

Forced Sexual Intercourse Among American High School Students: Statistical Correlates from a National Survey

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ABSTRACT

Clinicians and educators alike seek to understand the associations between forced sex and depression, substance abuse, suicide, and sexually transmissible diseases. We sought to determine whether selected demographic and behavioral factors from the 2003 Youth Risk Behavior Survey were associated with histories of forced sexual intercourse among American high-school students. No significant associations were observed between forced sexual intercourse and grade level, race, or alcohol consumption in last 30 days. Significant associations ($p < 0.05$) were found between forced sexual intercourse and physical abuse by boyfriend or girlfriend and also cocaine use in last 30 days. Subjects living in urban and rural settings were significantly more likely to report a history or forced sexual intercourse than were subjects living in suburban settings. Females were significantly more likely than males to report forced sexual intercourse.

INTRODUCTION

Episodes of coercive sex can leave victims with long-term physical, mental, and emotional scars. This type of sexual abuse can occur at any age, within either sex, and among both married and single individuals. Children and adolescents are particularly vulnerable. Family Health International (2004) states: "Sexual coercion in childhood and adolescence has multiple consequences with links to adverse reproductive health and HIV-related outcomes, subsequent experience of violence at the hands of intimate partners, and mental health problems."

There has been recent interest in dating violence, including forced sex, among American high-school students. Coker, et al. (2000) used data from the 1997 South Carolina Youth Risk Behavior Survey to study the effect of forced sex on well-being among adolescents. They conclude that forced sex (self-reported) is associated with poor health-related quality of life and adverse health behaviors in both victims and perpetrators. Females were significantly more likely to have been forced into sex than were males. Among those reporting forced sex, females were more likely to report being victims, and males were more likely to report being perpetrators. Undesirable consequences, though not necessarily identical consequences, accrued to both victims and perpetrators.

Upchurch and Kusunoki (2004) used data from the National Longitudinal Study of Adolescent Health to demonstrate a significant association between forced sex and history of sexually transmissible disease among adolescent girls. They found that girls who report forced sexual episodes also report being younger at first intercourse and report more sexual partners, and are more likely to have used drugs or alcohol at last sex. They found also that forced sex is associated with reports of STD history among adolescent females.

Nagy, et al, (1995) used an anonymous self-report survey to demonstrate associations between forced sex and selected behavioral and psychological factors in southern U. S. adolescent girls. Sexual abuse was found to be associated with lower age at first intercourse and higher rates of reported pregnancy. Associations were reported also between physical abuse and drug usage, depression, and suicide ideation.

Silverman, et al, (2004) used data from the 1997 and the 1999 Massachusetts Youth Risk Behavior Surveys to study associations among forced sex and a variety of independent variables. Significant associations between forced sex and: substance abuse, younger age at first sex, pregnancy, suicidality, and unhealthy weight management. Physical and/or sexual abuse was reported in about 20% of their subjects, and such violence was significantly associated with cocaine usage.

Buzi, et al, (2003) studied a sample of 490 secondary school students. About 18% of females and 7% of males reported unwanted sexual episodes in the past. Forced sex was associated with depression in females and suicidal thoughts among males. “Alcohol consumption within the past 30 days was significantly associated with sexually abusive experiences for females.

Both Silverman (2004) and Buzi (2003) find associations between unwanted sexual experience and substance abuse. Substance abuse certainly impairs judgment and may thereby exacerbate sexual vulnerability.

Previous studies were either limited to a single sex, to a restricted subgroup, or to a limited geographical region. This study, by contrast, derives from a large, nationally representative database. Moreover, the Youth Risk Behavior Survey is a probabilistic, multi-staged sample of American high school students, and therefore provides more generalizability to a national sample.

PURPOSE

To quantify statistical associations between a self-reported history of forced sexual intercourse and physical violence, alcohol consumption (past 30 days), cocaine usage (past 30 days), and domiciliary while controlling for race/ethnicity, grade-level, and gender. All variables were self-reported and taken from the 2003 Youth Risk Behavior Survey, a nationally representative survey of American high-school students compiled and maintained by the Centers for Disease Control.

METHODOLOGY

Data. The 2003 Youth Risk Behavior Survey (YRBS) was used for this study. Controlled co-variables were: gender, grade-level, race, and metro status (urban, suburban, or rural). Predictor variables were: physical violence, alcohol consumption in the past 30 days, and cocaine usage in the past 30 days. All variables were derived from self-reported responses. A history of forced sexual intercourse, also self-reported, was used as the dependent variable.

Again, the YRBS is a multi-staged, weighted survey designed to be representative of the United States population of high-school students. The survey has been conducted every other year since 1991 by the Centers for Disease Control. CDC conforms to current standards for human subject protection and informed consent. Specific information on this survey is available at www.cdc.gov/HealthyYouth/yrbs/data/2003/yrbs2003codebook.pdf

Statistical Analyses. All statistical analyses were conducted using SAS and took into account the complex weighting design of the survey. The YRBS is a complex design based on both stratum and clusters. New procedures in SAS like SUDAAN Software can account for complex design of survey data and yield unbiased estimates of both frequencies and their variability.

A logistic regression model (PROC SURVEYLOGISTIC) was specified in which the dependent variable, forced sexual intercourse, was regressed upon each of the independent variables while controlling for covariates: race/ethnicity, grade-level, and gender. Adjusted Odds Ratios (AOR) and 95% confidence intervals provided estimates of risk and statistical significance respectively.

Dependent and Independent Variables. We derived the independent and the dependent variables from responses to specific questions on the 2003 YHBS. An affirmative response to the following question served as the dependent variable: “Have you ever been physically forced to have sexual intercourse when you did not want to?”

Independent variables included grade-level “In what grade are you?”; gender “What is your sex?”; race/ethnicity “How do you describe yourself?”; alcohol consumption “During the past 30 days, on how many days did you have at least one drink of alcohol?”; cocaine usage “During the past 30 days, how many times did you use any form of cocaine including powder, crack, or freebase?”;

and metropolitan status (urban, suburban, or rural).

A weighted logistic regression was used to quantify risk for forced sex (self-reported). To fit this model, all variables were coded as binary. Respondents who reported forced sexual episodes were coded as 1; all others were coded as 0. Females were coded 1: Males were coded 0. Respondents reporting an urban metro status were coded 1, 0 otherwise; respondents reporting rural metro status were coded 1, 0 otherwise; and suburban metro status served as the reference. All other variables were coded in a similar fashion.

RESULTS

[Table 1](#) shows adjusted odds ratios in relation to forced sexual intercourse. No significant associations were found between forced sexual intercourse and grade-level, race, and alcohol consumption in the past 30 days. Nearly 12% of females and 6% of males reported having been forced into sexual intercourse. Table 1 provides the adjusted odds ratio (AOR = 2.263) and the 95% confidence interval (CI = 1.832-2.795).

Respondents who reported being hit or physically hurt by boyfriends or girlfriends were almost 6 times more likely to report forced sexual intercourse when compared to those who did not report such physical abuse (AOR = 5.668, 95% CI = 4.294 – 7.482).

Those who reported any use of cocaine in the past 30 days were more than 4 times as likely to report forced sex compared to those who reported no cocaine use in the past 30 days (AOR = 4.407, 95% CI = 3.142 – 6.182).

Respondents whose metro status was either urban (AOR = 1.613, 95% CI = 1.178 – 2.21) or rural (AOR = 1.716, 95% CI = 1.015 – 2.902) were significantly more likely to report episodes of forced sexual intercourse than were respondents reporting a suburban metro status. (See Table 1. The information in Table 1 is shown graphically in [Figure 1](#).)

DISCUSSION

Forced sexual intercourse carries major health consequences: pregnancy, depression, STDs, etc. It, in fact, is rape. For a constellation of reasons, adolescents are especially vulnerable. Researchers are beginning to identify demographic and behavioral factors that are associated with forced sexual intercourse among adolescents.

Analyses of regional data have been published (Coker, 2000). Some such analyses have focused exclusively on females (Nagy, 1995) while others have studied students attending alternative schools (Buzi, 2003). This study is apparently the first to utilize a large, recent, nationally representative sample that includes both male and female high-school students.

Earlier studies find females to be more likely than males to report a history of either forced sex (Buzi, 2003) or severe sexual violence (Coker, 2000). Our findings are consistent with these. We found females to be more than twice as likely as males to report forced sexual intercourse. This supports earlier findings, but this time with national data. Causes of the increased risk encountered by females are not completely understood. It may be that females are sexually attractive at earlier ages than males or that they are less capable of physical resistance than are males. More research is needed.

Silverman (2004), in a state-wide study of female high school students, reported a statistical association between physical and sexual dating violence and substance abuse (cocaine usage). Our findings confirm this at the national level for both females and males. Cocaine usage is significantly associated with forced sexual intercourse.

Certainly cocaine impairs judgment and lessens resolve. It may also place one in the company of others who are similarly compromised and perhaps predisposed toward sexual exploitation.

The association between being hit by your boyfriend or girlfriend and being forced into sexual intercourse is intriguing. This study provides no insight as to which of these is the chicken and which is the egg. There is, however, little question that forced sexual intercourse and other forms of intimate physical violence go together.

Risk of forced sexual intercourse is significantly greater for those of urban or rural domiciliary as compared to those of suburban

domiciliary. Perhaps the urban and rural settings provide less in the way of societal sanctions and fewer preventative structures. Perhaps one could find a greater percentage of typical, two-parent professional families in the suburbs, and perhaps such families more closely supervise their children and provide better access to societal support structures. Further research is indicated.

Limitations to our study are imposed by the nature of self-reported behaviors. Interpretation and conclusion should be accordingly guarded. However, self-reported survey data may be the most effective and reliable way of obtaining sensitive information from adolescent respondents.

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