Binge drinking as a risk factor for violence among secondary school students in a nationally representative sample in Puerto Rico

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INTRODUCTION

Violence is prevalent among adolescents and has a high impact on morbidity and mortality (Zhang and Johnson, 2005; Meuleeners, Lee and Hendrie, 2010). During 2007, the Youth Risk Behaviors Survey has shown that 36% of high school students reported being in a physical fight and 19% reported carrying a weapon (MMWR: 2010). On the other hand, alcohol is the most commonly used substance among adolescents with significant costs to society. Data from the National Longitudinal Study of Adolescent Health (AddHealth) show that rates of violent behavior are higher among adolescent drinkers than nondrinkers, with binge drinking being a salient predictor of violent behavior initiation (Swahn and Donovan, 2005). Although violent crime is the most costly of the negative consequences linked to alcohol use, there is a scarcity of information about the prevalence and risk factors for alcohol-related violent behavior. The National Research Council’s report published a decade ago urged researchers to investigate individual differences that distinguish people who behave violently while drinking from those who do not. The objective of this study was to determine the association between binge drinking and violence in a representative sample of secondary school students in Puerto Rico.

METHODOLOGY

Consulta Juvenil has been designed as a monitoring program of the prevalence of substance use, violence and the risk factors associated with these problem behaviors. The survey was conducted during the 2006-07 academic year.Consulta Juvenil VII has a representative sample of the adolescent students in Puerto Rico.

The sampling design was a multi-stage stratified cluster sampling. The sample frame of Consulta Juvenil VII includes all the public and private schools registered in the Department of Education and the Council of General Education in Puerto Rico. The study utilizes a self-administered questionnaire that was translated and adapted from the “Student Survey of Risk and Protective Factors and Prevalence of Alcohol, Tobacco & Other Drug Use”. A violence index was calculated from five questions asked regarding behaviors in the last two weeks (e.g. hurt someone that required medical treatment, carried a gun, carried a weapon on school property, hit a teacher, gang membership). Binge drinking was defined as one who had five or more drinks of alcohol in a row; that is within a couple of hours on any one occasion during the 12 months preceding the survey.

Statistical Analysis

Frequency distributions and descriptive statistics were used to describe the study sample. The violence index was dichotomized and used as a dependent variable in a multivariate analysis. Bivariate analyses using chi-square tests of independence were used to examine the association between youth violence, sociodemographic characteristics and binge drinking. A multiple logistic regression model was fitted to assess the effects of binge drinking on youth violence after adjusting for sociodemographic and other covariates of interest. All the statistical analyses were performed using SPSS version 17 (2008).

RESULTS

Table 1 shows a description of the study sample. Participants included 6,552 (47.9%) males and 7,120 (52.1%) females. Half of the sample were between seventh and ninth grades (51.6%) and 33.1% were between 14 and 15 years old. The majority of the sample was recruited from the public system (70.3%). In terms of parent’s education, more than 65% of the mothers reported more than high school compared with 54% of the fathers. Almost 20% of the sample was classified as binge drinkers (18.7%). The overall youth violence prevalence was 6.6%. Specifically, 3% reported hurt someone that required medical treatment, 2.4% reported carrying a gun, 2.2% carried a weapon on school property, 1.1% reported hitting a teacher and 3.6% reported gang membership.

Table 2 shows the results of the bivariate analysis. Males, those who have 14 years or more, vs. those who were born from the private system and binge drinkers were more likely to report violent behaviors. Parents’ education did not reach statistical significance.

Table 3 shows the results of the multivariate analysis. Multiple logistic regression analysis revealed that males (OR=2.9, CI: 2.4-3.5) and those who reported binge drinking (OR=5.6, CI: 4.7-6.7) were more likely to report violent behaviors.

Figure 1 shows the relationship between binge drinking frequency and violent behaviors. Adolescents who reported binge drinking more frequently were significantly more likely to report violent behaviors than those who did not report binge drinking.

Figure 2 shows the type of violent behavior among adolescents who practiced binge drinking during past month. The most prevalent violent behavior among adolescents who were binge drinkers was being member of a gang (10.6%), followed by carrying a gun (8.6%), hurting someone that needed medical treatment (8.5%), bringing a weapon to school (6.6%), and hitting a teacher (3.3%). For both, binge drinkers and non-binge drinkers, the least prevalent violent behavior was hitting a teacher (3.30% and 1.0%, respectively).

CONCLUSIONS

This study shows a positive association between binge drinking and violence among Puerto Rican adolescents, indicating that Hispanic youth who abuse of alcohol may be at higher risk for violence. These findings suggest that violence prevention programs should be integrated with substance use prevention programs. In addition, Violence prevention programs for youth need to focus on strategies that reduce involvement in physical fighting and discourage weapon carrying on school property.

REFERENCES


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