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Katherine B. Novak
Butler University, kbnovak@butler.edu

Lizabeth A. Crawford

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Perceived drinking norms, attention to social comparison information, and alcohol use among college students

Katherine B. Novak, Lizabeth A. Crawford

Abstract

Numerous studies indicate that normative campus drinking practices are important in determining college undergraduates' use and abuse of alcohol. The purpose of this paper was to extend this literature by assessing the extent to which a dispositional susceptibility to peer influence, measured using the Attention to Social Comparison Information subscale (Lennox & Wolfe, 1984), moderates this relationships. Consistent with prior research, the perception that alcohol use and abuse are common campus activities was associated with high levels of drinking across students. Attention to social comparison information also had a direct positive effect on alcohol consumption among the undergraduates surveyed. Moreover, as we predicted, students high in attention to social comparison information who believed other individuals on campus to be frequent and heavy users of alcohol reported the highest levels of drinking. These findings are interpreted with reference to the utility of both information- and resistance-based alcohol-prevention strategies.

High rate of alcohol-related crimes, accidents, and other problem behaviors on college campuses have led school administrators to implement a range of initiatives designed to reduce undergraduate drinking (Abbey, 1991; Scott, Schafer, & Greenfield, 1999; Wechsler, Davenport, Dowdall, Moeykens, & Castillow, 1994). Despite this, recent reports indicate that the vast majority of college undergraduates use alcohol, and that nearly half of all students routinely engage in heavy, or binge drinking (Wechsler, Lee, Kuo, & Lee, 2000).

Perceived Drinking Norms

While colleges and universities often have a number of characteristics that promote these patterns (Gonzales, 1987), perceptions of campus drinking norms continually emerge as one of the strongest determinants of undergraduates' drinking practices. Across analyses, students who believe alcohol use and binge drinking to be commonplace at their college or university consistently reported engaging in the highest rates of these activities (Baer, Stacy, & Larimer, 1991; Perkins & Berkowitz, 1986; Perkins & Wechsler, 1996; Wood, Nagoshi, & Dennis, 1992). This is an especially notable finding since students tend to overestimate both the amount of alcohol consumed by other individuals on campus and the proportion of their peers who drink heavily (Baer et al., 1991; Perkins & Berkowitz, 1986; Perkins, Meilman, Leichter, Cashin, & Presley, 1999). Insofar as students use beliefs about others' alcohol consumption to gauge the appropriateness of their own drinking, their misconceptions about peers' use of alcohol may contribute significantly to the alcohol "problem" described earlier. If heavy drinkers overestimate

the magnitude of others' alcohol use, they may fail to recognize their own drinking as hazardous or aberrant (Baer, et al., 1991), or they may more readily justify their potentially harmful behavior (Baer, et al., 1991; Perkins & Berkowitz, 1986; Wechsler & Kuo, 2000). Students who see heavy drinking as a normative activity may also increase their levels of alcohol consumption in order to gain social acceptance and avoid negative peer evaluations (Baer, et al., 1991; Perkins & Wechsler, 1996).

Susceptibility to Situational Influence

Although students frequently report that social concerns affect their drinking (Kriegler, Baldwin, & Scott, 1994; Lo, 1995), individuals may vary in their vulnerability to these kinds of pressures. The concept of self-monitoring (Snyder, 1974; 1979) was initially developed as a measure of dispositional susceptibility to situational influences like these across social contexts.

Self-monitoring refers to the extent to which individuals base their behaviors on internal factors or dispositional traits (low self-monitors) as opposed to external, situational constraints (high self-monitors). While low self-monitors tend to behave consistently across social settings, individuals high in self-monitoring typically exhibit a wider array of behavior, varying in accordance with the expectations of the people with whom they are interacting. Thus, it is high self-monitors who, given their concern with making favorable impressions and fitting in socially, are the most susceptible to the influence of those around them (Snyder, 1974).

While there is some evidence that college undergraduates high in self-monitoring consume more alcohol than other individuals (Colwell, Billingham, & Gross, 1995; Sharp & Getz, 1996), it is questionable as to whether self-monitoring is a valid measure of students' dispositional vulnerabilities to peer pressure. Since personal characteristics known to influence alcohol use (e.g., religiosity and sensation seeking) did not have greater effects on alcohol consumption among students low in self-monitoring, and environmental variables (in particular peers' use of alcohol) did not exert a stronger influence on the drinking behaviors of college undergraduates high in self-monitoring, Wolfe, Lenox, & Hudziug (1983) recommend against the use of the self-monitoring scale, in both its initial and abbreviated form, for this purpose.

More recently, researchers have found concern for appropriateness (Lennox & Wolfe, 1984), a construct more reflective of social anxiety and a tendency towards protective self-preservation than the more active and manipulative approach to interactive encounters associated with self-monitoring (Wolfe, Lennox, & Cutler, 1986), to be somewhat more promising as a measure of dispositional susceptibility to peer influence (Bliss & Crowne, 1994; Johnson, 1989; Wolfe, et al., 1986; Wolfe, Welch, Lennox, & Culter, 1985). A number of individuals have, however, suggested that attention to social comparison information, a dimension of the concern for appropriateness scale focusing specifically on individuals' sensitivities to social cues (Lennox & Wolfe, 1984), may be the best way to measure this tendency (Bearden, Netemeyer, & Teel, 1989; Bearden & Rose, 1990; Johnson, 1989; Wolfe, et al., 1985). While none of these authors examined the nature of the relationship between alcohol use and attention to social comparison

information specifically, individuals scoring high on this subscale are aware of the reactions of others to their behaviors, and care what others think of them. As a result, they are more likely to comply with normative pressure than individuals low in this capacity (Beardon & Rose, 1990). Thus, we used the Attention to Social Comparison Information subscale as our measure of students' general vulnerabilities to peer pressure in the analysis.

Study Purpose and Hypotheses

The purpose of this paper was to assess the extent to which a dispositional vulnerability to peer influence moderates the relationship between campus drinking norms and undergraduates' alcohol use described within the literature. While both the perception that the use and abuse of alcohol by peers is a common occurrence, and a sensitivity to peer pressure more generally, should be positively associated with undergraduate drinking, we expect to find the highest levels of alcohol consumption among individuals high in social comparison information who believe that other students on campus drink both frequently and heavily.

Method

Participants

During the spring of 2001, the authors administered a comprehensive survey form (including measures of students' demographic characteristics, alcohol use, and a range of social-psychological indicators) in a number of lower-level sociology and criminal justice courses at a medium-sized private Midwestern University. Although all of the students present in the classes in which the survey was given opted to complete the questionnaire, there was the usual rate of absences (about 5-10% of students per session) across classes. This, combined with the fact that students taking introductory sociology or criminal justice classes are not necessarily representative of all undergraduate students at this university, must be taken into consideration when interpreting the results of this survey. In total, 261 undergraduate students (154 females and 107 males) completed the survey form. These individuals were predominantly white (84.5%), reflecting the overall composition of this university's student population. While the percentage of sophomores (26.4%) and seniors (20.3%) was similar to their representation in the population, freshmen were overrepresented (39.5%) and juniors were underrepresented (13.8%) in this sample.

Measures

Perceived Drinking Norms. Perceived drinking norms were measured using three questions requiring participants to estimate the number of alcoholic drinks the "typical" student at their university drinks in an average week, the number of drinks a "typical" student drinks at one sitting, and the number of times a "typical" student drank to intoxication during the month prior to the administration of the survey (See Baer, et al., 1991; and Wood, Read, Palfai, & Stephenson, 2001 for similar operational definitions of peer drinking norms). These three

variables were standardized to give an equal weight to each of the three items and then combined into a composite drinking-norms index (Alpha = .80).

Susceptibility to Peer Influence. Participants' susceptibilities to peer influence were measured using 12 items from the Attention to Social Comparison Information subscale of Lennox & Wolfe's (1984) Concern for Appropriateness scale.¹ The Attention to Social Comparison Information subscale consists of self-report items (e.g. "It's important to me to fit in to the group I'm with," "My behavior often depends on how I feel others wish me to behave"), each scored, in this study, using a 4 point Likert scale ranging from "strongly disagree" to "strongly agree." Possible scores on this measure ranged from 12 to 48, with a high score indicating that the individual searches for social cues as to what is appropriate behavior. Consistent with the result of several studies testing the reliability of this instrument (Bearden & Rose, 1990; Cutler & Wolfe, 1985; Lennox & Wolfe, 1984; Wolfe, et al., 1985), the Alpha coefficient for the Attention to Social Comparison Information subscale was .80 among the undergraduate sample, indicating a reasonably high degree of internal consistency among the scale items.

Alcohol Use. Our dependent variable, alcohol use, was assessed using a series of four questions asking respondents to indicate the average number of drinks they consume in a week, the average number of drinks they consume at one sitting, the number of times they became intoxicated during the month prior to completing the survey, and the number of times in an average month they drank five or more drinks at one sitting. These four variables were standardized, again giving an equal weight to each of the five items, and then combined into a composite index for drinking behavior (Alpha = .94).

Control Variables. Given the relatively high levels of alcohol use among college males (Berkowitz & Perkins, 1987; Engs, Deibold & Hanson, 1996; Fillmore, et al., 1997) and students from middle- and upper-class families (Hanson, 1974; Wiggins & Wiggins, 1987), as well as variation in drinking patterns between under- and upper-classmen (Engs, et al., 1996), gender, parents' education, and year in school were included in all higher-order analyses as control variables.

Gender was coded as the dummy variable female (male = 0, female = 1). Since college students may be more able to accurately report their parents' educational background than their job status or income, we used a measure of parental education as a proxy for the second control variable, students' socioeconomic background. This variable was constructed by averaging mother's and father's levels of educational attainment (each scored using the following scale: 1 = less than

¹ The Attention to Social Comparison Information as formulated by Lennox and Wolfe (1984) consists of 13 items. Two of these items are virtually identical: "If I am the least bit uncertain as to how to act in a social situation, I look to the behavior of others for cues," and "When I am uncertain how to act in a social situation, I look to the behavior of others for cues." While this latter item was inadvertently omitted from the the study, the reliability of the resulting 12-item index was comparable to that found in studies using all 13 of the specified items (Cutler & Wolfe, 1985; Lennox & Wolfe, 1984; Wolfe, Welch, Lennox, & Cutler, 1985).

high school, 2 = high school graduate, 3 = some college, 4 = college graduate or professional degree). In cases where father's education was missing, parental education was computed based upon only the mother's educational background. When data for the mother was missing, parental education reflected only the father's level of educational attainment.

Year in school, the final control variable, was measured using a series of dummy variables. Students who indicated that they were freshmen received a score of 1 on the first variable (freshman), while all other survey participants received a score of 0 on this measure. Similarly, separate dummy variables were created for the sophomores, juniors, and seniors in the undergraduate sample, with freshman serving as the reference category in all higher-order analyses.

Procedure

The data for this study were collected in classroom settings. In accordance with the American Psychological Association's ethical guidelines, participation was anonymous and strictly voluntary. To ensure the anonymity of their responses, participants were reminded not to put their name, or any unique identifier, on their survey form. The survey took approximately 20 minutes to complete.

Results

Means and standard deviations on our key measures—perceived peer drinking norms, attention to social comparison information, and alcohol use—are presented in Table 1. Overall, patterns of alcohol use (Weschler et al., 2000), as well as scores on the Attention to Social Comparison Information subscale (Wolfe, et al., 1985; Wolfe, et al., 1986), were similar to those obtained in previous analyses.

The fact that students tended to overestimate others' use of alcohol on campus is also consistent with the results of prior studies (Baer et al., 1991; Perkins & Berkowitz, 1986; Perkins, et al., 1999). As shown in Table 1, students indicated that, on average, other individuals on campus consumed approximately 13 drinks per week, 5 drinks per sitting, and drank to the point of intoxication 6 times during the month prior to the administration of the survey. This was in spite of the fact that their average self-reported levels of personal alcohol use were substantially lower at 7 drinks per week, 4 drinks per sitting, and 3 episodes of intoxication, respectively. While it is possible that the students in our sample did, in reality, drink less than other individuals on campus, given the similarity between our estimates of students' current drinking behaviors and those reported in the literature (Weschler et al., 2000), this seems unlikely.

In a subsequent set of analyses, multivariate OLS regression was used to test our hypotheses about the nature of the relationships between perceived campus drinking norms, attention to social comparison information, and alcohol use. In the first regression, the additive model, composite drinking scores were regressed on measures of perceived drinking norms and attention

Table 1. Means and Standard Deviations for Key Measures ($n = 261$)

Measure	Mean	Standard Deviation	Range
Attention to Social Comparison Scale	28.92	4.53	12 - 42
Perceived Peer Drinking Norms			
# Drinks / Avg. Week	12.80	9.98	0 - 70
# Drinks / Sitting	5.05	3.14	0 - 23
# Times Intoxicated / Past Month	5.73	5.05	0 - 50
Unstandardized Peer Drinking Index	23.57	15.69	2 - 95
Standardized Peer Drinking Index	.002	2.53	-3.73 - 12.07
Alcohol Use			
Drink Alcohol	.74	.44	0 - 1
Binge Drink	.38	.49	0 - 1
# Drinks / Avg. Week	6.87	8.51	0 - 35
# Drinks / Sitting	3.50	3.46	0 - 15
# Times Intoxicated / Past Month	2.55	3.83	0 - 20
# Times 5 or more Drinks / Sitting	2.75	4.00	0 - 20
Unstandardized Drinking Index	15.68	18.45	0 - 71
Standardized Drinking Index	.004	3.67	-3.17 - 11.13

to social comparison information, as well as the three control variables (gender, parental education, and year in school). The results of the analysis are presented in column 1 of Table 2.

As shown here, both perceived drinking norms and attention to social comparison information, our measures of students' dispositional susceptibilities to peer influence, were positively associated with alcohol consumption when gender, parental education, and year in school were held constant. A comparison of the standardized coefficients, however, indicates that students' perceptions of peer drinking norms had a substantially larger effect on students' drinking behaviors than their vulnerability to peer pressure across social encounters.

In order to determine whether the impact of perceived drinking norms on alcohol use varied across levels of susceptibility to peer influence, the cross-product of these two variables was added to the earlier regression. The results of this analysis are presented in column 2 of Table 2. As shown here, the cross-product interaction term was statistically significant, indicating that a dispositional susceptibility to peer pressure does in fact moderate the relationship between perceived normative patterns of alcohol use and undergraduate drinking.

To determine the nature of this higher-order effect, we computed predicted composite drinking scores across varying levels of perceived drinking norms and attention to social comparison information using the unstandardized regression equation from column 2 of Table 2, plus a constant of 3. Scores on both the drinking norms index and the Attention to Social Comparison Information subscale were varied from low (one standard deviation below the mean) to high (one standard deviation above the mean), while all other model variables were held constant to their mean values (see Ross, Mirowsky, & Huber, 1983 for a further discussion of this method for interpreting interaction coefficients). The predicted drinking scores obtained for the different perceived drinking norms-dispositional peer influence combinations are displayed in Figure 1.

As expected, the effect of perceived drinking norms on composite drinking scores increased across increasing levels of susceptibility to peer influence, with individuals who both perceived high levels of alcohol consumption on campus and were vulnerable to peer influence across social settings reporting the most alcohol consumption. The fact that increases in attention to social comparison information slightly reduced, rather than increased, alcohol use among those students who perceived campus drinking to be relatively limited activity is also consistent with our hypotheses.

Table 2. Effects of Perceived Drinking Norms and Attention to Social Comparison Information on Alcohol Use ($n = 261$)

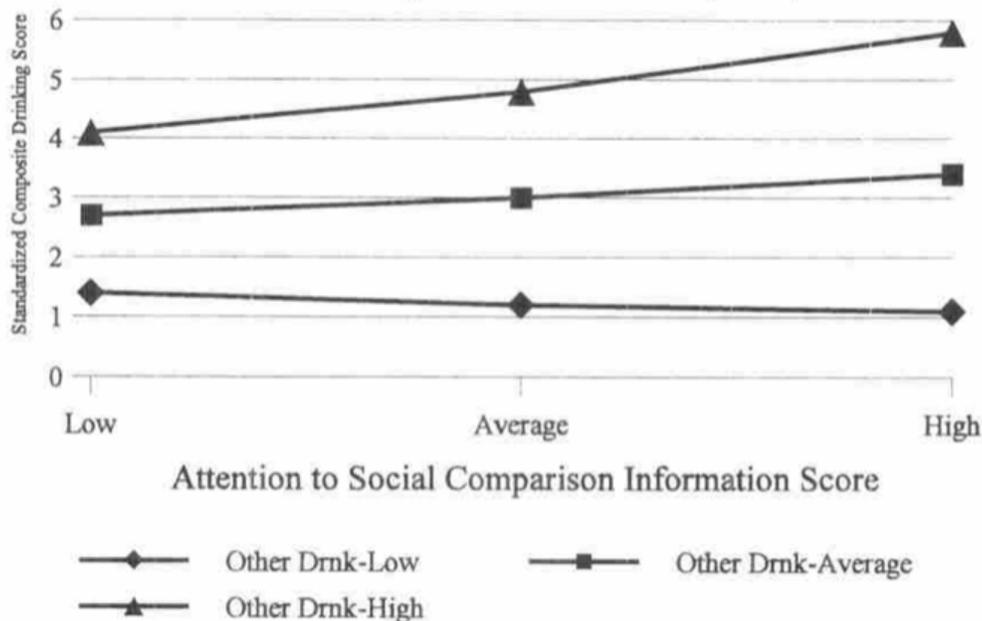
Variable	Column 1		Column 2	
	b	Beta	b	Beta
Constant	-1.72		-.16	
Female	-2.25***	-.30	-2.21***	-.30
Sophomore	.66	.08	.70	.08
Junior	-1.11	-.10	-1.14	-.11
Senior	-.24	-.03	-.19	-.02
Parent's Education	.20	.05	.22	.05
Attention to Social Comparison	.08*	.10	.07	.10
Perceived Drinking Norms	.71***	.49	-.40	.27
Attention to Social Comparison Perceived Drinking Norms			.04*	.77
R ²	.35***		.36*	

* $p < .05$

** $p < .01$

*** $p < .001$

Figure 1. Relationship Between Attention to Social Comparison Information, Perceived Drinking Norms, and Alcohol Use ($n = 261$)



Summary and Conclusions

Alcohol use and abuse among college students has been linked to the influence of peers in the research literature for several decades (Kandel, 1980; Hawkins, Catalano, & Miller, 1992). While several potential mechanisms through which peers influence levels of alcohol consumption have been identified, the role of misperceived peer drinking norms has received substantial recent attention. The purpose of this study was to extend this literature by examining the effects of perceived campus drinking norms, in combination with students' dispositional susceptibilities to peer influence, on patterns of undergraduate drinking.

Consistent with prior research, individuals in the undergraduate sample tend to overestimate the frequency and quantity of alcohol use by others on campus were the heaviest drinkers. A general susceptibility to situational pressures, measured as attention to social comparison information, was also associated with high levels of drinking. Moreover, scores on the latter measure moderated the relationship between perceived norms and alcohol use in the predicted fashion. Students exhibiting a dispositional vulnerability to peer influence who believed other students on campus to be frequent and heavy drinkers showed the higher level of alcohol consumption.

Taken together, these findings offer substantial support for the use of the Attention to Social Comparison Information subscale as a measure of general susceptibility to peer influence among college students. Thus, from a theoretical standpoint, they reinforce the notion that attention to social comparison information is conceptually distinct from the self-monitoring and concern for appropriateness, two related measures. In more practical terms, the results of this analysis have implications for the design of effective alcohol-reduction policies that may be of interest to college and university administrators.

Most notably, our findings suggest that assessing students' dispositional vulnerabilities to peer influence using the Attention to Social Comparison Information subscale may be one way to identify students who would benefit from norm-corrective interventions. In general, prevention programs that use norm-correction strategies, typically involving the presentation of more accurate information about other students' drinking, have produced encouraging results (Agostinelli, Brown, & Miller, 1995; Barnett, Far, Mauss, & Miller 1996; Haines & Spear, 1996; Steffian, 1999). Some such programs have, however, been ineffective in reducing alcohol use and abuse across undergraduate populations, leading researchers to call for interventions tailored more to the needs of specific subgroups of students (Werch, et al., 2000). Directly assessing students' vulnerabilities to peer influence by administering the Attention to Social Comparison subscale may be one way to accomplish this task. The results of this analysis suggest that perceived campus drinking norms have the greatest impact on levels of alcohol use among students high in attention to social comparison information. It follows that students exhibiting this cross-situational vulnerability to peer influence should respond most favorably to norm-corrective strategies.

A second implication of the study findings pertains to interventions designed to reduce students' susceptibilities to peer pressure more generally. Although increasing social pressure resistance skills is already a critical component of many drug prevention programs among adolescents (Botvin, 1990; Hansen, Johnson, Flay, Graham, & Sobel, 1988; Rosenbaum & Flewelling, 1994), few colleges and universities have employed these tactics. Our findings support the potential effectiveness of peer-resistance training among undergraduate populations. While attention to social comparison information actually decreased alcohol use among students in the undergraduate sample who believed others' use of alcohol to be relatively limited, this effect was small in magnitude. This, combined with the fact that students in general tend to overestimate others' use of alcohol, suggests that reducing individuals' susceptibilities to peer pressure across social encounters may in and of itself decrease campus drinking.

The identification of the nature of effective campus-based peer-resistance initiatives is beyond the scope of this analysis and bears further investigation. Further studies might also focus on assessing the impact to attention to social comparison information on the relationship between perceived campus drinking norms and alcohol use among representative samples of college students. Moreover, since the cross-sectional nature of our study design renders conclusions regarding the direction of the causal relationships in question somewhat speculative, it may prove useful to reexamine the associations between peer drinking norms, attention to social comparison information, and undergraduate drinking using longitudinal data.

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