

NORMATIVE PERCEPTIONS OF PEER SUBSTANCE USE AND PARTY-RELATED BEHAVIORS

Justin Shepherd, M.S.*

M.S. in Clinical Psychology '15, Rivier University,

Karen Meteyer, Ph.D.**

Assistant Professor and Director of Clinical Psychology Master's Program, Rivier University,

Kathryn Bruzios, M.S.‡

M.S. in Clinical Psychology '15, Rivier University,

Jeta Pol†

Graduate Student, M.S. Program in Clinical Psychology, Rivier University,

and

Mark Charpentier‡

Graduate Student, M.S. Program in Clinical Psychology, Rivier University

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Abstract

Alcohol and illicit substance use has been recognized as a widespread public health concern across college campuses in the United States. One factor which has consistently been found to predict drinking are perceptions of peer use. Beliefs about peer alcohol use, known as social norms, have been found to predict drinking behavior, despite the fact that these perceptions may overinflate actual rates of consumption. The current study examines the differences between actual and perceived substance use and party-related behaviors, and seeks to determine if a relationship exists between reported and perceived behaviors. Participants were college students (n=2896) from seven higher education institutions in New Hampshire. Findings indicated that participants overestimated rates of alcohol use, drug use, and party-related behaviors by the typical student. Results also suggested that there was a positive relationship between actual and perceived normative behavior, thus students who believed their peers were using substances more ultimately consumed more themselves. In conclusion, the use of social norming interventions that target both the general student body and higher-risk groups in college settings was supported.

Introduction

The consumption of alcohol and illicit substances has been identified as a significant risk on college campuses around the country. Research affirms that substance use is linked to a host of negative consequences (Borden et al., 2011; Courtney & Polich, 2009), ranging from short-term effects such as a feeling ill to longer-lasting and more serious consequences including vandalism, property damage, and sexual assault (Courtney & Polich, 2009; Wechsler et al., 1995). The mental and emotional well-being and negative psychological risks are numerous (Champion, Lewis, & Myers, 2015). Bodily injuries may occur while intoxicated requiring hospitalization (Wechsler et al., 1995). Over time, substance abuse may result in more serious medical conditions or even premature death (NIAAA, 2013; Weschler et al., 1995). For college students in particular, substance use negatively affects the ability to learn and retain material. Poor performance on exams and missing class, two commonly associated academic

consequences of substance use, are especially detrimental to students' academic performance (Courtney & Polich, 2009; Wechsler et al., 1995). Despite the wealth of information available, college students still continue to engage in high-risk behaviors. The crisis has garnered the attention of researchers and policy makers alike with many efforts focused on intervention strategies to mitigate the associated negative consequences and reduce rates of use. Educational programs have attempted to raise awareness of the potential risk associated with substance yet the effectiveness is limited (Larimer & Cronce, 2007; Perkins, 1997) and college students continue to use substances, and alcohol especially, in high numbers.

Numerous factors have been found to be associated with increased rates of college drinking including demographic characteristics, alcohol expectancies, and family and peer influences (for a review, see Ham & Hope, 2003). Apart from direct influences, beliefs about peer alcohol use, known as social norms, have been found to predict drinking behavior, despite the fact that these perceptions may overinflate actual rates of consumption. In the 1980s, Berkowitz and Perkins proposed a theory of social norms to explain the relationship between beliefs about peer norms and alcohol consumption (Berkowitz, 2005). The social norms theory proposes that individuals' misperceptions about how peers think and act impact their own behavior and actions in the direction of the perceived norms (Berkowitz, 2005). Two types of norms described in the theory are "perceived norms" and "actual norms." The perceived norm can be seen as a false assumption about peers' beliefs and actions, while the actual norm reflects the reality of the situation; the true beliefs and actions of peers. Thus, the discrepancy between the perceived and actual norms represents the degree of inaccuracy or misperception in individuals' judgements about peer drinking behavior.

Social Norms and Alcohol Use

Research has unequivocally demonstrated the widespread misperceptions that exist in regards to peer drinking norms, such that students dramatically overestimate the amount and frequency of their peers' alcohol consumption (Perkins, 2002). The inaccuracy of students' perceptions are significant because several studies have found a strong relationship between perceived social norms and actual alcohol consumption among college students (e.g., Berkowitz, 2005; Perkins & Wechsler, 1996). Perkins and Wechsler (1996) found that perceptions of college students' consumption of alcohol were more powerful predictors of alcohol use than personal attitudes toward drinking. In addition, the results of a study conducted by Clapp and McDonnell (2000) also demonstrated that, after controlling for individual differences, perceptions of peer drinking predicted individuals' own drinking behavior. At least one large-scale review found that perceptions of peer norms were the strongest and most consistent predictor of drinking behavior (Perkins, 2002). Although much research has focused on the relevance of social norms to alcohol consumption, relatively few studies have explored whether social norms would relate to the use of other substances or to partying behaviors on campus more generally.

The Current Study

Given the high rates of alcohol use, drug use, and risky party-related behaviors on college campuses and the support of social norms theory, the current study explored the relationship between individual alcohol use, drug use, and party-related behaviors (e.g., binge drinking) and perceptions of peer norms. In addition to providing confirmatory support for existing research regarding social norms and alcohol use, this study sought to determine whether social norms theory might also apply to other illicit substances not examined in previous research as well as party-related behaviors. Based on previous findings regarding the impact of social norms on alcohol consumption, it was hypothesized that: (1)

participants would overestimate peer normative behaviors (perceived norms would differ from actual reported use); and (2) a positive relationship would exist between actual behavior and perceived peer norms for substance use and partying behaviors. In essence, we predicted that students who overrate their peers' behaviors will use substances or party more themselves compared to students who have a less inflated (and more accurate) perception of their peers' substance use and partying behaviors.

Methods

Participants and Procedures

Eligible participants for this study were 16,112 students enrolled at seven higher education institutions in New Hampshire. These institutions varied in affiliation (e.g., private/public, religious/secular, two/four year), mission, and size. Of these students, 2,896 participants had valid responses to the New Hampshire Higher Education Alcohol Tobacco and Other Drug (NHHEATOD) Survey resulting in an 18% response rate. The sample was representative of colleges and universities in the state. The median age of the sample was 21 years and the majority of participants were female (70.5%). Most of the participants were White (94%) with other ethnic representations as follows: Asian (2.2%), Hispanic (2%), African-American (1.3%), and Other (.5%). Most participants were full-time students (98.8%). Among the undergraduate participants (99.6%), class was equally distributed such that the sample was representative of freshman (21.9%), sophomores (23.8%), as well as upper-class students (e.g., juniors and seniors; 53.8%).

Prior to administration of the survey, each institution received approval from their Institutional Research Board. Each institution used an on-line survey instrument and chose its own sampling method. All schools implemented an administration method designed to ensure anonymity and confidentiality of participants. The survey began in mid-to late February and all surveys were completed prior to spring break vacation. The choice to end the survey prior to spring break helped to ensure a uniform experience that was generally typical of usual use and not colored by spring break activities. Students were sent email invitations to participate in the NHHEATOD Survey and most institutions offered small incentives for participation (e.g., gift certificates or a raffle). The survey was posted for two weeks, on average, and students were sent reminder emails inviting them to participate.

Measures

Participants completed the New Hampshire Higher Education Alcohol, Tobacco, and Other Drug (NHHEATOD) Survey. The NHHEATOD Survey is derived from three national surveys: the Core Survey (short form), the Campus Survey of Alcohol and Other Drug Norms, and the 1999 Annual Student Behavior Assessment. The 97-item measure assesses students' alcohol, tobacco, and other drug use. The NHHEATOD Survey also includes questions about negative consequences related to use, the use of protective behaviors and, of interest to the current study, perceptions of peer substance use. For the purpose of this study, items of interest assessed the frequency of substance use in the past 30 days, perceived typical student substance use in the past 30 days, frequency of party-related behaviors in the past 30 days, and perceived typical student partying behavior.

Frequency of Substance Use in the Past 30 Days

Frequency of use was assessed via a series of items that asked participants to indicate on how many of the last 30 days they used a variety of substances. Participants were asked, “*In the past 30 days, how many days do you estimate you used...*” To measure normative perceptions of peer substance use, respondents were asked, “*In the past 30 days, how many days do you estimate the typical student used...*” Each item was rated on a 7-point Likert scale (1=*none*, 2=*1-2 days*, 3=*3-5 days*, 4=*6-9 days*, 5=*10-19 days*, 6=*20-29 days*, and 7=*all 30 days*). Information regarding use of the following substances was obtained: smoking tobacco (cigarettes, cigars, pipes), smokeless tobacco (chew, snuff, dip), alcohol (beer, wine, liquor), alcohol combined with stimulants, marijuana (pot, hash, hash oil), prescription drugs (stimulants, opiates, sedatives) steroids and other performance enhancing drugs, cocaine (crack, rock, freebase), stimulants (diet pills, speed, Adderall), sedatives (Ativan, Klonopin), hallucinogens (LSD, PCP, mushrooms), non-prescribed opiates (heroin, Oxycontin, Vicodin, Percocet), and designer drugs (ecstasy, MDMA). The internal consistency of the frequency of substance use items was acceptable ($\alpha = .870$).

Frequency of Party-Related Behaviors in the Past 30 Days

In the current study, party-related behaviors of interest included: frequency of binge drinking, the number of alcoholic drinks consumed when partying, and the typical number of nights per week spent partying. Binge drinking was assessed with a traditional measure (i.e., 5 drinks at one-sitting) to indicate how often students engaged in binge drinking during the preceding 2 weeks. Participants were first asked, “*How many times in the last two weeks have you had five or more alcoholic drinks in one sitting?*” Participants were then asked a follow-up question to measure perceptions of peer binge drinking, “*How many times in the last two weeks do you think the typical student at your school had five or more alcoholic drinks in one sitting?*” Each item was measured on a 7-point Likert scale (1=*none* to 7=*10+ times*).

Participants also responded to a question about individual alcohol use when partying: “*When you “party, socialize, and/or go out” how many alcoholic drinks do you usually have?*” To assess normative perceptions of peer alcohol use when partying, a follow-up question asked participants to indicate how many alcoholic drinks they thought the typical student consumed when “*partying, socializing, or going out.*” For both the individual alcohol use and peer perception items, responses were recorded on a 7-point Likert scale (1=*none* to 7=*11 or more*). Further, participants were asked, “*How many nights per week do you usually “party, socialize, go out?”* and “*How many nights per week do you think the typical student on this campus “parties, socializes, goes out.”* Responses were scored on a Likert scale ranging from 1 (*none*) to 6 (*5 or more*). The internal consistency of the frequency of party-related behaviors items was acceptable ($\alpha = .760$).

Results

Results suggested that with the exception of alcohol, the majority of participants did not frequently engage in tobacco or drug use. Table 1 displays comparisons between actual participant use and participants’ perceptions of typical student substance use behavior in the past 30 days.

Table 1.
Reported Actual vs. Perceived Substance Use Frequency in the Past 30 Days

Substance	% Actual Use (days)					% Perceived Use (days)				
	None	1-9	10-19	20-29	30	None	1-9	10-19	20-29	30
Smoking Tobacco	79	14	2	2	3	11	61	16	6	6
Smokeless Tobacco	94	4	1	1	0	21	64	9	4	2
Alcohol	17	67	14	2	0	1	48	40	9	2
Alcohol/Stimulant mix	78	21	1	0	0	10	81	7	1	1
Marijuana	75	16	2	3	4	7	62	19	9	3
Prescription Drugs	95	5	0	0	0	27	68	4	1	0
Steroids	99	1	0	0	0	47	51	2	0	0
Cocaine	98	2	0	0	0	58	41	1	0	0
Stimulants	93	6	1	0	0	26	64	7	2	1
Sedatives	99	1	0	0	0	53	46	1	0	0
Hallucinogens	98	2	0	0	0	50	49	1	0	0
Opiates	98	2	0	0	0	52	47	1	0	0
Designer Drugs	96	4	0	0	0	48	50	2	0	0

For example, while 79% of participants reported no use of smoking tobacco in the past 30 days, 89% believed the typical student used smoking tobacco at least once in the past 30 days. A similar pattern emerged for smokeless tobacco. Further, results suggested that while only 25% of the participants reported marijuana at least once in past 30 days, 93% of participants indicated that they believed that marijuana was used at least once in the past 30 days by the typical student. With the exception of marijuana, 93% or more of participants reported abstaining from illicit drug use within the past 30 days. Similar to other substance use items, results indicated that participants overrated illicit drug use by peers.

Table 2.
Descriptive Statistics and t-test Results for Actual vs. Perceived Substance Use

Substance	Actual		Perceived		95% CI	r	t	df
	M	SD	M	SD				
Smoking Tobacco	2.97	1.76	3.53	1.64	-2.05, -1.91	.161*	-54.124*	2868
Smokeless Tobacco	1.16	.79	2.82	1.51	-1.72, -1.60	.094*	-54.132*	2852
Alcohol	3.02	1.37	4.44	1.01	-1.47, -1.37	.274*	-51.717*	2821
Alcohol/Stimulant mix	1.36	.82	2.88	1.16	-1.56, -1.47	.256*	-65.438*	2855
Marijuana	1.72	1.56	3.70	1.52	-2.05, -1.91	.242*	-56.215*	2871
Prescription Drugs	1.10	.51	2.34	1.17	-1.28, -1.19	.122*	-54.538*	2857
Steroids	1.02	.22	1.84	1.03	-.86, -.79	.175*	-43.424*	2857
Cocaine	1.04	.29	1.63	.92	-.62, -.56	.159*	-34.494*	2860
Stimulants	1.13	.59	2.51	1.37	-1.43, -1.33	.182*	-53.147*	2854
Sedatives	1.03	.27	1.76	.99	-.77, -.69	.134*	-39.479*	2857
Hallucinogens	1.03	.23	1.74	.94	-.74, -.67	.086*	-39.903*	2863
Opiates	1.03	.31	1.73	.95	-.73, -.66	.113*	-38.492*	2863
Designer Drugs	1.05	.32	1.79	.98	-.77, -.70	.164*	-40.250*	2865

Note. M=mean, SD=standard deviation, 95% CI= 95% confidence interval, r=correlation coefficient, t=t statistic, df= degrees of freedom.

* p <.01.

A series of paired-samples t-tests were conducted to determine the degree to which students overestimated substance use by the typical student in relation to their own reported use. Results of the paired-samples t-tests are displayed above in Table 2. For all analyses, findings indicated that participants significantly overestimated substance use by the typical student for all use items. For example, results suggested that participants significantly overestimated typical student stimulant use ($M=1.13$, $SD=.59$) in comparison to actual stimulant use ($M=2.51$, $SD=1.37$); $t(2854)=-53.147$, $p<0.01$.

An additional purpose of this study was to determine if overestimation of substance use by the typical student reflected participants' actual reported use. Pearson correlation coefficients are presented in Table 2. For all analyses, the results suggested that a statistically significant positive relationship existed between actual and perceived substance use items. The effects sizes ranged from small (i.e. $r^2=.08$ for alcohol) to very small (i.e. $r^2=.007$ for hallucinogens). Thus, across all of the categories of substances measures, students' inflated perceptions of peer use were associated with higher rates of use themselves.

Another series of paired-samples t-tests were conducted to determine the degree to which students overestimated party-related behaviors by peers. Table 3 compares the mean scores for actual and perceived typical student behavior for the three party-related behavior items.

Table 3.

Descriptive Statistics and Mean Differences in Actual vs. Perceived Partying-Related Behaviors

Partying Behavior	Actual		Perceived		95% CI	<i>r</i>	<i>t</i>	df
	M	SD	M	SD				
Binge Drinking	2.19	1.42	3.86	1.23	-1.73, -1.62	.290*	-56.576*	2870
Alcoholic Drinks	3.24	1.58	4.30	1.18	-1.11, -1.00	.477*	-38.910*	2859
Nights Per Week	2.34	.99	3.51	.81	-1.22, -1.13	.173*	-53.970*	2862

Note. M=mean, SD=standard deviation, 95% CI= 95% confidence interval, *r*=correlation coefficient, *t*=statistic, df= degrees of freedom

* $p < .01$.

Similar to the substance use items, participants also significantly overrated party-related behaviors of their peers. For example, results indicated that the mean number of binge drinking episodes in the past two weeks was 2.19, which corresponds to approximately one binge drinking episode. However, the perceived mean frequency was 3.86, which corresponds to between 3-4 binge drinking episodes in the past two weeks. Further, for the number of alcoholic drinks consumed when partying, the mean number of drinks was 3.24 or approximately three to four drinks when partying, yet the perceived mean was 4.30 or 5-6 drinks when partying. A similar pattern emerged for number of nights per week of partying. While the average participant reported partying one or two nights per week, the perceived normative frequency corresponded to 3 or 4 nights per week. Pearson correlations were used to examine the relationship between actual and perceived party-related behaviors. Correlation coefficients are displayed in Table 3. The results indicate that a moderate relationship exists between actual and perceived alcohol use when partying ($r^2=.23$) and a small to very small but significant relationship between actual and perceived binge drinking and nights per week partying ($r^2=.08$ and $.03$, respectively).

Discussion

The purposes of this study were to (1) compare the relationship between individual alcohol use, drug use, and party-related behaviors with peer perceptions of normative behaviors, and (2) determine whether social norms theory would extend to other illicit substances not examined in previous research as well as party-related behaviors. The first hypothesis that participants would overestimate perceived substance use and other party-related behaviors among peers was supported. Consistent with prior research, results of the current study indicated a vast discrepancy between actual reported behaviors and perceived normative behavior such that participants grossly overestimated substance use and party-related behaviors.

Results also supported the second hypothesis; that actual behavior would be positively correlated with perceived peer norms in regards to substance use and party-related behaviors. There was a significant positive correlation between all actual-reported substance use items and perceived peer normative behavior. Students who reported engaging in more frequent use of a substance or a party-related behavior were also more likely to overrate their peer's behaviors compared to those who engaged in the behavior less frequently. However, effect sizes indicated that the magnitude of the relationship was only small to moderate, according to conventional standards (Cohen, 1992).

The relationship between social norms and the use of illicit substances was overwhelmingly supported by the present study, a relationship not adequately explored in prior research. The majority of research on social norms has focused on alcohol use (e.g., Baer, Stacy, & Larimer, 1991; Larimer, Irvine, Kilmer, & Marlatt, 1997; Perkins & Wechsler, 1996). The few studies which have examined the relationship between actual and perceived drug use suffered from methodological limitations such as a restrictive response scale or an incomplete list of substances (e.g., Martens et al., 2006; Perkins, Meilman, Lechliter, Cashin, & Presley, 1999). Thus the current study offers an important contribution to the literature on social norms by extending the applicability to substance use and partying behaviors.

Limitations

Although the present research provides new information regarding the relevance of social norms, it is not without limitations. First, all data were self-report and survey-based. Although participants were assured anonymity and confidentiality, which was intended to decrease response bias, the nature of self-report data is not without concerns regarding reliability and validity. Further, even though the measures of social norms were based on validated measures of the construct, the measure used in this study has not yet been standardized. Other limitations are related to the sample. For example, the survey response rate was low (18%) and the generalizability of the findings is limited by the fact that participants are from a single state. The data were also collected from the northeast region of the United States, which tends to have higher rates of alcohol use than other regions in the country (Johnston, O'Malley, Bachman, & Schulenberg, 2011). Additionally, all participants were volunteer college students and 70.5% were women. Given these limitations, care must be exercised when generalizing these findings to other populations. Finally, because the data is cross-sectional and therefore correlational, it is impossible to determine the underlying cause and effect relationships. Thus, it is possible that students who consume more alcohol and drugs overestimate peer use rather than the other way around or some unidentified third variable could be influencing both perceptions and substance use behaviors on campus.

Conclusions

Misperceptions of peer use are an important contributor to increased alcohol and drug use amongst college students. The findings of the current study highlight the potential power of social norms to reduce the use of alcohol and other drugs as well as high risk partying behavior on college campuses. Efforts to combat substance use have focused on three domains of prevention (i.e., universal, selective, and indicated). Universal prevention is designed for the population (i.e., entire college campus), but does not identify individuals who are or may be at risk of abuse. Selective prevention is designed specifically for members of a particular group (i.e., Greeks and athletes) who are at risk for abuse. Lastly, indicated prevention is for individuals who are currently displaying symptoms of abuse. Integrating social norming into existing prevention programs at all levels may help increase efficacy and reduce rates of harmful negative consequences associated with drug and alcohol use. Social norms campaigns have often focused on universal strategies designed to increase awareness of the discrepancy in reported actual use compared to perceived use on campus. Berkowitz's (2005) universal intervention plan involving social norms has been successful in reducing the consumption of alcohol and use of tobacco within college environments. Further research into the effectiveness of such interventions is warranted to determine how social norming can best be incorporated into prevention programs and at what level (universal, selected, and/or indicated). For example, research suggests that social norming may be an effective addition to individual or group treatment of collegiate substance users to reduce misconceptions among high-risk groups.

At a time when alcohol and other drug use is seen nationally as a normative college behavior, there is a need now, more than ever, to develop effective intervention strategies to address this observation and its underlying behaviors. Despite intervention and awareness efforts, alcohol and substance use remains a public health concern (Wechsler, Lee, Nelson, & Kuo, 2002). The findings from this study along with numerous others (e.g., Martens, Smith, & Murphy, 2013) continue to point toward the value of focusing on interventions to address misperceptions regarding social norms.

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* **JUSTIN SHEPHERD** earned his B.A in psychology from the University of Massachusetts, Lowell and his M.S. in clinical psychology from Rivier University. His research interests lie within the area of health promotion. More specifically, he is interested in substance use and health promotion intervention research. His current line of research examines the relationship between college students' alcohol use, negative consequences, and protective behavioral strategies.

- ** **DR. KAREN METEYER** is an Assistant Professor of Psychology and Director of the Clinical Psychology Program at Rivier University. Her work has been published in the *Journal of Personality & Social Psychology*, *Fathering*, and *Family Relations*. She earned a B.A. in psychology from Dartmouth College and a Ph.D. in clinical psychology from the University of Massachusetts, Amherst. A licensed psychologist, she has worked in diverse clinical settings including inpatient and community mental health and maintains an outpatient therapy practice. Her research interests include family dynamics, gender, predictors of anxiety and depression, and college students' drug and alcohol use.
- § **KATHRYN BRUZIOS** is a mental health counselor at the Worcester Recovery Center and Hospital. She earned her B.S. in psychology from High Point University and an M.S. in clinical psychology from Rivier University. After working with adolescents, Kathryn has developed a passion for research involving developing interventions for use in schools. Her general research interests include school adjustment, attachment styles, and prevention science.
- † **JETA POL** is pursuing a M.S. in clinical psychology from Rivier University. She received her B.A. in psychology from Mumbai University, a Bachelor's of Education from SNDT University, and a Masters of Education - specializing in special education and teachers' education from Marathwada University, India. She has been an international level gymnast and a national level pole vaulter. She is interested in research areas such as substance abuse and how the nervous system influences a person's cognition and behavior. Her current research focuses on the impact of negative cognitions and depression on college students' academic performance, relationships, and career goals.
- ‡ **MARK CHARPENTIER** is currently a first year student in the Master's of clinical psychology program at Rivier University. He graduated in 2014 with a B.S. in psychology (*cum laude*) from Liberty University. Mark grew up as an 'Army Brat', traveling all over the United States from Alaska to Virginia. His research interests are eclectic, but he is most interested in the area of military psychology, including both active-duty and veteran populations.