Alcohol-Free Alternative Activities for University Students: Modeling Associated Drinking Behavior

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ABSTRACT

An exploration of the linear relationships among alcohol use, participation in late-night alcohol-free entertainment options, perceived drinking norms, social identity, perception of university policy, and demographics was conducted. The sample was 1,074 college students enrolled in introductory psychology courses. Alcohol use was measured using self-report behavioral inventories. A total of 382 students participated in the study, 42% of whom attended one or more LateNight programs, and 52.7% of whom had binged within the past 2 weeks. Regression analysis results showed those who felt LateNight was a good example of having fun without using alcohol were 27% less likely to binge than those who did not believe this ($p<.05$*). Likewise, those with high perceptions of peer drinking norms were 30% more likely to party heavily than those with low perceptions (*$p<.001$*). LateNight participants were significantly (*$p<.001$*) less likely to drink heavily, were 14% less likely to binge (*$p<.001$*), and were 20% less likely to party heavily (*$p<.001$*) than nonparticipants. Respondents identifying socially with LateNight participants were 14% less likely to binge (*$p<.05$*). Those more aware of university-based efforts involving policy enforcement and prevention programming were 19% more likely to binge (*$p<.01$*), and 23% more likely to party heavily (*$p<.01$*) than those less aware of university efforts. Implications for program planning and evaluation are presented.*

Most Americans consume alcohol during adolescence or young adulthood, and many engage in dangerous forms of consumption (Engs & Hanson, 1993; Johnston, O'Malley, & Bachman, 1996; U.S. Department of Health and Human Services, 1997). Nationwide estimates of college student drinking reveal that on average women consume 4.5 drinks weekly, whereas men consume 6.7 drinks weekly (Presley, Meilman, Cashin, & Lyerla, 1996). College students under the legal drinking age also are more likely to binge when drinking (Presley et al., 1996).

"Binge drinking" is defined as men consuming five or more drinks in a row and women consuming four or more drinks in a row (Wechsler, Dowdall, Maenner, Glendhill-Hoyt, & Lee, 1998). Large-scale nationwide surveys of college student drinking reveal that approximately two of five students report binge drinking (Wechsler, Davenport, Dowdall, Moeykens, & Castillo, 1994; Wechsler et al., 1998; Wechsler, Lee, Kuo, & Lee, 2000). Accordingly, problems related to heavy alcohol use include poor academic performance; damaged relationships; unsafe sexual practices; physical violence; date rape; property damage; rioting; and suicide (Berkowitz & Perkins, 1986; Eddy, Hornack, & Murphy, 2000; Engs & Hanson, 1990, 1993; Perkins, 1992; Presley et al., 1996; Wechsler & Isaac, 1992; Wechsler et al., 1994, 1998; Wechsler, Lee, et al., 2000). Consequently, a national goal for the year 2010 presented in *Healthy People 2010* (U.S. Department of Health and Human Services,

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This research was funded by the United States Department of Education Safe and Drug Free Schools Program, as administered by the Higher Education Center for Alcohol and Other Drug Prevention, under the grant competition "Alcohol and Other Drug Prevention Models on College Campuses," PR-award P116X990016.

2000) is to reduce to 20% the proportion of college students "engaging in binge drinking within the past two weeks" (baseline was 39% in 1998, p. 26–29).

"Binge," or heavy, drinking has been referred to more recently as "high-risk," immoderate," or "excessive" drinking, and has increasingly come to the attention of politicians, academic administrators, parents, faculty, staff, and students (Engs, Hanson, & Diebold, 1996; Migneault, Velicer, Prochaska, & Stevenson, 1999; Page, Scanlan, & Gilbert, 1999; U.S. Department of Health and Human Services, 1997; Wechsler et al., 1994). As a means to stem the tide of underage and excessive alcohol use, many higher education institutions employ environmental management strategies (DeJong et al., 1998; U.S. Department of Education, 2000). Environmental management entails prevention programming to change the physical, social, economic, and legal environments affecting alcohol and other drug use through a combination of institutional, community, and public policy change (DeJong et al., 1998). Presently, one aspect of environmental management involves the provision of alcohol-free options such as late-night entertainment activities, leisure opportunities, and physical activity programs (U.S. Department of Education, 2000). In 1999 the "LateNight" program (LateNight herein) at a Big Ten university was selected by the U.S. Department of Education as a model alcohol-free option offering college students multiple forms of free social entertainment as a means of reducing the prevalence of high-risk drinking. Its mission is to provide quality leisure entertainment programs every weekend during the young-adult prime social times of 9 p.m. through 2 a.m.. The LateNight programs provide university students opportunities for social interaction in low-risk settings, and are safe alternatives to alcohol-related events that tend to occur in residence halls and off-campus. Programming events are held in the on-campus student union building, and include free movies; ballroom/swing dance; music; comedy; traditional board games; video games; magic; and arts and crafts.

The conceptual framework supporting this research uses Perkins's (1997) extension of peer socialization theory, contemporarily labeled the perceived peer norms model; Hansen's (1997) social ecology theory; and Botvin and Botvin's (1997) etiological determinants of alcohol and drug use. Perkins (1997) initiated a growing body of literature showing that most college students overestimate alcohol and other drug use rates and permissiveness of peers, when in fact most peers are moderate or nonusers of alcohol and other drugs. Meanwhile, Hansen (1997) argued for the application of social ecology theory to understand conceptually the mechanisms of college student drinking. He contends that alcohol availability, combined with peer pressure and social settings, are instrumental in promoting a drinking environment, and reiterates the importance of the following social influences: (a) friends and acquaintances; (b) dormitories and roommates; (c) parties; (d) cafes, nightspots, stores, and hangouts; (e) classes and classmates; and (f) fraternities and sororities (Hansen, 1997). Botvin and Botvin (1997) maintain that etiological determinants of substance use such as friendships; cognitive and attitudinal factors, including a positive or negative attitude toward substances; and personality factors, for instance self-esteem, self-satisfaction, or social confidence are vital to the understanding of alcohol-use and related problems. Wechsler et al. (1998) recommends "if colleges are to have an impact on their alcohol problems, they must change this drinking culture drastically" (p. 67). Alcohol-free options, such as LateNight, are a leading force in these cultural and institutional changes.

This study's purpose was to explore the relationship between participation in alcohol-free options and various psychosocial, behavioral, and demographic attributes among a nonrandom sample of undergraduate students. The authors sought to discover both linear and nonlinear relationships between university students' participation in LateNight activities and the following attributes: year in school; gender; grade point average (GPA); perception of drinking norms; social identity; quantity and frequency of alcohol use, including partying and binge drinking; perception of university policy; and perceptions of drinking norms. It is important to consider that this study was exploratory in nature and that the findings will be generalized only to those who participated in the survey. The following three research questions guided our analysis: (a) What is the linear relationship between "quantity and frequency" of alcohol use and demographics, participation in alcohol-free options, and perception of drinking norms? (b) To what degree is "bingeing" related to demographics, participation in LateNight, perception of alcohol-free options, social identity, and awareness of alcohol and other drug policy? (c) To what degree is "partying" related to demographics, participation in LateNight, perception of alcohol-free options, social identity, and awareness of alcohol and other drug policy? The three-predictor variables (i.e., total quantity and frequency, bingeing, and partying) and the independent variables are described in the following sections.

METHODS

Participants

The research population consisted of 1,074 students who were enrolled in five sections of Introduction to Psychology courses. Introductory psychology courses are classified using a General Education Code of Social and Behavioral Sciences, meaning that most associate and baccalaureate degree-seeking students enroll to satisfy graduation requirements. The researchers invited volunteers (n=700) to complete the questionnaire in exchange for extra course credit. A total of 700 questionnaires were distributed to those who volunteered to participate in the study.

Instrument

A 27-item questionnaire titled Late Night Alcohol Use Survey 2000 was used to measure psychosocial, behavioral, and demographic attributes of college students. As described in detail below, the 10 psychosocial and behavioral items suitable to be examined for internal consistency produced reliability estimates from α=.44 to α=.91. The remaining items, each of which were single-items and/or behavioral or demographic measures, were not conducive to internal reliability testing. This questionnaire contains a selection of established alcohol use and perception of alcohol-related peer norm measures (Berkowitz & Perkins, 1986; Engs, 1977; Engs & Hanson, 1994; Perkins, 1997; Wechsler et al., 1994). Measures specific to alcohol-free options and university policy were added to the questionnaire. These measures were used to assess participation in LateNight alcohol-free options, social identity, and perceptions of university alcohol policies, along with relevant demographics. During fall semester 1999, the draft questionnaire was evaluated for face validity by a team of university alcohol-education faculty, program planners, and administrators. Likert-type scales used in this study ranged from 0 = strongly disagree to 4 = strongly agree.

The student alcohol use subscale is a total quantity and frequency measure of college-student beer, wine, and liquor consumption (Engs, 1977; Engs & Hanson, 1994). It included questions such as "How often, on the average, do you usually have a beer?" or, "When you drink wine, how much, on the average, do you usually drink at any one time?" Response options were continuous and ranged from none to a high of more than six average servings. Its measure of internal consistency was excellent (α=.91, *n*=6 items). "Binge" drinking was measured using a nationally recognized question (Wechsler et al., 1998) that posed, "During the last two weeks, how many times have you had five or more drinks in a row (if you are a man), *or* four or more drinks in a row (if you are a woman)?" The response options were formatted continuously ranging from zero to 10 or more times. Partying was measured using one behavioral item querying, "When you party, how many drinks do you usually have?" Response options to the partying item ranged from zero to 17 or more. Participation in LateNight also was measured using one behavioral item and was determined by inquiring, "How many LateNight activities have you attended since the beginning of Fall Semester, 1999?" Response options ranged from zero to 9 or more activities.

The perception of peer norms subscale (Perkins, 1997; Perkins & Berkowitz, 1986), a two-item subscale, included continuous ratings to measure the perception of how many drinks the average male and the average female consumed in a typical week. Response options ranged from zero to 24 or more average servings. Reliability estimates for the perceived norms subscale were very high (α=.89, *n*=2 items). The social identity item, created specifically for this study, directed the respondent to determine the extent to which he or she agreed that: "Students who attend LateNight are like me." The response options for this item were formatted using a standard Likert-type scale responses (0 to 5).

The perception of university policy subscale requested that respondents evaluate the (a) degree to which they "agreed that alcohol and other drug policies are enforced at the university," and (b) extent to which they "agreed that the university encourages responsible or low-risk drinking behaviors." The first item was dichotomous in structure (yes/no), whereas the last two used a standard Likert-type response scale. The reliability estimate for the two-item Likert-type scale items was weak (α=.44, *n*=2 items). Finally, the respondents were asked to use a Likert- type scale to rate one item showing extent to which they agreed "Late-Night was a good example of having fun without using alcohol" (Moore, 2000).

Data Analysis

Data were analyzed using frequency analysis, chi-square analysis, ordinary least squares, and logistic regression analysis. In all analyses the limit for statistical significance was set at a probability level of .05. A frequency distribution of basic demographics and alcohol-related behaviors was obtained. Next, college students' participation in LateNight was evaluated based on demographic results such as gender, year in school, and unverified GPA. In the third phase of data analysis the relationship between the dependent variables, described above, were regressed on the independent variables. Several variables were recoded for use in these regression analyses. Binge drinking was constructed as a dichotomous dummy variable with a value of zero representing not binge drinking and 1 representing bingeing at least once during the past 2 weeks. This was recoded to differentiate "partying" from "nonpartying" behavior: A "nonpartier" consumed four or fewer beverages when typically partying, whereas a "partier" consumed five or more beverages while typically partying. The wording of the "partying" item did not control for gender differences. Nevertheless, the researchers chose to include both the "partying" item and the "binge-drinking" item to be used as separate dependent variables. This allowed the researchers to differentiate subtle semantic differences with regard to the alcohol consumption practices of these respondents. These variables were intended to serve as dichotomous dependent variables in the regression analyses.

It is important to note that the use of dichotomous dependent variables violates an important assumption of ordinary least squares regression: that the dependent variable is continuous. Ordinary least squares, or linear regression, assumes that the dependent variable can take on any value from negative infinity to positive infinity (Aldrich & Nelson, 1984). Therefore, a nonlinear functional form must be used to estimate a model with a noncontinuous dependent variable. Aldrich and Nelson

Table 1. Demographics

Demographic Variables	Frequency	Percentage
Gender		
Male	144	38.1
Female	234	61.9
Year in school		
Freshman (1st–2nd semester)	247	65.3
Sophomore (3rd–4th semester)	78	20.6
Junior (5th–6th semester)	32	8.5
Senior (7th–8th semester)	19	5.0
Ninth semester or higher	2	0.5
Grade point average		
Less than 2.0	9	2.4
2.0–2.49	26	6.9
2.5–2.99	76	20.2
3.0–3.49	162	43.0
3.5–3.99	98	26.0
4.0	6	1.6
Binged drinking (categorical)		
None	178	47.3
Infrequent	116	30.9
Frequent	82	21.8
Attended late night alcohol-free options		
Never	195	51.6
One–three times	112	29.6
Four–six times	47	12.4
Seven or more times	24	6.4

Note: n = 378.

(1984) state that logistic probability unit (logit) and normal probability unit (probit) are the most commonly used models for this type of analysis, and that the choice between the two is relatively arbitrary. Logistic regression was applied to the binge drinking and the partying data. Linear regression was used to estimate the relationship between total alcohol consumption and various independent variables, all of which were continuous in nature.

RESULTS

Of the 700 volunteers, more than one-half (54.6%; N=382) submitted completed questionnaires, yielding an overall response rate of 35.6%. The demographic characteristics for the sample population are shown in Table 1. More respondents were women (61.9%) than were men. Two-thirds (65.3%) of the respondents were freshmen. Most (69.0%) respondents reported an unverified average GPA between 3.0 and 3.99. Although half (51.6%) of the respondents said they had not attended a LateNight program since fall semester 1999, 29.6% had attended one to three LateNight programs, and 12.4% had attended between four and six programs. Nearly one-third (30.9%) of the respondents reported "infrequent" binge drinking (i.e., one to two times within past 2 weeks), and nearly one-fourth (21.8%) admitted "frequent" binge drinking, (i.e., three or more times within past 2 weeks).

The means and standard deviations for the various subscales and variables are shown in Table 2. The two variables, "typical use when partying" and "binge drinking," have continuous and categorical means displayed. Although these variables are only used as dichotomous dependent variables in the following analyses, displaying the means of the continuous variables allows the reader to have a more complete understanding of the underlying relationships.

An analysis of the LateNight participation levels among these respondents revealed no significant differences based on gender (χ^2=.10; df=1, n=377, p=.09), year in school (χ^2=5.07, df=4, n=377, p=.28), or GPA (χ^2=3.27; df=5, n=376, p=.66). Next, the researchers conducted a series of regression analyses to identify which variables most strongly predicted total alcohol use, bingeing, and partying behaviors. When two or more independent variables are highly correlated, multicollinearity may exist, making it difficult to attribute any change in the variance of the model to the contribution of a single independent variable. Thus, to guard against the presence of multicollinearity the authors examined correlations between variables and found that only the alcohol use variables (i.e., total quantity and frequency, binging, and partying) were highly correlated. These variables were not entered as simultaneous independent variables in any of the models. Thus, the authors maintain that multicollinearity did not pose a threat to the predictive validity of the various regression models.

Predicting Drinking Behaviors Using Multivariate Analyses

As shown in Table 3, when predicting the total quantity and frequency of alcohol consumed, the combined effect of gender, GPA, participation in LateNight, and perception of peer drinking norms (or the multiple correlation coefficient, R) was .43 (F [4, 357] = 20.48, p<.001). Thus, approximately 18% of the variation in quantity and frequency of alcohol consumption was explained by the combined effects of these five variables (adjusted R^2 = .18). Although all of the independent variables

Table 2. Mean Item Subscale Scores and Standard Deviations for Perception of Drinking Norms, Drinking Behaviors, and Selected Demographics

Variable Name	Number of Participants	Number of Items	Response Range[a]	Mean Item Score	Standard Deviation
Gender	378	1	0–1	0.38	0.04
Year in school	378	1	0–4	0.55	0.89
Grade point average	377	1	0–5	2.88	1.00
Participation in LateNight	378	1	0–9	1.65	2.44
Total quantity & frequency of use[b]	376	6	0–30	12.65	6.64
Typical use when partying	374	1	0–9	2.53	1.90
LateNight example of fun without alcohol	376	1	0–4	2.70	.89
Social identity subscale	378	1	0–5	2.52	1.59
Perception of peer norms subscale[c]	371	2	0–18	8.16	3.27
Perception of university policy subscale	366	2	0–8	4.46	1.54
Binge drinking (continuous)[d]	376	1	0–5	1.14	1.33
Binge drinking (dichotomous yes/no)	376	1	0–1	.53	.50
Partying (dichotomous light/heavy)	374	1	0–1	.48	.50

[a] Higher values indicate greater alcohol consumption, perception of drinking norms, social identity, awareness of policy, effect of LateNight Penn State to reduce drinking, male gender, year in school, and GPA.
[b] Engs (1977)
[c] Wechsler, Davenport, Dowdall, Moenykens, & Castillo (1994)
[d] Perkins (1997)

Table 3. Linear Regression: Total Quantity and Frequency of Alcohol Consumption on Selected Demographics, Participation in LateNight, and Perception of Peer Norms

Variable	Zero Order Correlation	Mean ($\bar{x}$)	Standard Deviation	Regression Coefficient (b)*	Standard Error	Beta (β)	t
Gender	.10	0.38	0.04	.59	.19	.15**	3.081
Grade point average	−.16***	2.88	1.00	−.29	.09	−.15**	−3.119
Participation in LateNight	−.25***	1.65	2.44	−.15	.04	−.20***	−4.025
Perception of peer norms subscale	−.21***	8.16	3.27	−.18	.03	.31***	6.269
Constant				3.19	.40		7.923

Note: $n = 362$, df = 4.
*R=.43, R^2=.19, adjusted R^2=.18, F=(4, 357)=20.48***.
**p<.01 (p = probability estimate).
***p<.001.

employed in the model were significant predictors of quantity and frequency of alcohol use, the perception of peer norms subscale (β=.31, p<.001) was twice as strong as was gender (β=.15, p<.01) and GPA (β=−.15, p<.01) in predicting total quantity and frequency. That is, when respondents thought their friends consumed greater quantities of alcohol, the respondents' total quantity and frequency of alcohol use was significantly (p<.001) higher. Two other findings from this model are intuitive: when GPA was lower, total quantity and frequency of alcohol use was significantly (p<.01) higher; and males were significantly (p<.01) more likely than females to consume higher quantities of alcohol. The last result showed that participation in LateNight was significantly (p<.001) and negatively (β = −.20) related to the quantity and frequency of alcohol use, documenting that participants were less likely to consume higher amounts of alcohol than nonparticipants. Although participation was not as robust a predictor as was peer norms, it remained a more powerful predictor than either gender or GPA.

The use of the dichotomous dependent variable, binge drinking, dictated the use of logistic regression during the next phase

Table 4. Logistic Regression: Binge Drinking on Selected Demographics, Participation in Late Night, Perception of Peer Norms, Perception of the LateNight Program, Social Identity, and Perception of Alcohol Policy Enforcement

Variable	B	Standard Error	Wald	Odds Ratio	95% Confidence Interval Lower	Upper
Gender	.24	.25	.91	1.28	.77	2.10
Year in school	.02	.13	.02	1.02	.78	1.33
Grade point average	−.22	.12	3.45	.80	.63	1.01
Participation in LateNight	−.15	.05	9.34	.86**	.78	.95
Perception of peer norms subscale	.17	.04	18.89	1.18***	1.10	1.28
Late Night example of fun without alcohol	−.31	.14	5.09	.73*	.56	.96
Social identity subscale	−.15	.07	4.09	.86*	.75	1.00
Perception of university policy subscale	.18	.08	5.43	1.19**	1.03	1.38
Constant	−.03	.75	.00	.97		

Note: n=359, df=8.
*p<.05, **p<.01, ***p<.001 (p = probibility extimate), Cox & Snell R^2=15.6%***

Table 5. Logistic Regression: Partying on Selected Demographics, Perception of Peer Norms, and Perception of Alcohol Policy Enforcement

Variable	B	Standard Error	Wald	Odds Ratio	95% Confidence Interval Lower	Upper
Gender	1.38	.28	24.71	3.99***	2.31	6.89
Year in school	.01	.14	.01	1.01	.76	1.34
Grade point average	1.29	.13	4.96	.75*	.58	.97
Participation in LateNight	1.22	.06	15.42	.80***	.72	.90
Perception of peer norms subscale	.26	.04	36.20	1.30***	1.19	1.41
Perception of university policy subscale	.21	.08	6.72	1.23**	1.05	1.45
Constant	12.51	.69	13.18	.08***		

Note: n=358, df=6.
*p<.05, **p<.01, ***p<.001 (p = probibility extimate), Cox & Snell R^2=23.5%***

of analysis. As shown in Table 4, the variables of gender (odds ratio [OR] = 1.28, p=.43), year in school (OR = 1.02, p=.96), and GPA (OR = .80, p=.08) were not significantly related to binge drinking.

More Likely to Engage in Binge Drinking

Respondents' perceptions of peer drinking norms were shown to be significantly related to binge drinking. For example, respondents who believed peer-drinking norms were high were 18% more likely to binge drink than those who indicated that peer drinking norms were low (OR = 1.18, p<.001). Respondents also were asked to rate their perception of university policy. Surprisingly, those who perceived a higher rate of policy enforcement were 19% more likely to report binge drinking than those who rated a lower perception of policy enforcement (OR = 1.19, p<.01).

Less Likely to Engage in Binge Drinking

Participants of LateNight were 14% less likely to engage in binge drinking (OR = .86, p<.01) than those who did not participate in LateNight (Table 4). Although this percentage is not extremely large, any positive and significant relationship should be considered important to understanding the mechanisms of binge drinking behaviors. Those who believed that LateNight was a good example of having fun without using alcohol were 27% less likely to engage in binge drinking (OR = .73, p<.05) than those who did not believe this. Likewise, when queried about social identity (e.g., whether participants were similar to themselves), those who agreed were 14% less likely to report binge drinking than those who did not hold similar social identity beliefs (OR = .86, p<.05).

Heavier Partying Behavior

In the final phase of analysis, the researchers used a logistic regression model to explore involvement in "partying"

behavior based on the perception of peer drinking norms, perception of policy enforcement, and select demographics. As shown in Table 5, the only variable not related statistically to partying behavior was year in school (OR = 1.01, p=.94). The following independent variables, however, were related statistically to heavier partying: gender, perceived drinking norms, and perception of university policy and prevention efforts. A striking finding regarding typical partying was that men were approximately 400% more likely to party heavily (OR =3.99, p<.001) than women respondents. In addition, those who perceived higher rates of drinking among their peers were 30% more likely to party heavily than were those who perceived lower peer drinking norms (OR = 1.30, p<.001). Another unexpected finding was that those with greater awareness of university policy and prevention efforts were 23% more inclined to party heavily (OR = 1.23, p<.01) than were respondents who were less aware of the university policy and prevention efforts.

Lighter Partying Behavior

Finally, the authors found that the variables GPA and participation in LateNight were related to lighter partying behavior. Specifically, those reporting higher GPAs (2.50–4.00) were 25% less likely to report partying heavily (OR=.75, p<.05) than those reporting lower GPAs (2.00–2.49). Likewise, respondents who reported higher rates of participation in LateNight (attending four or more LateNight activities since the previous semester) were 20% less likely to party heavily than were those who had lower rates of participation (attending 0–3 LateNight activities since the previous semester), as shown in Table 5 (OR = .80, p<.001).

DISCUSSION

Regression analysis was used to explore three characterizations of alcohol use in relationship to participation in alcohol-free options, psychosocial characteristics, alcohol-related behaviors, and demographic attributes among a nonrandom sample of undergraduate students. This section contains a summary of research findings in light of previous research, and recommendations for future research and practice. The reader should be reminded, however, of the study's limitations. The response rate was moderate, and the sample contained a high proportion of freshman students. In addition, as with all survey research, the likelihood of social desirability, defined as "responding in a way that is considered to present oneself in a favorable light," (Borg & Gall, 1983; p. 337) may have occurred. It should be noted, however, that during data collection, efforts to minimize social desirability were made by reminding respondents that responses were anonymous and by encouraging respondents to be as truthful as possible. Finally, the cross-sectional nature of these data, or collecting data at one point in time, limits the analysis to descriptive and exploratory findings only. These limitations pose significant threats to the external validity of the results.

The study's purpose was to explore relationships between participation in late night alcohol-free options and various psychosocial, and alcohol-related behaviors, not causal effects. This discussion, therefore, is limited to the respondents of this survey, thereby reducing the generalizability of these findings. Nonetheless, these results can serve as good pilot data for replication of this study among larger, randomly selected or nationally representative samples.

The first finding revealed that nearly one-fifth of the variance in total quantity and frequency of alcohol consumed was explained by the combined effects of gender, GPA, participation in LateNight, and perception of peer norms. Although not unanticipated, the authors documented that men and those reporting lower GPAs had a higher quantity and frequency of alcohol consumption, a finding that concurs with Berkowitz and Perkins (1986); Engs, Hanson, and Diebold (1996); Odo, McQuiller, and Stretesky (1999); Presley et al. (1996); Wechsler et al. (1998); and Wechsler, Dowdall, Davenport, and DeJong (1999). It is probable that these heavier drinkers devote more time to drinking quests that detract from academic pursuits. In addition, higher perception of drinking norms was related to higher total alcohol consumption. The finding that misperceived drinking norms lead to greater drinking is consistent with theory and research espoused by Berkowitz and Perkins (1986); Presley et al. (1996); Perkins and Wechsler (1996); and most recently, Perkins (1997). These results document that respondents with greater perception of drinking norms are significantly (p<.001) more likely to drink higher quantities of alcohol than those having moderate-to-low perceptions of drinking norms. These results corroborate Perkins's (1997) premise that the phenomenon of misperceiving peer norms is a self-fulfilling prophecy in the classic sociological sense. In essence, the more these students think others drink, the more they drink.

Findings from the second model also are revealing, showing that 15.6% of the variation in bingeing is explained by the combined effects of participation, perception of peer norms, belief that LateNight is an example of having fun without using alcohol, perception of university policy and prevention efforts, and social identity. The finding that participants were less likely to binge supports Mosher's (1999) contention that "harm reduction measures can be instituted within environments where young adults congregate—recreational facilities, work-places, and so on" (p. 360) thereby effectively reducing alcohol-related problems. The U. S. Department of Education supports campus efforts for promoting environmental management, under which alcohol-free options lie, to achieve systemic and ongoing health promotion of the university- and immediate-community members (Higher Education Center for Alcohol and Other Drug Prevention, 2001).

The next finding in the binge-drinking model is intriguing: Those with higher awareness of university policy enforcement

and prevention efforts were more likely to binge than those with a lower awareness of these efforts. This result, although perhaps shocking, may be explained by applying Engs and Hanson's (1989) "reactance theory," which suggests that preventing underage alcohol consumption creates a "reactance motivation," potentially leading to heavier drinking, and it supports the notion that the more university administrators eliminate a perceived freedom, the greater the reactance will be against the university's countermeasures. This university's administration has taken a vocal and visible stance to reduce high-risk drinking (Zimmerman, 1998), often facing equally forceful opposition from some students and alumni. It is possible that our findings reflect student reactance and opposition to the administration's stance.

The last factor within the binge-drinking model showed that respondents who identified socially with attendees of LateNight were less likely to binge. Consistent with Perkins's (1997) peer norm theory, Presley et al.'s (1996) normative beliefs concept, and Botvin and Botvin's (1997) epidemiological determinants of substance use theories, it is likely that these respondents, most of whom are freshmen, are inclined to adopt alcohol use peer norms.

With regard to predicting partying behavior, the authors found that nearly one-fourth of the reported variation in partying is explained by the combined effects of gender, peer norms, awareness of policy, GPA, and participation in LateNight. This result also substantiates the premise that alcohol-free options constitute viable forms of safe entertainment among these respondents. In this model, men and those with lower GPAs were more likely to report heavy partying behavior. These findings concur with the reports of Engs, Hanson, and Diebold (1996); Presley et al. (1996); Wechsler et al. (1998); and Maney, Theodorou, and Vasey, (2001). Likewise, those who expressed a belief that university alcohol policy was enforced and low-risk drinking was encouraged also were more likely to report heavy partying behavior. Although this finding might be unanticipated, it is consistent with the research of Engs and Hanson (1989); Presley et al. (1996); and Wechsler, Lee, Kuo & Lee (2000). Finally, participants of LateNight programming were significantly less likely to party heavily than nonparticipants. It is probable that the conscious decision to engage in alcohol-free options, such as attending a movie, musical performance, or ballroom dance, serves to curb the total amount consumed during prime time social hours.

CONCLUSIONS

Preeminent researchers of alcohol use have documented that frequently engaging in excessive drinking increases risks for a variety of health problems (Engs & Hanson, 1993; Engs, Hanson, & Diebold, 1996; Johnston, O'Malley, & Bachman, 1996; Presley et al., 1996; Wechsler, Lee, Kuo & Lee, 2000; Wechsler & Kuo, 2000; Wechsler et al., 2000). Given the limitations of this research, these results contribute to a growing body of evidence that normative beliefs, environmental management, reactance to policy enforcement, and epidemiological determinants are important theoretical constructs in understanding the mechanisms of college student alcohol use, misuse, and abuse. These findings also support Presley, et al.'s (1996) argument that, "In terms of overall environmental campus change, correcting misperceptions of use, increasing perceptions of policy enforcement, increasing awareness of prevention programming resources, and involving students in campus prevention efforts may help reduce alcohol and other drug use and the resulting negative consequences" (p. 69). In essence, alcohol-free options, such as LateNight, afford multiple opportunities for socializing in lower-risk settings, thereby creating a safe and enjoyable environment in which to live and learn.

ACKNOWLEDGMENTS

Special thanks are given to John Harlow, BS, for the design and implementation of the LateNight-Penn State program; and to Dorothy Ann Higham, MAEd., and Elena Theodorou, MS for assistance with data collection.

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