American Indian youths. (*Am J Public Health*. 2006;96:2228–2234. doi:10.2105/AJPH.2004.053454)

compared with the national rate of 1 in 9 births to all adolescents.⁶

Because the American Indian population is younger than the overall US population,⁷ the health concerns of youths are particularly salient for this population. However, data for American Indians are often not reported in national surveillance and survey reports (including the 2003 Youth Risk Behavior Survey), and research studies about adolescent sexual behavior have focused on White, African American, or, more recently, Hispanic youths. The overall underrepresentation of American Indians in research has been explained as the consequence of small numbers, which make analyses difficult, and the reluctance of American Indians to participate in research.⁸

Minnesota has higher-than-average racial disparities for many indices of reproductive health. For example, births to girls aged younger than 18 years comprise about 3% of all births in Minnesota overall but 16% of all births to American Indians in Minnesota.⁹ For almost a decade, Minnesota also has had one

of the lowest rates of adolescent childbearing in the United States for Whites and one of the highest rates for American Indians.⁶ Early childbearing also translates into poor infant outcomes.^{10–13} Racial differences in adolescent childbearing could contribute to the disparate infant mortality rates in the Twin Cities, which has one of the lowest overall infant mortality rates in US metropolitan areas but the fifth-highest rate of mortality among infants born to American Indians.¹⁴

We conducted this study to better understand the sexual behavior of American Indian adolescents in Minnesota. We used the 1998 and 2001 Minnesota Student Survey (MSS), which reflects a geographically defined sample of 9th- and 12th-grade students, to examine the correlates of having ever had sexual intercourse. The Theory of Triadic Influences guided the selection of variables for analyses.¹⁵ This theory of adolescent health behavior combines the elements of several social cognitive theories and identifies 3 domains of influence on health: (1) attitudinal influences from the macroenvironment,

(2) social influences from the more immediate social setting or microenvironment, and (3) personal characteristics. On the basis of data from the National Longitudinal Study on Adolescent Health,^{16,17} we hypothesized that having ever had sexual intercourse would be negatively associated with positive connections to family (microenvironment) and school (macroenvironment) and positively associated with health-compromising behaviors (personal characteristics). We further hypothesized that these associations would be especially strong for younger adolescents for whom sexual experience is less normative.

METHODS

Study Design and Subjects

The Minnesota Student Survey has been administered every 3 years since 1989 through the Minnesota Department of Education and the Minnesota Department of Health. The sampling, instrumentation, and study protocols are described elsewhere.¹⁸ The 1998 and 2001 surveys were anonymous paper-and-pencil questionnaires administered to 6th, 9th, and 12th graders in a classroom during a single class period under the supervision of school personnel. Ninety-two percent of Minnesota's school districts participated, representing 97% of Minnesota's public-school students. Nonparticipating districts were typically small, rural districts. Most of the school districts notified parents about the survey by letter and used a passive parent-consent procedure. Students were told that their participation was voluntary, that they could refuse to complete the survey or refuse to complete specific items on the survey, and that they could quit the survey at any time. Each year about 3% of the completed surveys were excluded because of inconsistencies or improbable responses.¹⁸

Both of the surveys included more than 133 000 students, representing about three quarters of all 9th graders and more than half of all 12th graders in Minnesota. The lower response rate of the 12th graders has been attributed to conflicting course or job schedules and off-campus activities.¹⁸ The gender of the students was equally distributed, and the race of the students was representative of

Minnesota's population; 1.4% of the students were American Indian.

We combined the 1998 and 2001 surveys to increase the number of American Indian students for analysis. The surveys from 6th graders were excluded because they were not asked questions about sexual behavior. Only the data from the 4777 9th- and 12th-grade students who identified themselves as American Indians were examined in this report. The MSS had no questions about tribal affiliation. Although information about tribal affiliation is not completely reported by American Indians who participate in the Census,¹⁹ it is estimated that about three quarters of the American Indians in Minnesota are Ojibwe.⁷ It is thus assumed that such tribal affiliation is represented in the MSS.

Of the 4777 youths who identified as American Indian, 87% had complete data on sexual intercourse or other salient items and, thus, 4135 students were available for analyses. The 642 students with incomplete data were significantly more likely than those with complete survey data (χ^2 , 2-tailed $P \leq .05$) to report that they had engaged in binge drinking in the past 2 weeks (64% vs 31%), used illicit drugs (78% vs 46%), or were truant from school in the past 30 days (47% vs 41%). Those with incomplete data were also significantly less likely than those with complete data to report that they were female (47% vs 54%), were in the 9th grade (54% vs 69%), liked school very much/quite a bit (30% vs 35%), wanted to go to college (65% vs 71%), and lived with both parents (32% vs 39%). Those with incomplete data compared with others, however, were also significantly less likely to report that they got a kick out of doing dangerous things (58% vs 77%) or engaged in vandalism or theft in the past year (44% vs 54%).

Measures

The MSS was designed to assess high-risk behaviors. The close-ended survey questions were mainly adapted from large-scale adolescent surveys, including the National Longitudinal Study on Adolescent Health,¹⁶ the Youth Risk Behavior Survey,¹ and the Monitoring the Future Study.²⁰ The outcome variable for this study was derived from the response to a single question: "Have you ever had sexual

intercourse ('gone all the way')?" A dichotomous variable was created from the 3 response options of *no*; *yes, once or twice*; and *yes, three times or more* to identify students who reported they were or were not "sexually experienced."

Macroenvironmental influences were derived from several questions from the MSS about school connectedness (i.e., feeling school caring about student quite a bit/very much, likes school very much, feeling teachers are interested in students all or most of the time, skipping school in past 30 days), sense of safety at school (strongly agree or agree), plans to go to college, main sources of information about sex most of the time (i.e., parents, school, health care professionals), and involvement in extracurricular activities on a weekly basis (i.e., sports teams, volunteering, religious activities).

Microenvironmental social influences were derived from questions about the family (i.e., lives with father, lives with both parents) and exposure to violence from family and non-family members (i.e., ever experienced physical abuse at home that made student afraid, ever touched sexually against wishes, ever experienced violence from a romantic partner). Personal influences included weight concerns (i.e., perception of being overweight; engagement in extreme weight-reduction practices such as vomiting, diet pills, or laxatives), perceptions about self (i.e., usually feels good about self, extremely/very satisfied with personal life in past 30 days, gets a kick out of doing dangerous things), health care (i.e., treatment for a chronic health condition in past 12 months, ever treatment for substance abuse), mental health (i.e., excellent/very good mood in the past 30 days, worried all or most of the time in the past 30 days, ever had a suicide attempt), and problem behaviors (i.e., ever run away from home, vandalism/theft in past 12 months, perpetrator of violence in past 12 months, cigarette use in past 30 days, binge drinking in past 2 weeks, alcohol use in past 30 days, illegal drug use in past 30 days).

Analysis

Before combining the 1998 and 2001 surveys, χ^2 analyses were conducted to identify differences (i.e., 2-tailed $P \leq .05$) between the

TABLE 1—Distribution of Characteristics of 4135 American Indian Youths by Gender and Age: Minnesota Student Surveys, 1998 and 2001

	Girls, %		Boys, %	
	13-15 Years n = 1600	16-18 Years n = 627	13-15 Years n = 1240	16-18 Years n = 668
Macroenvironment: school, activities, and information sources				
School				
Feels school cares about student very much/quite a bit	25.3 ^a	24.7 ^a	26.3 ^a	24.9 ^a
Likes school very much/quite a bit	40.5 ^a	39.9 ^a	29.5 ^a	29.6 ^a
Feels safe in school	84.6 ^a	88.4	81.6 ^a	82.0
All or most teachers interested in student as a person	30.2 ^a	38.3	32.3 ^a	36.4 ^a
Ever skipped a full day of school in past 30 days	37.4 ^b	54.1 ^b	32.7 ^b	53.4 ^b
Plans to go to college	80.1 ^a	72.7 ^a	68.0 ^a	55.8
Weekly extracurricular activities				
Religious services or programs	46.7 ^a	36.5 ^a	42.3 ^a	31.3
Volunteer or community service	35.8	38.4 ^a	25.9	27.4
Organized sports outside school	38.6 ^a	27.1 ^a	46.5	37.1
Main sources of information about sex				
Parents	54.1 ^a	45.8	40.9 ^a	35.8
School	50.3 ^a	45.8 ^a	43.7 ^a	36.4
Health care professional	25.8 ^b	29.0 ^b	13.4	11.8 ^b
Microenvironment: family and social influences				
Lives with both parents	38.0 ^a	34.8	44.7 ^a	37.4
Lives with father	44.3 ^a	38.9	54.0 ^a	46.9
Exposure to violence				
Ever physically abused by family member	25.5 ^b	24.9 ^b	16.9 ^b	16.3
Ever sexually abused by family member	9.4 ^b	14.0	4.6 ^b	6.3
Ever exposed to violence on a date	10.8 ^b	16.1 ^b	10.0 ^b	10.0 ^b
Ever sexually abused by non-family member	18.4 ^b	21.7 ^b	6.9 ^b	10.0 ^b
Personal characteristics				
Weight concerns				
Perceived overweight	37.3	41.5	12.8 ^a	18.9
Extreme diet methods in past 12 months	20.1 ^b	20.3 ^b	7.3 ^b	7.6
Perceptions about self				
Usually feels good about self	73.0 ^a	77.8	83.6 ^a	82.3
Satisfied with personal life in past 30 days	63.6	68.4	76.9	78.0
Gets a kick out of doing dangerous things	73.6 ^b	71.6 ^b	80.4 ^b	82.0 ^b
Health care				
Treated for chronic mental or physical condition in past 12 months	21.5	24.7	18.1	22.2 ^b
Treated for substance abuse ever	8.5 ^b	9.4 ^b	10.4 ^b	14.2 ^b
Mental health functioning				
Mood excellent/very good in past 30 days	29.9 ^a	31.9 ^a	48.6 ^a	49.7
Worried all or most of time in past 30 days	27.9 ^b	26.8	16.4 ^a	18.6 ^a
Ever tried suicide	30.5 ^b	27.8 ^b	14.2 ^b	14.2 ^b
Problem behaviors				
Ran away from home in past 12 months	25.3 ^b	17.7 ^b	19.4 ^b	18.1 ^b
Vandalized or stole something in past 12 months	51.4 ^b	42.7 ^b	60.1 ^b	59.6 ^b
Hit or beat up someone in past 12 months	47.8 ^b	33.8 ^b	59.2 ^b	50.0 ^b

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outcome variable and the correlates by study year. There were no differences, except for a reduction in cigarette smoking for all students from 1998 to 2001, so the data were sufficiently comparable for combination. To identify correlates of sexual experience, we stratified the data by gender and the 2 age groups that corresponded with the 2 grade groups (i.e., aged 13–15 years for 9th graders and aged 16–18 years for 12th graders). We conducted χ^2 analyses to identify significant (i.e., 2-tailed $P \leq .05$) differences, within strata, between students who reported they had experienced sexual intercourse compared with those who reported that they had not. Adjusted odds ratios and 95% confidence intervals were derived from age- and gender-stratified multivariate logistic regression models.

RESULTS

Characteristics of the Sample

There were 2227 girls (53.9%) and 1908 boys (46.1%) in the sample; 69% were aged 13 to 15 years ($n=2840$) and 31% were aged 16 to 18 years ($n=1295$). Boys were more likely than girls to be aged 16 to 18 years ($P \leq .0001$; 35% and 28.2%, respectively) and to report that they were sexually experienced ($P \leq .0001$; 53.6% and 47.4%, respectively). Older youths were also more likely than younger youths to report they were sexually experienced ($P \leq .0001$; 68.6% and 41.9%, respectively). The youths were able to endorse any racial category that described them, and the majority of youths reported they were biracial: 64% reported they were White and American Indian, 14% reported they were Black and American Indian, 5% reported they were Asian and American Indian, and 5% reported 3 or all racial identifiers.

Fifty-four percent of the youths resided in the 7-county metropolitan area of the Twin Cities. Thirty-nine percent of the youths lived with both parents, 44% lived with 1 parent, and 17% did not live with either parent; 76% lived in a household that included their biological mother, and 47% lived in a household that included their biological father. About half of the students reported that they could talk to their fathers about problems “most of the time or some of the time,” with little

TABLE 1—Continued

Smoked cigarettes in past 30 days	40.3 ^b	55.2 ^b	34.1 ^b	49.3 ^b
Used alcohol in past 30 days	47.1 ^b	53.8 ^b	42.7 ^b	60.2 ^b
Used illicit drugs in past 30 days	45.1 ^b	47.2 ^b	44.4 ^b	50.9 ^b
Binge drinking in past 2 weeks ^c	28.1 ^b	30.0	28.8 ^b	45.7 ^b

^aNegatively ($P \leq .05$) associated with having ever had sexual intercourse, χ^2 analysis.

^bPositively ($P \leq .05$) associated with having ever had sexual intercourse, χ^2 analysis.

^cBinge drinking defined as 5 or more drinks in row, with drink defined as a glass of wine, a bottle of beer, a wine cooler, a shot glass of liquor, or a mixed drink.

variation by age and gender. About three quarters of the youths reported that they could talk to their mothers about their problems “most of the time or some of the time.” More than three quarters of the students reported that they felt that their parents cared for them “quite a bit or very much.”

Between 30% and 40% of the American Indian students reported that they liked school very much or quite a bit, and one third reported that they did not like school at all or hated it. About one quarter reported that they felt that their school cared about them, about one third reported that all or most of their teachers were personally interested in them, and about 20% of the students reported that none of their teachers were interested in them. About one third of the younger students and about half of the older students reported having skipped a full day of school in the 30 days before the survey.

More than three quarters of the girls and more than half of the boys reported plans to go to college. About one third of the students reported engagement in 1 or more of the following extracurricular activities: organized sports, religious/spiritual activities, and volunteer or service work. About half of the girls and 40% of the boys reported that their parents and their schools were important sources of information about sex. More than three quarters of the students reported that they usually felt good about themselves, and two thirds of the girls and three quarters of the boys reported that they had been satisfied with their personal lives in the past 30 days.

About three quarters of the students also reported that they sometimes got a kick out of doing dangerous things. Boys reported a higher prevalence of violent behaviors (i.e., vandalism, physical fighting) in the past year,

whereas girls were more likely to report recent cigarette use; younger girls were more likely than younger boys to report any recent substance use. Reports of having ever attempted suicide were twice as high for girls, and having ever run away from home was higher among younger girls than younger boys. Table 1 shows the distribution of environmental, family/social, and personal characteristics and highlights their associations with sexual experience in χ^2 analyses.

Correlates of Sexual Experience

The majority of the youths reported that they could talk to both their mothers and their fathers about their problems; this variable was not significantly associated with sexual experience for any youths and was thus not included in multivariate analyses. In multivariate analyses, the correlates of sexual experience varied by gender and age group (Table 2). Feeling that their school cares about students was negatively associated with sexual experience most strongly for girls, whereas endorsement that all or most of the teachers were interested in students as people was positively associated with sexual experience for girls aged 13 to 15 years and negatively associated with sexual experience for boys aged 16 to 18 years.

Living with their father was associated with a reduced likelihood of being sexually experienced among those aged 13 to 15 years, and perceived overweight was negatively associated with sexual experience among boys aged 13 to 15 years. The boys aged 13 to 15 years who had engaged in extreme diet methods in the past 12 months were twice as likely as those aged 13 to 15 years who did not engage in such practices to report being sexually experienced. Reports that school was a

primary source of information about sex were negatively associated with sexual experience for all but boys aged 16 to 18 years. The associations of sexual experience with primary sources of information about sex were consistent across age and gender: school as a primary information source about sex was negatively associated with sexual experience, and health professionals as a primary source was positively associated with sexual experience. The strongest correlates of sexual experience were individual problem behaviors and, for young girls, exposure to sexual violence.

DISCUSSION

When sexual intercourse occurs at a very early age, it may signal that a child is in a high-risk environment.^{10,13,21,22} However, sexual intercourse in late adolescence may be socially and biologically normal,¹⁰ because about half of older American youths report that they are sexually experienced.¹ Reported sexual experience was greater for our American Indian sample than that reported in a recent national sample of youths¹ and higher than the total for the 1998 and 2001 MSS samples. Sixty-nine percent of our sample aged 16 to 18 years reported being sexually experienced compared with 48% of the total MSS sample of the same age; 31% of those aged 13 to 15 years in our study reported being sexually experienced compared with 22% of the total MSS sample of the same age.¹⁸

We hypothesized that the correlates of sexual experience would vary by age group. Generally, school connections and living with a father had a stronger negative association with sexual experience among those aged 13 to 15 years compared with older youths, although school as a source of sex information was also negatively correlated with sexual experience for older girls. Family connection, primarily measured by reported ability to discuss problems with mothers and fathers, was not associated with sexual experience. However, the majority of the students reported that they could speak to their parents about their problems; thus, this measure may not have discriminated well enough to have statistical significance. The finding that the majority of American Indian youths felt connected

TABLE 2—Adjusted Odds Ratios (95% Confidence Intervals) for Variables Associated With Ever Having Had Sexual Intercourse for 4135 American Indian Youths, by Age and Gender: Minnesota Student Surveys, 1998 and 2001

Variables	13–15 Years (n = 2840)		16–18 Years (n = 1295)	
	Girls	Boys	Girls	Boys
Macroenvironment: school, activities, and information sources				
School				
Feels school cares about student very much/ quite a bit	0.7 (0.5, 0.9)*	0.8 (0.6, 1.1)	0.6 (0.4, 1.0)*	1.1 (0.7, 1.7)
Likes school very much/quite a bit	0.9 (0.7, 1.3)	0.9 (0.6, 1.3)	0.8 (0.5, 1.2)	1.0 (0.6, 1.5)
Feels safe in school	0.7 (0.5, 0.9)*	0.8 (0.6, 1.3)	1.1 (0.6, 2.2)	1.4 (0.8, 2.4)
All or most teachers interested in student as a person	1.4 (1.1, 1.9)*	0.9 (0.7, 1.3)	1.2 (0.8, 1.9)	0.6 (0.4, 0.9)*
Ever skipped a full day of school in past 30 days	1.4 (1.1, 1.9)*	1.1 (0.8, 1.5)	0.8 (0.5, 1.3)	1.5 (1.0, 2.3)*
Plans to go to college	0.9 (0.6, 1.2)	0.9 (0.6, 1.2)	1.3 (0.8, 2.1)	0.8 (0.6, 1.3)
Weekly extracurricular activities				
Religious services or programs	0.9 (0.7, 1.2)	0.8 (0.6, 1.1)	0.8 (0.6, 1.3)	0.9 (0.6, 1.4)
Volunteer or community service	1.1 (0.8, 1.4)	1.3 (0.9, 1.9)	0.6 (0.4, 1.0)*	0.9 (0.6, 1.5)
Organized sports outside school	1.0 (0.8, 1.4)	1.1 (0.8, 1.5)	0.9 (0.6, 1.4)	1.6 (1.0, 2.5)*
Main sources of information about sex				
Parents	0.9 (0.7, 1.2)	0.8 (0.6, 1.1)	1.1 (0.7, 1.6)	1.0 (0.7, 1.5)
School	0.6 (0.5, 0.8)*	0.7 (0.5, 0.9)*	0.6 (0.4, 0.9)*	1.0 (0.7, 1.5)
Health care professional	2.1 (1.5, 2.8)*	1.8 (1.2, 2.8)*	3.0 (1.8, 4.8)*	2.3 (1.1, 4.7)*
Microenvironment: family and social influences				
Lives with father	0.6 (0.5, 0.8)*	0.6 (0.5, 0.8)*	1.1 (0.7, 1.7)	0.9 (0.6, 1.4)
Exposure to violence				
Ever physically abused by family member	0.7 (0.5, 1.0)*	0.9 (0.6, 1.4)	1.1 (0.7, 1.8)	1.2 (0.7, 2.3)
Ever sexually abused by family member	1.0 (0.6, 1.5)	2.2 (0.9, 5.6)	0.8 (0.4, 1.5)	1.2 (0.4, 3.8)
Ever exposed to date violence	2.3 (1.5, 3.6)*	1.6 (0.9, 2.8)	2.0 (1.0, 3.8)*	2.0 (0.8, 5.1)
Ever sexually abused by non-family member	1.7 (1.2, 2.3)*	1.6 (0.8, 3.4)	1.4 (0.8, 2.4)	1.0 (0.4, 2.4)
Personal characteristics				
Weight concerns				
Perceived overweight	0.8 (0.6, 1.0)*	0.5 (0.4, 0.7)*	0.9 (0.6, 1.4)	1.0 (0.6, 1.7)
Extreme diet methods in past 12 months	1.4 (1.0, 1.9)*	2.3 (1.2, 4.5)*	0.9 (0.5, 1.5)	0.5 (0.2, 1.1)
Perceptions about self				
Usually feels good about self	0.8 (0.6, 1.2)	1.4 (0.9, 2.1)	0.8 (0.5, 1.5)	1.9 (1.1, 3.5)*
Satisfied with personal life in past 30 days	1.7 (1.3, 2.3)*	0.7 (0.5, 1.1)	1.8 (1.1, 2.9)*	1.1 (0.7, 1.9)
Gets a kick out of doing dangerous things	1.0 (0.8, 1.4)	0.9 (0.6, 1.3)	1.6 (1.0, 2.4)*	1.7 (1.1, 2.8)*
Health care				
Treated for chronic mental or physical condition in past 12 months	0.8 (0.6, 1.1)	0.6 (0.4, 0.9)*	0.8 (0.5, 1.3)	1.5 (0.9, 2.6)
Treated for substance abuse ever	1.9 (1.1, 3.2)*	1.5 (0.8, 2.7)	1.1 (0.5, 2.5)	0.8 (0.4, 1.6)
Mental health functioning				
Mood excellent/very good in past 30 days	0.7 (0.5, 0.9)*	1.3 (0.9, 1.8)	0.7 (0.5, 1.2)	1.1 (0.7, 1.7)
Worried all or most of time in past 30 days	1.0 (0.7, 1.4)	1.3 (0.8, 2.0)	1.0 (0.6, 1.7)	1.9 (1.1, 3.4)*
Ever tried suicide	1.1 (0.9, 1.3)	1.2 (0.9, 1.6)	1.8 (1.3, 2.4)*	1.3 (0.8, 2.0)
Problem behaviors				
Ran away from home in past 12 months	2.1 (1.6, 2.9)*	1.0 (0.7, 1.6)	1.1 (0.6, 2.1)	1.0 (0.5, 2.0)
Vandalized or stole something in past 12 months	0.9 (0.7, 1.2)	1.2 (0.8, 1.7)	1.1 (0.7, 1.7)	1.1 (0.7, 1.8)

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to their families is a cultural strength that providers and programs can build on.²³

The reported experience of date violence was positively correlated with sexual experience for girls aged 13 to 15 years; further interpretation of this finding is hampered by the cross-sectional nature of the data. Our data are nonetheless consistent with reports that early sexual experience among girls may be associated with partner violence^{21,22} and suggest that young girls who are involved in sexual relationships need special counsel to help them identify and reject relationships that have the potential for abuse.

Our hypothesis that sexual experience would be more strongly associated with high-risk behaviors among younger American Indian students was only partially borne out. Having ever run away from home was only associated with sexual experience for young girls, but reports of having used illicit drugs in the past 30 days was associated with sexual experience for all youths. Binge drinking was most strongly associated with sexual experience for boys, and cigarette smoking was associated with sexual experience only for younger boys. Other studies also have reported positive associations between sexual experience and high-risk behaviors,^{10,21,22,24} including reports that have used the MSS²⁵ and those that have examined American Indian youths.^{26–28} Of concern is the association we saw between violence perpetuation and sexual experience, which was particularly strong among boys in both age groups. Such an association has been reported by others^{24,28} and may signal a need to examine whether this association is causal or shares a common etiology for adolescent boys of all races.

Our interpretation of findings is tempered by the understanding that a survey of high-risk behaviors, conducted at school, has the potential to underestimate the prevalence of such behaviors in all youths and in the student population. Our sample was necessarily limited to enrolled students and to students who were in attendance on the day of the survey. It is also important to note that 13% of the sample was missing salient data and that these 13% reported engagement in more risk behaviors than those included in the analysis. Further, none of the correlates

TABLE 2—Continued

Hit or beat up someone in past 12 months	1.4 (1.0, 1.8)*	1.9 (1.4, 2.6)*	1.3 (0.8, 2.1)	1.7 (1.1, 2.6)*
Smoked cigarettes in past 30 days	2.2 (1.6, 2.9)*	1.7 (1.2, 2.4)*	1.8 (1.2, 2.8)*	1.3 (0.8, 2.0)
Used alcohol in past 30 days	1.1 (0.8, 1.5)	1.4 (0.9, 2.1)	2.6 (1.5, 4.4)*	1.3 (0.8, 2.3)
Used illicit drugs in past 30 days	2.2 (1.6, 2.9)*	2.3 (1.7, 3.2)*	1.5 (1.0, 2.5)*	2.2 (1.4, 3.3)*
Binge drinking in past 2 weeks ^a	1.4 (1.0, 2.0)*	2.2 (1.4, 3.5)*	0.8 (0.4, 1.4)	1.7 (1.0, 3.2)*

Note. The multivariate model included every dichotomous variable in Table 2.

^aBinge drinking defined as 5 or more drinks in row, with drink defined as a glass of wine, a bottle of beer, a wine cooler, a shot glass of liquor, or a mixed drink.

* $P \leq .05$ (some confidence intervals include 1.0 because of rounding).

for which we found associations can be considered causal, because the MSS was a cross-sectional survey, and we cannot speculate about temporality.

Despite these caveats, the measures of school connectedness, irrespective of their weak associations with sexual experience, are worthy of consideration: fewer than one third of the students reported that they felt that the school cared about them quite a bit or very much, and less than half reported that they liked school quite a bit or very much. Conversely, a majority of the students reported that they planned to go to college. We noted that the reports of college plans were highest among the young students, and truancy was highest among the older students. The most pessimistic interpretation of these findings is that disengagement and disenchantment with school increases with age.

To our knowledge, this study is unique in its attempt to characterize the correlates of sexual experience for American Indian youths via a population-based survey. However, the MSS was not designed to examine the specific experiences of American Indians and, thus, we were not able to describe the cultural assets or traditional behaviors that are known to positively affect the health of American Indians.^{29,30} Because family and cultural ties are important to the health of American Indians,^{23,29–35} further work is needed to specifically identify salient community and family ties that are associated with health-promoting behaviors and attitudes. For example, we found that the majority of youths felt they could talk to their parents about their problems and that their parents cared about them very much; these family ties were very strong and did not help

discriminate students who were sexually experienced from those who were not. However, living with a father was negatively associated with sexual experience for those aged 13 to 15 years, suggesting that further examination of the nature of the father–child relationship may be fruitful in studying the early onset of sexual intercourse in this population.

Although the MSS provides several indices of mental health functioning, substance use, and violence,^{18,25,36} it primarily measures deficits, rather than assets. The new generation of research for all youths should focus on youths' strengths in order to inform public health initiatives that will promote and build youth, family, and community assets.^{28,31,34} The absence of measures about assets must not be misinterpreted as the absence of personal strengths and assets among the respondents of this, or any, survey.

Our study provides a snapshot of a biased sample of youths: those who were attending school on the day of the survey and those who were willing to be surveyed. It also provides a rare snapshot of American Indian youths, who have been underrepresented in the adolescent health literature. We encourage further work to identify, measure, and promote the assets of these young people. ■

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Contributors

W.L. Hellerstedt developed the analyses plan, conducted the analyses, and wrote the first and subsequent drafts of the paper. M. Peterson-Hickey, A. Garwick, and K.L. Rhodes contributed to the writing of the article.

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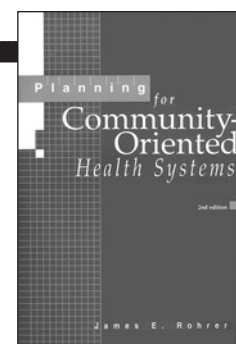
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This study was approved by the University of Minnesota's institutional review board.

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