

Friendship Networks and the Moderating Roles of Family, School, and Neighborhood Context on Initiation of Alcohol Use in Early Adolescence

(Extended Abstract)

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This study examines how friendship networks in early adolescence are linked to the initiation of alcohol use, and how family, school, and neighborhood contexts moderate the role of peers. We use longitudinal data from The University of Illinois Bullying and Sexual Violence Study (UI-BSV) from 2008-2010 to assess friendship network alcohol use and initiation of alcohol use over five waves of data tracking students from grade six until the end of grade eight. **We test whether friendship network alcohol use predicts the initiation and timing of alcohol use initiation, and whether support and conflict in three contexts (family, school, and neighborhood) moderate the role of peer alcohol use on initiation.**

This study addresses three primary questions:

- 1) Does peer alcohol use predict overall initiation of alcohol use in early adolescence? [**Answer: No**]
- 2) Does peer alcohol use predict the timing of alcohol use in early adolescence? [**Answer: Yes**]
- 3) Do support or conflict in family, school, and neighborhood contexts mediate or moderate the role of peers on alcohol initiation and timing of initiation? [**Answer: They mediate and moderate both initiation and timing**]

Background

Alcohol use continues to be a significant long-term health threat affecting many adolescents and young adults in the United States.

National data from Monitoring the Future indicate that alcohol is the most widely used substance by teenagers today. Current estimates suggest that 30% of adolescents have consumed alcohol by 8th grade and nearly 70% have tried by 12th grade (Johnston et al. 2013). Adolescent alcohol misuse is a major public health concern, with consequences including driving intoxicated, suicidal orientations, alcohol dependence, early sexual activity, and dropping out of school (Brown and Lourie 2001; Gomberg 1997; Nelson, Heath and Kessler 1998; Prendergast 1994; Turrise and Jaccard 1992; Windle, Miller-Tutzauer and Domenico 1992). Adolescence is also a critical stage of physiological development – rapidly changing body systems may be especially vulnerable to alcohol’s effects, and brain and hormonal maturation may be affected in the long term (Spear 2000). Thus, the critical periods for successful alcohol prevention and

intervention are during adolescence and the transition to young adulthood, the developmental periods which are the focus of this project. Although considerable progress has been made in identifying risk and protective factors associated with youth drinking (Donovan 2004; Gil, Vega and Turner 2005; Maney, Higham-Gardill and Mahoney 2002; McCarty et al. 2004; Power et al. 2005), psychosocial prevention programs tend to have small to medium effects on youth drinking behavior (National Institute on Alcohol Abuse and Alcoholism 2004/2005) and thus may be further enhanced by gaining a clearer understanding of the natural course of drinking and its determinants.

Peer relationships are associated with youth drinking behavior, but the nature of these associations is far from understood.

Youth substance use is undoubtedly influenced by a complex array of interrelated risk factors. In the case of drinking researchers have focused on such diverse factors as social influences, school and community contexts, intrapersonal characteristics (e.g., mental health), and delinquency (Donovan 2004; Hawkins, Catalano and Miller 1992; Maney, Higham-Gardill and Mahoney 2002; Nash and McQueen 2005; Petraitis, Flay and Miller 1995). Among these factors, one type has received disproportionate attention: *friendship and other peer relationships*. Numerous cross-sectional and prospective studies have found that exposure to pro-drinking peer behaviors and attitudes is associated with the initiation and escalation of alcohol use during adolescence and emerging adulthood (Bahr, Hoffman and Yang 2005; Bauman and Ennett 1996; Curran, Stice and Chassin 1997; Ennett et al. 2006; Mason and Windle 2001; Prinstein, Boergers and Spirito 2001). However, despite the considerable number of studies on peer relationships and drinking, this literature has only scratched the surface in terms of understanding the factors contributing to peer similarities in drinking, the diversity of peer influences relevant to drinking, and the conditions under which youth are susceptible versus resilient to drinking-related peer influences.

Relatively few studies have used social network analysis to understand peer influences on youth drinking behavior. Some of this research on peer networks and drinking has focused on the network composition of adolescent drinkers and non-drinkers, finding that at both the best friend (dyad) and entire group levels, individuals report similar behaving similarly; either all predominantly drinking or all non-drinking (Kobus 2003; Paschall, Bersamin and Flewelling 2005; Windle 2003).

A question that remains unaddressed is the role of family, school, and neighborhood context as a moderator of peer effects. This study addresses this issue directly.

Data and Methods

This study uses the UI-BSV data, a longitudinal study funded by the Centers for Disease Control that commenced in 2008. The UI-BSV study is a comprehensive examination of bullying experiences and sexual violence during early adolescence, and examines risk and protective factors at the individual, family, peer, and community levels. In addition to

measures of violence and aggression, the study also collected friendship nominations and alcohol and other drug use measures during the course of the study, but to date this aspect of the data has not been examined.

In September 2007, three public middle schools in Illinois agreed to participate in the longitudinal UI-BSV study. All students in 6th and 7th grade were invited to participate. Data were collected in Spring 2008, Fall 2008, Spring 2009, Fall 2009, and Spring 2010 (data collection is ongoing, but we only use the first five waves here). Participation and retention were excellent. Overall 95% of student completed the baseline assessment in early Spring 2008. Retention at each subsequent wave was over 90%, with a total sample of roughly 1,200.

We assess peer network substance use (drinking, smoking, illicit substances) using each adolescent's own report of their substance use, rather than the focal adolescent's perception of friend substance use. Peer groups are identified as people who are nominated by, or who nominate, the focal adolescent (out- and in-degree nominations). We calculate the proportion of each focal adolescent's peer group who report using any substances at more than a minimal level, which is our *peer use* independent variable. We also have *scales of support and of conflict* (comprised of three measures for each), reported by the focal adolescent, in three contexts: *family, school, and neighborhood*. These are used as control variables and as potential moderators of peer substance use.

For the current study, a longitudinal dataset was constructed the follows a cohort of non-drinking (at baseline) grade six individuals until they initiate alcohol use, they reach the end of grade 8, or they are censored by missing data. We use *discrete-time event history* analysis to model the initiation of alcohol use, and *failure time* models to assess timing of initiation. The analytic sample contains 524 people, contributing 889 person-semester observations.

21% of the grade 6 non-drinkers had initiated by the end of grade 8.

Preliminary Results

Overall Initiation

1. The bivariate association between peer substance use and drinking initiation is significant at the .03 level.
2. Adding control variables mediates the effect of peer substance use to nonsignificance.
3. In a full model that includes controls, peer use, and support / conflict scales for each context, **only neighborhood conflict, family conflict, and school support are significant predictors of drinking initiation.**
4. Support and conflict in each context do not moderate the role of peer networks on the initiation of alcohol use.

Timing of Initiation

Peer network substance use does not predict whether or not individuals ultimately start drinking, but it is possible that peer network use influence the timing of initiation for people who do take up alcohol use.

1. **Peer network substance use significant shortens the time to initiation** at the bivariate level.
2. Nested models for each connect show significant peer use effects (at the .05 level) as well as neighborhood and school contexts, but not family context.
3. Full models with all contexts show **that peer substance use significantly shortened the time to initiation (.06 level), while positive neighborhood context increase the time to initiation. Family and school contexts are not significant.**
4. However, **family and school context significantly interact with peer substance use**; positive family context attenuates the friend effect on timing ($p = .02$), and school conflict also attenuates the friend effect on timing.

Summary

Overall, school social support and family/neighborhood violence predict whether or not youth start drinking. **Peer substance use does not predict whether or not early adolescents start drinking, but does shorten the time to initiation for those who do initiate.** Positive neighborhood contexts also delay drinking initiation.

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