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Understanding Sibling Influence on Adolescents' Alcohol Use: Social and Cognitive Pathways

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Abstract

Research indicates that older siblings uniquely influence their younger brothers' and sisters' substance use behaviors during adolescence; however, the underlying mechanisms of socialization are rarely examined. The present study investigated whether social and/or cognitive pathways mediated the association between adolescent siblings' alcohol use and whether these pathways were moderated by the gender composition of the sibling dyad. Participants included one parent and two adolescent siblings (M age = 14.52 and 17.17 years) from 326 families. Data were collected via telephone interviews. Path analysis demonstrated that the association between older and younger siblings' alcohol use was mediated via social and cognitive pathways. Specifically, older siblings' drinking was positively related to the frequency of siblings' co-use as well as more positive expectations about alcohol, which in turn were positively associated with younger siblings' alcohol use. Identifying the ways in which siblings influence each other's substance use

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Contributors

SDW conceived of the study, participated in its design and coordination, and drafted the manuscript. ACJ participated in the design and coordination of the study, performed the statistical analysis, aided in the interpretation of the data, and helped draft the manuscript. SAM aided in the statistical analysis as well as the interpretation of the data, and helped draft the manuscript. JLM participated in the design of the study, aided in the interpretation of the data, and helped draft the manuscript. All authors have contributed to and approved the final manuscript.

Conflict of Interest

All authors declare that they have no conflicts of interests.

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and health is critical because they are emerging and effective targets of intervention and prevention.

Keywords

adolescent alcohol use; sibling relations; sibling influence

1. Introduction

Accumulating research indicates that siblings are important socializers of adolescents' health-related behaviors, including alcohol and other substance use (e.g., Fagan & Najman, 2005; Kothari, Sorenson, Bank, & Snyder, 2014; Low, Shortt, & Snyder, 2012). In fact, the magnitude of sibling influences on adolescents' substance use is often greater than parental influences (Kokkevi et al., 2007; Kothari et al., 2014; Windle, 2000) and on a par with peer influences (Fisher, Miles, Austin, Camargo, & Colditz, 2007; Brook et al., 1990; Scholte, Poelen, Willemsen, Boomsma, & Engels, 2008). Furthermore, behavioral geneticists have shown that similarities in siblings' substance use are significant above and beyond the contributions of shared genetics and shared parenting (Kendler, Ohlsson, Sundquist, & Sundquist, 2013; McGue, Sharma, & Benson, 1996; Scherrer et al., 2012; Slomkowski, Rende, Novak, Lloyd-Richardson, & Niaura, 2005). In short, siblings (especially older siblings) uniquely contribute to their brothers' and sisters' developing alcohol and other substance use behaviors. The mechanisms underlying the associations between siblings' substance use, however, are largely unknown as most studies fail to measure influence processes directly and therefore infer explanations *post hoc* or by using proxy variables. The present study addressed this gap by examining whether social and/or cognitive pathways mediated the association between adolescent siblings' alcohol use.

1.1. Sibling Influence: Social and Cognitive Pathways

To date, researchers have proposed several different (and potentially competing) pathways through which adolescent siblings may influence each other's alcohol and other substance use. Perhaps the clearest form of socialization is older siblings' social facilitation of younger siblings' substance use. For example, sisters and brothers may act as "partners in crime" by engaging in risky behaviors such as drinking alcohol and smoking together. Siblings may foster opportunities for substance use by directly providing the illicit substances or the settings and companions that encourage substance use (Conger & Rueter, 1996; Rowe & Gulley, 1992; Windle, 2000). In fact, two recent studies by McGue, Iacono, and colleagues (McGue & Iacono, 2009; Samek, McGue, Keyes, & Iacono, 2014) suggest that siblings' perceptions of facilitation—a construct which included the provision of substances, co-use, and acceptance of siblings' use—mediated the link between siblings' alcohol and other substance use. The present study builds upon this work by specifically investigating the degree to which one dimension of facilitation—sibling co-use (or drinking together)—mediated the association between older and younger siblings' alcohol use.

Older siblings' substance use behaviors, however, may also indirectly influence their younger sisters and brothers by altering their attitudes and expectations about the effects of

substances. D'Amico and Fromme (1997), for example, discovered that younger siblings' perceptions of their older brothers' and sisters' alcohol use were tied to their expectations, such that youth who believed their siblings were heavier drinkers endorsed weaker negative and stronger positive alcohol expectancies, which in turn, were linked to greater likelihood of alcohol use. This cognitive pathway offers an alternative indirect pathway through which older brothers and sisters may intentionally or unwittingly influence their younger siblings' current and future substance use behaviors.

In addition to shaping expectations, siblings can influence each other indirectly by providing models for how to behave. Indeed, the largest body of work on sibling influence has focused on how modeling processes moderate the associations between siblings' substance use behaviors (e.g., Slomkowski et al., 2005; Whiteman et al., 2013; 2014). For example, consistent with social learning principles that suggest models are most effective when they resemble the target, research indicates that associations between siblings' substance use behaviors are strongest when siblings share the same gender (e.g., Boyle, Sanford, Szatmari, Merikangas, & Offord, 2001; Trim, Leuthe, & Chassin, 2006) and are close in age (e.g., Kokkevi et al., 2007; Samek et al., 2014; Scholte et al., 2007). As such, it is critical to consider how structural characteristics of the sibling dyad may moderate the social and cognitive pathways underlying siblings' socialization of adolescents' alcohol use.

1.2. Current Study

Research clearly identifies siblings as important and unique socializers for adolescents' alcohol and other substance use behaviors. Scholars have explicated multiple pathways through which siblings socialize each other with respect to substance use, but these pathways have rarely been tested empirically. As such, the present study investigated whether the associations between adolescent siblings' alcohol use were mediated by social (i.e., co-use) and/or cognitive pathways (i.e., alcohol expectancies). On the basis of previous work, we hypothesized that the direct effect between older and younger siblings' alcohol use would be explained, at least in part, by these two mediating (or indirect) pathways. Importantly, we advanced previous work by testing social and cognitive pathways concurrently, thereby assessing their unique effects and potential mutual operation. Furthermore, we isolated the effect of sibling socialization by controlling for the influence of parent and peer use as well as other qualities and characteristics of the sibling relationship (e.g., sibling warmth, siblings' shared friends) that have been used as proxy variables for influence processes in previous research. This strategy directly tests the hypothesized influence processes, independent of known correlates and other potentially confounding factors. Finally, integrating work on sibling modeling, we tested a moderated mediation hypothesis, examining whether the indirect associations were stronger for same-versus mixed-gender dyads.

2. Method

2.1. Participants

Participants included two adolescent-aged siblings and one parent from 326 families (978 participants). On average, older siblings (51% female) were 17.17 years old ($SD = .94$),

younger siblings (56% female) were 14.52 years old ($SD = 1.27$), and parents (87% mothers) were 44.95 years old ($SD = 5.54$). Sibling dyads were almost equally distributed between same-gender (52%) and mixed-gender (48%) dyads. Seventy-one percent of parents identified themselves as White (not Hispanic), 23% as African American, 4% as Latino, 1% as Asian, and 1% as multi-ethnicity. Seventy-seven percent of parents were currently married. The socioeconomic circumstances of families varied from working to upper class as indexed by parent education (97% of parents were high school graduates; 58% of parents held bachelor's degrees) and household income ($Mdn = \$70,000$; $M = \$77,964$; $SD = \$72,806$; range \$0–\$980,000).

To generate the sample, families with adolescent offspring from seven counties in one Midwestern U.S. state were identified from a purchased marketing list. Families were mailed pre-notification letters that described the study and included a telephone number, email address, and a postage paid postcard to return if the family fit the study criteria (i.e., family had two adolescent-aged offspring with the older sibling being in the 11th or 12th grade and closest-aged biological sibling being approximately two to three years younger—twin siblings were not eligible) and were interested in participating. A total of 6,854 addresses and phone numbers were provided by the marketing company of which 3,852 contained correct contact information. Of these families, 2,556 did not follow up with and were not contacted via phone by project staff. An additional 511 families that were contacted did not meet our study criteria. Thus, a final pool of 785 eligible families was identified, 326 of which participated (a 42% response rate). This rate is comparable to the 37% response rate obtained by the National Survey of Families and Households in which three family members were recruited (Sweet & Bumpass, 1996). Finally, to increase the ethnic diversity of the sample, African American families were oversampled (23% of the current sample was African American as compared to a state average of 9%).

2.2. Procedures

Data were collected following approval from appropriate Institutional Review Boards. Informed consent (from parents) and assent (from youth) were obtained in writing from all study participants via mail prior to the scheduling of interviews. Standardized telephone interviews were then conducted individually and privately with each participating member of the family. Several steps were taken to ensure the privacy of participants including using different interviewers for parents and youth, asking participants to answer questions in a room away from other family members, and the use of coded Likert scales for responses. Interviews lasted approximately 30–40 minutes with each family member. Following the completion of the interviews each participant received an honorarium of \$35.

2.3. Measures

2.3.1. Demographic information—Family background information including household composition, parent marital status, age, gender, ethnicity, and education level of each member of the household was collected from parents. Gender constellation of the sibling dyad (0 = same gender; 1 = mixed gender) as well as age spacing between siblings (difference in years of age; $M = 2.65$, $SD = 1.08$) were derived from these parent data.

2.3.2. Alcohol use—Older siblings', younger siblings', and parents' alcohol use in the past 12 months was indexed via self-report on two questions from the NIAAA's Task Force on Recommended Alcohol Questions (2003). First, participants reported on the frequency that they consumed alcohol in the past year using the following scale: 0 (*not at all*), 1 (*a couple of times*), 2 (*a few times each month*), 3 (*several times a week*), 4 (*about once a day*), 5 (*several times a day*). Forty-six percent of older siblings and 19% of younger siblings reported drinking in the past year. Second, participants indicated the average number drinks consumed on a typical day they drank alcohol using the following scale: 1 (*1–2 drinks*), 2 (*3–4 drinks*), 3 (*5–6 drinks*), 4 (*7–9 drinks*), 5 (*10–11 drinks*), 6 (*12 or more*); participants who did not report drinking in the past year received scores of 0. Total consumption of alcohol use for each respondent was indexed by multiplying frequency by quantity, with higher scores denoting greater consumption. Finally, using the same frequency scale from above, youth also provided their perceptions of the frequency of their friends' alcohol use by answering the following question: "How often do your friends drink alcohol?" See Table 1 for descriptive statistics.

2.3.3 Alcohol Expectancies—Younger siblings' alcohol expectancies were measured with 7 items created by Elliott, Huizinga, and Ageton (1985). Items were designed to assess alcohol expectancies in general (e.g., "drinking alcohol makes people happier"). Items were rated on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Scores were averaged across the seven items, with higher scores indicating more positive alcohol expectancies ($\alpha = .91$).

2.3.4. Siblings' Co-Use of Alcohol—On a 5-point Likert scale ranging from 0 (*never*) to 4 (*very often*), older and younger siblings reported on the frequency of their co-use of alcohol use by responding to the following statement: "On the occasions when you drank alcohol, please indicate how often (sibling's name) was with you." Older and younger siblings' reports were correlated ($r = .33, p < .001$) and averaged into a single index with higher scores denoting greater frequency of drinking together.

2.3.5. Control Variables—To isolate the influence of siblings, our models controlled for a number of known correlates of adolescents' substance use as well as other variables that have been implicated as important for sibling influence. *Parents' knowledge* of their younger adolescents' activities was assessed using Stattin and Kerr's (2000) 9-item measure. On a 5-point scale, ranging from 1 (*almost never*) to 5 (*almost always*), parents indicated the extent to which they were aware of their children's activities. Scores were created by averaging items for the scale, with higher scores denoting greater knowledge ($\alpha = .85$).

Sibling intimacy was rated by younger siblings using an adaptation of an 8-item measure developed by Blyth and Foster-Clark (1987). On a scale ranging from 1 (*not at all*) to 5 (*very much*), younger siblings rated the degree of emotional intimacy they felt with their older sibling. An example item is "How much do you go to your brother/sister for advice or support?" Scores were created by averaging items for the scale, with higher scores indicating greater intimacy ($\alpha = .81$).

Siblings' shared friends were indexed using a measure developed by Trim, Leuthe, and Chassin (2006). Specifically, each sibling rated "To what extent do you and your brother/sister currently have the same friends?" on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*very much*), with higher scores reflecting more common peers. Older and younger siblings' reports were correlated ($r = .48, p < .001$) and were averaged into a single index of shared friends.

3. Results

To examine whether the association between older and younger siblings' alcohol use was mediated by social and/or cognitive pathways we conducted path analysis using Mplus 6 (Muthén & Muthén, 2010). The model included younger siblings' alcohol use and alcohol expectancies as well as siblings' co-use as endogenous variables. Each endogenous variable was regressed onto all exogenous variables with additional paths directed from siblings' co-use and younger siblings' alcohol expectancies toward younger siblings' alcohol use. Exogenous variables included older siblings' alcohol use, parents' alcohol use, friends' alcohol use, younger siblings' gender (0 = female; 1 = male), gender composition of the sibling dyad (same gender = 0; mixed-gender = 1), younger siblings' age, siblings' age difference, parental knowledge, sibling intimacy, and siblings' shared friends. Given their association, siblings' co-use and younger siblings' expectancies were treated as correlated variables. The INDIRECT command in Mplus was used to test the whether the effect of older siblings' alcohol use on younger siblings' alcohol use was mediated through siblings' co-use and younger siblings' alcohol expectancies, respectively. Finally, to test whether the indirect effects were further moderated by the gender composition of the sibling dyad, a multi-group analysis was performed. Specifically, all paths in the model were constrained to be equal across the groups and then the paths from older siblings' alcohol use to younger siblings' alcohol expectancies and siblings' co-use were allowed to vary (at the same time; see Figure 1). Difference in model fit was assessed using χ^2 via the DIFFTEST option in Mplus.

As can be seen in Table 2, for younger siblings' alcohol expectancies, both older siblings' ($\beta = .16$) and friends' ($\beta = .35$) alcohol use were linked to more positive expectancies. Older siblings' ($\beta = .30$) and friends' alcohol use ($\beta = .23$) were also positively associated with the frequency of siblings' co-use. In terms of younger siblings' alcohol use, parental knowledge ($\beta = -.14$) was negatively related to use; in contrast, friends' use ($\beta = .32$), more favorable alcohol expectancies ($\beta = .26$), and more frequent co-use with older siblings ($\beta = .27$) were positively associated with younger siblings' use.

In addition to direct effects, analyses revealed significant indirect effects of older siblings' alcohol use on younger siblings' use through both social and cognitive pathways. Consistent with expectations, older siblings' alcohol use was linked to younger siblings' use through co-use ($b = .035, SE = .009, p < .001, \beta = .081$). Specifically, younger siblings were more likely to report having used alcohol themselves when their older siblings' drank more and they reported more frequent co-use. Older siblings' use was also indirectly linked to younger sibling use through younger siblings' alcohol expectancies ($b = .018, SE = .007, p < .01, \beta = .041$), such that older siblings' drinking was associated with more favorable expectations

about alcohol, which in turn were related to greater use. Importantly, these pathways fully mediated the association between siblings' use, as older siblings' use was not directly associated with younger siblings' use in the full model (see Table 2). Finally, models examining whether the indirect effects were stronger for same- as compared to mixed-gender dyads revealed no improvement in fit when freeing the indirect paths from older siblings' alcohol use to co-use or expectancies, $\chi^2 (DF = 2) = 5.14, ns$.

4. Discussion

A growing body of research demonstrates that older siblings are unique socializers of adolescents' health risk behaviors, including alcohol and other substance use (e.g., Fagan & Najman, 2005; Kothari et al., 2014; Low et al., 2012). With a few recent exceptions (McGue & Iacono, 2009; Samek et al., 2014), most studies in this area have focused on direct effects between siblings' behaviors and have neglected to measure the mediating pathways through which sibling influence is transmitted. The present study addressed this gap by examining social and cognitive pathways through which older siblings may influence their younger brothers' and sisters' alcohol use.

Consistent with previous work, results revealed that older and younger siblings' alcohol use was positively associated. This link between siblings' alcohol use, however, was completely mediated via social and cognitive pathways. Building on the work of McGue and Iacono (2009) and Samek and colleagues (2014), we found that sibling co-use of alcohol was a critical pathway through which sibling influence was transmitted. These findings are consistent with the suppositions of scholars (Needle et al., 1986; Rowe & Gulley, 1992; Windle, 2000), who have long speculated that older siblings may introduce their younger brothers and sisters to substance use through direct provision of the substances or the settings where substances are used. Research has also suggested that associations between siblings' substance use behaviors are explained via siblings' shared social networks (Conger & Rueter, 1996; Rowe & Gulley, 1992; Windle, 2000). To account for this possibility, our models controlled for friends' alcohol use as well as siblings' shared friends, thereby isolating the effect of siblings' co-use and documenting the unique influence of older siblings' socialization.

In addition to co-use, our results highlighted that older siblings indirectly influenced their younger siblings' alcohol use by shaping their expectations about alcohol. That is, older siblings' alcohol use was associated with more favorable expectations about alcohol among younger siblings, which in turn were related to greater alcohol use. Adolescents' alcohol expectancies have long been recognized as important predictors of their concurrent and future use (e.g., Brown, Christiansen, & Goldman, 1987; Cooper, 1994). Although both parents and peers use have been implicated as strong predictors of adolescents' expectancies, with a few exceptions (Ary, Tildesley, Hops, & Andrews, 1993; D'Amico & Fromme, 1997), research has not considered how siblings' behaviors shape adolescents' attitudes and expectancies. The results from this study suggest that older siblings' influence on expectancies (and subsequently their use) extends above and beyond parents' and peers' use as well as siblings' co-use.

Given that previous research has indicated that sibling similarities in substance use may be stronger in same- as compared to mixed-gender dyads, we examined whether gender composition of the sibling dyad moderated the indirect pathways described above. Results indicated no differences in the pathways of influence for same- and mixed-gender dyads. Although consistent with social learning principles that modeling is enhanced when observers and models are more similar, it could be that gender itself is an inadequate marker of similarity. In fact, some work reveals no gender composition differences in siblings' similarity in alcohol consumption (e.g., Samek et al., 2014; Van Der Vorst et al., 2007). It is also possible that our models were underpowered to test these moderated mediation hypotheses, as the sample size was effectively halved for these analyses. In fact, studies with larger samples may benefit from examining more nuanced gender effects as one recent study indicates that older brothers may have particularly strong effects on younger siblings' alcohol use (Ellingson, Slutske, Richmond-Rakerd, & Martin, 2013). Future research should also explore additional potential moderators of these indirect pathways, including age-spacing and other sibling influence dynamics (e.g., sibling modeling and differentiation).

Although this study adds to the literature by identifying the mechanisms through which older siblings influence their younger brothers' and sisters' alcohol use, there were several methodological shortcomings that may restrict our conclusions. First, because of the cross-sectional design, we were unable to account for any previous shared delinquent behavior between siblings or determine whether older siblings' alcohol use was related to changes in younger siblings' attitudes or subsequent patterns of alcohol use. Clearly, longitudinal designs are needed to explicate the temporal ordering and long-term influence of siblings' socialization of alcohol and other substance use. Nevertheless, the present study provides preliminary evidence for two different pathways (that operate simultaneously) through which older siblings socialize their younger brothers' and sisters' regarding substance use behaviors. Second, although both older and younger siblings reported on their frequency of drinking together, the degree of agreement between siblings was modest. It is possible that youth underreported their degree of co-use in an effort to not disclose their siblings' illegal behavior. Similarly to work on peers, future work should consider how youths' perceptions of siblings' behaviors correlate with their actual behaviors. Third, we assessed alcohol expectancies in general as opposed to positive and negative domains (Cooper, 1994). Greater variability in adolescents' alcohol expectations may be detected if a broader range of questions were assessed. Fourth, although the sample was ethnically diverse, families were more affluent and educated as compared to state averages (US Census Bureau, 2010). Fifth, although telephone interviews are valid and reliable methods for gathering data on adolescents' alcohol and other substance use (Aquilino, 1991; Shannon, Mathias, Marsh, Dougherty, & Liguori, 2007), fewer adolescents in this sample reported alcohol use as compared to national samples (Johnston, O'Malley, Bachman, & Schulenberg, 2012). As such, it is possible that adolescents underreported their use and the present study may misestimate the associations between older and younger siblings' alcohol use. Finally, our models investigated top-down or vertical socialization with influence flowing from older to younger siblings. Given the age-grading and hierarchical nature of sibling relationships (Tucker & Updegraff, 2009) as well as the developmental nature of adolescents' alcohol use (Brown et al., 2008), this focus was logical. Nevertheless, a bottom-up approach, or how

younger siblings influence their older brothers and sisters has been largely ignored and may be especially important in areas such as substance use when a younger siblings' earlier use would be non-normative.

These limitations notwithstanding, the recognition that siblings influence each other's substance use behaviors through both social and cognitive mechanisms is critically important as siblings have been neglected in programs aimed at curbing adolescents' alcohol and other substance use. These findings provide new and specific targets for family-based intervention and prevention efforts, which may be especially effective given recent evidence indicating that sibling-based interventions promote adolescent health and adjustment and provide a less stigmatizing entrée into the family (Feinberg, Soli, & McHale, 2012; Feinberg et al. 2013).

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Highlights

- We examine two pathways through which siblings' influence each other's alcohol use
- Older siblings' use predicted sibling co-use and younger siblings' expectancies
- Sibling co-use and expectancies, in turn, predicted younger siblings' use
- Siblings represent an emerging target for intervention for adolescents' alcohol use

Figure 1. Conceptual Model Identifying Direct and Indirect Paths through which Older Siblings' Alcohol Use is Linked to Younger Siblings' Alcohol Use.

Table 1

Descriptive Statistics and Correlations between all Study Variables (N's range from 322 to 326)

	1	2	3	4	5	6	7	8	9	10	11
1. OS Alcohol Use	--										
2. YS Alcohol Use	.17**	--									
3. Parents' Alcohol Use	.09	.02	--								
4. Friends' Alcohol Use	.20***	.50***	-.06	--							
5. YS Alcohol Expectancies	.23***	.48***	-.02	.43***	--						
6. Sibs' Co-Use of Alcohol	.36***	.46***	.05	.33***	.38***	--					
7. YS Age	.26***	.24***	-.05	.37***	.21***	.29***	--				
8. Age Spacing	-.12*	-.12*	-.02	-.22***	-.15**	-.14*	-.69***	--			
9. Parents' Knowledge	-.06	-.23***	.05	-.13*	-.22***	-.08	-.26***	.14*	--		
10. Sibling Intimacy	-.05	-.01	-.01	.01	-.06	.03	-.05	.10	.17**	--	
11. Sibs' Shared Friends	-.02	.02	.01	.13*	-.04	.05	.27***	-.28***	.05	.23***	--
<i>M</i>	1.16	0.36	1.71	1.56	1.86	0.49	14.52	2.65	4.46	3.27	2.32
<i>SD</i>	2.27	0.99	1.81	0.93	0.85	0.72	1.27	1.08	0.47	0.68	0.91

Note. OS = older sibling; YS = younger sibling.

*
 $p < .05$.**
 $p < .01$.

 $p < .001$. Older siblings', younger siblings', and parents' alcohol use were assessed using frequency X quantity measures; friends' alcohol use relied on perceived frequency only.

Table 2

Summary of Path Models Predicting Younger Siblings' Alcohol Expectancies, Siblings' Co-Use, and Younger Siblings' Alcohol Use (N = 322)

Predictors	Endogenous Variables														
	Younger Sibling Alcohol Expectancies					Co-Use					Younger Sibling Alcohol Use				
	<i>b</i>	<i>SE</i>	β	<i>b</i>	<i>SE</i>	β	<i>b</i>	<i>SE</i>	β	<i>b</i>	<i>SE</i>	β			
YS Gender	.08	.09	.05	.06	.08	.04	.05	.09	.02						
YS Age	.00	.00	.00	-.00	.00	-.02	-.00	.00	-.07						
Sib Gender Comp	.15	.08	.09	.06	.08	.04	-.02	.09	-.01						
Sib Age Difference	-.03	.04	-.04	-.04	.04	-.05	.01	.04	.01						
Sib Intimacy	.00	.07	.00	.06	.06	.05	.02	.07	.01						
Sib Shared Friends	-.04	.05	-.05	.01	.04	.02	-.03	.05	-.03						
Parents' Knowledge	-.09	.07	-.07	.04	.06	.04	-.21**	.07	-.14						
Parents' Alcohol Use	-.00	.02	-.01	.01	.02	.02	.02	.02	.03						
Friends' Alcohol Use	.31***	.05	.35	.18***	.04	.23	.33***	.05	.32						
OS Alcohol Use	.06**	.02	.16	.10***	.02	.30	-.02	.02	-.05						
YS Expectancies							.30***	.06	.26						
Sib Co-Use							.37***	.07	.27						

Note. OS = older sibling; YS = younger sibling.

*
 $p < .05$.**
 $p < .01$.

 $p < .001$. Older siblings', younger siblings', and parents' alcohol use were assessed using frequency X quantity measures; friends' alcohol use relied on perceived frequency only.