Influences of norm proximity and norm types on binge and non-binge drinkers: examining the under-examined aspects of social norms interventions on college campuses

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Abstract
Aims: Social norms interventions for reducing excessive drinking on college campuses have reported mixed results. In an attempt to understand the inconsistencies, this study examined some of the under-examined aspects of the social norms approach.
Design: A cross-sectional survey of undergraduate students at two large mid-western universities in the USA was conducted. Norm proximity (campus vs. friends' norms), norm types (descriptive vs. injunctive norms), and college drinker types (frequent binge drinkers, occasional binge drinkers, and non-binge drinkers) were differentiated.
Findings: The influences of friends' norms are stronger than those of campus and those of descriptive norms are stronger than injunctive norms. Friends’ descriptive norms influenced frequent and occasional binge drinkers’ behavior most strongly, whereas the campus descriptive norm and self-efficacy influenced non-binge drinkers’ behavior.
Conclusions: Proximity and types of norms as well as types of college drinkers will need to be distinguished in the future design and evaluation of social norms interventions.

Keywords: Social norms, self-efficacy, binge drinking.

Introduction
One of the most persistent health issues on United States college campuses is that of excessive alcohol consumption. College students are more likely to engage in heavy episodic drinking than other individuals in the same age group (Bennett, Miller, & Woodall, 1999) and the prevalence of such alcohol consumption on campus does not show any sign of decrease (Wechsler, Lee, Kuo, Seibring, Nelson, & Lee, 2002). According to Wechsler and colleagues (2002), two out of five college students engaged in heavy episodic drinking in their 2002 survey, which is similar to the ratio found in their 1993, 1997, and 1999 surveys.
The negative outcomes of binge drinking are well known. Binge drinkers are at a high risk for getting into arguments or physical fights with others, sexually harassing/assaulting others, or becoming victims of such behaviors. Alcohol-impaired driving after binge drinking can result in the loss of innocent lives (National Institute on Alcohol Abuse and Alcoholism, 1995; American Academy of Pediatrics, 1999).

As a means to prevent and reduce excessive alcohol consumption, a number of colleges have adopted the social norms approach (Perkins & Berkowitz, 1986). Based on the recognition that college students overestimate the incidences and approval of alcohol consumption among their peers, the social norms approach focuses on correcting the overestimation, and providing accurate information on behavioral and attitudinal norms on campus (Perkins, 2002).

The intuitive appeal of the approach, according to Borsari and Carey (2003), has led to “a veritable explosion of norm education campaigns across the country” (p. 332). The popularity of the social norms approach, however, has not been backed by matching evidence of effectiveness. While some interventions reported success (e.g. Haines & Spear, 1996), others found no effect (e.g. Werch, Pappas, Carlson, DiClemente, Chally, & Sinder, 2000; Wechsler, Nelson, Lee, Seibring, Lewis, & Keeling, 2003).

Previous attempts to address the inconsistent findings have focused on issues in the design, evaluation, or implementation of social norms interventions (e.g. Werch et al., 2000; Russell, Clapp, & DeJong, 2005). Much less attention has been paid to the conceptual aspects of the social norms approach. The discussion on the design, evaluation, or implementation should be preceded by closer examinations of the core concepts of the social norms approach. It is only after gaining a clearer understanding of normative influences that the development of social norms interventions should be reconsidered.

Thus, the goal of this study is to investigate some of the under-examined aspects of the social norms approach. These features include proximity and types of norms, as well as types of college drinkers. By doing so, this study attempts to account for the inconsistent effects of the current social norms approach and to bring this understanding to future health education endeavors. This paper starts with a brief overview of the social norms approach. Next, it discusses different types of norms and drinkers, and the relationship between these factors. After presenting the methods and results of a study, this paper concludes with a discussion of the theoretical and practical implications.

**Background/literature review**

*The social norms approach*

The premise of the social norms approach is that perceived norms deviate from actual norms and that the perceived norm, notwithstanding its error-prone nature, influences behavior. Specifically, studies have shown that college students overestimate various aspects of their peers’ drinking, including quantity, frequency, and approval, and that these overestimations promote alcohol consumption (e.g. Thombs, Wolcott, & Farkash, 1997; Page, Scanlan, & Gilbert, 1999). Consequently, the social norms approach asserts that a solution for college students’ problematic drinking is to provide students with accurate information concerning campus alcohol consumption.

Implicit in this approach is the assumption that if accurate information is presented and perceived, this will result in a uniform reduction in on-campus alcohol consumption. Norms differ in terms of their proximity and types; college students differ in their alcohol
consumption rates. Consequently, different norms may produce different effects on different types of drinkers. The social norms approach, however, has not taken into consideration the variations in the types of norms or college drinkers. Distinguishing these aspects may not only improve the understanding of normative influences, but also account for the inconsistent outcomes of social norms interventions thus far reported.

**Norm proximity**

The social norms approach has frequently focused on conveying the central tendency of the distribution of campus drinking behaviors and attitudes. Social norms messages present “average” or “typical” students’ alcohol consumption quantity, frequency, or approval. An underlying assumption of this approach is that each campus is comprised of a single culture with which each and every student on campus considers themselves identified. Furthermore, it is assumed that what “typical” or “average” students do or feel matters to the rest of the students on campus.

On any campus, however, students do not constitute a homogeneous group in terms of their demographics, beliefs, values, or lifestyles. The social identification theory states that not all groups are equal and the behavior of individuals is influenced by the groups with which they perceive a sense of belonging (e.g. Tajfel & Turner, 1986; Hogg & Abrams, 1988). In this light, Borsari and Carey (2003) argue, “information on what the ‘typical student’ does may be easier for the students to dismiss than the norms of a more relevant group” (p. 338).

A more relevant, proximal social reference group for college students would be their network of friends. Friends are those individuals with whom one empathizes, spends time, and shares various characteristics. In comparison, average or typical students who have been one of the focal features of social norms messages would represent a less relevant, more distant social reference group to individual college students. Therefore, it is likely that the norms of friends exert a greater influence on college students’ drinking behavior than those of the campus as a whole.

**Norm types**

Norms are also distinguished in terms of their types: descriptive and injunctive (Cialdini, Reno, & Kallgren, 1990). A descriptive norm informs individuals of what is being done within a social reference group. It describes the prevalence of a certain behavior and thus motivates individuals to adopt that behavior since prevalence implies usefulness of the behavior in managing social life. In the case of college drinking, for example, descriptive norms would be the central tendency of alcohol consumption quantity among one’s network of friends or among typical students on campus.

Injunctive norms pertain to perceptions about a social reference group’s evaluation of a certain behavior. These are perceived as approval or disapproval, and function as pressure on an individual to perform or not perform a behavior. Injunctive norm informs individuals as to what a social reference group believes ought to be done.

Upon which norm should the social norms approach focus? Social norms interventions have rarely differentiated descriptive vs. injunctive norm in their design or evaluations (Borsari & Carey, 2003). When Borsari and Carey (2003) differentiated these norm foci in their meta-analysis, the discrepancy between actual and perceived norm was more prominent for injunctive, rather than descriptive norm.
In one sense, this finding calls for the current social norms interventions to shift their focus from descriptive to injunctive norms. This is because the current social norms approach locates the source of excessive alcohol consumption in an incorrect norm perception, and the solution in the provision of correct norm information. Consequently, it is assumed that presenting the largest gap between the perceived and the actual norm will prompt self-evaluation and motivation for moderating alcohol consumption in students (Borsari & Carey, 2003, p. 339).

College students’ alcohol consumption is likely to be influenced more by descriptive, rather than injunctive norm, however. Salience is an important precondition for normative influence on behavior (Cialdini, 2003). In everyday college life, descriptive norm would be more salient than injunctive norm. Descriptive norms are easy to discern—in this case, by observing friends and peers at parties and other social gatherings where alcohol is served and consumed.

On the other hand, injunctive norms often afford only indirect estimations and inferences. Since injunctive norms concern moral rules, they require more cognitive analyses than descriptive norms (Cialdini, 2003). This would also partly explain the greater inaccuracy in the estimation of actual injunctive rather than descriptive norm reported by Borsari and Carey (2003).

**Types of drinkers**

Finally, the social norms interventions have rarely considered potential differential effects on different types of college drinkers. Inherent in this approach is the premise that the intervention will be equally efficacious for all types of students on campus. The influence of norm is not likely to be uniform, however, since what others do or feel would matter to varying degrees to different types of college drinkers.

The behaviors or attitudes of others concerning alcohol consumption would be less relevant for infrequent light drinkers than frequent heavy drinkers. To begin with, infrequent light drinkers may be the ones who do not like drinking. They may believe that excessive drinking is not a good thing to do, for either health or value reasons; they may have been frequent heavy drinkers at one point and are now regulating themselves with regards to drinking.

In any of these circumstances, infrequent light drinkers are not likely to pay attention to the alcohol-related behaviors or attitudes of “typical” or “average” students. Instead, they would strive to be not swayed by what their peers or friends do or feel in terms of drinking. For these individuals, internal factors such as self-efficacy (Bandura, 1977; Young, Oei, & Crook, 1991) are likely to be more important than external influences such as norms. Despite the fact that self-efficacy has been shown to be a significant predictor of alcohol use and abuse (see Oei & Morawska, 2004, for a review), the social norms approach is predicated exclusively on the significance of social norms as the determinant of college students’ alcohol use.

Frequent heavy drinkers on college campuses are likely to be more susceptible to norms than infrequent light drinkers. Communicative interaction is essential to the formation and dissemination of normative perceptions (Prentice & Miller, 1993), and research indicates that frequent heavy drinkers talk about drinking with a wider range of individuals and more often than infrequent light drinkers.

For example, Dorsey, Scherer, & Real (1999) reported that the range of a college student’s social network was positively associated with the frequency of his/her excessive
drinking. The frequency of talking about various drinking-related issues with friends was also positively associated with the frequency of engaging in excessive drinking (Dorsey et al., 1999; Rimal & Real, 2003). Communication about drinking with friends and peers may help perpetuate the perception among frequent heavy drinkers that excessive drinking occurs often, and is accepted.

On the basis of the preceding discussion, the following hypotheses are proposed:

- **H1a.** The descriptive norm of friends is more strongly associated with drinking behavior than the descriptive norm of campus.
- **H1b.** The injunctive norm of friends is more strongly associated with drinking behavior than the injunctive norm of campus.
- **H2a.** The descriptive norm of campus is more strongly associated with drinking behavior than the injunctive norm of campus.
- **H2b.** The descriptive norm of friends is more strongly associated with drinking behavior than the injunctive norm of friends.
- **H3a.** The influences of norms (descriptive, injunctive, campus, friends) are likely to be greater among frequent heavy drinkers than infrequent light drinkers.
- **H3b.** Among infrequent light drinkers, the influence of self-efficacy is likely to be greater than that of norms.

**Methods**

*Overview and respondents*

A paper and pencil, self-administered survey of undergraduate students was done at two universities in the midwestern USA. Both universities are large-size, land grant institutions with residential campuses. Each university's institutional review board approved the survey. Respondents were assured of the anonymous nature of their participation.

Participants were volunteers enrolled in various introductory communication courses. This convenience sampling method is justified since the objective of this study was not to describe a representative sample of college students' drinking behavior, but to examine theoretical relationships between normative factors and drinking behavior.

In both of the states where the universities are located, the legal minimum drinking age is 21. While no formal studies have specifically examined the drinking behaviors of college students in either of these two states, it is reasonable to assume that the primary context of alcohol consumption would occur in various social settings, as in other parts of the USA. Studies have shown that youth perceive alcohol to be part of a normal social life. Alcohol enhances sociability by helping young people feel confident about themselves, show that they are not afraid, and thus gain peer approval (e.g. Liu & Kaplan, 1996; Turrisi, 1999; Kuther & Higgins-D’Alessandro, 2003). Heavy episodic drinking, especially, is viewed by the young as enhancing social interaction, relaxation, and arousal (Turrisi, 1999).

The original sample included a total of 624 participants whose age ranged from 18 to 37 (SD=1.62). In order to make it easier to generalize the findings of this study to a homogeneous age group, cases with ages higher than 25 were excluded in the analysis. Thus, in the resulting sample (n=609) the age of participants ranged from 18 to 25, with the mean being 20 (SD=1.16).

The majority of the respondents were Caucasians (84.0%), with the rest Asian/Pacific Islanders (7.4%), African-Americans (4.9%), and Hispanics (1.6%), respectively. The percentage of racial/ethnic minorities of the sample seems to be roughly equivalent to that
of the populations of the two universities from which the sample was recruited (17.0 and
11.3%, respectively). There were more female (63.9%) than male (36.1%) participants in
the sample. Similarly, the colleges of both universities that offer introductory communica-
tion courses tend to have more female, rather than male students (Michigan State
University, 2006; Purdue University, 2006).

**Measures**

Consistent with previous research (e.g. Wechsler *et al.*, 2002), alcohol consumption
content was standardized by asking respondents at the beginning of the survey to consider a
drink as a 12-oz can or bottle of beer, a 4-oz glass of wine, a 12-oz bottle or can of wine
cooler, or a shot (1.25 oz) of liquor straight or in a mixed drink. The average alcohol
content in these drinks is approximately 13 cc.

**Descriptive norm.** The quantity of alcohol consumption on campus and among the
participants’ friends was assessed for the descriptive norm. The participants were asked the
number of drinks that a typical (university name) student, or most of their friends, consume
on one drinking occasion. These items were given in an open-ended format.

**Injunctive norm.** The items measuring the injunctive norm of campus/friends were based on
Rimal and Real’s work (2003). These items assessed the extent to which “most [university
name] students” or most of a respondent’s friends “like to drink,” “enjoy drinking,”
“think drinking is pleasurable,” “drinking is O.K.,” and “drinking is good.” These five
items were given on a seven-point Likert scale ranging from 1 (“strongly disagree”) to 7
(“strongly agree”). Cronbach’s *z* was 0.88 for campus and 0.95 for friends’ injunctive
norm.

**Self-efficacy.** Young *et al*.’s (1991) 31-item drinking refusal self-efficacy questionnaire
(DRSEQ) was used. The DRSEQ consists of three factors including social pressure,
emotional relief, and opportunistic drinking. Items were given on a seven-point scale.
Higher scores indicate greater self-efficacy. Cronbach’s *z* was 0.95.

**Behavior.** First, the respondents’ average quantity of alcohol consumption per drinking
occasion was gauged in an open-ended format. Secondly, the frequency of binge drinking
was measured. For male respondents, their frequency of consuming five or more drinks in a
row for the past 2 weeks was assessed. For female respondents, their frequency of
consuming four or more drinks in one setting for the previous 2 weeks was assessed. These
binge-drinking measures are consistent with Wechsler *et al*.’s (e.g. Wechsler, Davenport,
Dowdall, Moeykens, & Castillo 1994; Wechsler *et al*., 2002).

**Control variables.** Demographic variables of age, sex (0=male, 1=female), race, age of first
alcohol consumption, on/off campus residence (0=off campus, 1=on campus), and
membership to fraternity/sorority (0=no, 1=yes) were measured as control variables.
Public health literature indicates that these variables are associated with college students’
alcohol consumption. Both the respondent’s age and the age of first alcohol consumption
were assessed in an open-ended format and coded as continuous variables. For multiple
regression analyses race was recoded as a dichotomous variable (0=Caucasian, 1=non-
Caucasian).
Analyses

Initially, zero-order correlations were run to take a look at the relationships among the key variables; results are shown in Table 1. Next, multiple regression analyses were performed. Prior to implementing the regression analyses, the dependent variable of alcohol consumption behavior was logarithmically transformed to adjust for normal distribution. For investigating Hypotheses 1 and 2, behavior (average number of drinks consumed on each drinking occasion) was regressed onto the aforementioned set of demographic, and theoretical variables (the descriptive norm of campus and friends, the injunctive norm of campus and friends, and self-efficacy).

In order to examine Hypothesis 3, drinker classification was done in accordance with Wechsler et al.’s (2002) frequent, occasional, and non-binge drinker categorizations. In this method, frequent binge drinkers are those who have engaged in binge drinking more than three times during the past 2 weeks. Occasional binge drinkers are those who binge drank once or twice during the same time period. Non-binge drinkers are those who drank within a year, but did not binge for the past 2 weeks.

When these criteria were applied to the sample, 149 frequent binge drinkers, 154 occasional binge drinkers, and 134 non-binge drinkers were identified. Separate multiple regressions were run for the three drinker groups. For each of the groups, the dependent variable was regressed onto the same set of demographic and theoretical variables.

Results

Hypotheses 1 and 2

Hypotheses 1a and 1b argued that the norms (descriptive, injunctive) of friends will be more strongly associated with drinking behavior than norms of campus. As predicted, the influence of the descriptive norm of friends ($r=0.68$, $p<0.01$; $\beta=0.40$, $p<0.001$) was stronger than that of campus ($r=0.40$, $p<0.01$; $\beta=0.10$, $p<0.01$). Similarly, the influence of the injunctive norm of friends ($r=0.36$, $p<0.01$; $\beta=0.16$, $p<0.001$) was stronger than that of campus ($r=0.16$, $p<0.01$; $\beta=-0.03$, $p=ns$).

Hypotheses 2a and 2b argued that the descriptive norms (friends’, campus) will be more strongly associated with drinking behavior than injunctive norms. As predicted, the influence of the descriptive norm of friends ($r=0.68$, $p<0.01$; $\beta=0.40$, $p<0.001$) was stronger than that of the injunctive norm of friends ($r=0.36$, $p<0.01$; $\beta=0.16$, $p<0.001$). Likewise, the influence of the descriptive norm of campus was stronger ($r=0.40$, $p<0.01$; $\beta=0.10$, $p<0.01$) than that of the injunctive norm of campus ($r=0.16$, $p<0.01$; $\beta=-0.03$, $p=ns$).

Self-efficacy also emerged as a significant factor ($r=-0.33$, $p<0.01$; $\beta=-0.19$, $p<0.001$) for the entire sample. Significant demographic variables included sex ($\beta=-0.12$, $p<0.001$) and the age of first alcohol consumption ($\beta=-0.08$, $p<0.05$). Male participants consumed more alcohol than female participants, and those who started alcohol consumption earlier drank more than those who started later. The results are shown in Tables I and II.

Hypotheses 3

Hypothesis 3a argued that the influences of norms are likely to be greater among frequent heavy drinkers than infrequent light drinkers, and the results offer limited support for this hypothesis.
In zero-order correlations, the association between the friends’ descriptive norm and behavior was strongest in frequent binge drinkers ($r=0.66$, $p<0.01$), followed by occasional binge drinkers ($r=0.53$, $p<0.01$) and non-binge drinkers ($r=0.41$, $p<0.01$). Similarly, the association between the campus descriptive norm and behavior was stronger in frequent binge drinkers ($r=0.45$, $p<0.01$) than in occasional binge drinkers ($r=0.19$, $p<0.01$). However, the association between campus descriptive norm and behavior in non-binge drinkers ($r=0.41$, $p<0.01$) was equivalent in size to the one in frequent binge drinkers.

When multiple regression methods were employed, the influence of friends’ descriptive norm was equivalent in size in frequent ($\beta=0.40$, $p<0.001$) and occasional binge drinkers ($\beta=0.39$, $p<0.001$), but non-significant in non-binge drinkers ($\beta=0.09$, $p=ns$). In contrast, the influence of the campus descriptive norm became larger in non-binge drinkers ($\beta=0.30$, $p<0.01$) than in frequent ($\beta=0.18$, $p<0.05$) and occasional binge drinkers ($\beta=0.07$, $p=ns$).

The influence of the campus injunctive norm was not significant for any of the sub-samples, in both correlation and regression analyses. The significant correlation between the descriptive and injunctive norms of friends and non-binge drinkers’ alcohol consumption behavior disappeared in the regression analysis. Similarly, the significant association between self-efficacy and frequent binge drinkers’ behavior vanished in the regression equation.

Hypothesis 3b argued that among infrequent light drinkers, the influence of self-efficacy is likely to be greater than that of norms. This prediction was not supported. Among non-binge drinkers, the influences of self-efficacy ($r=-0.38$, $p<0.001$; $\beta=0.27$, $p=0.001$) and

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<tr>
<th>Table I. Norms, self-efficacy, and alcohol consumption: results of zero-order correlations</th>
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<tr>
<td>Campus descriptive norm</td>
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<tr>
<td>Friends’ descriptive norm</td>
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<tr>
<td>Campus injunctive norm</td>
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<tr>
<td>Friends’ injunctive norm</td>
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<td>Self-efficacy</td>
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*p<0.01.

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<tr>
<th>Table II. Influences of norms and self-efficacy on the alcohol consumption of total sample: results of multiple regression analyses</th>
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<td>Age first alcohol consumption</td>
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<td>On/off campus residency</td>
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<td>Friends’ descriptive norm</td>
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<td>Self-efficacy</td>
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<td>$R^2$</td>
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*p<0.05; **p<0.01; ***p<0.001. |
campus descriptive norm \((r=0.41, p<0.001; \beta=0.30, p<0.01)\) were equivalent in magnitude. Results are shown in Table III.

### Discussion

This study sought to improve the understanding of the social norms approach to college alcohol abuse prevention and to look closely at some of the under-examined aspects of normative influences. Overall, the results indicate that proximity and types of norms, as well as types of drinkers are all important aspects of normative influences that need to be distinguished in the design and evaluation of social norms interventions.

The results of Hypotheses 1a and 1b indicate that the influences of friends’ norms are stronger than those of campus on drinking behavior. The descriptive norm of friends showed a much stronger influence on behavior than the descriptive norm of campus. The injunctive norm of friends showed a small but significant influence on behavior, but the injunctive norm of campus was not significant. Thus, both the influences of descriptive and injunctive norms were greater in reference to the more proximal social group of friends than to the more distant group of typical students on campus.

These findings call for a reconsideration of the current social norms approach, which typically features campus norms. Although the descriptive norm of campus influenced college students’ drinking behavior significantly, the magnitude was considerably smaller than that of friends. Therefore, a shift of norm focus from campus to friends is necessary. By addressing the norms within college students’ networks of friends, future interventions can increase their intended effects.

The findings of Hypotheses 2a and 2b show that the influences of descriptive norms are stronger on college students’ alcohol consumption behavior than those of injunctive norms. The influence of the friends’ descriptive norm was stronger than the friends’ injunctive norm. Likewise, the campus descriptive norm was stronger than the campus injunctive norm in influencing college students’ drinking behavior. These results provide support for the reasoning that injunctive norms are less salient than descriptive norms in everyday college life. Simultaneously, the results are consistent with Cialdini’s (2003) argument that norm salience is a critical factor in determining normative influence on behavior.

| Table III. Influences of norms and self-efficacy on the alcohol consumption of frequent-, occasional- and non-binge drinkers: results of multiple regression analyses |

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<thead>
<tr>
<th></th>
<th>Frequent binge drinkers, (\beta)</th>
<th>Occasional binge drinkers, (\beta)</th>
<th>Non-binge drinkers, (\beta)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>(-0.13^*)</td>
<td>(-0.02)</td>
<td>(-0.12)</td>
</tr>
<tr>
<td>Sex</td>
<td>(-0.36^{***})</td>
<td>(-0.04)</td>
<td>(-0.09)</td>
</tr>
<tr>
<td>Race</td>
<td>(-0.05)</td>
<td>(-0.00)</td>
<td>(0.04)</td>
</tr>
<tr>
<td>Age first alcohol consumption</td>
<td>(0.02)</td>
<td>(-0.06)</td>
<td>(-0.18^*)</td>
</tr>
<tr>
<td>Greek membership</td>
<td>(-0.03)</td>
<td>(0.12)</td>
<td>(0.00)</td>
</tr>
<tr>
<td>On/off campus residency</td>
<td>(-0.04)</td>
<td>(0.00)</td>
<td>(0.08)</td>
</tr>
<tr>
<td>Campus descriptive norm</td>
<td>(0.18^*)</td>
<td>(0.07)</td>
<td>(0.30^{**})</td>
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<tr>
<td>Friends’ descriptive norm</td>
<td>(0.40^{***})</td>
<td>(0.39^{***})</td>
<td>(0.09)</td>
</tr>
<tr>
<td>Campus injunctive norm</td>
<td>(0.00)</td>
<td>(0.03)</td>
<td>(-0.14)</td>
</tr>
<tr>
<td>Friends’ injunctive norm</td>
<td>(0.03)</td>
<td>(0.07)</td>
<td>(0.17)</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>(-0.08)</td>
<td>(-0.00)</td>
<td>(-0.27^{***})</td>
</tr>
<tr>
<td>(R^2)</td>
<td>(0.57)</td>
<td>(0.25)</td>
<td>(0.35)</td>
</tr>
</tbody>
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*p<0.05; **p<0.01; ***p<0.001.*
Given the prominence of descriptive norm found in this study, future interventions of social norms may need to tackle descriptive norms before addressing injunctive norms. Simultaneously, however, interventions focusing on the injunctive norm will be worthwhile, in that Reno, Cialdini, and Kallgren’s (1993) experimental research reported the influence of the injunctive norm to be more robust across situations than that of descriptive norm. Therefore, ways to make the injunctive norm more salient in college life could be an important consideration for both future research and the practice of social norms.

The results relevant to Hypotheses 3a and 3b support the prediction that the influence of norm is not uniform across the different types of college drinkers. In the frequent binge drinker sample, the strongest predictor of alcohol consumption behavior was the friends’ descriptive norm, followed by the campus descriptive norm. In the occasional binge drinker sample, the only significant predictor of behavior was the friends’ descriptive norm. Thus, for both samples of binge drinking college students, the friends’ descriptive norm is the most important influence.

Binge drinkers represent the subgroup of college students who are at the highest risk of alcohol abuse and are those most in need of effective persuasion. However, the results of this study suggest that the social norms interventions, with their current exclusive emphasis on the campus norm, may not appeal to binge drinkers. The present study suggests that for this group of college students, drinking for the most part is embedded in the network of friends. Put differently, those with whom a college student “hangs out” are likely to determine most significantly the amount of alcohol consumed by a college student. Therefore, changing the focus of the interventions strategy from that of campus to friends will be important for this priority population.

The pattern of findings also suggests that increasing self-efficacy in binge drinkers could be an important way to reduce the frequency, as well as the quantity of alcohol consumption. In both of the frequent and occasional binge drinker samples, the significant effect of self-efficacy found in the entire sample vanished. Specifically, the influence of self-efficacy was not significant in frequent ($\beta = -0.08, p = ns$) and occasional binge drinkers ($\beta = -0.00$), but was substantial in non-binge drinkers ($\beta = -0.27, p = 0.001$).

An additional comparison of means of self-efficacy in frequent ($M = 4.45, SD = .99$), occasional ($M = 4.74, SD = .94$), and non-binge drinkers ($M = 5.37, SD = .94$) indicated a significant difference [$F(2, 421) = 32.11, p = 0.001$]. The Scheffe test also revealed significant differences between all comparisons (all $ps < 0.05$). Frequent binge drinkers showed lower self-efficacy beliefs than occasional binge drinkers, who in turn indicated lower self-efficacy beliefs than non-binge drinkers.

These results appear to suggest that self-efficacy could be a factor in determining the transition from binge drinker to non-binge drinker status or vice versa. Evidence exists that self-efficacy can protect youth from social normative influences. For example, a study on adolescent smoking reported that friends’ influence was moderated by perceived self-efficacy (Stacy et al., 1992). Specifically, it was found that “greater belief in the ability to resist social influence reduces the strength of friends’ social influence on smoking” (Stacy, Sussman, Dent, Burton, & Flay, 1992, p. 170). Similarly, recent research using the theory of planned action (Ajzen, 1991) discovered self-efficacy as a significant predictor of college students’ binge drinking (Norman, Bennett & Lewis, 1999; Johnston & White, 2003).

Therefore, along with friends’ norms, self-efficacy perceptions should be addressed in future interventions against excessive drinking on college campuses. Current social norms interventions implicitly assume that awareness of the norm with regards to drinking
behavior is the single significant determinant of college students’ drinking behavior. After all, if normative influences are that significant, health interventions should be able to provide the means to cope with the explicit and implicit social pressures.

For this purpose, combining or complementing the social norms approach with motivational (e.g. Borsari & Carey, 2000; Larimer, Turner, Anderson, Fader, Kilmer, Palmer, & Cronce, 2001) or skills-based approaches (e.g. Baer, Marlatt, Kivlahan, Fromme, Larimer, & Williams, 1992; Darkes & Goldman, 1998) could be considered. For example, motivational interviewing (Miller & Rollnick, 1991, 2002) might be useful in that self-efficacy is increased with the provision of skills and personalized feedback (e.g. Marlatt, Baer, Kivlahan, Dimeff, Larimer, Quigley, Somers, & Williams, 1998; Dimeff, Baer, Kivlahan, & Marlatt, 1999).

The significant effect of campus descriptive norm found for non-binge drinkers was unexpected. One speculation about this finding can be based on the false consensus effect (Ross, Green, & House, 1977), and in the context of other findings of this study that indicate that both frequent and occasional binge drinking is most significantly influenced by friends’ norms. While not hanging out with heavy drinking friends, and thereby not seeing excessively drinking peers frequently, non-binge drinkers may project that their drinking quantity is equivalent to that of a typical college student’s. Certainly, future research should examine this speculation in addition to exploring alternative explanations. Also, among the non-binge drinker sample, the influence of self-efficacy was not larger than that of norm, contrary to the prediction.

More research is needed to ascertain the processes through which norms influence health/risk behavior, including the alcohol consumption of college students. This study is limited in that it used a cross-sectional convenience sample. A more rigorous investigation of the causal effect of norms will have to involve longitudinal studies of representative samples of college students. Such a design would provide more precise answers to the questions raised in this study.

Conclusion

In conclusion, the present study provides a useful perspective for enhancing the understanding of normative influences. It suggests that proximity and types of norms, as well as types of college drinkers, will need to be distinguished in the future design and evaluation of social norms interventions. Interventions should focus on the more proximal social reference groups of friends’ norms instead of only on campus norms and this is especially important for the at-risk population of binge drinkers. Data from this study also suggest that interventions would need to address descriptive norms of friends first, since their influences were larger than those of injunctive norms. Finally, interventions against excessive college drinking should begin to address self-efficacy perceptions. In particular, ways in which a college student might cope with friends’ descriptive and injunctive norms for drinking and binge drinking should be provided.

References


