Patterns of Drinking Among College Students by College Major

Amanda L Smith
Department of Psychology
Miami University
501 East High Street
Oxford, OH 45056 USA

Faculty Advisor: Dr. Rose Marie Ward

Abstract

Alcohol consumption amongst college students is on the rise despite intervention and prevention efforts (9). Problematic alcohol consumption is associated with alcohol-related consequences including academic problems, personal injury, risky sexual behavior, impaired driving, property damage, physical violence, and suicide (9). Leisure activities and timing of classes are correlated with the prevalence of drinking (3, 11, 12). Whereas some aspects of academic load are related to timing of alcohol consumption, it is unknown if major is related to alcohol consumption. Using a sample of 232 college students from a mid-sized university, we examined a variety of definitions with respect to college major groups and their relationship to alcohol consumption. It seems that social science majors experience more alcohol consequences, soft sciences drink more often, and that undecided students drink more often and in larger amounts than other students.

Keywords: Alcohol, College, Major

1. Introduction

On average, 1,825 college students between the ages of 18 and 24 die from alcohol-related unintentional injuries and about 3,360,000 students drive under the influence of alcohol per year (4). Consistently, national samples report high levels of alcohol consumption among college students (e.g., 14, 5, 9). For example, researchers estimate that over 40% of college students drink heavily (6). Not only are college students regular consumers of alcohol, they also experience the largest proportion of negative consequences associated with alcohol (e.g., drinking and driving), and the rate of negative consequences is increasing (9). Moreover, college students' willingness to experience these consequences relates to their level of consumption (12).

These startling statistics indicate a legitimate problem that extends beyond the 'college experience' belief that suggests that excessive drinking is a necessary part of college life. Heavy episodic drinking has been constantly on the rise despite intervention and prevention efforts (9). Excessive alcohol consumption is associated with alcohol-related consequences including academic problems, personal injury, risky sexual behavior, impaired driving, property damage, physical violence, and suicide (9).

White and Labouvie (7) examined alcohol problems and developed a measure for alcohol consequences that is used by many researchers. The Rutgers Alcohol Problem Index (RAPI) assesses both positive and negative consequences, (i.e., talking to new people, or skipping class). Leisure activities and timing of classes are correlated with the prevalence of drinking (3, 12, 15). Whereas some aspects of academic load are related to timing of alcohol consumption, it is unknown if academic major and course load relate to alcohol consumption.

Numerous studies have been conducted on the trends and patterns of college alcohol use across the academic semester. Researchers have learned that students tend to drink more across the social weekend (i.e., Thursday, Friday, and Saturday; 3), and these drinking patterns are associated with: course schedules (15), class standing (2, 3,

10) employment (1), and work load (8). There is a gap in research regarding specific variables that may influence and explain the type of student who may be drinking often.

Research of alcohol use on college campuses ample, however few researchers have examined at college majors, frequency of alcohol use in a typical week, number of drinks, and alcohol consequences simultaneously. Past research indicates certain expected trends among collegiate alcohol use. Finlay and colleagues (3) determined that obligations (work, spiritual, leisure) impact alcohol consumption. In this case, activities that involved socialization, alcohol use was more prevalent; however, spiritual and media use was negatively correlated with alcohol consumption. This can potentially be applied to obligations found within specific majors, such as specific required courses and credits, or academic division. Wechsler, Davenport, Dowdall, Moeykens, and Castillo (13) determined that alcohol consumption (in general) varies across academic majors with business majors having the highest consumption rates. However, Wechsler and colleagues (13) did not examine other aspects of alcohol consumptions (e.g., alcohol related consequences) across major. Other researchers examined major classification by hard and soft sciences (6). The researchers found that hard science majors experience higher levels of stress in comparison to their soft science counterparts. The research of stress in relation to alcohol use is limited, however one study states that work-school conflict is negatively correlated with alcohol consumption (1).

Given these initial studies, we have set forth two hypotheses. First, we hypothesize that there will be a significant difference in majors and alcohol consumption during a typical week. Next, we hypothesize that students with more stressful majors (6) will drink less than students will less stressful majors.

2. Method

2.1. Participants:

A total of 232 students (124 women, 107 men) from a highly selective midsized Midwestern University were recruited during an evening data collection as part of a larger study. Both men and women ranged in age from 18 – 23 years of age, with two 29 year old outliers ($M = 20.4$, $SD = 1.6$). The sample was mostly Caucasian (90.9%), not married (95.7%) students whose year in school varied (17.7% first year student, 22.4% second year student, 25.4% third year student, 29.7% fourth year student, 3.4%, and 1.3% graduate student) with an average GPA of 3.31 ($SD = .48$). There were 60 different majors from 12 academic divisions (categorized by Miami University) selected by the participants with 22.4% business, 11.2% health and social services,10.8% math and science, 9.5% social sciences, and 8.6% education. The majority of the students came from educated families, 73.7% of fathers and 70.3% of mothers had a Bachelor's degree or higher and 50.9% of families made over $100,000 a year.

2.2. Materials And Procedures:

The participants were recruited during evening field data collection. The survey consisted of about 160 different questions, 38 of which were used directly in the present survey. The survey consisted of a series of demographic questions, as well as frequency of alcohol use questions, and the RAPI.

2.2.1. the rutgers alcohol problem index (7).

The RAPI is a 23-item survey asking about the numbers of occurrences of certain alcohol consequences (0-3; 0 = none, 1 = 1-2 times, 2 = 3-5 times, 3 = more than 5 times). Questions consisted of negative school, relationship, and personal consequences. The mean for the RAPI was 3.32 (SD = 5.63). The internal consistency for the scale was .91 in the current sample.

2.2.2 alcohol consumption.

Participants were provided with the definition of a standard drink. They were asked to report their highest drinking occasion in the past 30 days, the typical number of drinks that they had on a drinking occasion, and the typical number of days they drank each week.

2.2.3. coding the majors.

Majors were self-reported by the participants in a text-entry question. As a result, there was a large amount of variance in the responses, from spelling errors, to technical errors (i.e., listing majors with incorrect names, or listing majors that had recently been changed. We coded majors in three distinct ways; major subject (a 12-point categorization, provided by the Miami University majors by subject classification), hard vs. soft science majors (6), and credit requirements (retrieved from the Miami General Bulletin). The major subject included large subject groups such as, Business, Education, and Engineering. The hard and soft science majors were coded based on the amount of biology, chemistry, and mathematics courses required to complete the major, if more than 6 courses were required, the majors were considered a hard science, and opposite a soft science (6). Division requirements were omitted, and only major specific courses were documented. The credit requirements were based on the amount of required credits, participants were separated based on the requirement of 40 credits or more, and less than 40 credits, and this is about average for the majors.

3. Results

The results of the one-way ANOVA for the Major Code, which refers to the division of the majors into categories based on subject (Miami University, 2011), shows that there was a significant difference between Social Science majors ($M = 7.62$, $SD = 9.56$) compared to Communications majors ($M = 1.20$, $SD = 1.82$) and Health and Social Science majors ($M = 1.68$, $SD = 3.39$) with respect to RAPI responses, $F(11, 183) = 1.96$, $p = .03$.

Table 1. descriptive statistics of major subjects by RAPI results

	M	*SD*
1. Business	3.18	4.45
2. Communication	1.20	1.82
3. Computing	4.50	3.54
4. Education	3.5	5.06
5. Engineering	4.25	8.79
6. Health & Social Services	1.68	3.39
7. Humanities	1.69	3.70
8. International	1.33	2.06
9. Math & Science	4.73	6.79
10. Political Science	3.13	4.12
11. Social Sciences	3.13	9.55
12. Undecided	7.62	3.55
	2.20	5.69

Social science majors reported significantly more alcohol-related consequences. Although, when coded by major division, there were no differences in the drinking tendencies (i.e., peak drinking occasion, typical number of drinking days, typical number of drinks), it seems that Social Science majors experience more consequences.

Another one-way ANOVA examined the difference between the hard and soft science majors. In a typical week, hard science majors ($M = 2.02$, $SD = 1.16$) and soft science majors ($M = 2.51$, $SD = 1.32$) differ in the amount of days they drink at least one drink $F(2, 206) = 5.58$, $p = .004$.

Table 2. descriptive statistics of hard and soft science majors by typical week of alcohol use

	M	*SD*
1. Hard Science	2.02	1.62
2. Soft Science	2.51	1.32
3. Other	1.50	1.45

Soft science majors drank more often than hard science majors, however, we did not find any other significant results.

A one–way ANOVA compared people in majors with more than 40 credit hour requirements ($M = 2.18$, $SD = 1.34$), less than 40 credit requirements ($M = 2.50$, $SD = 1.24$), and undecided majors ($M = 1.50$, $SD = 1.45$). We found that in a typical week the groups differed in the amount of days they drink at least one drink.

Table 3. descriptive statistics of credit requirements by drinking patterns

	Typical Week		*Typical Day*		*30 Day Period*	
	M	SD	M	SD	M	SD
1. Less than 40 Credits	2.50	1.24	5.76	3.54	9.89	4.91
2. More than 40 Credits	2.18	1.34	5.09	3.13	8.88	5.53
3. Other/ Undecided	1.50	1.45	3.33	2.49	5.83	5.04

In this case participants in with majors that require less than 40 hours are drinking more often than participants in the other category, $F(2, 206) = 6.75$, $p = .02$. We found that the participants with major requirements of less than 40 credits drank more in a typical day than the other/undecided participants, $F(2, 203) = 3.32$, $p = .03$. We also found that our less than 40 credit participants had the highest drinking episode in the past 20 days compared to the other/undecided participants, $F(2, 200) = 3.51$, $p = .03$.

4. Discussion

Alcohol consumption remains a prominent issue on college campuses (9). This study was the first to examine alcohol consumption differences across a variety of classifications of field of study. Altering the classification for major showed very different results depending on the method. With the discovery of Social Science majors experiencing the most alcohol consequences, soft science majors drinking more in a typical week than hard science majors, and our students with majors that require less than 40 credits drinking more in a typical week, typical day, and in a 30 day account of highest episode, we have opened the door to more specialized research on this topic. Testing students who have already been out drinking gives us a more specialized sample. With our findings, we have furthered alcohol research and given insight into the current trends of alcohol use in association with college major. This also allows us to get a large amount of information that is not limited to drinking. Based on prospective data trends, with other information we can potentially find even more drinking trends. Implications about the potential results can help us to figure out new prevention efforts in order to maintain normal drinking patterns. This will also further the information available about Thursday drinking, as well as breathalyzer research.

Compared to previous research we have both expected and unexpected results. Looking solely at major Wechsler and colleagues (13) found that business majors were drinking the most, this seems to be contrary to our results, however, due to differences in data collection, we may have eventually seen the same results. Looking at May and Cazazza (6), which our hard and soft science major classification is based upon, they found that the hard science majors experience substantially more stress than our soft science majors. This can contribute to our implications.

It is important to realize that when majors were coded by subject, there was no difference in the amount of alcohol consumed, that the soft and hard sciences, soft sciences did not drink in larger quantities, only on more days of the week, and especially for our credit requirement group, undecided majors were a substantially smaller group than the other two, thus potentially altering the results. Some possible implications for the results are that coding majors is a task that can be interpreted in many different ways. In some cases, the categorization or characteristics separating two groups seemed rather arbitrary, although based on a university classification system and a research method used in previous studies. Implications of the results indicated that it is possible for our hard science majors to experience more stress and therefore, students with soft science majors will experience less stress and will be more likely to drink. It is also possible that our less stressed students have more time to enjoy the drinking aspects of college. Further studies might experiment with other types of classification methods, as well as survey to multiple universities with a school wide recruitment process. It would be interesting to complete a longitudinal study with students based on their majors and drinking experience, whether that be by hard and soft science or by major subject, to see if the episodic drinking is highest during the semesters when students are enrolled in the least amount of major courses, or when students are completing the final courses for their majors.

Overall, this study merely breaks the surface of drinking patterns; however, it has the potential to influence future research and impact future decisions on attempts to lower the instances of college alcoholism. The findings alone indicate that a lot of variation can occur with the simple changes made by classifying majors. This is enough to encourage a closer look at the way majors are categorized in research and in academia. With more research such as this, it might be possible to completely alter the course requirements for heavy drinking majors in order to get students back into the classroom and out of the bars.

5. Acknowledgements:

6. References:

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