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Initiation of alcohol use in early adolescence: Links with exposure to community violence across time

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Abstract

Early alcohol use initiation has been linked with exposure to community violence, but the direction of these associations and the roles of witnessing violence vs. victimization are not clear. This study used a cross-lagged structural equation model to examine the prospective relationships between alcohol use initiation and witnessing community violence and victimization in early adolescence. A sample of 603 boys and girls provided two waves of data 16 months apart. After controlling for continuity in alcohol use and violence exposure, early initiation of alcohol use predicted later victimization in the community. Witnessing community violence increased and victimization decreased the risk of subsequent alcohol use. Prevention programs targeting early alcohol initiation may result in decreased victimization, while interventions addressing constructive ways of coping with witnessing community violence may also reduce early adolescents' alcohol use.

Keywords

early adolescence; alcohol use; witnessing violence; victimization

1. Introduction

Early initiation of alcohol use is associated with a variety of negative outcomes in late adolescence and adulthood, including alcohol abuse and dependence, illicit drug use, violence, and risky sexual behavior (Gruber, DiClemente, Anderson, & Lodico, 1996; Hingson, Heeren, Winter, & Wechsler, 2003). One factor that has been linked with early initiation of alcohol use is exposure to community violence (Taylor & Kliwer, 2006). However, the causal direction of these associations is less clear, as are the unique contributions of witnessing violence versus direct victimization. While stress and coping

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theory (Lazarus & Folkman, 1984) posits that exposure to violence may prompt some adolescents to use alcohol to cope with the stress of violence exposure, lifestyle exposure theory (Hindelang, Gottfredson, & Garofalo, 1978) suggests that alcohol use may increase the risk for witnessing violence and victimization by placing the individual in high risk situations for violence. Moreover, witnessing violence and victimization are differentially associated with specific precursors and outcomes (Schwartz & Proctor, 2000), so their temporal relationships with alcohol use may also vary.

Limited evidence suggests the presence of reciprocal links between alcohol use and exposure to community violence in adolescence. Witnessing community violence predicted subsequent initiation of alcohol use in early adolescents (Sullivan, Kung, & Farrell, 2004), and a combination of witnessing violence and victimization predicted higher levels of alcohol use over a 1-year period among late adolescent females (Thompson, Sims, Kingree, & Windle, 2008). No studies addressed the prospective unique effects of victimization in the community on adolescent alcohol use. Additionally, alcohol use in late adolescence predicted an increase in a combination of witnessing and victimization over a 1-year period in both males and females (Thompson et al., 2008). However, no studies have evaluated the effects of early initiation of alcohol use on victimization and witnessing community violence in early adolescence.

This study employs a 2-wave prospective design to evaluate reciprocal influences between initiation of alcohol use and exposure to community violence in early adolescence, while distinguishing between witnessing violence and victimization.

2. Methods

2.1. Participants and procedures

The sample included 593 early adolescents who participated in both waves of the Birmingham Youth Violence Study that took place on average 16 months apart (mean age 11.8 years, $SD=.8$, at Wave 1). The study was approved by the Institutional Review Board at the University of Alabama at Birmingham and is described in detail elsewhere (Mrug & Windle, in press). Adolescents and their primary caregivers completed individual interviews at each wave.

2.2. Measures

Family income and adolescent gender, racial minority status, and age at Wave 1 were included as covariates. At Wave 1, adolescents indicated whether they ever had more than a few sips of beer, wine or liquor. At Wave 2, the same question was asked for the past 12 months. Violence exposure was assessed with the Birmingham Youth Violence Study Violence Exposure measure (Mrug, Loosier, & Windle, 2008). At each wave, adolescents reported whether they witnessed or were victimized by the following three types of violence in the past 12 months: (a) a threat of physical violence; (b) actual physical violence; and (c) a threat or actual violence involving a weapon. Endorsement of any item was followed by three contextual probes, one of them being 'Did this happen in the neighborhood?'. Violence

exposure was measured as the sum of the witnessing and victimization items endorsed for the neighborhood, respectively.

3. Results

Descriptive statistics are presented in Table 1. The relationships between violence exposure and alcohol initiation across time were analyzed with a cross-lagged structural equation model (see Figure 1) using Mplus 4.2 (Muthen & Muthen, 1998–2006). Because of their few categories and high skewness, alcohol use, victimization, and witnessing violence were analyzed as ordinal categorical variables. All Wave 1 variables were adjusted for family income and adolescent age, gender, and race (results not shown). The model had an excellent fit to the data: $\chi^2(12) = 16.87$, *ns*, CFI=.989, RMSEA=.026. As is illustrated in Figure 1, there was moderate continuity in witnessing community violence, alcohol use, and victimization over time. Higher levels of witnessing community violence and lower levels of violent victimization at Wave 1 predicted alcohol initiation between the two waves. Initiation of alcohol use before Wave 1 was associated with increased risk of subsequent victimization in the community. Residual correlations between concurrent violence exposure and alcohol use were positive and significant, with the exception of the relationship between Wave 1 victimization and alcohol use which did not reach significance.

4. Discussion

After controlling for continuity in alcohol use, witnessing violence, and victimization, higher levels of witnessing community violence positively predicted initiation of alcohol use in early adolescence. This finding replicates previous reports of prospective effects of community violence exposure on initiation of and progression in alcohol use in younger and older adolescents (Sullivan et al., 2004; Thompson et al., 2008). It is possible that adolescents use alcohol to cope with the distressing experience of witnessing community violence. Alternatively, both witnessing community violence and subsequent initiation of alcohol use may be prompted by common factors, such as low parental supervision and affiliation with deviant peer groups. In contrast, victimization in the community was related to decreased risk of alcohol initiation over time. Because direct victimization is likely to be much more traumatic than witnessing community violence, it is possible that victimized adolescents refrained from situations that would lead to alcohol use (e.g., parties), either as a result of internalizing problems or as an attempt to protect themselves from situations in which victimization might be likely. Finally, early alcohol initiation was associated with increased victimization over time, but not with increased witnessing of community violence. Early alcohol use thus appears to put young adolescents in situations where they are more likely to be victimized (e.g., in the company of deviant peers, or near others who may get violent as a result of alcohol or other substance use). Additionally, being under the influence of alcohol or other substances may make youth more vulnerable to victimization.

This study provides important insights about the temporal relationships between early initiation of alcohol use and exposure to community violence. As alcohol use becomes more prevalent and normative in older adolescence, its associations with community violence may change. Future studies should thus examine these relationships longitudinally in older

samples and with more than two waves of data. Because alcohol use shows differential associations with victimization and witnessing of community violence, it is recommended that future studies distinguish between these types of violence exposure. Additionally, it will be important for future studies to elucidate the mechanisms through which witnessing violence and victimization may affect alcohol use, as well as mechanisms through which alcohol use may lead to victimization. An obvious limitation of this study is a reliance on youth self-report. Although using a single informant is not ideal, adolescents are deemed the most accurate reporters of both their exposure to violence and substance use, as parents are often unaware of these experiences and behaviors (Martinez & Richters, 1993).

The present results suggest that interventions addressing exposure to violence and alcohol use in early adolescents need to occur at multiple levels. First, it is crucial to decrease levels of community violence to reduce the number of youth who witness or are victimized by such violence. Second, universal interventions (especially in highly violent, urban areas) should address adaptive ways of coping with witnessing violence and victimization to provide skills and resources that adolescents can utilize when confronted with violence. Additionally, preventive programs targeting alcohol and other substance use should incorporate information on violence exposure as it relates to substance use.

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Figure 1.

Standardized coefficients in a cross-lagged structural equation model of alcohol use, witnessing community violence, and victimization.

Note: Wave 1 variables are adjusted for family income and adolescent's age, gender, and race. * $p < .05$; ** $p < .01$; *** $p < .001$

Table 1

Sample characteristics (N=593)

	Wave 1 N (%)	Wave 2 N (%)
Male	308 (52%)	
African-American	461 (78%)	
White	123 (21%)	
Used alcohol	85 (14%)	137 (23%)
Witnessing violence		
None	401 (68%)	398 (67%)
1 type	94 (16%)	112 (19%)
2 types	74 (13%)	59 (10%)
3 types	24 (4%)	25 (4%)
Victimization		
None	532 (90%)	554 (93%)
1 type	47 (8%)	27 (5%)
2 types	14 (2%)	13 (2%)
3 types	1 (0%)	0 (0%)