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RUNNING HEAD: Misperceptions of Prepartying and Drinking Games

Normative Misperceptions of Drinking Among College Students:

A Look at the Specific Contexts of Prepartying and Drinking Games

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Abstract

Objective: In the collegiate context, misperceptions of student drinking norms are among the most salient predictors of heavy drinking. Despite overall overestimations of peer alcohol use, misperceptions of context-specific behaviors have been infrequently studied. The present study examines students' perceptions of the high risk behaviors of prepartying and drinking games and investigates the relationship between perceived and actual behavior.

Method: A sample of 524 college students completed an online assessment of actual and perceived alcohol use related to prepartying and drinking games. Quantity and frequency of overall drinking, prepartying, and drinking games was assessed for perceptions of all students at the university, as well as for male and female students separately. Questions also assessed participants' overall drinking, prepartying, and drinking game behavior.

Results: Participants significantly overestimated the prepartying and drinking game behavior of all students, male students, and female students at their university. For males, perceptions of same sex prepartying quantity and drinking game frequency and quantity associated with actual behavior. For females, perceptions of both same sex and other sex prepartying quantity associated with actual behavior.

Conclusions: These findings provide preliminary support for the association between context-specific perceived norms and actual prepartying and drinking game behavior. Addressing these same sex and opposite sex norms during interventions may help students reduce their own engagement in these risky behaviors.

Heavy drinking among college students continues to be a problem, with substantial proportions of students experiencing ensuing consequences from their own or others' drinking (Hingson et al., 2005; Wechsler et al., 2002). Research focusing on the social norms approach to college drinking (Perkins and Berkowitz, 1986) suggests that a student's perception of other students' drinking relates to his or her own drinking. Research consistently demonstrates that college students overestimate how much other students actually drink (see Berkowitz, 2004; Perkins, 2003) and the magnitude of overestimation has been prospectively linked with heavier drinking (Baer et al., 1991; Neighbors et al., 2006a). These perceived norms are among the strongest and most consistent predictors of drinking for college students (Borsari and Carey, 2003; Neighbors et al., 2007).

While students hold misperceptions of campus drinking norms in general, there is evidence that situational and contextual drinking norms may also be important (Neighbors et al., 2006b). The college context as a whole provides many opportunities and social pressure for peers to influence alcohol use (Carey, 1993; 1995), but within the broad environment are specific situations where pressure may be even greater. High risk situations and contexts that may perpetuate heavy drinking include drinking games (Borsari, 2004; Pedersen and LaBrie, 2006), holidays such as Halloween and St. Patrick's Day (Martell et al., 2006), football games and tailgating (Martell et al., 2006; Neighbors et al., 2006b), Spring Break (Lee et al., 2006; Smeaton et al., 1998), prepartying (Borsari et al., in press; Pedersen and LaBrie, in press), and 21st birthdays (Neighbors et al. 2006b; Neighbors et al., 2005). Students misperceive the percentage of students who drink during celebratory occasions and high risk events (e.g., Spring Break, Halloween, St. Patrick's Day, home football games) (Martell et al., 2006). Further, Neighbors and colleagues (2006b) found significant overestimations of the quantity of drinks consumed during 21st birthday celebrations and during football tailgating. These perceptions were associated with greater drinking during these specific events.

Due to the influence of general, situation-, and context-specific perceived norms on actual behavior, we designed the present study to examine misperceptions of two context-specific behaviors

which are emerging in the literature as high-risk: prepartying and drinking games. Prepartying is a behavior well-known among many college students that involves drinking before going out to an intended destination (e.g., bar, party, concert). Prepartying predicts heavier drinking on the same evening after prepartying and associates with greater alcohol-related consequences (Pedersen and LaBrie, in press). Participation in drinking games, although a traditionally male-dominated activity (e.g., Engs and Hanson, 1993; Johnson et al., 1998), has recently sparked research attention as an increasing prevalent heavy drinking practice among female students (e.g., Pedersen and LaBrie, 2006; Zamboanga et al., 2006). Examining these context-specific perceptions and the influence they may have on actual behavior may help further understanding of the nature of college drinking and aid in the development of social norms interventions specifically addressing these misperceptions.

The present study examined a diverse sample of male and female college students to explore perceived norms of prepartying and drinking games. Based on previous research with context-specific perceptions of behavior (Martell et al., 2006; Neighbors et al., 2006b), we hypothesized that participants will overestimate the frequency of and the number of drinks consumed during these contexts and that perceptions will associate with actual behavior. Sex-specific and general student norms will be examined among both male and female students.

Method

Participants

Over two sequential semesters, 224 participants seeking credit through the university psychology subject pool completed an online assessment of actual and perceived alcohol use. Participants received one subject pool credit for completing the survey. To access a larger and more representative sample of college students, we employed a modified respondent-driven sampling design (RDS; Heckathorn, 1997). This approach has been shown to reveal a non-homogenous sample representative of the population targeted (Heckathorn, in press; Heckathorn, Semaan, Broadhead, Hughes, 2002). Each subject pool participant was offered the opportunity to recruit one or two

college-aged peers (criteria was a college student at the participant's university between the ages of 18 and 25) to complete their own online assessment. For each recruited participant, the subject pool participant was awarded one extra credit. Of the 308 participants recruited by subject pool participants, only 10 failed to complete the assessment. The final sample consisted of 522 college students from one medium-sized university on the West Coast (mean age = 19.37 ($SD = 1.31$)). Female students made up 61% ($n = 316$) of the sample. Ethnicity varied, with 51% Caucasian, 18% Hispanic/Latino(a), 12% Asian/Pacific Islander, 11% Mixed ethnicity, 5% African American/Black, 2% Other, and 1% declined to state. In the past month, 81% ($n = 420$) of the participants drank at least one time, of which 75% ($n = 316$) prepartied and 64% ($n = 271$) played drinking games. Participants were similar in demographics with a larger university-wide sampling conducted two years prior ($N = 1,277$ [approximately $\frac{1}{4}$ of the student population]; 53% Caucasian; 63% female; age = 20.4 [$SD = 2.04$]). These two samples matched the demographics of the university as a whole. Seventy-eight percent of the students in the larger sample reported consuming alcohol at least once in the past month. Prepartying and drinking game behaviors were not assessed in the larger study.

Design and Procedure

An online survey distribution program emailed all participants an online assessment survey to the email accounts provided. Data was not linked to participants' names or emails. All participants were prompted to read and sign a local Internal Review Board-approved consent form before completing the survey and participants were assured prior to beginning the survey that their data would not be linked to their name, email, or recruited (or recruiter) friend. Participants were allowed to complete their survey at any point during the semester in which they received it.

The survey began with demographic questions of age, sex, and ethnicity. Next, participants endorsed responses to questions involving drinking behavior in the past month. Pictures and descriptions of standard drinks (i.e., one drink containing $\frac{1}{2}$ ounce of ethyl alcohol) accompanied all questions assessing drinking behavior. Participants responded to two questions assessing typical

monthly frequency (“How many days in the past month did you drink alcohol”) and quantity (“How many drinks on average did you drink during a typical drinking occasion in the past month”).

Participants were also asked about the frequency of their drinking days in the past month that involved prepartying (defined for participants as drinking before going out to a planned destination [e.g., party, bar, concert] at which more alcohol may or may not be consumed) and frequency of drinking games (defined as a game where drinking alcohol is part of the known rules, with a goal of avoiding drinking, drinking a lot, or forcing others to drink a lot). Items assessing typical quantities consumed during prepartying and drinking games in the past month were also included. These six questions revealed a reliability estimate of $\alpha = .76$ for all participants.

Finally, participants were prompted to answer a series of questions regarding their perceptions of student drinking behavior within the past month at their particular university. Two questions assessed general frequency and quantity of drinking: “How many days per month does a typical {X University} student drink alcohol” and “How many drinks on average does a typical {X University} student drink during a typical drinking occasion.” Questions also assessed general perceived frequency and quantity of prepartying and drinking game behavior: “How many days in the past 30 days do you think a typical {X University} student prepartied,” “How many days in the past 30 days do you think a typical {X University} student played drinking games,” “How many drinks on average does a typical {X University} student drink while prepartying,” and “How many drinks on average does a typical {X University} student drink while playing drinking games.” These questions were repeated to assess sex-specific norms (replacing the word “student” with “male student” and “female student”). These fourteen perception questions revealed a reliability estimate of $\alpha = .89$. Means of participants’ responses to questions assessing their own behavior was used as actual behavior variables, and thus were used to compare to participants’ responses regarding perceived norms. Only drinkers’ responses to questions regarding actual prepartying and drinking game behavior were included in analyses, while perceived norms of all participants were included.

This was to control for lower means of actual behavior due to zero-responses from non-drinkers. All continuous variables were recoded within three standard deviations from the mean to reduce the influence of outliers (Tabachnick and Fidel, 2007).

Results

Normative Misperceptions

Drinking Behavior. Participants overestimated the frequency of drinking days in the past month among a typical student at their university. Males perceived all students at the university to drink a mean of 10.78 ($SD = 5.41$) days per month and women perceived all students as drinking 10.01 ($SD = 4.71$) days per month. Participants drank an actual mean of 5.42 ($SD = 5.27$) days in the past month, revealing significant overestimations of frequency of drinking for both men, $t(193) = 13.87, p < .001$, and women, $t(307) = 17.10, p < .001$. Although participants drank an actual mean of 3.72 ($SD = 2.98$) drinks during a typical drinking occasion, men believed all students typically drank a mean of 6.21 ($SD = 2.74$) drinks, $t(193) = 12.65, p < .001$, while women believed all students to typically drink a mean of 5.36 ($SD = 2.36$) drinks, $t(306) = 12.41, p < .001$.

Prepartying and Drinking Games. Table 1 contains means and standard deviations of the actual prepartying and drinking game behavior in the past month of the sample, as well as the mean perception of these behaviors reported by male and female participants. Actual behavioral norms presented in the left column represent the mean behavior reported by all participants, male participants, and female participants. The columns labeled *Males* and *Females* contain the samples' perceived means of behavior for all students, male students, and female students. The two columns are divided by sex to present perceptions of behavior by male and female participants. Separate one sample t -tests were run to examine differences between participants' perceived behavior and the actual behavior of the sample. Each actual behavioral norm for all students, male students, and female students was entered as the population mean and tested for males' and females' perceived means for each group. Both male and female participants evidenced significant overestimations of

frequency and quantity of both behaviors for all students, males, and females. In addition, males and female were similar in their estimations of all prepartying and drinking game variables, differing only in their perceptions of all student prepartying quantity, $t(507) = 2.33, p < .05$, and female drinking game quantity, $t(507) = 2.33, p < .05$.

Association between Perceived Norms and Behavior

Correlation analyses determined relationships between perceived prepartying and drinking game norms and actual behavior. Males evidenced significant positive correlations between actual prepartying quantity and perceived prepartying quantity norms of male students ($r = .34, p < .001$) and all students ($r = .27, p < .001$). For women, significant positive correlations were evident between actual prepartying quantity and their perceived prepartying quantity norms of both males ($r = .29, p < .001$) and females ($r = .27, p < .001$) at the university. Regarding drinking games, significant positive correlations were observed for men's actual game frequency and perceived frequency norms of male students ($r = .14, p < .05$) and between actual quantity consumed during games and perceived quantity norms of all students at the university ($r = .28, p < .05$). No significant positive correlations existed between women's perceived and actual behavior for drinking games.

Discussion

The present study examined the extent that college students overestimate the context-specific behaviors of prepartying and drinking games among their peers and explored how these perceptions relate to drinking behavior. Consistent with our hypotheses and as in previous research examining situation- and context-specific perceptions (Martell et al., 2006; Neighbors et al., 2006b), students overestimated the frequency of prepartying and drinking games among all students, male, and female students at their university. Male and female participants were similar in nearly all their perceptions of behavior. In addition, a relationship emerged between perceived behavior and actual behavior. Norms appeared to relate to behavior to a greater extent for prepartying than drinking games. A relationship between drinking games and behavior existed for men only.

The overestimations of prepartying and drinking game behavior observed among participants may influence an individual's own behavior, which is revealed in the relationship between perceived and actual behavior. Perhaps the perception that other students will already be drunk once arriving at the destination motivates students to drink beforehand themselves, avoiding being "the only one" at the party, bar, or event without a good buzz. Men may desire to arrive at similar intoxication levels as their male peers, perhaps to demonstrate their drinking ability or to loosen up to meet members of the opposite sex (e.g., West, 2001). For women, the overestimation of both male and female norms may have a similar interpretation, as subjective reports suggest that women may desire to be accepted by and held in high regard by male drinking partners, and that women who can drink comparable to men receive more sexual attention from male peers (Young et al., 2005). Believing that intoxicated female peers will have an advantage over them in impressing or meeting men may influence prepartying consumption levels. Women also appear to be influenced by opposite sex norms, suggesting that their anticipation that men may arrive at the party or event intoxicated may influence their prepartying consumption levels.

Regarding drinking games, the competitive nature of this behavior may permeate into mere involvement, as men may want to show other men their ability to "hold their liquor" or impress women with their drinking game talents (Green and Grider, 1990; West, 2001). It is noteworthy that women's overestimations of drinking game behavior did not associate with their own drinking game behavior. Presumably, since drinking games has been viewed as a traditionally male-dominated activity (Borsari, 2004) and research suggests that students are most impacted by same-sex norms (Lewis and Neighbors, 2004), women may not have been influenced to play games based on their perceptions. For women, drinking games may be more of a function of availability or peer pressure within the moment than a function of perceived norms.

Limitations exist in the study. First, participants were asked retrospectively about their own past use and the perceived use of their peers. Although participants completed the survey at different

times throughout two semesters, participants' memories or perceived norms may have been influenced by a period of the semester that they associated with heavy or light drinking (e.g., immediately after spring break or mid-term exams). Collection of data via the online survey is also a potential limitation. There are several strengths to this novel approach including convenience, flexibility, and direct data entry by participants. However, there are important drawbacks including concerns about confidentiality and security of data provided over the web. While this cannot be completely eliminated, participants were informed of extensive provisions to ensure confidentiality and security of their data in the informed consent. Further, recent research (Miller et al., 2002) indicates no differences in self-reported alcohol use and problems between individuals randomized to complete web vs. paper assessments.

In addition, results contained herein refer to associations between perceived norms and actual behavior and do not imply causation. It may be that students who engage in these behaviors to a large degree hold higher perceptions. Finally, perceived norms were compared to "actual norms" based on the responses of the study's participants. Approximately half of the sample consisted of participants recruited by psychology subject pool students. While we anticipated this to be a strong strategy to help reveal a more generalizable sample beyond only psychology students, students may have recruited friends similar in drinking behavior and drinking attitudes to themselves. However, hopefully this extraneous factor was balanced due to the apparent wide range of student drinkers (and nondrinkers) in the sample and therefore balanced each other out (Heckathorn, in press). In the large, university-wide study distributed previously, students reported a mean of 3.36 ($SD = 2.90$) drinks per occasion – similar to the average drinks per occasion reported in this study ($M = 3.72$ [$SD = 2.98$]). Likewise, students were similar in demographics and drinking status. Despite this, we were unable to determine if the participants in the present study demonstrated representative prepartying and drinking game behavior compared to the larger university. These behaviors were not assessed in the larger survey. Therefore, as the first study to address misperceptions of prepartying and drinking

games, our findings are preliminary and we encourage more advanced predictive models in future research, as well as reports of “actual norms” that may more accurately represent the college population as a whole.

Despite limitations, these results provide preliminary support for the association between perceived norms and actual prepartying and drinking game behavior. The overt overestimations observed highlight the need to focus norms presentations and interventions on both same sex and opposite sex context-specific behaviors. Providing students with accurate context-specific norms, particularly of the risky and prevalent behaviors of prepartying and drinking games, may help reduce these risky behaviors.

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Table 1 – Differences between means on actual behavioral norms and mean perception of behavioral norms

Behavior (in the past month)	Males (<i>n</i> = 224)		Females (<i>n</i> = 330)	
<i>Actual Mean (SD)</i>	<i>Mean Perception of Norm (SD)</i>	<i>t</i>	<i>Mean Perception of Norm (SD)</i>	<i>t</i>
Prepartying Frequency (days in past month)				
All students = 2.71 (3.50); median = 1; range = 0 to 14	8.39 (5.46)	13.03 ***	8.40 (4.98)	20.14***
Males = 3.07 (3.71); median = 2; range = 0 to 12	9.08 (6.24)	13.65***	9.47 (5.50)	20.47***
Females = 2.48 (3.34); median = 1; range = 0 to 8	7.53 (5.72)	12.52***	7.47 (4.42)	19.82***
Prepartying Quantity (average drinks per occasion)				
All students = 3.91 (1.94); median = 4; range = 1 to 12	4.98 (3.35)	4.52***	4.40 (2.36)	3.63***
Males = 4.76 (2.14); median = 5; range = 1 to 12	5.89 (3.12)	5.13***	5.58 (2.47)	5.88***
Females = 3.29 (1.51) drinks; median = 3; range = 1 to 8	3.93 (2.76)	3.29**	3.64 (1.71)	3.57***
Drinking Game Frequency (days in past month)				
All participants = 2.09 (3.14); median = 1; range = 0 to 13	7.66 (6.31)	12.46***	7.22 (5.012)	18.25***
Males = 3.04 (3.80); median = 2; range = 0 to 13	8.09 (5.95)	11.98***	7.94 (5.28)	16.36***
Females = 1.47 (2.45); median = 1; range = 0 to 13	5.71 (4.94)	6.72***	5.36 (4.24)	10.35***
Drinking Game Quantity (average drinks per occasion)				
All students = 2.39 (1.97); median = 2; range = 1 to 7	6.14 (3.31)	15.95***	6.24 (3.74)	17.96***
Males = 2.94 (2.04); median = 3; range = 1 to 7	6.93 (3.35)	16.75***	7.27 (4.37)	17.33***
Females = 1.84 (1.74); median = 1.71; range = 1 to 6	4.69 (2.81)	14.24***	5.36 (4.24)	14.51***

Values under bolded headings represent actual behavioral norms reported by all participants, males, and females (actual norms)

Values under *Male* and *Female* columns represent means of males' and females' perceptions of behavior for all students, males, and females (perceived norms)

t values represent difference between actual norms and perceived norms across each row; *** $p < .001$, ** $p < .01$

Actual norms behavior statistics reported for prepartiers and drinkers only