

Perceptions of Family Alcohol Use in a Young Adult Sample

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Perceptions of family alcohol use have been linked to adolescent alcohol use behaviors, yet there have been no studies that have assessed this relationship in young adults. This study examined perceptions of family alcohol use and their association with participants' self-reported alcohol use. Participants included 171 undergraduate students (mean age = 21.67, 71.9 percent female, 75.4 percent Caucasian). Participants completed measures assessing quantity and frequency of alcohol use, negative consequences of use, and sibling relationship quality. They also reported their perceptions of alcohol use for siblings and parents during a typical week. Perceptions of siblings' quantity of weekly alcohol use were significantly associated with participants' quantity of alcohol use ($r = .21, p = .006$) and frequency of alcohol use ($r = .23, p = .002$). Perceptions of parental alcohol use were not related to the participants' alcohol use patterns.

Alcohol is the most prevalent substance used in the United States, with more than 50 percent of adults endorsing that they are current, regular drinkers [1]. Young adults in particular have a high prevalence rate of alcohol use disorders [2], and the National Institute on Alcohol Abuse and Alcoholism (NIAAA†) has reported that the consequences of college drinking are “larger and more destructive than commonly realized” [3]. Immediate health risks of alcohol use include unintentional injuries, violence, risky sexual behaviors, and alcohol poisoning; long-term health risks include psychopathology, social problems, and health problems [4]. Because alcohol use is both prevalent in young adulthood and is associated with serious consequences, it is important that medical professionals assess the correlates of problematic alcohol use.

When considering family influences on the development of alcohol use behaviors, the literature has traditionally been very “parent-centric” [5], with a focus on parents as models for problematic alcohol use [6,7]. Siblings, however, represent an important part of the family system and including siblings in this body of research allows for a more representative and comprehensive un-

derstanding of how the family system influences the onset and course of alcohol use behaviors.

There has been recent attention to the role that siblings play in substance use behaviors. Older sibling substance use has been found to be an independent predictor of younger sibling substance use [8], and one study found that older brothers' stage of drug use was significantly related to younger brothers' stage of drug use ($r = .49, p < .001$). Other studies have found periods of developmental risk for sibling influences, with adolescents between the ages of 12 and 15 at the highest risk when a sibling uses substances [9]. Longitudinal research has demonstrated that older sibling substance use is predictive of increased substance use in younger siblings over time [10], even when controlling for shared peer groups and parental alcohol use [11]. Further, other investigators have found that older siblings' modeling of substance use was one of the strongest predictors of younger sibling substance use, even when controlling for a number of variables, including a peer-oriented lifestyle, antisocial behavior, truancy, parental monitoring, self-esteem, and depressive mood [12]. The available research has demonstrated that environmental influences

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†Abbreviations: NIAAA, National Institute on Alcohol Abuse and Alcoholism; DDQ, Daily Drinking Questionnaire; RAPI, Rutgers Alcohol Problem Index; ASRQ, Adult Sibling Relationship Questionnaire.

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have a significant impact on the development of substance use behaviors within families even when accounting for genetic relatedness, thus providing the empirical foundation necessary to further examine environmental influences [9,13,14].

While some of the research on siblings and alcohol use has used direct report from both siblings [10], it is unlikely that younger siblings witness every drinking event by their older siblings; instead, they likely hold perceptions about their siblings' alcohol use (e.g., "My brother drinks a lot," "My sister has a problem with alcohol"). It may be that these perceptions are what affect alcohol use, regardless of the actual amount of drinking conducted by older siblings. Perceptions of alcohol use have often been used in the literature, with studies on perceptions of siblings' substance use [9,12], perceptions of parents' substance use [6], and perceptions of peers' substance use [15-18]. In fact, some research has indicated that perceptions of peer substance use may be a stronger predictor of substance use behaviors than peers' actual self-reported use [19]. For this reason, we investigated how perceptions of older siblings' substance use were associated with undergraduate students' alcohol use.

There are a number of factors that might account for siblings' substance use, one of which is the quality of the sibling relationship. While young adults may no longer share a household with their older siblings, there is evidence that they may still feel close to their siblings even without daily contact [20]. There have been mixed findings in the literature regarding sibling relationship quality and its corresponding impact on substance use. Sibling relationships characterized by warmth and shared mutual friends have been found to be more alike in their substance use and delinquency [21]. Some studies have found that having a warm sibling relationship is related to problematic substance use [21,22], while others have found that having a conflictual sibling relationship is related to problematic substance use [8,23]. We chose to include a measure of sibling relationship quality in our study to examine how it may be related to alcohol use patterns in an undergraduate sample.

The aim of this study was to investigate how alcohol use in young adulthood is related to perceptions of sibling and parental alcohol use. We included other relevant variables, such as sibling relationship quality and negative consequences from alcohol use, to further understand how these relationships may be related. This was the first study to our knowledge that has assessed family alcohol perceptions and relationship quality in a young adult, non-clinical sample. Because family members are a source of influence on alcohol use behaviors during adolescence, it is important to examine the extent to which family factors may continue to be related to alcohol use behaviors in young adulthood. We hypothesized that young adult alcohol use would be significantly correlated with sibling use, while parental alcohol use would not, as there is a growing body of literature that supports that siblings have more

of an impact on alcohol use behaviors in young adulthood [9,24,25]. Further, we hypothesized that having a warm sibling relationship would moderate the relationship between perceptions of siblings' alcohol use and participants' self-reported alcohol use.

METHOD AND MATERIALS

Participants were undergraduate students recruited from two universities in the Pacific Northwest. Inclusion criteria were that participants had to be English-speaking, 18 years old or older, and must have an older sibling. If participants had more than one older sibling, they were asked to report on the older sibling closest to them in age. The Institutional Review Board at Seattle Pacific University approved this study. Participants were recruited by visiting classrooms at two universities and passing out flyers, as well as by recruiting from the subject pool as part of enrollment in an introductory psychology course. If interested and eligible, participants were directed to an online website where they were instructed to complete four measures and a demographic questionnaire.

The Daily Drinking Questionnaire-Revised is a shortened form of the Daily Drinking Questionnaire (DDQ) [26]. It measured the quantity and frequency of alcohol use by determining typical weekly alcohol use. Participants were asked to describe their alcohol use within a "typical week" by entering the number of standard drinks they would typically drink per weekday. One standard drink is considered four ounces of wine, 12 ounces of beer, or one ounce of liquor. In addition to participants' self-report of their own alcohol use, their perceptions of parental and sibling alcohol use were assessed using this measure. Participants were asked to complete the form rating their perceptions of their older siblings' alcohol use, as well as for their parents' alcohol use (the parent that they believed drank the most alcohol).

The Rutgers Alcohol Problem Index (RAPI) [27] measured negative drinking consequences by assessing for problem drinking. It contains 23 items rated on a four-point scale (0 = none, 1 = 1-2 times, 2 = 3-5 times, and 3 = more than 5 times). The measure asks participants to report how many times each consequence has happened to them while drinking. Sample items include "Went to work or school drunk," "Noticed a change in your personality," and "Was told by a friend, neighbor, or relative to stop or cut down drinking."

The Adult Sibling Relationship Questionnaire (ASRQ) [28] measured relationship quality between siblings. The ASRQ contains 81 items and 14 scales. Sample items include "How close do you feel to this sibling?" and "How much do you discuss important personal decisions with this sibling?" The ASRQ has three factors: Warmth, Conflict, and Maternal/Paternal Rivalry. Only the Warmth and Conflict factors were used for this study. The Warmth and Conflict items are rated on a five-point Likert scale from 1 (*hardly at all*) to 5 (*extremely much*). The Warmth

Table 1. Descriptive statistics for all measures. *N* = 171.

| | Minimum | Maximum | Median | <i>M</i> | <i>SD</i> |
|--|---------|---------|--------|----------|-----------|
| Participant Alcohol Quantity | 0.00 | 24.00 | 0.00 | 1.73 | 3.75 |
| Perceptions of Older Sibling Alcohol Quantity | 0.00 | 37.50 | 3.00 | 6.21 | 7.67 |
| Perceptions of Parent Alcohol Quantity | 0.00 | 80.00 | 2.00 | 5.44 | 10.44 |
| Participant Alcohol Frequency | 0.00 | 7.00 | 0.00 | .66 | 1.18 |
| Perceptions of Older Sibling Alcohol Frequency | 0.00 | 7.00 | 2.00 | 2.52 | 2.41 |
| Perceptions of Parent Alcohol Frequency | 0.00 | 7.00 | 2.00 | 2.64 | 2.62 |
| Participant Negative Consequences | 0.00 | 52.00 | 0.00 | 3.31 | 6.47 |
| Sibling Warmth | 1.29 | 4.92 | 3.30 | 3.25 | .86 |
| Sibling Conflict | 1.00 | 3.99 | 2.10 | 2.24 | .69 |

Note: Alcohol use variables (quantity and frequency) represent weekly use. Quantity of alcohol use is represented in Standard Drinks.

Table 2. Correlations between participants' alcohol use and perceptions of family alcohol use. *N* = 171.

| | Alcohol Quantity | Alcohol Frequency | Negative Consequences |
|--|------------------|-------------------|-----------------------|
| Perceptions of Older Sibling Alcohol Quantity | .21* | .23* | .2 |
| Perceptions of Older Sibling Alcohol Frequency | .17 | .24* | .19 |
| Perceptions of Parent Alcohol Quantity | .07 | .1 | .08 |
| Perceptions of Parent Alcohol Frequency | .09 | .15 | .11 |
| Sibling Warmth | 0 | -.06 | -.17 |
| Sibling Conflict | -.09 | -.11 | .07 |

Note. * = $p < .006$ (Bonferroni-corrected for multiple comparisons). Alcohol use variables (quantity and frequency) represent weekly use.

factor is comprised of the following subscales: Intimacy (6 items), Emotional-Support (6 items), Affection (6 items), Knowledge (6 items), Instrumental Support (6 items), Similarity (4 items), Admiration (6 items), and Acceptance (6 items). The Conflict factor is comprised of the following subscales: Quarreling (5 items), Dominance (6 items), Antagonism (6 items), and Competition (6 items). In this sample, Cronbach's alpha values ranged from .81 to .95 across the Warmth subscales and .76-.90 for the Conflict subscales.

Means and standard deviations were examined for each of the constructs (alcohol use, negative consequences, outcome expectancies, and sibling relationship quality). Correlations were used to assess the relationship between variables. The level of significance was adjusted using a Bonferroni-correction to account for multiple comparisons. To examine sibling warmth as a moderator, we used hierarchical multiple regression. The independent variable and the moderating variable were both centered to create an interaction term. A median split was used to dichotomize the sibling warmth variable to visually depict the interaction. We used a composite variable of the participants' alcohol use scores to account for the dependent variable.

RESULTS

Participants included undergraduate students ($N = 171$) from two universities in the Pacific Northwest. Participants were 71.9 percent female and had an average age of 21.67 years ($SD = 6.09$). Participants were primarily Caucasian (75.4 percent), with 10.5 percent identifying as

Asian/Pacific Islander, 5.3 percent as Multiracial, 4.7 percent as Hispanic, 3.6 percent as Black/African American, and .6 percent as Native American. Participants reported an average of 2.48 siblings ($SD = 1.8$), with their older siblings' average age as 25.92 years ($SD = 7$). On average, participants had lived with their older siblings for a total of 14.65 years ($SD = 5.13$). Additionally, 80.1 percent of the sample reported on a full biological older sibling (shared father and mother), in comparison to step-siblings, half-siblings, or adopted siblings.

Descriptive characteristics for participants' alcohol use, participants' alcohol outcome expectancies, participants' alcohol consequences, perceptions of older siblings' alcohol use, perceptions of parental alcohol use, and sibling relationship quality are presented in Table 1. Correlations were computed between variables and are presented in Table 2. A Bonferroni-correction was used by dividing the level of significance (.05) by the number of comparisons (8), which resulted in a level of significance of $p < .006$. Notably, perceptions of older sibling alcohol use were significantly related to participants' self-report of alcohol use for alcohol quantity and frequency, while perceptions of parental alcohol use were not significantly related. We then tested if the sibling and parent correlations were significantly different, with the finding that they were not significantly different for both alcohol quantity ($t = 1.54, p = .937$) and alcohol frequency ($t = 1.03, p = .847$). Hierarchical multiple regression was used to examine the hypothesis that a warm sibling relationship would moderate the statistical relationship between perceptions of older siblings' alcohol use and the participants' alcohol use outcomes. Results of the regression analysis indicated that the three predictors (per-

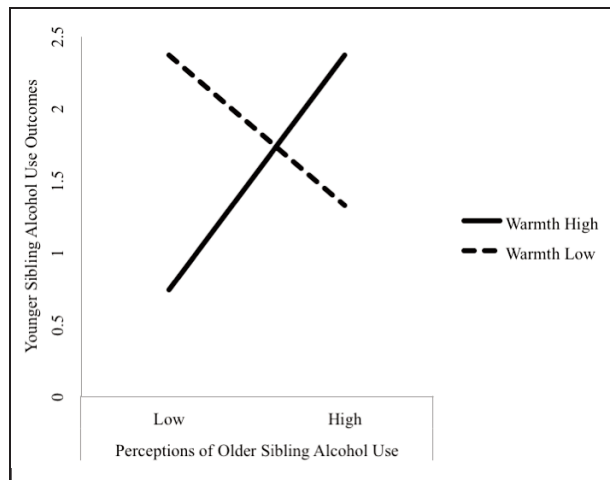


Figure 1. The Interaction of Sibling Warmth and Perceptions of Older Sibling Alcohol Use on Younger Sibling Alcohol Use Outcomes.

ceptions of older siblings' alcohol use, sibling warmth, and the interaction term) accounted for 12.6 percent of the variance in the younger siblings' alcohol use outcomes, $F(3,167) = 8.03, p < .001$ (see Figure 1). Results indicated that a sibling relationship with a high degree of warmth was associated with increased alcohol use outcomes when perceptions of older siblings' alcohol use were high.

DISCUSSION

This study examined how perceptions of older siblings' alcohol use and parental alcohol use were related to undergraduate students' alcohol use outcomes. There was some support for our hypothesis regarding the association between perceptions of family alcohol use and participants' self-reported alcohol use. We found that siblings' alcohol use was significantly correlated with participants' alcohol use, but the same was not true for parents' alcohol use. However, the correlations between perceptions of parental alcohol use and participants' outcomes and perceptions of sibling alcohol use and participants' outcomes were not statistically different, suggesting that parental alcohol use may have some role. Our finding that perceptions of older siblings' alcohol use, and not perceptions of parental alcohol use, were significantly related to outcomes supports results from several other studies that have examined both siblings and parents [9,24,25]. We also found that having a warm sibling relationship was associated with increased alcohol use outcomes. This finding supports Bandura's Social Cognitive Theory in which behaviors are more likely to be imitated if the model is seen as warm and approachable. While there has been some mixed evidence in the literature regarding sibling relationship quality and outcomes, our finding is similar to several others in which a warm relationship was associated with increased substance use [21,22].

This study found support for the effect of perceptions of older siblings' alcohol use during young adulthood, in

which the siblings are likely living apart and spending more time independently from one another. It could be that these effects are stronger in adolescence, and the finding that we discovered is a remnant of that relationship [9]. Additionally, siblings may be considered as part of the peer group and/or a normative reference point for drinking patterns, which could lead to the significant association. Alternatively, it could be that participants' own alcohol use biased their perceptions of their family members' alcohol use patterns.

This study further contributes to the growing body of literature on siblings and substance use by 1) focusing on a young adult population, whereas traditionally this line of research has focused on adolescent populations, and 2) using a non-clinical sample. Most of the available literature on siblings and substance use has used an adolescent population; however, as our results demonstrate, siblings may be an important component to consider when assessing alcohol use behaviors in young adulthood. The findings also highlight the importance of sibling influences in a non-clinical population, which allows for a greater breadth of understanding in the development and maintenance of alcohol use behaviors. Given these findings, medical professionals may be interested in not only asking about parental history of substance use, but also including perceptions of siblings' alcohol use.

Several limitations should be considered when interpreting the results. First, this study consisted of a cross-sectional design, which limited any inferences about causality of siblings' alcohol use on participants' alcohol use. Because all participants were recruited from two universities in the Pacific Northwest, the generalizability of these findings to other populations should be considered with caution. There were also several variables that were not assessed in this study, such as perceptions of peer alcohol use, substance use diagnoses, drug use, and comorbid mental health symptoms. Alcohol use reported by siblings and parents were not assessed, so it was not possible to compare the participants' perceptions with other family members' self-reported alcohol use. Thus, it is possible that the perceptions of family members' alcohol use were not accurate and may have reflected their own biases. Finally, parental alcohol use during the participants' childhood was not assessed, which may have impacted how participants perceived their family members' current drinking.

Despite the limitations outlined above, this study confirms prior findings that perceptions of siblings' alcohol use are related to participants' alcohol use [6,9,12]. We expanded previous research by investigating these relationships within a young adult, non-clinical sample. A longitudinal design would enhance future research by evaluating older sibling influences along several developmental time points (e.g., early adolescence, late adolescence, young adulthood). Future research should also compare perceptions of sibling alcohol use with siblings' self-reported use, with the goal of identifying the best predictor of alcohol use outcomes.

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