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Social Factors, Alcohol Expectancy, and Drinking Behavior: A Comparison of Two College Campuses

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Abstract

Background: Though college students have high rates of heavy drinking, few studies have examined the various pathways through which risks affect drinking and whether this varies by institution. We examined whether alcohol expectancy mediates the relationship between social factors (i.e., hooking up, friends drinking, Greek affiliation, entitlement) and drinking behavior comparing college students from one Midwestern and one Southeastern university. *Methods:* In the 2013–14 academic year, 1,482 college students (51% female) enrolled in undergraduate courses at two public universities completed a paper and pencil survey of attitudes and experiences about dating, sexuality, and substance use. Multiple group path analysis was used to compare two institutions. *Results:* Drinking behavior was positively associated with hooking up more often, Greek affiliation, being male, having close friends who consume more alcohol, and greater alcohol expectancies. We found unique differences in the mediating pathways for the two campuses. *Conclusion:* This study provides a more nuanced understanding of risk factors for heavy drinking. Moreover, it adds to the scarce body of

literature concerning entitlement and drinking and the unique pathways between two college campuses. Finally, the results could lead to the development of more specific intervention strategies to reduce risky drinking among U.S. college students.

Keywords: alcohol expectancy, college students, drinking behavior

Introduction

Heavy drinking among U.S. college students underscores a serious public health concern. Studies reveal that 35% of college students are binge drinkers, and 40% of females and 46% of males report having gotten drunk in the past 30 days (Johnston et al., 2015). While rates of heavy drinking among college students are high, regional variations in the United States exist: rates of college student alcohol use are higher on campuses in the Northeast and North Central regions compared to the Midwest and the West (Wechsler & Nelson, 2008). Though numerous risk factors for heavy drinking among college students have been examined (e.g., positive alcohol expectancies, Marx et al., 2000; perceptions of peers' drinking, Tyler et al., 2015; and Greek affiliation, Hummer et al., 2012), little is known about whether these risks operate similarly between college campuses. Greek affiliation refers to group membership in a fraternity or sorority, which are social organizations at colleges and universities that engage in philanthropic activities, often host parties and other events, have a shared ideology, and create networking and career opportunities for their members. Moreover, the role of higher entitlement (i.e., unreasonable expectations for receiving advantageous treatment, Campbell et al., 2004) though correlated with negative behaviors (Campbell et al., 2004), has seldom been examined in conjunction with heavy drinking. To address these shortcomings, we use multiple group path analysis to examine whether alcohol expectancy mediates the relationship between social factors (i.e., hooking up, amount friends drink, Greek affiliation, entitlement) and drinking behavior among college students from one Southeastern and one Midwestern university in the United States. Though rates of young adult drinking vary by region, we expect heavy episodic drinking to be higher at the Southeastern university because of heightened predominance of Greek life on this campus, which is strongly linked to elevated drinking levels (Hummer et al., 2012).

The association between alcohol expectancy and drinking behavior

Research finds that a stronger endorsement of alcohol expectancies (i.e., positive outcomes anticipated when one drinks) is related to higher alcohol consumption (Gilles et al., 2006; Zamboanga, 2006). Moreover, alcohol expectancy has been found to mediate the association between the number of friends who drink and alcohol consumption (Lau-Barraco et al., 2012). Though gender plays an important role, findings are mixed in terms of whether men (Greenbaum et al., 2005; Park & Levenson, 2002) or women (Read et al., 2004) endorse greater alcohol expectancies, such as believing that alcohol will enhance social situations and make personal experiences more pleasurable.

Hooking up, or engaging in spontaneous sexual encounters without the expectation of further involvement, has been directly linked with more frequent heavy drinking among college students (Tyler et al., 2015). The findings on whether males or females have higher

rates of hooking up while consuming alcohol, however, are mixed. That is, while some research has found similar rates of hooking up among male and female college students (Owen et al., 2010), others have found the rate of hooking up to be higher for college men (Sutton & Simons, 2015).

Peer drinking behavior is significantly related to higher alcohol expectancies and one's own alcohol consumption (Wood et al., 2001). Moreover, undergraduate students overestimate peer drinking amounts and frequency (Lewis & Neighbors, 2004). Students exposed to alcohol-laden environments and where increased positive alcohol expectations exist (LaBrie et al., 2011) are at greater risk for binge drinking (Weitzman et al., 2003).

Research highlights the rise of entitled attitudes among college students, related to their beliefs that they are deserving certain privileges and are not required to adhere to standard societal norms and expectations (Greenberger et al., 2008). Though few studies have examined entitlement and alcohol use, Crawford and Novak (2006) found that heavy-drinking college students were significantly inclined to subscribe to beliefs surrounding the normalcy of alcohol use in college and that they were entitled to drink excessively in the college context. General entitlement has been linked to dominance and hostility (Campbell et al., 2004; Raskin & Terry, 1988), but further research is needed to better understand the link between entitlement and heavy drinking behavior.

Greek affiliation is linked with higher drinking levels (Chauvin, 2012; Hummer et al., 2012; McCabe et al., 2004) and more frequent alcohol consumption (Larimer et al., 2000). Moreover, fraternity and sorority members engage in more party drinking compared to students living elsewhere (Page & O'Hegarty, 2006). However, less is known about the nuanced social pathways between Greek affiliation and drinking behavior across different college campuses.

Hypotheses

Expectancy outcome theory guided the framing of our study and hypotheses. According to this framework, alcohol consumption patterns are explained by the beliefs people hold regarding the outcomes they expect to receive from drinking alcohol. Elements of social learning impact the relationship between beliefs and behavior, as individuals develop their alcohol expectancies through their social experiences (Jones, Corbin, & Fromme, 2001). We hypothesized: (1) hooking up more often, being Greek affiliated, being male, having heavily drinking friends, and higher entitlement would be positively linked with alcohol expectancies; (2) alcohol expectancies would be directly and positively linked with drinking behavior; (3) alcohol expectancies would mediate the relationship between social factors (i.e., hooking up, Greek affiliation, friends drinking, and entitlement) and drinking behavior; and (4) because our Southeast campus had a higher prevalence and mean score on almost all of the risk factors, we hypothesized that the pathways leading to drinking behavior would be significantly stronger for these college students compared to those at the Midwest campus.

Methods

Study site and participants

Data collection was conducted in the 2013–14 academic year at two large public universities in the United States, one in the Midwest and one in the Southeast. Both universities are public land-grant institutions with undergraduate enrollment ranging from 20,000 to 25,000 students. Racial composition at both locations was approximately 80% White. The combined sample consisted of 1,482 college students.

Procedure

Undergraduate students enrolled in introductory social science courses completed a paper and pencil survey of attitudes and experiences about dating, sexuality, and substance use. Every student was eligible to participate. Students were informed that their participation was voluntary and their responses were anonymous. They had the option of filling out the survey for course credit. If they did not wish to complete the survey, they were given another option. Students were told that if they chose not to fill out the survey or do the alternative extra credit assignment, it would not affect their course grade. Thus, they were given three options: (1) do not complete either assignment if they did not want extra credit; (2) complete the survey for extra credit; or (3) complete an alternative assignment for extra credit. Approximately 98% of all students in attendance across both institutions completed the survey while the remaining students opted for the alternative assignment. The Institutional Review Board at both institutions approved this study for their respective location.

Materials

Independent variables

Alcohol expectancy included six items from the Social/Physical Pleasure scale of the Alcohol Expectancy Questionnaire (Brown et al., 1980), which has been shown to consistently predict drinking among college samples (Darkes et al., 2004). Sample items included, “Alcohol makes me happy” and “Drinking adds a certain warmth to social occasions.” We created an index in which a higher score equals higher alcohol expectancy. Alpha reliability was .70.

Hooking up was a single item which asked respondents, “How many times in the past 12 months have you hooked up?” (0 = never to 4 = 10 or more times).

Greek affiliation was coded 0 = not a member or 1 = is a member of a Greek fraternity or sorority.

Friends’ drinking was a single item, which asked respondents “How much do your close friends typically consume when drinking?” (0 = they don’t drink; 1 = 1 or 2 drinks; 2 = 3 to 5 drinks; and 3 = 6 or more drinks).

Entitlement included six items adapted from the Psychological Entitlement Scale (Campbell et al., 2004), which measures beliefs such as “I honestly feel I’m just more deserving than others” and “People like me deserve an extra break now and then” (1 = strongly disagree to 5 = strongly agree). All items loaded on one factor with an alpha reliability of .73. A mean scale was created where a higher score equals higher entitlement.

Demographic variable

Gender was coded as 0 = male and 1 = female.

Dependent variable

Drinking behavior included two items (adapted from Testa et al., 2003) which asked respondents, "During the past 12 months, 'how many times have you gotten drunk on alcohol' and 'how many times have you consumed five or more (if you're a man)/four or more (if you're a woman) drinks in a single sitting'" (0 = never to 5 = five or more days per week). The two items were averaged (Testa et al., 2003), such that a higher score indicated more frequent heavy drinking. The correlation was .87.

Results***Statistical analyses***

Comparisons between the two institutions were first done using *t*-tests and chi-square tests. Next, a fully recursive multiple group path model was estimated using the maximum likelihood estimator in Mplus 6.1 (Muthén & Muthén, 1998–2007) in order to simultaneously compare pathways between the two institutions. Standardized beta coefficients (β) are reported in all figures and multivariate tables. Unstandardized coefficients (*b*) are shown in Table 4 to compute the difference in the indirect effects between the two campuses. One hundred twelve cases (7.6%) were dropped from the final analyses due to missing data.

Sample characteristics

Participants included 1,482 undergraduate college students: 778 (52.5%) from the Southeast campus and 704 (47.5%) from the Midwest campus. The combined sample was evenly split between males (48.8%) and females (51.2%). The majority of respondents were White (80%), followed by Black/African American (7.3%); Asian (6.6%); Hispanic or Latino (3.6%); and 2.4% identified their race as "other."

Table 1 reports *t*-test comparisons between campuses. The results reveal that the mean for hooking up, friends' drinking, alcohol expectancy, and respondent drinking is significantly higher among students at the Southeast campus compared to those at the Midwest campus. The chi-square test results in Table 2 reveal that there are significantly more females at the Midwest campus (55.5%) compared to the Southeast campus (44.5%) but more Greek-affiliated students at the Southeast location (67.2%) compared to the Midwest location (32.8%).

Table 1. Mean comparison between campuses

Correlate	Mean		<i>t</i> -test
	Southeast campus	Midwest campus	<i>t</i>
Hooking up	1.459	1.152	4.201**
Friends drinking	4.065	3.646	6.576**
Entitlement	2.312	2.296	.422
Alcohol expectancy	3.908	3.219	7.314**
Respondent drinking behavior	1.427	1.060	7.008**

Note: ***p* < .01; **p* < .05

Table 2. Frequencies and group comparison for dichotomous variables by campus

	N/Total	T Total Southeast campus		Midwest campus		Chi-square	
		%	N	%	N		
Female	775/1475	52.5%	336	44.5%	419	55.5%	39.41**
Greek affiliate	551/1470	37.5%	370	67.2%	181	32.8%	76.38**

Note: ***p* < .01; **p* < .05

Multivariate results

Direct effects

The results for the path analysis for the Southeast campus (only significant paths given) are shown in Figure 1. The numbers in Figures 1 and 2 are standardized beta coefficients. For students at the Southeast campus, higher alcohol expectancy was positively associated with hooking up more times ($\beta = .098$), having close friends who consume greater amounts of alcohol ($\beta = .452$), and having higher entitlement ($\beta = .093$). Drinking behavior was positively correlated with hooking up more often ($\beta = .267$), being a Greek affiliate ($\beta = .163$), male ($\beta = -.159$), higher alcohol expectancy ($\beta = .224$), and having close friends who consume more alcohol ($\beta = .278$). The model explained 53% of the variance in drinking behavior for students at the Southeast campus.

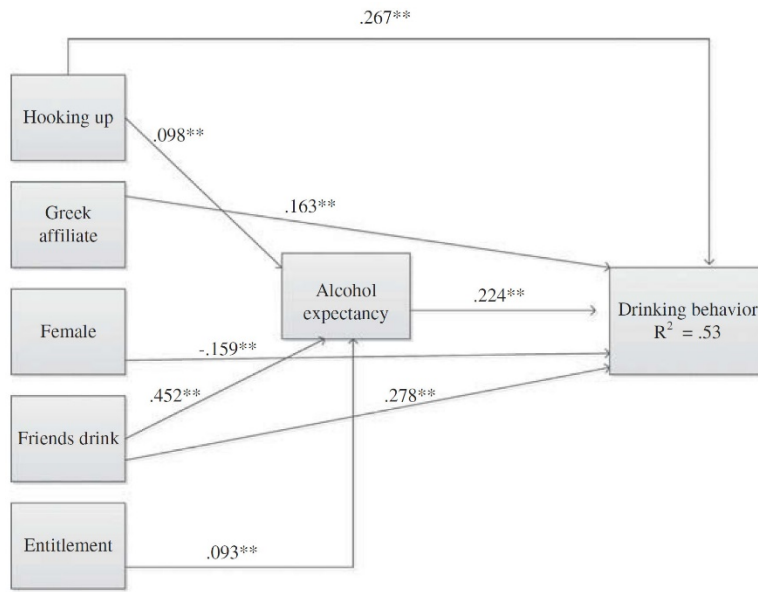


Figure 1. Path model for correlates of drinking behavior for the Southeast campus (only significant paths shown).

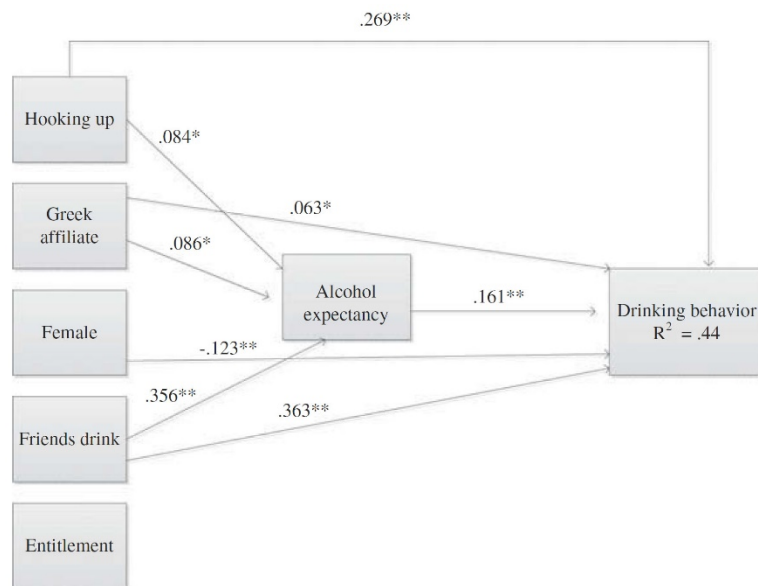


Figure 2. Path model for correlates of drinking behavior for the Midwest campus (only significant paths shown).

The results for the Midwest campus shown in Figure 2 reveal that higher alcohol expectancy was associated with hooking up more often ($\beta = .084$), being a Greek affiliate ($\beta = .086$), and having close friends who consume greater amounts of alcohol ($\beta = .356$). Drinking was

positively correlated with hooking up more often ($\beta = .269$), Greek affiliation ($\beta = .063$), being male ($\beta = -.123$), higher alcohol expectancy ($\beta = .161$), and having close friends who consume more alcohol ($\beta = .363$). This model explained 44% of the variance in drinking behavior for students at the Midwest campus.

All direct path coefficients were statistically similar between campuses at the $p < .05$ level with two exceptions. The positive relationship between fraternity/sorority membership and drinking behavior was stronger at the Southeast campus ($\beta = .163$) compared to the Midwest campus ($\beta = .063$). Also, alcohol expectancy was a stronger correlate of drinking behavior for the Southeast campus ($\beta = .224$) compared to the Midwest campus ($\beta = .161$).

Indirect effects

The full indirect effect results for the Southeast campus (top half of Table 3) revealed that three variables including hooking up, friends’ drinking, and entitlement had a significant indirect effect on respondent drinking behavior through alcohol expectancy. Specifically, students who hook up more often and those who report having close friends who consume larger amounts of alcohol have higher alcohol expectancy, which is related to heavier drinking among respondents at the Southeast campus. Additionally, those with higher entitlement also have higher alcohol expectancy, which is linked to heavier drinking.

Table 3. Full model results for drinking behavior

Variables	Direct effect		Total indirect effect		Total effect	
	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.
Southeast campus						
Hooking up	.267**	.029	.022**	.008	.289**	.030
Greek affiliate	.163**	.027	.008	.008	.171**	.028
Female	-.159**	.026	.000	.007	-.159**	.027
Friends drinking	.278**	.031	.101**	.015	.379**	.029
Entitlement	.036	.026	.021**	.008	.057*	.026
<i>Mediating construct</i>						
Alcohol expectancy	.224**	.030				
Midwest campus						
Hooking up	.269**	.033	.014	.007	.282**	.033
Greek affiliate	.063*	.031	.014*	.007	.077*	.032
Female	-.123**	.031	-.007	.006	-.130**	.031
Friends drinking	.363**	.034	.057**	.013	.420**	.032
Entitlement	.020	.030	.001	.006	.020	.031
<i>Mediating construct</i>						
Alcohol expectancy	.161**	.033				

Note: Standardized coefficients shown. ** $p \leq .01$; * $p \leq .05$

The results for the Midwest campus (bottom half of Table 3) revealed that two variables including Greek affiliate and friends’ drinking had a significant indirect effect on respond-

ent drinking behavior through alcohol expectancy. Specifically, students who report having close friends who consume larger amounts of alcohol have a higher alcohol expectancy, which is related to heavier drinking among students at the Midwest campus. Additionally, those who belong to a Greek organization have higher alcohol expectancy, which is linked to heavier drinking.

Statistically significant indirect effect results for drinking behavior for both campuses are presented in Table 4. A significant indirect effect coefficient indicates that the corresponding indirect pathway is statistically significant. For example, the indirect effect coefficient for “Hooking up → Drinking behavior” ($\beta = .022$) for the Southeast campus is significant ($p < .01$) meaning the effect of hooking up on drinking behavior is partially mediated through alcohol expectancy. The standardized indirect effect of 0.022 is calculated by multiplying the coefficients for “Hooking up → Alcohol expectancy” ($\beta = .098$) and “Alcohol expectancy → Drinking behavior” ($\beta = .224$).

Table 4. Statistically significant indirect effects for Southeast (So) and Midwest (MW)^{a,b} campuses

Indirect pathway to drinking behavior	Southeast campus		Midwest campus		<i>b</i> So – <i>b</i> MW ^d
	<i>b</i>	β	<i>b</i>	β	
Hooking up → Alcohol expectancy	0.015**	0.022**	0.010	0.014	0.005
Greek → Alcohol expectancy	0.016	0.008	0.030*	0.014*	-0.014
Female → Alcohol expectancy	-0.001	0.000	-0.014	-0.007	0.013
Friends drinking → Alcohol expectancy	0.092**	0.101**	0.043**	0.057**	0.049**
Entitlement → Alcohol expectancy	0.029**	0.021**	0.001	0.001	0.028*

- a. Indirect effect is presented if the indirect effect coefficient is statistically significant ($p < .05$) for So and/or MW.
- b. “*b*” indicates unstandardized coefficient, “ β ” indicates standardized coefficient.
- d. Difference between unstandardized coefficients for So and MW. ** $p \leq .01$; * $p \leq .05$

Upon testing the equality of five indirect effects by calculating the difference in each unstandardized indirect effect coefficient between the campuses (Table 4), we found two pathways were significantly different. First, the path from “friends’ drinking” to “drinking behavior” through “alcohol expectancy” was significantly different across campuses ($b = .049$), suggesting that having friends who drink is more strongly related to drinking behavior indirectly through alcohol expectancy for students at the Southeast campus. Second, the path from “entitlement” to “drinking behavior” through “alcohol expectancy” was significantly different across campuses ($b = .028$). Thus, alcohol expectancy mediated the relationship between entitlement and drinking behavior but only for Southeast campus students ($\beta = .021$).

Discussion

This study examined whether alcohol expectancy mediates the relationship between social factors (i.e., hooking up, friends drinking, Greek affiliation, entitlement) and drinking behavior comparing college students from one Midwestern and one Southeastern university. Though many of the direct pathways to drinking behavior were similar for both campuses (e.g., hooking up, friends' drinking), other direct pathways to drinking behavior were significantly stronger for the Southeast campus. Additionally, the indirect effects for some of the paths varied significantly between institutions. Though many of the variables examined were positively associated with drinking behavior for both campuses, the strength of some of the pathways uniquely varied between locations. These findings underscore the need to examine regional variations in college student drinking across different university campuses (Wechsler & Nelson, 2008).

For both campuses, hooking up more often is positively linked to drinking behavior, which is consistent with prior research (LaBrie et al., 2014; Tyler et al., 2015). Hooking up is particularly risk-laden as it not only directly increases one's chances for more frequent heavy drinking, but, for students at the Southeast campus, it does so indirectly through greater alcohol expectancy. The perception of how much one's peers drink is particularly revealing as it is positively linked to greater alcohol expectancies and more frequent heavy drinking among students at both campuses, which coincides with previous work (Lau-Barraco et al., 2012; Wood et al., 2001). Additionally, those at the Southeast campus with higher entitlement also have higher alcohol expectancy, which is associated with more frequent heavy drinking. This finding is supportive of Crawford and Novak (2006), who found that college students who drank heavily felt entitled to drink excessively in college.

Though campus culture in general contributes to widespread drinking (LaBrie et al., 2011), the social context of Greek life adds additional risk because Greeks have higher rates of drinking (Borsari, Hustad, & Capone, 2009; Ragsdale et al., 2012) and both fraternity and sorority members engage in more drinking while partying compared to students living in other types of housing. Moreover, Greek members have been found to suffer more negative outcomes (Franklin, 2010) compared to non-Greeks as a consequence of drinking. Current findings reveal that for both campuses, being a Greek affiliate is positively associated with more frequent heavy drinking, similar to prior research (Chauvin, 2012; Hummer et al., 2012; McCabe et al., 2004). Among students at the Midwest location, Greek members also have higher alcohol expectancy, which is linked to heavier drinking.

In terms of campus comparisons, the direct, positive relationship between Greek affiliation and drinking behavior was stronger for students at the Southeast campus, as was the positive relationship between alcohol expectancy and drinking behavior. Though these direct pathways were significant for both campuses, the magnitude of the pathways was significantly stronger for students at the Southeast location. It is possible that Greek life is more culturally prominent at the Southeast institution, as their membership is more than double compared to the Midwest institution. College culture contributes to widespread drinking behavior (LaBrie et al., 2011) and positive expectations regarding drinking are related to higher alcohol consumption (Gilles et al., 2006; Zamboanga, 2006). The added element of widespread Greek culture with its emphasis on heavy drinking (Hummer et al.,

2012; Larimer et al., 2000; McCabe et al., 2004) may exacerbate frequent heavy drinking among students at the Southeast campus compared to those at the Midwest location.

We also found significant differences in the indirect effects across campuses. The pathway from friends' drinking to respondent drinking via alcohol expectancy was statistically different across campuses. Having friends who drink more alcohol is more strongly related to respondent's own drinking indirectly through alcohol expectancy for students at the Southeast campus. One possible explanation is that more of one's friends at the Southeast location are Greek members given their high rates of membership; thus not only do their friends endorse higher alcohol expectancies but they may also have higher drinking rates if they are Greek members.

The second significant indirect effect found across campuses was the path from entitlement to drinking behavior through alcohol expectancy. Greater entitlement is associated with higher alcohol expectancies, which is linked to more frequent heavy drinking, but only for students at the Southeast campus. Because research has documented the rise of entitled attitudes among college students, such that they believe they are deserving of certain privileges and are not required to adhere to normative societal expectations (Greenberger et al., 2008), it is plausible that regardless of campus, some students feel entitled to drink without consequence. However, entitled attitudes among students at the Southeast institution may be exacerbated if they also hold the status of Greek member, which may be revered as an elevated, privileged position (Sanday, 2007). That is, not only do they feel entitled to drink more but also expect to drink more, thus resulting in higher alcohol expectancies and subsequently, higher rates of drinking for students at the Southeast campus. Though interesting, this finding requires further exploration in future research.

Some limitations should be noted. First, all data are self-reported and because of the sensitive nature of some questions, it is possible that some students may have succumbed to social desirability bias and reported lower rates of hooking up or alcohol use than their actual behavior. Despite this, participants answered anonymously so it is less likely that they would be motivated to bias their responses. Another limitation is the retrospective nature of some of the measures, which may have resulted in some over- or underreporting. Third, the cross-sectional data precludes inferences about causality. For example, while hooking up was modeled as an independent variable leading to drinking behavior, the reverse relationship is plausible. Fourth, because students were not randomly selected, we cannot generalize our findings to all undergraduate students enrolled in social science courses at the Midwest and Southeast campuses.

These findings contribute to broader research in two ways. First, little research has examined the role of general entitlement and drinking behavior, but our results show that entitlement had significant effects for students at the Southeast campus. Given the rise in entitled attitudes among contemporary college students (Greenberger et al., 2008), further research on general entitlement and drinking behavior is warranted. Second, we compared two large public universities and found that some risk factors operate differently in explaining respondent drinking behavior. In fact, the effect of Greek membership, alcohol expectancy, friends' drinking, and entitlement with drinking behavior were significantly different for students at the two campuses. These findings suggest that though drinking is prevalent at many colleges, the risk factors may vary by campus location. As such, areas

to target for college drinking interventions and solutions may need to be context specific for individual campuses and the larger surrounding community.

Given our findings, there is need for additional exploration of risk factors by campus location. Specifically, further research on college populations is needed to see whether these campus differences with regard to Greek affiliation and alcohol expectancy can be replicated. The location of public universities should be taken into consideration for campus-based interventions that highlight the unique drinking behavior risks that different campuses may face. It is also important to develop alcohol-focused reduction interventions for both Greek and non-Greek heavy drinkers that can be implemented outside of traditional alcohol treatment. Widespread dissemination of alcohol-focused reduction efforts would also benefit the college student population more broadly because it may reduce the risk for negative drinking outcomes. Because the impact of peer drinking is so influential, a broad intervention effort may have the most impact in reducing harmful drinking, regardless of locale.

Declaration of interest – The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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