

SEXUAL, ASSAULTIVE, AND SUICIDAL BEHAVIORS
AMONG URBAN MINORITY
JUNIOR HIGH SCHOOL STUDENTS

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ABSTRACT

Objective: A greater understanding of minority adolescents' involvement in sex and violence is an essential precursor to the development of effective prevention programs targeted at inner-city youths. **Method:** To estimate the prevalence of involvement in sexual, assaultive, and suicidal behaviors and to quantify the relative importance of demographic, psychosocial, and behavioral risk factors for those behaviors, a survey was administered in the spring of 1992 to a sample of 3,738 predominantly Hispanic and African-American students attending four junior high schools in an economically disadvantaged, medically underserved New York City school district. The mean age of participants was 13.5 years; 73.7% were Dominican, 6.9% were other Hispanic, and 10.4% were black. **Results:** Thirty-one percent of males and 7% of females reported involvement in sexual intercourse, 27% of males and 8% of females reported involvement in assaultive behavior, and 10% of males and 19% of females reported suicide intentions/attempts. The primary risk factor for sexual intercourse was a belief that involvement in intercourse was common and acceptable among peers. The primary risk factor for assaultive behavior was adverse social circumstances. The primary risk factor for suicide intentions/attempts was symptoms of depression. The risk for involvement in each of the three investigated risk behaviors was substantially increased by involvement in the other two behaviors.

Conclusions: These findings underscore the urgent need for comprehensive sex and violence prevention programs targeted at urban minority junior high school students and suggest factors that may identify students at highest risk.

Key Words: sexual behavior, assaultive behavior, suicidal behavior, risk behavior, adolescents.

INTRODUCTION

Sex and violence are now the major sources of morbidity and mortality among American youths. Violence is the major source of mortality, with accidents, homicide, and suicide accounting for three quarters of all adolescent deaths (Centers for Disease Control and Prevention, 1993). Pregnancy and sexually transmitted diseases, with their adverse physical and social sequelae (Nord et al., 1992; Yarber and Parrillo, 1992), are two of the major sources of morbidity, affecting millions of teenagers each year (Newcomer and Baldwin, 1992).

Most adolescent morbidity and mortality is largely attributable to a relatively small number of preventable risk behaviors, such as aggressive conflict resolution and unprotected sexual intercourse. Recent national surveys indicate that these risk behaviors are highly prevalent among older adolescents. Thus, in a 1991 survey (Kane et al., 1993) of past-year behaviors conducted among 12,272 American high school students, 43% had been involved in a physical fight, 26% had carried a weapon, 29% had seriously thought about attempting suicide, 7% had attempted suicide, 2% had made a suicide attempt that required medical intervention, 54% had had sexual intercourse, 19% had had four or more intercourse partners, and 54% had not used a condom during intercourse.

Rates of mortality, morbidity, and risk behaviors are disproportionately high among minority youths. Minority adolescents are reported to have higher mortality from homicide (Centers for Disease Control and Prevention, 1993), higher morbidity from pregnancy and sexually transmitted disease (Morris et al., 1993), and greater involvement in sexual intercourse, physical fighting, and weapon carrying (Kane et al., 1993).

The present analysis was undertaken in the context of the development of risk behavior prevention programs for minority adolescents attending junior high schools in one of New York City's most economically disadvantaged and medically underserved school districts. The goal of the analysis was to attain a

greater understanding of the prevention needs of this population by estimating the prevalence of involvement in sexual, assaultive, and suicidal behaviors and quantifying the relative importance of demographic, psychosocial, and behavioral risk factors for those behaviors. To this end, a survey was administered in the spring of 1992 to 3,738 adolescents attending four junior high schools in the target New York City school district.

METHOD

Subjects: The eligible study population comprised sixth through eighth grade students attending the four public junior high schools in a New York City school district in the spring of 1992 ($N = 5,757$). Passive parental consent was required for students' participation in the survey. All students whose parents did not refuse participation (95% of students) and who were present on the day of administration (70% of students) participated in the survey. The mean age of participants ($n = 3,738$; 65% of those eligible) was 13.5 years ($SD 1.9$; range: 11 to 17 years); 53.5% of participants were male. The racial/ethnic distribution of participants was 73.7% Dominican, 6.9% other Hispanic, 10.4% African-American, and 9.0% other. Forty-seven percent of participants were born outside of the United States (39.1% in the Dominican Republic); 57.5% preferred to communicate in Spanish or in a combination of English and Spanish. The demographic characteristics of students participating in the survey closely mirrored those of the entire eligible population.

Measurements: The self-report survey instrument, which is available from the authors, was developed by the staff of the Center for Population and Family Health (CPFH) in the Columbia University School of Public Health. The instrument comprised 55 closed-end, multiple-choice items assessing involvement in sexual intercourse, assaultive behavior, and suicidal intentions/attempts, as well as demographic, psychosocial, and

other behavioral items. Many of the items were drawn from instruments validated by other researchers (e.g., Kann et al., 1993). Focus group discussions and pretests were conducted to refine the instrument and to ensure the appropriateness of the instrument for the target population.

The instrument was administered by CPFH staff in the classroom setting in one class period according to a standardized administration protocol. Students were informed by CPFH staff that survey responses were voluntary and confidential and would be used by CPFH professional staff to plan health services. Students could choose to complete either a Spanish or an English language version of the survey.

Risk Behaviors: Students were asked to complete a series of items regarding involvement in sexual intercourse, suicide intentions/attempts, and assaultive behavior. Lifetime involvement in sexual intercourse was defined as ever having had vaginal intercourse. Lifetime involvement in suicide intentions/attempts was defined as ever having intended to commit suicide or ever having attempted suicide. Past-year involvement in assaultive behavior was defined as in the past year having been suspended from school for fighting or having beaten up, mugged, shot, or stabbed someone. Lifetime involvement in assaultive behavior was not assessed.

Risk Factors for the Investigated Behaviors: Demographic, psychosocial, and behavioral variables with previously demonstrated (Cohall et al., 1991; Santelli and Beilenson, 1992; Shaffer et al., 1988) empirical or theoretical associations with sexual, assaultive, and suicidal behaviors were selected for analysis in the present study. The goal of the analysis was to quantify the relative importance of these variables as risk factors for the three investigated behaviors in the sampled population.

- Demographic: Students were asked to complete one item each pertaining to gender, race/ethnicity, and current grade level.

- Psychosocial: Students were asked to complete nine items comprising an additive scale assessing adverse social circumstances germane to the sample population, including parental separation/divorce, deaths among family/friends, exposure to the ambient drug culture, exposure to violence, absence of a male head of household, and Medicaid status. They also were asked to complete four items comprising an additive scale assessing degree of acculturation to the United States, including place of birth, preferred language, length of residence in the United States, and frequency of travel to their country of origin. Students also were asked to complete eight items operationalizing the psychiatric diagnostic criteria (American Psychiatric Association, 1987) for current depressive disorder. They also were asked to complete three items comprising an additive scale assessing social influence pertaining to involvement in sexual intercourse, including an estimation of how many of their close friends and how many people their age had ever had intercourse and whether they personally believed that people their age should have intercourse. Finally, students were asked whether they knew anyone who has acquired immunodeficiency syndrome (AIDS) and whether they knew anyone who had attempted suicide.

- Behavioral: Students were asked to complete three items comprising an additive scale assessing academic problems, including grades attained, subjects failed, and frequency of absenteeism. Students also were asked to complete five items comprising an additive scale assessing use of alcohol, cigarettes, marijuana, cocaine/crack, and heroin. In the present study, the internal consistencies of all scales described above were acceptable, ranging from .68 to .79.

Statistical Analysis: The proportions of students reporting involvement in each of the three investigated risk behaviors (i.e., lifetime involvement in sexual intercourse, lifetime suicide ideation/attempts, and past-year involvement in assaultive behavior) were calculated for the total sampled population and separately for the gender, race/ethnicity, and grade-level subgroups.

To quantify the relative importance of risk factors for involvement in the three investigated behaviors, multiple logistic regression (Hosmer and Lemeshow, 1989) was used. In these analyses, each of the three risk behaviors was regressed onto four demographic variables comprising gender, two vectors representing race/ethnicity, and a three-level grade variable. Entered simultaneously with the demographic variables were relevant psychosocial and behavioral variables specific to each risk behavior, as indicated in Tables 2 through 4. Multivariate odds ratios and 95% confidence intervals then were calculated for each variable in the models. The multivariate odds ratios indicate the risk conveyed by each of the demographic, psychosocial, and behavioral variables, net of the effects of all other variables in the models.

For the adverse social circumstances, acculturation, social influence, and academic problems scales, the extreme categories of each scale ("most" versus "least") were compared. For the substance use scale, at least weekly use of any of the five substances was compared to no use of any of the five substances ("present" versus "absent"). Depression was coded as "present" if the student reported at least five symptoms of depressive disorder, including depressed mood or anhedonia, nearly every day for the past 2 weeks (American Psychiatric Association, 1987).

To investigate the extent to which the three risk behaviors were interrelated, the proportions of students involved in each behavior given involvement in neither, either, or both of the other two behaviors were calculated. In addition, odds ratios (and 95% confidence intervals) were calculated to estimate the

odds of involvement in each of the three risk behaviors given involvement in both versus neither of the other two behaviors.

RESULTS

Prevalence of Risk Behavior Involvement: Table 1 presents the prevalence of students' reported involvement in the three investigated risk behaviors. One fifth of students (greater proportions of males than females, African-Americans than Hispanics or others, and eighth than sixth or seventh graders) reported lifetime involvement in sexual intercourse. Of those, 38.1% reported past-year intercourse involvement, 66.2% reported never or only sometimes using contraception, and 3.2% reported ever having been pregnant or having impregnated someone. The modal age of reported initiation of intercourse was 13 years. Among students using contraception, 84.4% reported usually using condoms, 7.1% reported usually using withdrawal, and 4.9% reported usually using oral contraceptive pills. Also among those who used contraceptives, 38.5% reported obtaining devices from drugstores, 33.0% from friends or family, and 19.4% from a hospital-based family planning clinic.

One tenth of students (a greater proportion of females than males) reported lifetime involvement in suicide intentions/attempts. Of those, 34.8% reported intentions/attempts in the past month and 19.8% reported intentions/attempts in the past year.

One fifth of students (greater proportions of males than females, and African-Americans than Hispanics or others) reported past-year involvement in one or both of the investigated assaultive behaviors. Of all students, 10.8% (16.3% of males and 4.6% of females) reported having been suspended from school for fighting, and 6.5% (9.1% of males and 3.5% of females) reported having beaten up, mugged, shot at, or stabbed someone.

Risk Factors for Involvement in the Investigated Behaviors:

Tables 2, 3, and 4 present the multivariate odds ratios for involvement in each of the three investigated behaviors, given the modeled variables. Social influence was the primary risk factor for involvement in sexual intercourse, followed by involvement in assaultive behavior, male gender, adverse social circumstances, substance use, and suicide intentions/attempts (Table 2).

Symptoms of depression was the primary risk factor for suicide intentions/attempts, followed by adverse social circumstances and female gender (Table 3). Adverse social circumstances was the primary risk factor for involvement in assaultive behavior, followed by academic problems, substance use, male gender, and involvement in sexual intercourse (Table 4).

The regression analyses also were conducted separately within each gender and race/ethnicity category. In these subgroup analyses, the previously demonstrated associations were maintained with one exception: academic problems ($p < .05$) and substance use ($p < .001$) were significantly associated with sexual intercourse among Hispanics, but not among African-Americans.

Interrelationships of Risk Behaviors: Table 5 presents the proportions of students reporting involvement in each of the three investigated risk behaviors, and the odds for involvement in each behavior, given involvement in the other two behaviors. Both analyses demonstrate that the risk for involvement in each of the three investigated risk behaviors was substantially increased by involvement in the other two behaviors. These findings were maintained for both genders and for all three race/ethnicity groups (χ^2_{homog} [Fleiss, 1981] non-significant for all behavior relationships).

DISCUSSION:

This investigation is one of the few multivariate explorations of risk factors for involvement in sex and violence among a young, nonreferred sample of urban minority adolescents. The principal finding from this investigation is that substantial proportions of junior high school students reported involvement in sexual intercourse (usually unprotected), suicide intentions/ attempts, and assaultive behavior. The risk for involvement in each of these behaviors was substantially increased by involvement in the other two behaviors. Certain psychosocial and behavioral variables substantially increased the risk for involvement in these behaviors, and as such they should be the focus of preventive interventions targeted at inner-city minority youths.

Before considering the implications of these findings, however, some methodological issues are addressed. First, the external validity of the analysis is limited by the nonrepresentativeness of the sample population. Thus, the findings from this analysis may not be generalizable to students attending schools unwilling to permit such surveys, to students whose parents do not permit participation in such surveys, to students with a different demographic profile (including other Hispanic groups), or to teenagers who are habitually absent or have withdrawn from school. Indeed, this latter group of adolescents has been found to be at particularly high risk for involvement in the investigated behaviors (Centers for Disease Control and Prevention, 1994) and may have different determinants of these behaviors as well.

Second, because the behavioral prevalence data from this analysis are derived from self-report survey responses, they are subject to bias from over- and underreporting. However, survey administration procedures were designed to maximize accurate self-disclosure. Moreover, the behavioral prevalence findings are strengthened by their similarity to those reported from other investigations conducted among similar populations of youths (Biglan et al., 1990; Garrison et al., 1993; Gladstein and Slater,

1988; Price et al., 1991; Shafer and Boyer, 1991; Siegel et al., 1991; Vanderschmidt et al., 1993; Walter et al., 1992).

As an additional validity check, the responses to the survey item assessing lifetime involvement in sexual intercourse were compared to responses to the same item in a separate semistructured interview routinely conducted by trained social workers in the school-based health clinics. Thus, the interview responses of each of 659 students who presented to the clinics for social services during the 2-month interval bracketing survey administration were compared to each of their survey responses. The overall Index of Agreement (Fleiss, 1981) between survey and interview responses was 82%, and the chance corrected agreement (κ) (Fleiss, 1981) was .62, indicating "very good" agreement beyond chance. Similar tests of validity were not possible for the other two dependent variables because involvement in assaultive behavior and suicide intentions/attempts was not routinely assessed in the clinic-based interviews.

As a final methodological point, because the data from this analysis are cross-sectional, the directionality of the observed associations between the explanatory and outcome variables cannot be determined and await clarification in longitudinal analyses.

In this analysis, one third of boys and one tenth of girls reported lifetime involvement in sexual intercourse, usually unprotected by contraceptives. The overall prevalence of sexual activity in this population is lower than has been reported from two other recent studies conducted among junior high school populations in which African-American students were overrepresented (Siegel et al., 1991; Vanderschmidt et al., 1993). In the present study, African-American students were overrepresented among intercourse-experienced students compared to Hispanic and other students. Thus, the findings from the three studies are consistent with the suggestion that early sexual activity may be more common among African-American youths than among youths of other race/ethnicities. The relative contributions of social class, cultural and religious mores, and

other factors to these differences in sexual activity need to be determined.

The primary risk factor for involvement in sexual intercourse was social influence. Thus, students who believed that involvement in intercourse was common and acceptable among their peers were 21 times more likely to report sexual experience than were students not endorsing those beliefs. This finding is consistent with recent theoretical propositions (Fisher, 1988) and with empirical findings among older adolescents (Biglan et al., 1990; Shafer and Boyer, 1991; Walter et al., 1992, 1993).

Assaultive behavior, substance use, suicide intentions/attempts, and academic problems also were related to students' involvement in sexual intercourse, confirming the suggestion that early intercourse clusters with other problem behaviors (Santelli and Beilenson, 1992). However, intercourse involvement was associated with a greater number of problem behaviors among Hispanics than among African-Americans, suggesting that early sexual activity may be more of a normviolating behavior among Hispanics than among African-Americans. Contrary to previous reports (Becarra and de Anda, 1984), the present analysis failed to observe an association between degree of acculturation and reported involvement in intercourse, net of the effects of the other investigated predictor variables.

One tenth of boys and one fifth of girls reported lifetime involvement in suicide intentions/attempts. Other studies conducted among community samples of youths have reported rates of suicide ideation/attempts ranging from 2% to 63%, depending on the definitions of suicidality used by the investigators (Garrison et al., 1993). However, a recent investigation (Garrison et al., 1993) of suicidality conducted among a multiethnic sample of high school students reported a past-year rate of planned suicide and suicide attempts of 13.9%, a rate similar to that observed in the present study. In the present investigation, females were two times as likely to have been involved in suicide intentions/attempts than were males; a similar finding was reported from the Garrison et al. (1993) study.

The primary risk factor for suicide intentions/attempts was symptoms of depression; adverse social circumstances also played an important explanatory role. Thus, students reporting symptoms of depression and adverse social circumstances were seven and five times, respectively, more likely to report suicide intentions/attempts than were students not reporting those factors. In the Garrison et al. (1993) study, aggressive behaviors (carrying weapons and fighting) and substance use were among the strongest risk factors for suicidality; however, in that study, symptoms of depression and adverse social circumstances were not assessed. In the present analysis, associations of suicide intentions/attempts with assaultive behavior, suicidal behavior among acquaintances, academic problems, and sexual intercourse also were observed, confirming previous reports (Garrison et al., 1993; Shaffer et al., 1988).

One quarter of boys and one tenth of girls reported past-year involvement in one or more assaultive behaviors. In addition, 31.9% of students reported having witnessed a violent assault, 53.3% reported having seen street drugs being sold, and 45.6% reported knowing someone who sells drugs. Similarly disturbing findings recently were reported from three other studies also conducted among populations of inner-city youths (Gladstein and Slater, 1988; Price et al., 1991; Vanderschmidt et al., 1993).

In this analysis, the primary risk factor for involvement in assaultive behavior was adverse social circumstances. Thus, students experiencing the greatest number of adverse social circumstances were 15 times more likely to report assaultive behavior than were students experiencing the least number of adverse circumstances. Reported involvement in assaultive behavior also was associated with academic problems, substance use, sexual intercourse, suicide intentions/ attempts, and greater acculturation to the United States, as has been shown previously (Cohall et al., 1991).

The findings from this investigation have several implications for the development of risk behavior prevention programs targeted at urban minority youths. First, the results

suggest that substantial numbers of young inner-city teenagers may be involved in risk behaviors having potentially devastating adverse consequences. However, one recent study (Stiffman et al., 1988) of minority adolescents using inner-city health clinics demonstrated that few of these youths present to health professionals for help with these behaviors. In that study, fewer than one third of patients with suicide ideation or assaultive behavior and only one half of patients with depression sought or received care for those problems, and only two thirds of sexually active females sought or received contraceptive counseling. Accordingly, accurate, efficient, and confidential mechanisms that identify students at risk and refer them to the most appropriate sources of treatment are urgently needed.

Second, because of the demonstrated interrelationships between involvement in sexual intercourse, suicide intentions/attempts, and assaultive behavior, students presenting with involvement in any one of these three risk behaviors should be carefully assessed for involvement in the other two behaviors. Moreover, the further interrelatedness of these three risk behaviors with academic problems and substance use underscores the notion that risk behaviors co-vary systematically among youths (Jessor and Jessor, 1977) and as such should be addressed comprehensively in prevention programs.

Third, because of the strong and consistent associations of adverse social circumstances with all three investigated problem behaviors, youths experiencing such stressors should be considered to be at substantially heightened risk and as such should be targeted for especially intensive prevention efforts. Although the precise mechanisms whereby adverse social circumstances influence involvement in risk behaviors are not clear, it has been suggested (Cohall et al., 1991) that such circumstances reflect a breakdown of agents of social control (e.g., family, community, church) that induce conformity to conservative norms. Clearly, research designed to identify strategies that effectively enhance adolescents' abilities to cope adaptively with the loss of such controls is urgently needed.

Fourth, because of the powerful association between social influence factors and involvement in sexual intercourse, programs aimed at the delay of sexual debut should foster social norms and values that are consistent with that goal. For example, teenagers could be helped to clarify their personal values relating to involvement in sexual intercourse, to understand the effects of external influences (e.g., peer pressure, media portrayals) on those values, and to correct misconceptions about the commonness and acceptability of sexual intercourse among their peers. Finally, the strong associations of suicidality with both symptoms of depression and adverse social circumstances are consistent with the suggestion (Brent et al., 1993) that not only should suicide prevention programs place a major emphasis on the early identification and rapid treatment of depressive disorder, but also that a greater understanding of the interrelationships between stressors, depression, and suicide should be a prevention research priority. Preventing unnecessary death and injury among young people should be one of the nation's most urgent public health priorities. To have a measurable impact on the health status of adolescents, physicians must continue to acknowledge and comprehensively address the contributions of behavioral and social factors to the major causes of morbidity and mortality among youths.

TABLE 1

Prevalence (in %) of Students' Reported Involvement in Risk Behaviors

	Lifetime Involvement in Sexual Intercourse	Lifetime Involvement in Suicide Intentions/ Attempts	Past Year Involvement in Assaultive Behavior
Total	19.7	13.7	18.2
Gender			
Male	30.7	9.5	26.8
Female	7.2	18.6	8.4
Race/ethnicity			
Hispanic	18.5	14.0	16.7
Black	32.9	12.0	32.1
Other	15.5	12.8	16.8
Grade level			
6th	15.8	13.6	18.9
7th	18.2	13.8	18.8
8th	24.7	13.8	17.3

TABLE 2

Multivariate Odds Ratios (OR) and 95% Confidence Intervals (CI) for Lifetime Involvement in Sexual Intercourse, Given Modeled Variables (n = 3,325)

Variable	OR (95% CI)
Demographic	
Gender (male vs. female)	5.2 (4.0, 6.8)
Race/ethnicity 1 (Hispanic vs. other)	1.1 (0.8, 1.7)
Race/ethnicity 2 (black vs. other)	1.7 (1.1, 2.7)
Grade (8th vs. 6th)	1.4 (1.1, 1.8)
Psychosocial	
Adverse social circumstances (most vs. least)	3.9 (2.2, 7.3)
Acculturation (most vs. least)	1.0 (0.9, 1.1)
Depressive disorder (present vs. absent)	1.7 (0.8, 3.7)
Social influence (most vs. least)	20.7 (14.6, 29.3)
Acquaintance has AIDS' (yes vs. no)	1.1 (0.8, 1.4)
Behavioral	
Assaultive behavior (ever vs. never)	5.4 (3.3, 9.2)
Suicide intentions/attempts (ever vs. never)	2.5 (1.8, 3.4)
Academic problems (most vs. least)	1.7 (1.2, 2.4)
Substance use (present vs. absent)	3.7 (2.0, 6.8)

TABLE 3

Multivariate Odds Ratios (OR) and 95% Confidence Intervals (CI)
for Lifetime Suicide Intentions/Attempts, Given Modeled Variables
(n = 3,319)

Variable	OR (95% CI)
Demographic	
Gender (male vs. female)	2.7 (1.8, 2.9)
Race/ethnicity 1 (Hispanic vs. other)	1.1 (0.8, 1.6)
Race/ethnicity 2 (black vs. other)	1.4 (0.9, 2.1)
Grade (8th vs. 6th)	1.2 (0.9, 1.5)
Psychosocial	
Adverse social circumstances (most vs. least)	5.1 (2.5, 10.3)
Acculturation (most vs. least)	1.0 (0.9, 1.1)
Depressive disorder (present vs. absent)	6.9 (3.2, 9.0)
Acquaintance attempted suicide (yes vs. no)	2.0 (1.6, 2.4)
Behavioral	
Assaultive behavior (ever vs. never)	2.2 (1.4, 3.5)
Sexual intercourse (ever vs. never)	1.9 (1.5, 2.4)
Academic problems (most vs. least)	1.9 (1.2, 3.0)
Substance use (present vs. absent)	1.3 (0.8, 2.1)

TABLE 4

Multivariate Odds Ratios (OR) and 95% Confidence Intervals (CI)
for Past-Year Involvement in Assaultive Behaviors, Given Modeled
Variables (n = 3,349)

Variable	OR (95% CI)
Demographic	
Gender (male vs. female)	3.0 (2.4, 3.8)
Race/ethnicity 1 (Hispanic vs. other)	1.0 (0.8, 1.5)
Race/ethnicity 2 (black vs. other)	1.1 (0.9, 1.4)
Grade (8th vs. 6th)	1.2 (0.9, 1.5)
Psychosocial	
Adverse social circumstances (most vs. least)	14.6 (8.5, 25.1)
Acculturation (most vs. least)	1.8 (1.2, 2.7)
Depressive disorder (present vs. absent)	1.4 (0.7, 2.5)
Behavioral	
Sexual intercourse (ever vs. never)	2.8 (2.3, 3.5)
Suicide intentions/attempts (ever vs. never)	2.0 (1.5, 2.8)
Academic problems (most vs. least)	4.4 (3.1, 6.3)
Substance use (present vs. absent)	3.2 (1.9, 5.5)

TABLE 5

Proportions (in Percent) of Students Reporting Involvement in Sexual Intercourse, Assaultive Behavior, and Suicide Intentions/Attempts, Respectively, Given Involvement in the Other Two Behaviors

Involvement in Other Two Behaviors	Sexual Intercourse	Assaultive Behavior	Suicide Intention/Attempts
Neither	13.0	11.7	11.0
Either	35.3	32.6	19.1
Both	52.3	46.9	23.8
OR ^a (95% CI)	6.0 (4.8, 7.4)	5.6 (4.5, 6.9)	2.2 (1.8, 2.7)

^aOdds for involvement in each of the three risk behaviors given involvement in both versus neither of the other two behaviors. OR = odds ratio; CI = confidence interval.

REFERENCES

- American Psychiatric Association (1987), *Diagnostic and Statistical Manual of Mental Disorders*, 3rd edition-revised (DSM-III-R). Washington, DC: American Psychiatric Association
- Becarra R, de Anda D (1984), Pregnancy and motherhood among Mexican American adolescents. *Health Soc Work* 9:106-123
- Biglan A, Metzler CW, Witt R et al. (1990), Social and behavioral factors associated with high-risk sexual behavior among adolescents. *J Behav Med* 13:245-261
- Brent DA, Perper JA, Moritz G et al. (1993), Psychiatric risk factors for adolescent suicide: a case-control study. *J Am Acad Child Adolesc Psychiatry* 32:521-529
- Centers for Disease Control and Prevention (1993), *Mortality Trends, Causes of Death, and Related Risk Behaviors among US Adolescents*. Adolescent Health: State of the Nation monograph series, No. 1. CDC Publication No. 099 4112. Atlanta, GA: Centers for Disease Control and Prevention
- Centers for Disease Control and Prevention (1994), Health risk behaviors among adolescents who do and do not attend school – United States, 1992. *MMWR* 43:129-132
- Cohall AT, Mayer R, Cohall K, Walter HJ (1991), Teen violence: the reasons why. *Contemp Pediatr* 8:54 77
- Fisher JD (1988), Possible effects of reference group-based social influence on AIDS-risk behavior and AIDS prevention. *Am Psychol* 43:914 920
- Fleiss JL (1981), *Statistical Methods for Rates and Proportions*, 2nd ed. New York: John Wiley & Sons
- Garrison CZ, McKeown RE, Valois RF, Vincent ML (1993), Aggression, substance use, and suicidal behaviors in high school students. *Am J Public Health* 83:179-184
- Gladstein J, Slater EJ (1988), Inner city teenagers' exposure to violence: a prevalence study. *Md Med J* 37:951-955
- Hosmer DW, Lemeshow S (1989), *Applied logistic Regression*. New York: John Wiley & Sons
- Jessor R, Jessor SL (1977), *Problem Behavior and Psychosocial Development: A longitudinal Study of Youth*. New York: Academic Press
- Kann L, Warren W, Collins JL, Ross J, Collins B, Kolbe LJ (1993), Results from the national school-based 1991 Youth Risk Behavior Survey and progress toward achieving related health objectives for the nation. *Public Health Rep* 108:47-55

Morris L, Warren CW, Aral SO (1993), Measuring adolescent sexual behaviors and related health outcomes. *Public Health Rep* 108:31-36

Newcomer S, Baldwin W (1992), Demographics of adolescent sexual behavior, contraception, pregnancy, and STD's. *J Sch Health* 62:265-270

Nord CW, Moore KA, Morrison DR, Brown B, Myers DE (1992), Consequences of teen-age parenting. *J Sch Health* 62:310-318

Price JH, Desmond SM, Smith D (1991), A preliminary investigation of inner city adolescents' perceptions of guns. *J Sch Health* 61:255-259

Santelli JS, Beilenson P (1992), Risk factors for adolescent sexual behavior, fertility, and sexually transmitted diseases. *J Sch Health* 62:271-279

Shafer MA, Boyer CB (1991), Psychosocial and behavioral factors associated with risk of sexually transmitted diseases, including human immunodeficiency virus infection, among urban high school students. *J Pediatr* 119:826-833

Shaffer D, Garland A, Gould M, Fisher P, Trautman P (1988), Preventing teenage suicide: a critical review. *J Am Acad Child Adolesc Psychiatry* 27:675-687

Siegel D, Lazarus N, Krasnovsky F, Durbin M, Chesney M (1991), AIDS knowledge, attitudes, and behavior among inner city, junior high school students. *J Sch Health* 61:160-165

Stiffman AR, Earls F, Robins LN, Jung KG (1988), Problems and help seeking in high-risk adolescent patients of health clinics. *J Adolesc Health Care* 9:305-309

Vanderschmidt HF, Lang JM, Knight-Williams V, Vanderschmidt GF (1993), Risks among inner-city young teens: the prevalence of sexual activity, violence, drugs, and smoking. *J Adolesc Health* 14:282-288

Walter HJ, Vaughan RD, Gladis MM, Ragin DF, Kasen S, Cohall AT (1992), Factors associated with AIDS risk behaviors among high school students in an AIDS epicenter. *Am J Public Health* 82:528-532

Walter HJ, Vaughan RD, Gladis MM, Ragin DF, Kasen S, Cohall AT (1993), Factors associated with AIDS-related behavioral intentions among high school students in an AIDS epicenter. *Health Educ Q* 20:409-420

Yarber WL, Parrillo AV (1992), Adolescents and sexually transmitted diseases. *J Sch Health* 62:331-338