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The Social Norms of Alcohol-Related Negative Consequences

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Abstract

Social norms for alcohol use are important influences on individual college student drinking. The present study extends social norms research by examining alcohol-related consequences and, in particular, whether similar misperceptions exist regarding the frequency and evaluation of these consequences over time. The associations between social norms and alcohol-related consequences are examined in the context of projection and conformity models. College student drinkers ($N=624$) participating in a longitudinal study completed web-based surveys assessing alcohol use and related consequences, as well as their beliefs about frequency and evaluation of consequences for the typical college student. Findings suggest that students overestimated how often typical college students experience negative consequences and underestimated how negative other students evaluated those consequences. Finally, results support a bidirectional model for alcohol-related consequences, possibly indicating a reciprocal, mutually influential feed-forward loop of norms and consequences that promotes maintenance of college student drinking and consequences.

Keywords

alcohol-related problems; evaluations; descriptive and injunctive norms; conformity; projection; drinking consequences

Negative alcohol-related consequences are common on U.S. college campuses (Hingson, Heeren, Zakocs, Kopstein, & Wechsler, 2002) and can include damage to one's self (e.g., academic impairment, injury) and to others (e.g., destruction of property, violence; e.g., Perkins, 2002b). Despite the experience of such negative consequences, college students often do not change their drinking behavior. This may be because "negative" consequences (e.g., having a hangover) may not actually be evaluated as negative by college students (Mallett, Bachrach, & Turrise, 2008). Previous research has found that evaluation of alcohol's potential effects relates to high-risk drinking and consequences and may be further dependent on the perceived likelihood of experiencing a consequence (Fromme, Stroot, & Kaplan, 1993; Gaher & Simons, 2007). Therefore, we specifically examined how students evaluated alcohol-related consequences.

While alcohol consumption is consistently related to the experience of negative consequences, research suggests that the amount of alcohol may be unrelated to evaluations of consequences

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as positive or negative (Park, 2004). However, psychosocial factors (e.g., coping motives, stress) can influence the evaluation or experience of consequences, independently and in combination with alcohol use behavior (Martens, Neighbors, Lewis, Lee, Oster-Aaland, & Larimer, 2008; Sadava & Pak, 1993). Therefore, consequences are not objective, and understanding perceptions and beliefs about normative consequences may be an important factor contributing to alcohol-related problems among college students. Based on an extensive body of research documenting that college students tend to overestimate frequency, quantity (i.e., descriptive norms) and approval (i.e., injunctive norms) of typical college student alcohol use and that normative perceptions are associated with personal alcohol use (Lewis & Neighbors, 2004; Neighbors, Dillard, Lewis, Bergstrom, & Neil, 2006a; Neighbors, Lewis, Bergstrom, & Larimer, 2006b; Perkins, 2002a), we aimed to extend the social norms literature by examining: (a) the extent to which alcohol-related consequences are normatively perceived as frequent and negatively evaluated, and (b) how these perceptions may be associated with personal frequency and evaluation of negative consequences over time. Further, the examination of the temporal associations of social norms for alcohol-related consequences can help to inform intervention strategies by elucidating the direction of influence of these variables over time. For example, an individual's perceptions of others may predict own future experiences and evaluations. In contrast, one's personal experiences and evaluations may be associated with future perceptions of others' evaluations and experiences. Either, or perhaps some combination of both, of these explanations is plausible.

Present Study

Although overestimating norms for drinking behavior has a documented association with higher levels of alcohol use and problems (e.g., Baer, 2002; Baer et al., 1991; Borsari & Carey, 2001; Lewis & Neighbors, 2004), perceived norms for the frequency and evaluation of negative consequences are largely unknown. The present study examined whether college students held misperceptions about how often others experienced negative alcohol-related consequences and the extent to which they believed other students evaluated those experiences as negative. We also explored the temporal associations of and students' personal frequency and evaluation of consequences and their perceived social norms for frequency and evaluation of consequences across six months.

Method

Participants and Procedures

Participants included 624 students in a longitudinal study examining the efficacy of a web-based normative feedback intervention for high-risk drinking among first-year college students (for details see Neighbors, Lee, Lewis, Fossos, & Larimer, 2007). Participants consumed at least four or more drinks for women and five or more for men per occasion at least once during the last month at screening. Students were assessed every 6 months for two years with present analyses coming from 12- and 18-month follow-ups. Of the original 818 in the longitudinal study, 697 (85.2%) completed the 12-month and 679 (83.0%) completed the 18-month, with 624 (76.2%) completing both follow-ups. Demographics include 60% women and 65% reporting as White/Caucasian, 23% Asian, and 12% other. The mean age at the 12-month survey was 19.63 years old ($SD = .70$) and 72% classified themselves as in their second year of college.

Measures

Personal drinking-related frequency of consequences was measured using the Young Adult Alcohol Problems Screening Test (YAAPST, Hurlbut & Sher, 1992). Participants were asked the number of times they had experienced each of 27 consequences during the past year. For

the purposes of the present manuscript, eight items were selected based on relative frequency of items from the screening survey and representing a range of behavioral and physical consequences to be assessed in conjunction with normative perceptions (see below and Table 1 for items). Personal consequences were re-coded so that response options indicated the frequency of experiencing each item from 0 = Never, 1 = at least 1 time, but not in past year, 2 = 1 time in the past year, 3 = 2 times in the past year, and 4 = 3 or more times in the past year. Responses were summed to create a final personal consequence score (possible and actual range of 0 to 24, $\alpha = .78$ and $.76$ at the 12-month and 18-month assessments, respectively).

Perceived typical student frequency of drinking-related consequences was measured by assessing how often participants thought the typical student (on their campus) experienced the eight consequences (described above) in the past year. As with personal consequences, responses were re-coded to 0 (never) to 4 (3+ times in the last year) and summed to create a final perceived frequency of consequence norm score (possible and actual range of 0 to 24, $\alpha = .91$ and $.91$ at 12- and 18-months).

Personal evaluations of consequences were measured by assessing how negative the eight selected items would be (to the student) if they were to personally experience them. Items were reverse-coded and ranged from 0 (extremely positive/extremely good) to 6 (extremely negative/extremely bad), so higher values would reflect more negative evaluations of consequences. The mean of the eight items was computed to create a final personal evaluation score ($\alpha = .89$ and $.90$ for 12- and 18-month).

Perceived evaluation of consequences norms were measured by assessing how the respondent thought the typical student on their campus would evaluate each of the eight items if they were to happen to the typical student. Response options and scale calculations were the same as personal evaluations described above ($\alpha = .93$ and $.93$ at 12- and 18-month).

Alcohol Use—Participants were asked to report the number of standard drinks they drank on each day of a typical week in the last three months (Collins, Parks, & Marlatt, 1985). Typical drinks per week were computed by summing the number of drinks the participants reported drinking on each day of the typical week.

Results

Descriptive Statistics of Frequency and Evaluation of Drinking-related Consequences

Table 1 provides means and standard deviations for the prevalence of students' personal frequency and evaluations of alcohol-related consequences, as well as their perceptions of other students' frequency and evaluation of consequences. Hangovers the next day and throwing up after drinking were the most frequently reported, while getting into fights and damaging property were relatively rare social consequences. Students' own personal evaluations of each of the consequences were fairly negative with rankings of somewhat negative to extremely negative assigned to each. Drinking and driving and getting into unwanted sexual situations were rated most negative; having a headache (hangover) and not remembering part of the prior evening were evaluated as slightly less negative. Table 2 presents correlations between the variables of interest.

Normative Misperceptions of Frequency and Evaluation of Consequences

Paired samples *t*-tests (one at each time point) were conducted and effect sizes were calculated ($d = 2t / \sqrt{df}$ and $t = \sqrt{F}$, Rosenthal & Rosnow, 1991) to assess whether students overestimated the frequency and evaluation of alcohol-related consequences. Participants perceived that students experienced consequences more frequently than students actually reported at both

time periods (Time 1: $t(680) = -28.83, p < .001, d = -2.21$; Time 2: $t(656) = -25.42, p < .001, d = -1.98$). As shown in Figure 1 (top), the perceived norms for frequency were about double the personal frequency as represented by the sample mean for all consequences. Next, we found that participants believed that other students evaluated consequences less negatively than students actually did across both time periods (see Figure 1 [bottom], Time 1: $t(678) = 10.08, p < .001, d = .77$; Time 2: $t(651) = 8.95, p < .001, d = .70$). Effects sizes were large (Cohen, 1992) for misperception of both norms.

Normative Beliefs and Consequences: Cross-sectional and Temporal Associations

Our second objective was to evaluate the temporal associations between personal and perceived frequency and evaluation of consequences over time. We followed the same procedure used in a previous study (Neighbors et al., 2006a) and fit two cross-lagged panel models using Amos 16.0 (Arbuckle, 2007). In the first model, we examined the relationship between personal and perceived college student frequency for alcohol-related consequences, as well as their associations with drinking behavior. In particular, we were interested in comparing the strength of the relationships between Time 1 perceived frequency norms and Time 2 personal frequency, and between Time 1 personal frequency and Time 2 perceived frequency norms. Similarly, in the second model, we examined cross-sectional and cross-lagged associations among personal and perceived evaluations and drinking behavior.

Perceived frequency versus personal frequency

Figure 2 presents associations among personal frequency of consequences, perceived frequency of consequences, and drinking behavior. We fit a baseline saturated model in which all associations were freely estimated. Results indicated that perceived frequency and personal frequency of consequences were significantly associated, both cross-sectionally (at Time 1 and Time 2) and longitudinally. In contrast, while drinking was associated with frequency of consequences, it was not associated with perceptions of frequency either cross-sectionally or longitudinally.

In exploring the direction of influence of perceived frequency norms and personal frequency of consequences, both paths were significant. That is, Time 1 perceived frequency of consequences and Time 2 personal frequency consequences were correlated, and Time 1 personal frequency of consequences and Time 2 perceived frequency of consequences were correlated. We compared the saturated model in which these paths were unconstrained with one in which the paths were constrained to equality; no significant difference was observed, $\chi^2\Delta (df = 1, N = 686) = 0.29, p = ns$; NFI = 1.00, CFI = 1.00; RMSEA = 0.00. Thus, while both the paths were significant, they were not different from each other in strength.

Perceived norms for evaluations of consequences versus personal evaluations

Figure 3 presents associations among personal evaluations, perceived evaluation norms, and drinking behavior. We fit a baseline saturated model in which all associations were freely estimated. Results indicated perceived evaluation norms and personal evaluations were significantly associated both cross-sectionally and longitudinally. In contrast, while drinking was associated with actual evaluations, it was not associated with perceived evaluation norms cross-sectionally or longitudinally.

Paths between Time 1 perceived evaluation norms and Time 2 personal evaluations and between Time 1 personal evaluations and Time 2 perceived evaluation norms were significant. We compared a model in which the paths were free to one in which the paths were constrained to equality. No significant difference between the models was found, $\chi^2\Delta (df = 1, N = 686) = 0.124, p = ns$; NFI = 1.00, CFI = 1.00; RMSEA = 0.00. Thus, both paths were significant and did not differ from each other in strength.

Discussion

Many college students may view negative consequences as an inevitable consequence of drinking, rather than something to be avoided. These evaluations may be part of the developmental context of young adult drinking, in which negative outcomes are seen as normative (McMahon et al., 1994). In fact, students overestimated the frequency with which other college students experienced negative alcohol-related consequences and perceived others to evaluate consequences as less negative than they actually did. Combined, these perceptions may lead to the normalization of alcohol-related consequences, such that college students believe negative consequences frequently occur and are experienced as relatively benign.

Students' perceptions of their own and others' evaluations of consequences may provide valuable and unique information about their experience. That is, individuals may evaluate their drinking context not only in terms of quantity, but also in terms of what consequences they experienced and how these align what they believe to be normative for peers. Thus, independent of consumption, the perceptions of others' frequency and evaluations of consequences may play an important role in predicting alcohol-related consequences and evaluations of the negativity of those consequences, possibly by influencing alcohol outcome expectancies. If students believe certain consequences are normative and normatively believed to be harmless, these perceptions may influence the extent to which they believe these consequences happen to themselves and how negatively they evaluate the consequences. When negative consequences are not perceived as negative or severe, the motivation to change behavior may not be enacted.

The results suggest there are bidirectional relationships between social norms and alcohol-related consequences over time. Both influences are likely at work and perhaps provide a reciprocal, mutually influential feed-forward loop promoting maintenance of drinking (Neighbors et al., 2006a) and consequences. For example, college students may perceive that typical students both experience negative consequences somewhat frequently and believe those consequences to be not particularly aversive. These perceptions may then influence their own evaluations and estimations of the likelihood of experiencing consequences, or future alcohol outcome expectancies. For example, students may believe they experience fewer consequences and perceive them more negatively than others do, possibly as a way of justifying their own behavior in the face of negative experiences (Prentice & Miller, 1993).

These bidirectional findings may be explored from conformity (i.e., perceived norms predicting future consequences, Festinger, 1954; Latane, 1981; Tajfel & Turner, 1986; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) and projection (i.e., consequences predicting future perceived norms, Marks & Miller, 1987; Ross, Green, & House, 1977) hypotheses. For example, conformity would suggest that a person conforms to their perceptions of normative behavior, whereas projection would suggest one may project their own behavior onto others. A more thorough examination of these processes would include specific measures of conformity, possible peer selection effects, and alcohol expectancies. For example, projection (or changing normative perceptions based on personal experiences) may be a function of (or mediated by) peer group selection, such that heavier drinkers select heavier drinking peer groups and these groups reinforce each others' beliefs about typically high rates of alcohol-related consequences. It may be that students who are experiencing consequences are moving toward a peer group with similar behaviors and attitudes, thus explaining the positive relationship between personal consequences and later perceived norms.

Implications for Intervention

Individualized social norms interventions often focus on correcting overestimation of college student drinking by presenting accurate drinking frequency and quantity norms (e.g., Lewis &

Neighbors, 2006; Neighbors, Larimer, & Lewis, 2004; Perkins, 2002a). Future individualized interventions could evaluate whether accurate information regarding the frequency and evaluation of alcohol-related consequences is similarly effective in reducing drinking and associated consequences. For example, interventions with students who are experiencing problems could highlight that typical college students do not actually experience as many consequences as they believe and that most students believe the experience of consequences are worse than they would assume.

Current motivational-based interventions utilizing personalized feedback (e.g., Walters & Neighbors, 2005) often have components that review one's current experiences with alcohol. It may be useful to incorporate valence of consequences (i.e., not all consequences may be evaluated similarly) and focus on consequences the individual feels are most negative to elicit motivations to reduce high risk behaviors. Additionally, it may be useful to include discussions about how they think others would perceive those consequences, although these components remain to be implemented and tested.

Limitations / Future Directions

The present research should be considered in the context of its limitations. First, the measurement of perceived frequency of consequences was assessed with a past year reference, however the time interval between the two surveys was six months. While there may be some overlap in the consequences reported at the two time points, the same timeframe was used for both the assessment of personal consequences and perceived norms. In addition, we believe any overlap would lead to a more conservative estimate of these relationships by, if anything, diminishing potential variability in change between the two assessments. Future research should include more time points with a longer period of follow-up to further elucidate the potential reciprocal influence of social norms and consequences, as well as including a wider selection of consequences. Future research might also explore other variables related to negative consequences (e.g., gender, tolerance) and how these might contribute to a more positive evaluation of consequences and/or perceived overestimations of negative consequences. Further, potential mechanisms for observed effects should be investigated. These effects may be stronger when considering more homogenous peer groups (e.g., fraternities, sororities). The present study extends prior research on social norms by focusing on the association between norms and college students' frequency and evaluations of alcohol-related consequences.

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Figure 1. Misperception in Frequency of Consequences Norms at Time 1 and Time 2 (top) and Misperception in Evaluations of Consequences Norms at Time 1 and Time 2 (bottom). *Note.* Higher scores are equal to greater frequency of consequences and negativity of evaluations.

Figure 2.

Associations among Personal and Perceived Frequency of Consequences, Within and Across Time

Note. All coefficients are standardized. T1 and T2 = Time 1 and Time 2.

** $p < .01$. *** $p < .001$.

Figure 3.

Associations among Personal and Perceived Evaluations of Consequences, Within and Across Time

Note. All coefficients are standardized. T1 and T2 = Time 1 and Time 2.

** $p < .01$. *** $p < .001$.

Table 1

Means and Standard Deviations (in Parentheses) for Personal and Perceived Alcohol-related Consequences at Time 1

	Frequency		Evaluation	
	Personal Consequences <i>M (SD)</i>	Perceived Consequences <i>M (SD)</i>	Personal Evaluations <i>M (SD)</i>	Perceived Evaluations <i>M (SD)</i>
Having a headache (hangover) the morning after drinking	2.87 (1.47)	3.46 (1.13)	4.20 (0.96)	4.13 (0.96)
Feeling very sick to the stomach or throwing up after drinking	2.54 (1.44)	3.30 (1.18)	4.57 (0.99)	4.40 (0.95)
Waking up the morning after a good bit of drinking and not being able to remember a part of the evening before	1.89 (1.63)	2.96 (1.35)	4.48 (1.15)	4.28 (1.12)
Becoming rude, obnoxious, or insulting after drinking	1.16 (1.57)	2.77 (1.38)	4.87 (1.03)	4.52 (0.99)
Getting into sexual situations that are later regretted because of drinking	1.02 (1.27)	2.53 (1.39)	5.28 (1.05)	4.93 (1.09)
Driving a car after drinking too much	0.83 (1.26)	1.83 (1.42)	5.44 (0.99)	5.12 (1.03)
Getting into physical fights when drinking	0.39 (0.96)	1.94 (1.44)	5.18 (1.02)	4.84 (1.00)
Damaging property, setting off a false alarm, or other things like that after drinking	0.36 (0.87)	1.97 (1.49)	5.23 (1.02)	4.89 (1.03)

Note. *Ns* range from 676 to 683. Higher scores on descriptive norms indicate greater number of consequences. Higher scores on injunctive norms indicate greater negativity toward consequences.

Table 2

Correlations between Time 1 and Time 2 Alcohol Use, Personal Frequency and Evaluation of Consequences, and Perceived Frequency and Evaluations of Consequences

	1	2	3	4	5	6	7	8	9	10
<u>Variables Time 1</u>										
1. Personal Alcohol Use	--									
2. Personal Frequency of Consequences	0.47***	--								
3. Personal Evaluations of Consequences	-0.29***	-0.41***	--							
4. Perceived Frequency of Consequences	0.05	0.25***	-0.11**	--						
5. Perceived Evaluation of Consequences	-0.04	-0.12***	0.63***	-0.32***	--					
<u>Variables Time 2</u>										
6. Personal Alcohol Use	0.75***	0.40***	-0.27***	0.06	-0.01	--				
7. Personal Frequency of Consequences	0.36***	0.68***	-0.31***	0.15***	-0.05	0.41***	--			
8. Personal Evaluations of Consequences	-0.23***	-0.30***	0.51***	-0.03	0.28***	-0.24***	-0.31***	--		
9. Perceived Frequency of Consequences	-0.05	0.11***	-0.04	0.50***	-0.23***	-0.01	0.29***	-0.05	--	
10. Perceived Evaluation of Consequences	0.01	0.01	0.30***	-0.18**	0.47***	-0.00	0.01	0.61***	-0.22***	--

Note. Ns range from 678–686 for intercorrelations with Time 1 variables and 611–620 for correlations with Time 2 variables.

*
p = .05.

**
p < .01.

p < .001.