



RESEARCH ON IOWA STUDENT EXPERIENCES: BINGE DRINKING

Elizabeth J. Whitt, Sherri I. Edvalson, Ashley M. Asel, and Sarah L. Hansen

Office of the Provost
The University of Iowa

RISE Brief No. 2
October 2008



High-Risk Drinking in College

High-risk alcohol consumption by college students is a matter of increasing concern in postsecondary education in the United States. Consequences of excessive and underage drinking, including alcohol-related deaths, injuries, and assaults; unsafe and/or unwanted sex; property damage and vandalism; drunk driving; arrests and other interactions with police; health problems; and academic problems, affect most campuses and most students, even those who choose not to drink (National Institute on Alcohol Abuse and Alcoholism (NIAAA), 2007). A 2002 NIAAA report, *A Call to Action: Changing the Culture of Drinking at U.S. Colleges*, noted “a tradition of drinking has developed into a kind of culture – beliefs and customs – entrenched in every level of college students’ environments . . . These beliefs and the expectations they engender exert a powerful influence over students’ behavior toward alcohol” (p. 1). This research brief focuses on results from the Research on Iowa Student Experiences (RISE) study regarding frequency and impacts of binge drinking and “a culture of drinking” among undergraduates at The University of Iowa.

The RISE Project

In June 2005, then-Executive Vice President and Provost Michael J. Hogan commissioned the University of Iowa (UI) Center for Research on Undergraduate Education (CRUE) to perform a comprehensive quantitative and qualitative study of undergraduate experiences and outcomes at UI. The Center undertook the RISE project between September 2005 and September 2006. Researchers collected quantitative data via a web-based survey sent to all undergraduate first-year and senior students in late March. We obtained completed surveys from 1,477 first-year students and 1,676 seniors, a response rate of 36.5%. The mean GPA for senior survey respondents was 3.3, for first-year students, 3.0. Although the first-year and senior samples were representative of their respective populations by race/ethnicity, women and individuals with high ACT scores were overrepresented in both. To adjust for this response bias, we weighted the samples up to population values by sex and ACT composite score quartile; the quantitative analyses reported here are based on weighted estimates. To gather qualitative data, researchers conducted interviews with focus groups composed of 75 first-year students and 45 seniors.

Binge Drinking at Iowa

We included binge drinking in the RISE survey because of the attention paid to high-risk drinking in higher education in general and at UI in particular. We used the measure of binge drinking common to studies on college drinking behavior: Students were asked to “Think back over a typical 2-week period at The University of Iowa. How many times did you have 5 or more drinks (a 12-ounce can of beer, a 4-ounce glass of wine, 1 wine cooler, 1 shot of liquor or 1 mixed drink) on one occasion?” Response options were: None, One time, Two times, Three to five times, and Six or more times. Table 1 reports students’ responses to this item. For both groups (25% of first-year students and 29% of seniors), the most frequent response was 3-5 times in a typical two-week period. A little more than 10% of first-year students and 13.5% of seniors reported 6 or more binge drinking episodes (that is, at least 30 drinks) during a typical two-week period in college. Therefore,

nearly 36% of first-year respondents and 43% of seniors reported binge drinking at least 3, and as much as 6 or more, times in a typical two-week period in college. “Six or more times” is roughly the equivalent of 5 or more drinks every other night in a two-week period. The drinking reported might or might not, however, be spread evenly over the two weeks; the 6 or more reported binge drinking occasions could, for example, occur over 2 weekends. Note, too, that 30.7% of first-year students and 21.5% of seniors reported no binge drinking in a typical two-week period.

Inside

Binge Drinking at Iowa.....	1
Other College Experiences.....	2
Fraternity & Sorority Membership..	3
Impacts of Drinking on College Outcomes.....	4
“A Culture of Drinking”	5
Summary & Implications.....	5
Questions to Consider & References/Resources.....	6

For more information, please contact:

Elizabeth J. Whitt, Director
Student Success Initiatives
Office of the Provost
111 Jessup Hall
319-384-3283
elizabeth-whitt@uiowa.edu

For the full RISE Report, please visit the website for the Center for Research on Undergraduate Education at:

<http://www.education.uiowa.edu/crue/publications/documents/RISE.Report.9-06.COMPLETE.pdf>

This does not mean they did not consume alcohol, only that they reported not binge drinking.

Because we expected drinking behavior in college to be influenced by drinking behavior in high school, we asked respondents an identical question about binge drinking in high school (Table 1). Our analyses indicated that drinking behavior in high school was by far the strongest predictor of drinking behavior at UI. In addition, we compared first-year students' binge drinking in high school and college. We found a substantial increase (21.6 percentile points) in binge drinking between first-year students' reported high school drinking behavior and their reported drinking at Iowa. This suggests that the major socialization to binge drinking at Iowa occurs sometime during the first year of college, perhaps as early as the first semester. The data show, too, that although reported binge drinking behavior shows a significant increase between high school and the second semester of college, binge drinking does not decrease significantly by the end of the senior year. This implies that binge drinking behaviors, once established in the first year, did not change significantly over the respondents' time in college.

The extent of binge drinking reported by students in the RISE survey is consistent with other research on Iowa students' use of alcohol. The University has participated in the Harvard School of Public Health's College Alcohol Study (see Wechsler & Nelson, 2008), and, for nearly twenty years, has conducted



internal studies of student health-related practices. All the studies point not only to consistent levels of binge drinking over time, but also consistently high

levels: UI students are consistently at the top end of the national averages for binge drinking.

Other College Experiences and Binge Drinking

One of our research questions was what, if any, UI experiences were associated with binge drinking? Were certain experiences likely to contribute to binge drinking? Did some experiences seem to inhibit binge drinking? And did such experiences differ for first-year students and seniors? In these analyses, statistical controls were introduced for a wide range of individual student characteristics (e.g., sex, race/ethnicity, ACT composite score, high school and college grades, place of residence at UI, intended or actual major, parents' education) and college experiences (e.g., an array of specific extracurricular involvements). Table 2 reports the results.

For first-year students, two experiences were associated with binge drinking: (1) belonged to a fraternity or sorority, and (2) participated in intramural sports. Given the controls used in the analyses, we can assume these experiences affected drinking separately; we cannot know from our data, however, why these experiences were associated with binge drinking. Three college experiences were associated with lower levels of (or no) binge drinking for first-year respondents: (1) participated in a living-learning community, (2) was a member of the honors program, and (3) participated in a racial or cultural awareness workshop. Recall that controls were in place for UI and high school grade point averages and ACT composite, so the impact of membership in "the honors program" (the wording used in the survey) is independent of student academic background or achievement. Again, we cannot know from the survey responses what these experiences entailed nor why they seemed to limit binge drinking.

As with first-year students, two experiences – the same two experiences – were associated with binge drinking for seniors: (1) belonged to a fraternity or sorority, and (2) participated in intramural sports. In addition, participation in an internship or co-op program also was associated with binge drinking. The nature or reason for these relation-



ships is impossible to ascertain from our data. For seniors, four experiences had a significant negative association with (that is, seemed to decrease or inhibit) binge-drinking: (1) was a member of the honors program, (2) served as a peer educator, (3) participated in a racial or cultural awareness workshop, and (4) tutored or taught other students.

An important inference from these results is that engagement in a number of experiences that are associated, in general, with student success – such as participating in a living-learning community, serving as a tutor or peer educator, and participating in a racial or cultural awareness workshop – also is associated with lower levels of binge-drinking frequency. One could assert, then, that encouraging more extensive involvement in these and other educationally-purposeful activities could be part of a comprehensive effort to curb binge drinking at UI. This is a point to which we return. These results argue for examination and explanation of the experiences – "Greek" affiliation and participation in intramural sports – that were associated with binge drinking for both first-year students and seniors. What is it about these experiences that appears to contribute to binge drinking and how might those factors be addressed?

Table 1

Binge Drinking Behavior

	6 or more times		3-5 times		2 times		1 time		0 times	
	First Year	Senior	First Year	Senior	First Year	Senior	First Year	Senior	First Year	Senior
Times drank 5 or more drinks within a two-week period in college	10.5%	13.5%	25.4%	29.2%	17.9%	19.7%	15.4%	16.1%	30.7%	21.5%
Times drank 5 or more drinks within a two-week period in high school	4.1%	3.6%	12.2%	12.1%	15.3%	13.7%	14.7%	18.4%	53.7%	52.2%

Table 2
UI Experiences Associated with Binge Drinking

Number of Binge Drinking Episodes in Two-Week Period	
Influenced positively by (or increased binge drinking frequency):	
Belonged to a fraternity or sorority	(F, S)*
Participated in intramural sports	(F, S)
Participated in an internship or co-op program	(S)
Influenced negatively by (or decreased binge drinking frequency):	
Participated in a living-learning community	(F)
Was a member of the honors program	(F, S)
Participated in a racial or cultural awareness workshop	(F, S)
Served as a peer educator	(S)
Tutored or taught other students	(S)

*An (F) indicates a significant effect for first-year students, an (S) indicates a significant effect for senior students, and an (F, S) indicates a significant effect for both samples.

Fraternity and Sorority Membership and Binge Drinking

In light of the results showing a positive association between fraternity/sorority membership and binge drinking for first-year students and seniors, we examined possible differences between fraternity/sorority members and students who were not members of “Greek” organizations in binge drinking frequency. Once again, we implemented statistical controls for student characteristics, college experiences, and self-reported levels of binge drinking in high school. These analyses revealed that first-year students and seniors who were members of fraternities and sororities were significantly more likely to binge drink in college than their non-affiliated peers. For example, “Greek” first-year students were 1.8 times more likely to binge drink at least once in a typical two-week period than nonaffiliated students. For seniors who were members of fraternities and sororities, the odds of binge drinking at least once in a typical two-week period were 2.4 times that of their non-affiliated peers.

Members of fraternities and sororities also were more likely to binge drink at higher levels than non-affiliated students. First-year fraternity/sorority members were about twice as likely as their non-affiliated peers to binge drink at least twice, and as much as five times, in a typical two-week period; first-year “Greeks” were not significantly more likely than their non-affiliated peers to binge drink six or more times. Differences for seniors were even more striking. When compared to non-affiliated seniors, senior members of fraternities and sororities were (1) 3 times more likely to binge drink twice, (2) 2.6 times more likely to binge drink three to five times, and (3) 3.5 times more likely to binge drink six or more times, in a typical two-week period in college.

Further analysis showed no differences between men and women in the impact of fraternity/sorority membership on binge-drinking frequency. In addition, for both first-year and senior students, there were no statistically significant conditional effects based on high school binge drinking frequency. That is, the significant positive relationship between Greek affiliation and binge drinking frequency was the same for students who reported they did not binge drink in high school as for students who reported they did. We infer from this that the significant influence of fraternity/sorority affiliation on binge drinking is an effect of socialization, rather than of recruitment. Even when levels of reported high school



binge drinking (as well as other potential influences) were taken into account, Greek affiliation increased substantially the odds that a student would binge drink in college. Though fraternities and sororities at The University of Iowa might not recruit binge drinkers, they appear to create them (Asel, Pascarella, & Seifert, 2007).

These results also warrant further examination and, perhaps, action. Given the vast array of serious potential consequences of high-risk drinking, this evidence that first-year and senior members of fraternities and sororities are significantly more likely than non-affiliated peers to binge drink and to binge drink at higher levels is a matter for urgent concern and should not be disregarded in plans to address binge drinking at The University of Iowa.

“These analyses reveal that first-year students and seniors who were members of fraternities and sororities were significantly more likely to binge drink in college than their non-affiliated peers.”

Impacts of Binge Drinking on College Outcomes

We analyzed the survey data to identify what, if any, impact binge drinking had on desired outcomes of college (e.g., cumulative grade point average, growth in general/liberal arts education, growth in career/professional preparation, personal/interpersonal growth) for the survey respondents. Again, in each analysis, we introduced statistical controls for student characteristics and college experiences, as well as reported levels of binge drinking in high school. In the presence of those controls, level of binge drinking had a significant link with only one outcome measure: cumulative UI grade point average (Figure 1). On this outcome, there was a clear inverse relationship between binge drinking frequency and grades for both first-year and senior students. As frequency of binge drinking increased, grade point average decreased. So, for example, binge drinking twice in a typical two-week period (versus not binge drinking) was linked to a penalty of .08 of a grade point for seniors. Binge drinking three to five times (versus none) led to a drop of .095 of a grade point for first-year students and .144 of a grade point for seniors. Finally, first-year students who reported binge drinking six or more times in a typical two-week period had average grades .284 of a grade point

lower than their peers who did not binge drink. The cumulative grade point average for seniors who reported binge drinking six or more times was .203 points lower than their peers who did not binge drink. To the extent that college grade point average can influence access to educational and career opportunities after college, the impact of binge drinking on this outcome is noteworthy.

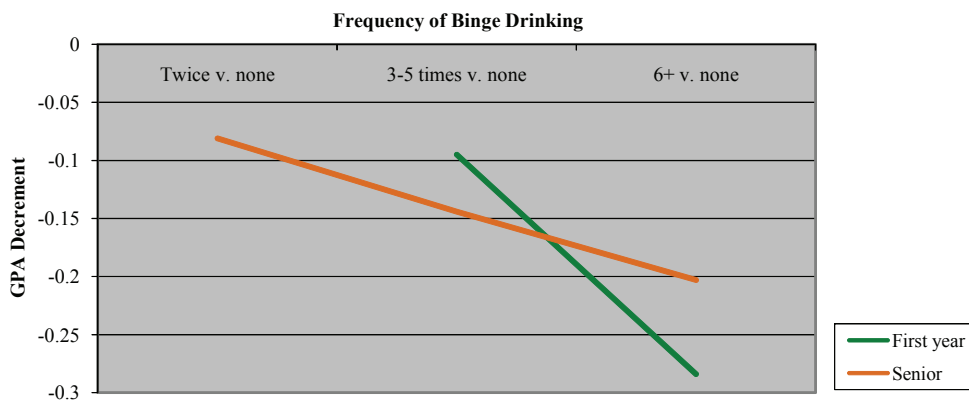
We speculated that the negative effects of binge drinking on grades could be explained by the negative effects of binge drinking on time spent studying or preparing for class. Therefore, we added a measure of hours-per-week spent preparing for class (e.g., studying, reading, doing library research, writing, rehearsing, and other activities related to one’s academic program) to the regression equations. We found, however, that the negative effects of binge drinking on grades remained statistically significant; thus, the effect of binge drinking on grade point average is independent of time spent in class preparation.

We conducted additional analyses to determine if the negative impact of binge drinking on grades differed by race/ethnicity, sex, or tested academic preparation (i.e., ACT composite score). Our analyses indicated no statistically significant differences

based on any of these characteristics. Given the positive association between fraternity or sorority membership and binge-drinking, we also examined whether the negative effect of binge drinking on grades was greater for “Greeks” than non-affiliated students. Once again, we found no significant difference; the negative effect of binge-drinking on grades was no worse for fraternity or sorority members than their non-affiliated peers.



**Figure 1
Significant Estimated Negative Effects of
Binge Drinking on Cumulative GPA**



Above graph presented in percentages of one grade point

Binge Drinking Frequency	First year	Senior
Twice v. none	*	-8.10%
3-5 times v. none	-9.50%	-14.40%
6+ v. none	-28.40%	-20.30%

*No statistically significant differences

“A Culture of Drinking”

Alcohol consumption by UI students also was raised by the students in every RISE interview. Although the focus group protocols did not include questions about drinking, the topic was addressed extensively by the students in the interviews; alcohol use – in the words of some respondents, “a culture of drinking” – was in the forefront of their UI experiences.

First-year students described underage drinking as common, and most first-year students perceived few social alternatives to alcohol-related events; this was a frustration for many, but not for all. In a few cases, respondents described “partying” – in particular, excessive alcohol consumption and underage drinking – as a positive attribute of student life at the University (e.g., as a reason to choose to attend UI or a highlight of one’s UI experience). For many first-year students and seniors, it was simply a fact of student life. Comments such as “Drinking is just part of undergraduate life [and] part of how students adjust to college” were typical from these students. For many others, however, it was a distinct disadvantage in terms of, for example, its negative impact on social life (e.g., the comment “There’s nothing to do here but drink” was common), academic life (e.g., class attendance, amount and seriousness of intellectual activity in and out of class, academic motivation of “typical” UI students), UI’s external reputation (e.g., as a “party school”), and quality of life in the residence halls (e.g., complaints that noise from “partiers” interfered with sleep and study time).

Several senior interviews included in-depth discussions about frustration with this “culture of drinking,” including a fairly widespread perception that “the University isn’t doing all it could or should” to address that culture. Indeed,

some seniors asserted that Iowa’s “reputation as a party school” was associated with its perceived lack of academic challenge; that is, if UI provided more academic challenges, students would not be able to spend as much time partying as they do.* Some also worried that the party-school reputation would have a negative impact on their future employment prospects or admission to graduate school.

Because of the open-ended nature of our interview protocols, we did not ask specific questions about binge drinking, and it was mentioned only rarely as a specific phenomenon. Nevertheless, we found the amount and extent of alcohol consumption students described in the interviews, and the key role students ascribed to drinking in the UI student culture, disturbing.

Summary and Implications

The RISE data demonstrate alcohol use – including excessive consumption – influences experiences and outcomes of UI undergraduates from entry through the senior year. As far as we know, this study is unique in looking at the negative consequences of binge drinking on grades in the context of rigorous statistical controls; we were surprised at the significance of those consequences, as well as the extent and durability of binge drinking behaviors across time in college. These results also point to two types of UI experiences – fraternity and sorority membership and intramural sports – that were associated with binge drinking for both first-year students and seniors. Both imply a need for additional study; in particular, the significant differences in frequency and lev-



els of binge drinking between fraternity and sorority members and non-affiliated students call for serious attention.

There is some good news, however, in these results. Some educationally-purposeful out-of-class experiences had significant negative associations with binge drinking. Evidence of the impact of such activities on student success in college is plentiful (c.f., Kuh et al., 2005; Pascarella & Terenzini, 2005); this study points to their potential inhibiting effect on binge drinking as well. Efforts to expand involvement of UI students in these and similar endeavors should, therefore, be considered. And our interviews indicated that, for some students, the “culture of drinking” is a negative aspect of student life at Iowa; this demonstrates potential student support for efforts to curb binge drinking.

Research elsewhere on efforts to reduce excessive alcohol consumption on college campuses also reveals promising practices. A 2007 summary of studies of college drinking by the National Institute on Alcohol Abuse and Alcoholism (NIAAA) noted “a close collaboration between colleges and their surrounding communities is key. This includes environmental approaches (such as more vigorous enforcement of zero tolerance laws . . . and strategies to reduce the availability of alcohol) as well as approaches that target the individual drinker (such as wider implementation of alcohol screening, counseling, and treatment programs) . . . Successful interventions *operate simultaneously* (emphasis added) to reach individual students, the student body as a whole, and the greater college community.” (p. 2)

“The RISE data demonstrate alcohol use – including excessive consumption – influences experiences and outcomes of UI undergraduates from entry through the senior year.”

Continuing the Conversation about High-Risk Drinking at Iowa

Questions for Faculty

- What role can you, as a faculty member, play in addressing the “culture of drinking” at Iowa? What expectations do you communicate to your students?
- In what ways might you incorporate discussions regarding high-risk alcohol use into your interactions with students? Are there, for example, assignments or discussion topics relevant to the alcohol culture that are relevant to your course content?
- How might you encourage student participation in educationally-purposeful activities and discourage participation in high-risk drinking behaviors?
- What steps would you take to talk with a student whose alcohol use concerns you? What resources are available on campus to assist students with substance abuse problems?

Questions for Staff

- What role can you, as a staff member, play in addressing the “culture of drinking” at UI? What expectations do you communicate to students?
- In what ways might you incorporate discussions regarding high-risk alcohol use into your interactions with students?
- How might you encourage student participation in educationally-purposeful activities and discourage participation in high-risk drinking behaviors?
- What steps would you take to talk with a student whose alcohol use concerns you? What resources are available on campus to assist students with substance abuse problems?

Questions for Institutional Leaders

- What are the policy implications of the data reported in this research brief?
- The NIAAA Report mentions the importance of focusing on three levels of intervention --individual students, the student body as a whole, and the greater college community – to address high-risk drinking behavior. To what extent could the UI do more in each area and what specific roles should UI leadership play in addressing high-risk drinking in these ways?

Questions for Students

- What impact has alcohol use (your own or other students) had on your college experience at Iowa? What resources are available to you to address negative effects of alcohol?
- What role can you play in addressing the “culture of drinking” at Iowa? What specific steps can you take?
- What role can students take in changing the reputation of the UI as a “party school”?
- What role can you play in addressing the student concern that there is “nothing to do at Iowa but drink”? Do you agree or disagree with this perception? Why?

References and Additional Resources

- Asel, A.M., Pascarella, E.T., & Seifert, T.A. (2007, November). *The effects of Greek affiliation on college experiences and outcomes: A portrait of complexity*. Paper presented at the Annual Meeting of the Association for the Study of Higher Education, Louisville, KY.
- Kuh, G.D., Kinzie, J.I., Schuh, J.H., Whitt, E.J., & Associates (2005). *Student success in college: Creating conditions that matter*. San Francisco: Jossey-Bass.
- Pascarella, E.T., Goodman, K.M., Seifert, T.A., Tagliapietra-Nicoli, G., Park, S., & Whitt, E.J. (2007). College student binge drinking and academic achievement: A longitudinal replication and extension. *Journal of College Student Development*, 48, 715-726.
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- Wechsler, H., & Nelson, T. (2008). What we have learned from the Harvard School of Public Health College Alcohol Study: Focusing attention on college student alcohol consumption and the environmental conditions that promote it. *Journal of Studies on Alcohol and Drugs*, 69, 481-490.

On-line reports:

- National Institute on Alcohol Abuse and Alcoholism: What Colleges Need to Know: An Update on College Drinking Research: http://www.collegedrinkingprevention.gov/1College_Bulletin-508_361C4E.pdf.
- National Institute on Alcohol Abuse and Alcoholism: A Call to Action: Changing the Culture of Drinking at U.S. Colleges: http://www.collegedrinkingprevention.gov/NIAAACollegeMaterials/TaskForce/TaskForce_TOC.aspx
- American Medical Association: High-risk Drinking in College: <http://www.ama-assn.org/ama/put/category/3558.html>
- University of Iowa National College Health Assessment Data, Spring 0007: http://www.uiowa.edu/~shs/health_iowa/HIPdata.shtml
- University of Iowa Student Health Interests and Practices Survey, 2006: http://www.uiowa.edu/~shs/health_iowa/documents/Healthpractices.pdf and <http://www.uiowa.edu/~shs/documents/summaryHIP2006.pdf>

*For RISE results regarding academic engagement, see RISE Brief No. 1 (May 2008): http://www.education.uiowa.edu/crue/publications/documents/RISE_Brief_Academic_Engagement.pdf