

Direct and Indirect Effects of Older Siblings' Alcohol Use on Younger Siblings' Alcohol Use

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INTRODUCTION

- A growing body of research highlights that older siblings' substance use behaviors consistently predict their younger siblings' concurrent and future use (e.g., Fagan & Najman, 2005; Low et al., 2012; Slomkowski et al. 2005).
- Importantly, these sibling effects emerge beyond the influence of parents and peers (e.g., Fagan & Najman, 2005; Windle, 2000) as well as shared genetics (e.g., Kendler et al., 2013; Scherrer et al., 2013; Slomkowski et al., 2005).
- In short, older siblings make a unique contribution to their younger brothers' and sisters' developing substance use behaviors.
- The mechanisms underlying the associations between siblings' substance use, however, are largely unknown as most studies fail to measure influence processes and therefore infer explanations post hoc.
- The present study addresses this gap by identifying the direct and indirect pathways through which older siblings' shape their younger siblings' attitudes about and patterns of alcohol use.

METHOD

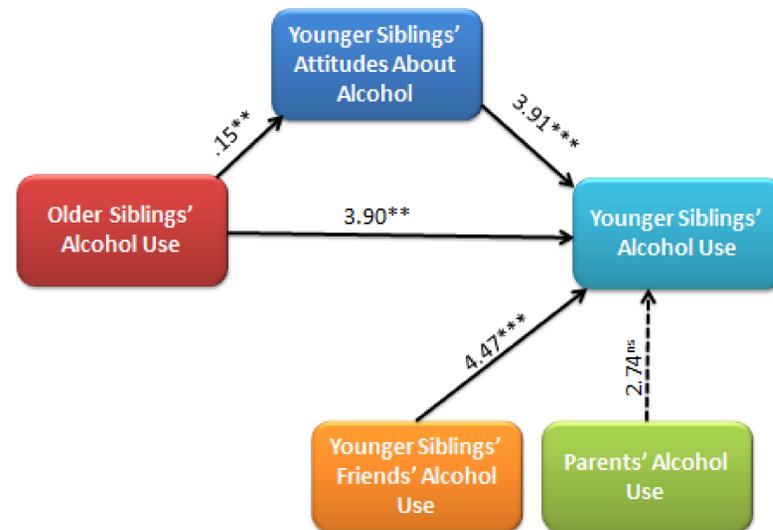
Participants

- Parents and two adolescent siblings from 326 families.
- Older siblings (51% female) averaged 17.17 (SD = .94) years old. Younger siblings (56% female) averaged 14.52 (SD = 1.27) years old.
- 71% of families were White (not Hispanic); 23% were African American; 4% Latino; 1% Asian; 1% multi-ethnic.
- Families ranged from working to upper class

Procedure

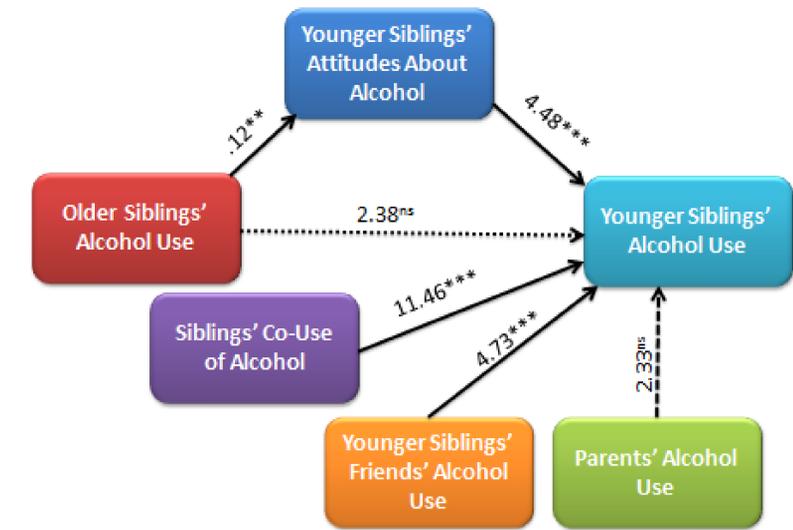
- Data were collected via telephone interviews with one parent and two adolescent siblings. Interviews were conducted separately and privately and lasted approximately 30 to 45 minutes.
- Participants received an honorarium of \$35 (\$105 per family).

FIGURE 1



* $p < .05$, ** $p < .01$, *** $p < .001$

FIGURE 2



* $p < .05$, ** $p < .01$, *** $p < .001$

METHOD (continued)

Measures

- **Alcohol Use** (NIAAA, 2003). Parents', older and younger siblings' reported on the frequency of their own alcohol use in the past year. Responses were dichotomized: 0 = did not use alcohol in past year; 1 = used alcohol in past year.
- **Attitudes About Alcohol** (Elliott et al., 1985). Younger siblings' ratings of 7 items on a 5-point scale ($\alpha = .91$). Higher scores denote more favorable attitudes about alcohol.
- **Siblings' Co-Use of Alcohol**. Older and younger siblings' reported of frequency with which target sibling was present when they drank alcohol in past year. Recoded into dichotomous variable: 0 = did not drink with sibling; 1 = drank with sibling.
- **Friends' Alcohol Use**. Younger siblings' reported on the frequency of their friends' alcohol use in the past year. Responses were dichotomized: 0 = did not use alcohol in past year; 1 = used alcohol in past year.

ANALYTIC STRATEGY

- To estimate the relative effects of sibling influence, a series of models were estimated using conditional process analysis (Hayes, 2013).
- To isolate the effects of older siblings' alcohol use, all models controlled for parents' alcohol use, younger siblings' friends alcohol use, parents' knowledge/monitoring, sibling intimacy, sibling conflict, siblings' shared friends, sibling age-spacing, youth gender, and gender composition of the sibling dyad.

RESULTS

- Older siblings' alcohol use predicted younger siblings' use directly ($OR = 3.90$) and indirectly through younger siblings' attitudes about alcohol (indirect effect = .35, 95% $CI = .05 - .71$; $OR = 1.42$). (See Figure 1)
- Siblings' co-use of alcohol ($OR = 11.46$) accounted for some of the variance of the direct effect ($OR = 2.38$, ns). The indirect association remained significant (indirect effect = .31, 95% $CI = .02 - .69$; $OR = 1.37$). (See Figure 2)

DISCUSSION

- Consistent with previous research, older siblings' alcohol use was predictive of younger siblings' use, controlling for a number of individual, family, and friend characteristics.
- Older siblings' influence operated through both indirect and direct channels.
- Indirectly, older siblings' use shaped younger siblings' cognitions, which in turn, were linked to their probability of use.
- Directly, older siblings' facilitated younger siblings' drinking by introducing them to the contexts in which alcohol was used (i.e., co-use).
- The identification of processes that drive sibling similarities is critical to the development of effective family-based intervention strategies aimed at curbing adolescent alcohol and other substance use.
- In fact, intervention programs specifically targeting sibling relationships may be especially promising given recent evidence that they serve as a non-stigmatizing entrée into families and promote health (Feinberg et al., 2012; 2013).