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Interrelationship of Place of Residence and Peer Influence on Drinking Behavior

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Interrelationship of Place of Residence and Peer Influence on Drinking Behavior

Abstract

Alcohol abuse on most college campuses continues to be a problem. Alcohol abuse disrupts both the residential and the academic environment, resulting in housing professionals struggling to find ways to lessen the negative impact of alcohol abuse by college students. Educational programs reflect a continuum of approaches, ranging from attempting to teach students to drink responsibly to strictly adhering to the legal drinking age of 21. However, they all share the common goal of striving to change the alcohol culture among university students, including within student housing. Some institutions, spurred on by the recent research of Pasch, Lindsay, Barnes, Liechty, and Koschoreck (2000) among others indicating that students living in alcohol-free housing experience fewer effects of secondhand drinking than do those in other student housing, and are attempting to reconfigure their halls to accomplish this goal. The purpose of this study was to examine students' living environment, academic SUCCeSS variables data from a recent university-wide alcohol survey, and selected demographic variables to learn what variables contributed to student drinking behavior.

Disciplines

Domestic and Intimate Partner Violence | Family, Life Course, and Society | Higher Education | Public Health Education and Promotion | Social Control, Law, Crime, and Deviance

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Interrelationship of Place of Residence and Peer Influence on Drinking Behavior

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INTRODUCTION

Alcohol abuse on most college campuses continues to be a problem. Alcohol abuse disrupts both the residential and the academic environment, resulting in housing professionals struggling to find ways to lessen the negative impact of alcohol abuse by college students. Educational programs reflect a continuum of approaches, ranging from attempting to teach students to drink responsibly to strictly adhering to the legal drinking age of 21. However, they all share the common goal of striving to change the alcohol culture among university students, including within student housing. Some institutions, spurred on by the recent research of Pasch, Lindsay, Barnes, Liechty, and Koschoreck (2000) among others indicating that students living in alcohol-free housing experience fewer effects of secondhand drinking than do those in other student housing, and are attempting to reconfigure their halls to accomplish this goal. The purpose of this study was to examine students' living environment, academic SUCCeSS variables, data from a recent university-wide alcohol survey, and selected demographic variables to learn what variables contributed to student drinking behavior.

Alcohol and College Students

Heavy drinking among college students is an age-old problem. Although the percentage of

college students who abstain from alcohol consumption has doubled since 1990, consumption remains a major concern among university presidents (Caruthers, et al., 1997). Congress chose to address this issue with the passage of the Drug-Free Schools and Communities Act (1986) and its subsequent amendments (1989) and with the Drug-Free Schools and Campuses Regulations Act (1990). With the passage of these laws, heavy drinking among college students transcended the biological, psychological, and sociological world and entered the political arena. Higher education joined its counterpart, public school education, in seeking quick and effective ways to change student behavior.

The 1992 Drug Free Schools program model addressed the need to provide students with a continuum of services, including prevention, education, intervention, and aftercare, based upon needs assessment and program evaluation data. Klitzner's (1987) report to Congress emphasized the need for comprehensive programming, which would include (a) approaches to increase the individual's knowledge about the health risks of alcohol consumption, (b) the legal consequences of illegal consumption, (c) the personal and interpersonal skills needed to abstain from illegal consumption, and (d) support networks that would enhance the effectiveness of these approaches.

Hawkins, Lishner, Catalano, and Howard (1986) focused on identifying individuals who are likely to use illicit substances based upon personal, familial, and community risk factors. Bernard (1991), however, took another approach. She suggested that professionals in the field of substance abuse prevention and intervention could learn from those who already model the desired behavior. She suggested focusing on the development of protective factors and resiliency skills. With the emergence of Berkowitz' (1991, 1997), Haines' (1996, 1998) and Haines and Spear's (1996) focus on prevention, emphasis switched to environmental factors and social norms strategies.

Social norms theory proposes that students' perception of the drinking patterns of their peers is inaccurate (Perkins & Berkowitz, 1986; Perkins & Wechsler, 1996). Basically, students tend to overestimate the amount of drinking done by peers and subsequently drink UP to expectations. Providing students with accurate information concerning the volume of peer drinking results in a decrease in personal alcohol consumption.

METHOD

A telephone survey was conducted at a four-year, public land grant university located in the Midwest, with more than 26,000 students enrolled in eight colleges. The student population is comprised of 81 % undergraduate students, of whom 56% are male and 44% female. The undergraduate student population is predominately white (88%), although there are some African American (2.6%) and Hispanic (1.4 %) students. Seventy-eight percent of undergraduate students come from within the state; 5.2% come from outside the United States. Ninety-two percent of the incoming freshmen rank in the upper half of their high school graduating classes. The average ACT composite score is 24.5.

The survey was conducted by a telephone survey section of the University Statistics Department during October and November of 1998. Only those who were under 24 years of age and who lived within 50 miles of campus were chosen, because their behavior would be the most likely to be impacted by their perceptions of the drinking behavior of other students. For that reason, the statistics reported here cannot be generalized to the undergraduate community as a whole, but reflect the "traditional undergraduate student who lives on or near the university campus. Six hundred undergraduate students were selected at random to obtain a target of 500 completed responses. Sampling was conducted to allow statistical comparisons by gender, classification, and living area. Living areas included undergraduate residence halls, off-campus and university apartments, and Greek housing.

The trained professional interviewers were supervised, and a sample of their interviews was monitored for quality control. All completed surveys were checked twice for inconsistent or missing data.

The overall response rate was 89.1 %, resulting in 524 usable surveys. The high return rate was attributed to the professional nature of the interviewers, the persistence in reaching students, the reliable contact information provided to interviewers for students in the sample (only 54 could not be contacted), and the fact that the survey length was kept to about 10 minutes (only 22 refused to be interviewed). Characteristics of the analytic sample and distributions of key study variables are found in Table 1. Normalized weights for gender and

residency status were applied to compensate for the oversampling and to ensure that the analytic sample reflected a representative profile of the population. In the weighted sample, 44.7% were female and 55.3% were male. Forty-four percent of the sample lived in undergraduate residence halls 48% lived in the university apartments or off campus, and 8% lived in a fraternity or sorority. For purposes of this study, students living in the predominately family university apartments (1.6% of the respondents) were categorized as off campus.

By student classification, the weighted sample consisted of 21.1 % freshmen, 21.9% sophomores, 22.5% juniors, and 34.5 % seniors. A majority (55.4%) were under 21. The students come from many different majors and all colleges. Non-Hispanic whites comprised the majority of the sample (91.7%), which also included African American and Asian-American students, and students of "other" ethnicity.

Dependent Variable

Two survey questions soliciting information about each student's recent drinking behavior comprised the dependent variable (named drinking). One question asked about frequency of drinking: "On how many occasions have you had a drink of alcohol in the past 30 days?" A second question, "In the past 30 days, on those occasions when you drank alcohol, how many drinks did you usually have?" sought information on quantity of alcohol consumed. The product of the responses to the two questions was used to approximate the total number of drinks the student consumed in the past month. The resulting sum better reflected the drinking behavior of respondents during the past 30 days. The analyses of drinking amount showed that 75% of the drinks reported in the 30 days prior to the survey were consumed by only 25% of the students surveyed. As a large proportion of the students consumed very little or no alcohol, the distribution of reported drinking in the last 30 days did not resemble the normal curve. Because a normal distribution was necessary to satisfy the assumptions for the results of a regression equation to be valid, a logarithmic transformation was used to make the distribution of the dependent variable normal.

Independent Variables

Several variables were coded into dichotomous "dummy" variables for estimating the model. The frequency of responses for the demographic variables can be seen in Table 1. The dummy variables were gender (females coded 0, males coded 1), age (students less than 21 were coded 0, those 21 or older were coded 1), ethnicity (other than non-Hispanic whites were coded 0, non-Hispanic whites were coded 1), and class (freshmen were coded 0, other than freshmen were coded 1). Residence type was divided into two dummy variables: on-campus residence (those who were not living in undergraduate residence halls were coded 0, those in undergraduate residence halls were coded 1) and Greek residence (those not living in a Greek house were coded 0, those living in a Greek house were coded 1).

Independent variables other than demographic indicators used in the model also included grade point average (GPA) measures, operationalized as the student's actual grade point average for fall semester 1998. Survey responses were confidential, but not anonymous. Respondent grade information was obtained from university records by matching the student's university identification number. A variable named perception 7 was the response to the question, "Based on what you've heard or seen, approximately what percentage of all students at ISU do you think drink alcohol at least once a month?" A similar variable, named perception 2, was the response to the question, "What percentage of your friends at ISU do YOU think drink alcohol at least once a month?"

A hierarchical linear regression analysis was conducted by entering three blocks of independent variables in stepwise fashion, as described in Table 2. The demographic characteristics, gender, classification, ethnicity, and age, were entered in step 1. The residence types of on-campus residence and Greek residence were entered in step 2. Fall 1998 GPA, an indicator of academic performance, was entered in step 3. Perception 1 and perception 2 were entered in the final step 4 of the equation building procedure.

RESULTS

Pearson correlation coefficients were calculated for each of the variables in the

equation (see Table 2). In the equation, the strongest correlation was between the dependent variable, drinking, and perception 2, the student's perception of friends drinking ($r = .53$, $p = .00$). Drinking also had a significant positive correlation with gender,

TABLE 1
RELATIVE FREQUENCIES FOR THE
INDEPENDENT VARIABLES

Demographic	%
Classification	
Freshmen	21.1
Sophomores	21.9
Juniors	22.5
Seniors	34.5
Total	100.0
Current Residence Type	
Undergraduate Residence Halls	44.0
Fraternity-Sorority	8.0
University Student Apartments	1.6
Off-Campus	46.4
Total	100.0
Gender	
Male	55.3
Female	44.7
Total	100.0
Age At Last Birthday	
18	13.2
19	21.5
20	20.5
21	19.5
22	15.2
23	8.0
Total	100.0
Ethnicity	
White (not Hispanic)	91.7
Black (not Hispanic)	2.2
Asian or Pacific Islander	5.7

Hispanic and "other" ethnicity	0.4
Total

ethnicity, classification, Greek residence, and perception 1. Drinking had a significant negative correlation with on-campus residence.

In the stepwise regression analyses, the adjusted R-square statistic increased from .14 in the first step to .38 in step 4, a substantial improvement in model fit (Table 3), indicating that the inclusion of each set of independent variables contributes to explaining variation in perceived drinking behavior.

Gender (men) and ethnicity (non-Hispanic white) were significant in step 1, reflecting that white males were more likely to consume higher

3
5

TABLE 2
CORRELATION COEFFICIENTS FOR THE
VARIABLES

	Drinking	Gender	Age	NonHispanic White Ethnicity	Classification	Campus	Greek	GPA	per. Perception ception
Drinking									
Gender									
Age	0.00		0.05						
Non-Hispanic White	0.09*	-0.05	-0.09*						
Classification On-campus	0.14*	0.06	-0.27* *		1				
Greek	*	0.03			-0.48**	1			
GPA	-0.02	-0.06	0.05	-0.06	0.13**	-0.28**	0.06		
Perception 1		-0.07	0.04	-0.02	0.14**	-0.10*	0.06	0.06	
Perception 2		0.07	0.08*	0.08*	0.10*	-0.24**	0.08*	0.03	0.40* *

.01

< .05

amounts of alcohol [in the last 30 days]. When on-campus residence and Greek residence were introduced in step 2, on-campus residence alone joined gender and ethnicity as significant predictors of alcohol consumption [in the last 30 days]. When GPA (fall 1998 GPA) was introduced, gender, ethnicity, and on-campus residence remained significant predictors of alcohol consumption, while GPA did not appear as a significant predictor. Finally, when the perception variables, perception I and perception 2, were introduced, perception 2, together with only gender and ethnicity, were significant predictors of alcohol consumption

[in the last 30 days]; on-campus residence was not a significant predictor.

DISCUSSION

Data analyses revealed that female students tend to drink less alcohol than male students. These findings are consistent with the findings reported by Tampke (1990). In addition, non-Hispanic white students are more likely to drink than are other ethnicity groups. These findings are consistent with previous alcohol and other drug

TABLE 3
SUMMARY STATISTICS FOR THE MODEL

Model R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df	Change
1 ^a	0.38	0.15	0.14	6.25	0.15	4	41.3
2 ^b	0.42	0.18	0.16	6.16	0.03	7.42	41.1
3 ^c	0.42	0.18	0.16	6.16	0.00	1.24	41.0
4 ^d		0.39	0.38	5.30	0.21		408

Model 1 predictors: (Constant), classification, non-Hispanic White or not, Gender, above or under 2

1^b Model 2 predictors: (Constant), classification, non-Hispanic White or not, Gender, above or under 2 1 On-campus

^c Model 3 predictors: (Constant), classification, non-Hispanic White or not, Gender, above or Under 2 1 On-campus, fall 1998 semester ^d Model 4 predictors: (Constant), classification, non-Hispanic White or not, Gender, above or under 2 1

On-campus, fall 1998 semester, Perception 1, Perception 2

Note. Summary statistics for weighted least squares regression with drinking variable as the dependent variable. Data were weighted to reflect the eligible student population on residence, gender, and age.

TABLE 4
UNSTANDARDIZED AND STANDARDIZED COEFFICIENTS FOR THE MODEL

Step	Variable	Unstandardized Coefficients		Standardized Coefficients Beta			95% Confidence Interval for B	
			Std. Error				Lower	Upper
1	(Constant)	0.66	0.38		1.75	0.08	-0.08	1.40
	Gender	0.82	0.12	0.32	7.07	0.00	0.59	1.04
	Age	-0.08	0.13	-0.03	-0.57	0.57	-0.34	0.19
	Ethnicity	1.10	0.25	0.20	4.36	0.00	0.60	.60
	Classification	0.28	0.15	0.09	.83	0.07	-0.02	0.58
	2	(Constant)		0.42		3.24	0.00	0.54
Gender		1.37	0.11	0.34	7.43	0.00	0.63	1.08
Age		0.85	0.14	0.04	-0.84	0.40	-0.39	0.15
Ethnicity		-0.121	0.25	0.18	4.09	0.00	0.53	1.51
Classification		.02	0.17	0.00	0.03	0.97	-0.33	0.34
On-campus		0.01	0.14	0.00	-3.07	0.00	-0.70	0.34
Greek		-0.43	0.20	0.06	.35	0.1	-0.12	0.66
3	(Constant)	.50	0.44		3.42	0.00	0.64	2.37
	Gender	0.84	0.11	0.33	7.35	0.00	0.62	1.07
	Age	-0.1	0.14	-0.04	-0.81	0.42	-0.38	0.16
	Ethnicity	.06	0.25	0.19	4.21	0.00	0.57	1.56
	Classification	0.03	0.17	0.01	0.16	0.87	-0.31	0.36
	On-campus	-0.43	0.14	0.07	-3.07	0.00	-0.70	0.67
	Greek	0.28	0.20	-0.05	1.40		-0.21	0.06
	GPA	-0.07						

			0.07		-1.11	0.16		
						0.27		
(Constant)			0.45		-0.98	0.33		0.44
Gender					7.39	0.00	-1.33	0.93
Age	-0.44		0.10		-1.27	0.21	0.54	0.08
Ethnicity	0.74		0.12	0.29	3.34	0.00	-0.38	1.17
Classification	-0.15				0.23	0.82	0.30	0.32
On-campus	0.73		0.22	-0.05	-1.1	0.27	-0.25	0.11
Greek	0.03		0.15	0.13	0	0.1	-0.37	0.60
	-0.13		0.12	0.01	1.55	2	-0.07	0.05
Perception 1	0.27		0.17	-0.05	1.12		-0.18	0.01
Perception 2	-0.06		0.06	0.06	-0.03	0.26	-0.01	0.03
			0.03	0.00	1.1	0.98	0.02	
			0.00	0.00	7	0.00		
				0.48				

Note. The dependent variable is drinking.

addiction studies. The Monitoring the Future Survey (Johnston, O'Malley, & Bachman, 2000), which has been conducted by the University of Michigan's Center for Social Behavioral Research for nearly 25 years, consistently has shown alcohol use to be higher among Caucasian males in all age groups. A study by Wechsler, Davenport, Dowdall, Moeckens, and Castillo (1994) of Harvard University found that the proportion of collegiate abstainers in the U.S. jumped nearly 22% in the four years since their earlier study.

The current study also indicates that a minority of students (25%) consumes the majority of the alcohol (75%). This finding also is consistent with research findings in the substance abuse field as well as with predictions of prevalence of addicted individuals within a normal population (Johnson, 1980; Milan & Ketcham, 1981). Neither student classification nor 21-year-old drinking status was found to be influential factors in predicting alcohol consumption (in the last 30 days). Students living on campus were found to consume less alcohol than students living in Greek housing or other locations off campus. Thus, this study indicates that men and students

living in Greek housing tend to drink more. Tampke's (1990) study also found a higher prevalence of drinking among Greek men than on-campus men. One explanation for these findings might be the higher proportion of freshmen or younger students living on campus.

Palmer (1995) reported that students living in residence halls received more information than off-campus students about institutional rules regarding alcohol and other drug consumption as well as more education in these areas. These factors also may contribute to our finding that students living in on-campus housing consume less alcohol than do students living in other residential settings. Students living in Greek houses are more likely to participate in binge drinking than are off-campus or on-campus students, although the significance level for the regression coefficient for residential location is not particularly strong.

Results of the present study indicate that students' academic performance does not appear to have any relationship with their drinking behavior, as the correlation between GPA and the dependent variable, drinking, is very close to zero. Although the Core Alcohol and Drug Survey (1998) results indicate that a negative correlation exists between alcohol consumption

by college-aged students and GPA, our study does not support the argument that academically

successful students will drink less alcohol.

More importantly, where a student lives is overshadowed by the student's perception of his or her friends' drinking behavior in predicting their drinking behavior. This is reflected by the jump in R-square from block 3 to block 4 and the replacement of on-campus residence when the perception 2 predictor was introduced. This finding provides further evidence for the above argument that drinking patterns are determined more by social than by geographic considerations. These data specifically indicate that the drinking pattern of college students is heavily influenced by their perception of what their friends are doing. Although this finding can be interpreted as consistent with the Social Norms Theory it does raise the following issue.

Social Norms Theory holds that one's drinking pattern is determined by one's perception of the amount of drinking done by one's peers (Berkowitz, 1991; Haines, 1996; Perkins, 1991; Perkins & Berkowitz, 1986). Furthermore, it contends that college students in general perceive that their peers drink more than is justified by their actual consumption. In response to this misconception, it is believed that individual students drink more. That is, they drink UP to the perceived level of consumption rather than the actual level of consumption. The reference group for this perception and resulting drinking pattern is the peer group at large. Our study, however, indicates that the relevant normative reference group is the individual's friends, and not college students in general. This finding has significant theoretical and prevention program implications that impact upon the content of the prevention message delivered, the method of its delivery, and the intended target group.

The most surprising finding is that students' perceptions of their friends' drinking have more impact on their own drinking than does their perception of drinking behavior by their overall peer group at the institution. Furthermore, their perception of their friends' drinking is much more a factor in their own drinking behavior than is where they live. This finding suggests that students' drinking behavior is influenced more by personal friendships than by a perceived generic peer group. The finding

also suggests that social marketing campaigns develop messages for specific target groups rather than generic messages for an entire student population.

CONCLUSIONS

These results have several implications for student affairs professionals, in general, and student housing professionals, in particular. First, this study did not demonstrate a predictive relationship between grades and drinking behavior or vice versa. Second, the initial finding that white male status is the best predictor of drinking behavior is not surprising. Students over 21 years of age tend to live off-campus. Therefore, it also is not surprising that in a residence system that houses predominantly underage freshmen students, students will drink less than their upper-class peers who reside in other settings such as Greek housing or offcampus housing.

If housing professionals take steps to modify students' drinking behavior by altering the living environment, this research suggests that steps affecting the students' friendship group will increase the chances for success in modifying students' drinking behavior. The change must be designed in such a way that it effectively alters the students' friendship group to include only those who drink less, or the change must affect the students' friendship group so they will drink less. Wechsler, Lee, Nelson, and Lee (2001) document the success of substance-free residence halls in curbing resident drinking. In addition, alternative substance-free activities in the residence halls should be provided, which might bring about more friendships that do not encourage substance abuse and restructure the use of free time. Further research should be conducted to examine the degree of influence an individual's personal friendships have on one's drinking behavior as opposed to that of one's generic peer group.

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