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Overestimation of Close Friend Drinking Problems in the Prediction of One's Own Drinking Problems

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Abstract

Background—Overestimation of the amount that other students drink is related to alcohol-related problems. Although beliefs concerning students' friends tend to be stronger predictors of drinking than beliefs regarding students generally, little research has focused on overestimation of friends' drinking-related problems.

Objectives—Test hypotheses that students overestimate a close friend's drinking-related problems and that such overestimation would relate to more frequent drinking and related problems.

Method—Participant/friend pairs ($N = 55$) completed online measures of drinking-related beliefs and behaviors.

Results—Participants overestimated the alcohol-related problem severity experienced by their friends. Greater overestimation of friends' problems was related to greater participant alcohol-related problems and binge drinking.

Conclusions/Importance—Cognitive distortions regarding a friend's drinking-related behaviors may be useful therapeutic targets.

Keywords

college drinking; perceived norms; drinking motives; alcohol-related problems

1. Introduction

Alcohol use is prevalent on college campuses, with 59.8% of college students reporting past-month alcohol use compared to 51.5% of non-college age peers (Substance Abuse and Mental Health Services Administration, 2015). College drinkers experience a range of problems, as 32.9% reported doing something they regretted, 25.1% reported missing class, 19.1% reported performing poorly on a test, and 29.1% reported driving under the influence (Core Institute, 2014). Such problems are common across gender, as men and women do not

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differ in their experience of alcohol-related problems (Perkins, 2002). Undergraduates are four times more likely to report heavy episodic drinking (i.e., five drinks within two hours for men, four drinks within two hours for women) in the prior year (Cranford, McCabe, & Boyd, 2006) compared to the general population (Chavez, Nelson, Naimi, & Brewer, 2011).

Perceived norms are among the strongest predictors of college student alcohol use and related problems (Borsari & Carey, 2001; Clapp & McDonnell, 2000; Neighbors, Dillard, Lewis, Bergstrom, & Neil, 2006; Wood, Nagoshi, & Dennis, 1992). College students typically overestimate the amount that other students drink (e.g., Borsari & Carey, 2003; Campo et al., 2003; Kypri & Langley, 2003) and the amount of alcohol-related impairment experienced by other students (Baer, Stacy, & Larimer, 1991; Kypri & Langley, 2003).

Overestimation of perceived alcohol consumption is related to greater personal alcohol consumption and drinking frequency (Borsari & Carey, 2003; Neighbors et al., 2007; Perkins, Haines, & Rice, 2005). Perceived and actual norms of friends are stronger predictors of alcohol use quantity and alcohol-related consequences than norms regarding students in general (LaBrie, Hummer, Neighbors, & Larimer, 2010; Neighbors et al., 2008; Urberg, De irmencio lu, & Pilgrim, 1997). Some studies have shown that students misperceive drinking-related problems of other students, including their friends, by comparing students' perceptions of others' alcohol-related problems to the amount of problems the students actually experience (Baer & Carney, 1993; Carey, Borsari, Carey, & Maisto, 2006; Lewis & Neighbors, 2004). Yet, no known work has collected data from friends on their alcohol-related problems to confirm that students are actually overestimating friends' problems. Further, the impact of such overestimation on one's own drinking behaviors remains unknown. The current study aims to determine if students overestimate their friends' alcohol related problems, and determine if such an overestimation impacts students' drinking behaviors.

Given prior work suggesting that students overestimate alcohol-related problems experienced by their friends (Baer et al., 1991; Kypri & Langley, 2003) it was hypothesized that students would overestimate their friends' alcohol-related problems. Further, given that such overestimation relates to personal alcohol use (e.g., Borsari & Carey, 2003), it was hypothesized that that greater overestimation of a friend's alcohol-related problems would be positively associated with students' own drinking behaviors.

2. Method

2.1 Sample and Procedures

The sample consisted of university students who reported consuming least one alcoholic drink in the past month and were at least 18 years of age. Participants were undergraduate students of all classifications (i.e., freshman through senior) enrolled in psychology classes who were recruited through an online study recruitment and participation system. A description of the study was posted to the system and interested students signed up to participate to earn course credit. Participants were asked to refer a close friend of the same sex (not required to be a current drinker or current student). Given that same sex perceived norms are better predictors of alcohol-related problems than perceived norms of different

sexes (Lewis & Neighbors, 2004), referred friends were required to identify as the same sex as participants. Although 785 students initiated the study, 716 students completed the survey, and 63 were excluded for not providing a valid email address for their friend. Of the 653 friends invited, 93 (14%) participated in the study. Participants who denied current drinking ($n = 34$) or whose friends reported a different sex as the participant ($n = 3$) were excluded. One participant's score on the *Rutgers Alcohol Problem Index* (RAPI; White & Labouvie, 1989) was considered an outlier (greater than 3.29 standard deviations above the mean; Tabachnick & Fidell, 2007) and excluded from analyses. Included participants did not differ from excluded participants on race/ethnicity $\chi^2 = 8.06$, $p = .152$, Cramer's $\phi = 0.11$, age, $t(691) = -0.07$, $p = .946$, $d < 0.01$, drinks per drinking day, $t(701) = 0.41$, $p = .683$, $d = 0.05$, binge drinking status, $\chi^2 = 3.33$, $p = .080$, Cramer's $\phi = 0.07$, or strength of friendship, $t(693) = 0.19$, $p = .853$, $d = 0.02$. Completers ($M = 7.94$, $SD = 9.80$) reported more severe alcohol-related problems than non-completers ($M = 4.82$, $SD = 4.83$), $t(632) = 2.70$, $p = .007$, $d = 0.38$.

The final sample consisted of 55 participant-friend pairs. The mean age of participants was 20.78 ($SD = 3.15$). Participants were predominately female (89.1%). Participant race and ethnicity was as follows: 7.3% African American, 83.6% Non-Hispanic Caucasian, 3.6% Hispanic Caucasian, 1.8% American Indian, 1.8% Asian, and 3.6% Multiracial.

Mean age of friends was 22.82 ($SD = 7.89$). Friends were predominately female (89.1%). Friends' races/ethnicities were 5.5% African American, 87.3% Non-Hispanic Caucasian, 0.0% Hispanic Caucasian, 1.8% American Indian, 3.6% Asian, and 1.8% Multiracial.

The university's Institutional Review Board approved the study and informed consent was obtained prior to data collection. Participants completed self-report measures online. Friends were emailed an invitation to complete measures within one month. Participants were compensated with credit points for their psychology classes. Friends who completed the study were entered into a drawing for one of five \$20 prizes.

2.2 Measures

2.2.1 Participant measures

Rutgers Alcohol Problem Index (RAPI): The RAPI is a 23-item measure of alcohol-related problem severity experienced in the past month (White & Labouvie, 1989). Response options range from 0 (*never*) to 4 (*more than 10 times*) and were summed. The RAPI has demonstrated excellent internal consistency in previous studies (Buckner, Ecker, & Proctor, 2011) and in the current sample ($\alpha = 0.91$). A modified RAPI assessed the participant's estimate of alcohol-related problem severity their friend experienced in the past month, which demonstrated excellent internal consistency ($\alpha = 0.95$).

Daily Drinking Questionnaire (DDQ): The DDQ (R. L. Collins, Parks, & Marlatt, 1985) assessed standard drinks consumed each day in a typical week in the past month. Average number of drinks per drinking day indicated drinking quantity and total number of drinking days indicated drinking frequency. The DDQ has shown good test-retest reliability (S. E. Collins, Carey, & Sliwinski, 2002).

Heavy Episodic Drinking: To assess heavy episodic drinking (i.e., five drinks within two hours for men, four drinks within two hours for women; Wechsler, Dowdall, Davenport, & Castillo, 1995), participants reported the most drinks they consumed in a two-hour period in the past month (Cranford et al., 2006). Participants meeting these criteria were coded as heavy episodic drinkers (Cranford et al., 2006).

Intimate Friendship Scale (IFS): The IFS (Sharabany, 1994) was used to confirm that the dyads were close friends. Participants rated 36 items on a scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). The IFS achieved excellent internal consistency in the current study ($\alpha = 0.95$).

2.2.2 Friends' measures—Referred friends completed the DDQ (R. L. Collins et al., 1985) and the RAPI ($\alpha = 0.86$; White & Labouvie, 1989) To assess the friends' familiarity with the participants' drinking behaviors, friends reported the number of drinking occasions they shared with the participant in the past month (Hagman, Cohn, Noel, & Clifford, 2010).

2.3 Data Analytic Strategy

Alcohol use quantity, frequency, and alcohol-related problems variables did not evince severe skew or kurtosis (i.e., skew < 3, kurtosis < 10; Kline, 2016). A paired *t*-test evaluated the hypothesis that students would overestimate their friend's alcohol-related problems. Correlations were calculated between discrepancy score and participants' drinking quantity, frequency, and alcohol-related problems to test the discrepancy's relation to one's own alcohol use behaviors. Friends' report of alcohol-related problem severity was subtracted from participants' perceived alcohol-related problem severity to calculate discrepancy of alcohol-related problems. Logistic regression tested the discrepancy's relation to heavy episodic drinking status (dummy coded such that binge drinker = 1, non-binge drinker = 0). For tests of statistical significance, α was set at 0.05.

3. Results

Participants ($M = 1.61$, $SD = 1.13$) and friends ($M = 1.98$, $SD = 1.96$) did not differ in alcohol use frequency, $t(54) = -1.25$, $p = .216$, $d = 0.23$, or binge drinking, $\chi^2 = 0.08$, $p = .778$, Cramer's $V = 0.04$. Participants' alcohol use quantity ($M = 3.11$, $SD = 2.35$) differed from referred friends ($M = 1.12$, $SD = 2.07$), $t(52) = 5.27$, $p < .001$, $d = 0.90$. Participants ($M = 7.31$, $SD = 8.76$) endorsed more severe alcohol-related problems than their friends ($M = 4.20$, $SD = 4.79$), $t(54) = 2.45$, $p = .020$, $d = 0.44$. Participants' perceived alcohol use quantity ($M = 1.49$, $SD = 4.03$) did not differ from their friends' actual alcohol use quantity ($M = 1.12$, $SD = 2.07$), $t(52) = 0.63$, $p = .533$, $d = 0.15$. Participants' perceived alcohol use frequency ($M = 1.95$, $SD = 1.67$) did not differ from their friends' actual alcohol use frequency ($M = 1.98$, $SD = 1.96$), $t(54) = -0.16$, $p = .871$, $d = 0.02$. Among participants, 26 (47.3%) reported binge drinking, and 18 friends (32.7%) reported binge drinking. Participants' mean perceived alcohol use quantity was 1.46 ($SD = 3.96$) and mean perceived alcohol use frequency was 1.95 ($SD = 1.67$). Participants' mean perceived alcohol-related problem severity was 6.96 ($SD = 9.91$). Participants' mean IFS score was 112.05 ($SD =$

24.71), indicating intimacy levels consistent with being “good friends” (Hagman et al., 2010). Mean past-month shared drinking occasions with the friend was 2.93 ($SD = 3.21$).

Alcohol use quantity, frequency, and shared drinking occasions were significantly, positively related to alcohol-related problem severity (Table 1). Shared drinking occasions were significantly, positively correlated with alcohol use quantity and frequency (Table 1).

As predicted, participants reported that their friends experienced more severe problems (perceived problems $M = 6.96$, $SD = 9.91$) than their friend reported experiencing (friend's problems $M = 4.20$, $SD = 4.79$), $t(54) = 2.16$, $p = .005$, $d = 0.38$, reflecting a moderate effect (Cohen, 1992). The discrepancy was positively correlated with participants' own drinking problems (Table 1). Discrepancy was significantly related to binge drinking status, $B = 0.93$, $p = .018$, $OR = 1.10$, 95% CI [1.02; 1.18].

4. Discussion

This study extends prior work on normative discrepancy (e.g., Baer et al., 1991; Borsari & Carey, 2003), by finding that college students' overestimate severity of a close friend's alcohol-related problems by using collateral informants. Students overestimate the amount students in general drink (Borsari & Carey, 2003; Lewis & Neighbors, 2004), and the current study extends that work by showing that students overestimate a friend's alcohol-related problems. Notably, overestimation of friends' problems was positively related to experiencing more severe alcohol-related problems and binge drinking. Students who overestimate the number of alcohol-related problems experienced by a close friend may be at risk for more frequent binge drinking and experiencing alcohol-related problems because they believe such drinking-related negative consequences are normative. Alternatively, per the false consensus effect (e.g., Marks & Miller, 1987), participants who experienced alcohol-related problems may assume that their friends experience a similar number of alcohol-related problems. Friends may have under-reported alcohol-related problems which contributed to the discrepancy.

4.1 Limitations & Future Directions

The current study should be interpreted in light of its limitations. First, a small percentage of friends completed the study, and future work may benefit from recruitment strategies that increase friends' participation. Second, the sample consisted entirely of college students and their friends, who were primarily women. However, given college students drink more than non-college age peers (Substance Abuse and Mental Health Services Administration, 2015) college students remain an important population of study. Third, the cross-sectional design precludes inferring causality. Fourth, only one friend was recruited. Despite this limitation a strength of the study was the use of collateral reporting. Potential next steps include investigation of the relation of alcohol expectancies and motives to close friend discrepancies and investigation of injunctive norms discrepancies.

4.2 Conclusions

Results suggest that undergraduate drinkers overestimate the degree to which a close friend experiences alcohol-related problems, which relates to experiencing more severe alcohol-

related problems. Findings of the current study also have clinical implications. Given that brief motivational interventions for college drinking (e.g., Dimeff, Baer, Kivlahan, & Marlatt, 1999) often provide personalized feedback on students' drinking, it may be that efforts to change overestimation of friends' drinking problems result in even greater reductions in risky drinking.

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Table 1

Means, standard deviations, and correlations between study variables

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. Alcohol Use Quantity	3.02	2.35	-						
2. Alcohol Use Frequency	1.62	1.13	.55**	-					
3. Alcohol-Related Problem Severity	7.31	8.76	.50**	.47**	-				
4. Friend Alcohol Use Quantity	1.12	2.07	.23	.09	.05	-			
5. Friend Alcohol Use Frequency	1.98	1.96	.13	.10	.05	.57**	-		
6. Friend Alcohol-Related Problem Severity	4.20	4.79	.19	.33	.13	.52**	.56**	-	
7. Shared Drinking Occasions	2.93	3.21	.49**	.52**	.43**	.36**	.32*	.28*	-
8. Alcohol-Related Problems Discrepancy	2.76	9.49	.17	.21	.58**	-.09	-.04	-.16	.18

Note. *M* = Mean, *SD* = Standard Deviation*
p < 0.05.**
p < 0.0