

Differences in College Greek Members' Binge Drinking Behaviors: A Dry/Wet House Comparison



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College Greek life students self-report high rates of binge drinking and experience more alcohol-related problems than students who are not members of the Greek system. But little research has been conducted to measure differences in alcohol-free housing (dry) and alcohol-allowed housing (wet). The purpose of this quantitative study was to investigate the alcohol consumption of Greek houses (dry sorority, wet fraternity, dry fraternity). It was found that in the Greek community, university students' scores on the Alcohol Use Disorders Identification Test-Consumption (AUDIT-C) were significantly lower for dry sorority housing members than both the wet fraternity and dry fraternity housing members, with no significant difference found between the wet and dry fraternity participants. Regardless of type, Greek-affiliated students' drinking levels appear to be high and exceed what is considered safe on the AUDIT-C for both female and male Greek students.

Keywords: binge drinking, college students, AUDIT-C, Greek system, wet/dry housing

Throughout the literature, research findings indicate that university students affiliated with the Greek system consume more alcohol and experience more alcohol-related problems than students who are not members of the Greek system (Barry, 2007; Borsari, Hustad, & Capone, 2009; Ragsdale et al., 2012). In particular, self-reported binge drinking is significantly higher among members of this community (Barry, 2007; Chauvin, 2012; Page & O'Hegarty, 2006). Research also indicates that students who come to college with a prior drinking history may seek out venues for continuing this behavior in college, as indicated by the variable of high school binge drinking being the best predictor of Greek student binge drinking (Chauvin, 2012). Borsari et al. (2009) concluded that students who use alcohol heavily in high school may self-select into the Greek system in order to find an environment supportive of their behavior. However, it also has been found that students who join a fraternity in their first year significantly increase their drinking and alcohol-related consequences compared to those who do not join (Park, Sher, & Krull, 2008).

Consequences of Binge Drinking

There are numerous costs associated with college students engaging in binge drinking behaviors, both to the students themselves and others. It is estimated that per university, the total yearly cost of alcohol-related emergency department visits is around \$500,000 (Mundt & Zakletsiaia, 2012). Negative consequences of binge drinking can range in severity from a hangover to alcohol-related problems with law enforcement to suicide attempts (Gillespie, Holt, & Blackwell, 2007). Alcohol consumption among undergraduate college students contributes annually to an estimated 600,000 alcohol-related unintentional injuries, 700,000 assaults by another student who was drinking, 1,500 alcohol-related

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student deaths, 97,000 sexual assaults, 400,000 acts of alcohol-related unprotected sex and 100,000 incidences of being too intoxicated to know if sex was consensual (Hingson, Zha, & Weitzman, 2009). Further, it has been found that 50% of men who commit rape on college campuses were drinking at the time of the offense (Cole, 2006), and women who drink on college campuses are more likely to be the victim of a sexual assault (McCauley, Calhoun, & Gidycz, 2010).

The literature provides that college students who are members of the Greek community are at greater risk for experiencing negative consequences from heavy drinking (LaBrie, Kenney, Mirza, & Lac, 2011; Nguyen, Walters, Rinker, Wyatt, & DeJong, 2011; Soule, Barnett, & Moorhouse, 2015). Fraternity and sorority membership has been positively associated with driving after drinking (LaBrie et al., 2011) and owning a fake ID (Nguyen et al., 2011). Fraternity and sorority members reported that they were twice as likely as non-Greek college students to engage in sex with someone without getting consent and were one and a half times more likely to forget what they did or where they were after drinking (Soule et al., 2015). In fact, sorority members who binge drink are significantly more likely to be injured, drive under the influence of alcohol, be sexually victimized and engage in unwanted sex than non-Greek female binge drinkers (Ragsdale et al., 2012). Given that Greek membership and binge drinking are correlated with more severe negative consequences and that fraternity and sorority members report more peer pressure to drink (Knee & Neighbors, 2002; Young, Morales, McCabe, Boyd, & D'Arcy, 2005), it is important to consider the effect of the type of housing on college student drinking behaviors.

Alcohol-Free University Housing

Because of the influence of the Greek housing environment on drinking norms, interventions at the residential level have been cited as a strategy for reducing risky drinking levels (Borsari et al., 2009). But what happens when alcohol-free policies are implemented? Do levels of risky drinking decrease? Examining alcohol-free Greek housing in general provides a mixed picture of results. First, at colleges that only allow dry housing, students are significantly less likely to drink alcohol than students at wet schools (29.1% abstainers at dry schools versus 16.1% abstainers at wet schools). But when examining only those students who report drinking while attending colleges that ban alcohol, their drinking patterns do not differ from drinkers at non-ban schools (Wechsler, Lee, Gledhill-Hoyt, & Nelson, 2001). Overall, there are lower rates of secondhand effects of alcohol use (e.g., insults, serious arguments, property damage, interrupted sleep) at schools where alcohol is banned. In residences where both alcohol and smoking are banned, there are lower levels of drinking, but not in residences where only alcohol is banned. Wechsler, Lee, Nelson, and Lee (2001) concluded that this type of substance-free residence may help protect those students who were not heavy drinkers in high school from becoming engaged in episodic drinking in college, but it does not lower drinking levels among those who did drink heavily in high school. It appears that students who are not heavy drinkers in high school are more likely to choose substance-free housing in college.

Colleges also have attempted to establish alcohol-free events as a means of decreasing alcohol use on campus. Wei, Barnett, and Clark (2010) found that during the semester that was surveyed, less than half of the students (43.9%) attended an alcohol-free party. However, for students who attended both alcohol and alcohol-free parties, their level of alcohol consumption and intoxication was lower on the nights of the alcohol-free events versus their typical drinking nights. In another study, it was found that students drank less on days they attended alcohol-free programming than when they went to other events where alcohol was present, drinking 41% fewer drinks on the evenings of late-night planned activities (Patrick, Maggs, & Osgood, 2010).

Greek Life Housing

The question remains as to how these results apply to the Greek system. Greek housing has been found to create an enabling environment for drinking (Ashmore, Del Boca, & Beebe, 2002; Borsani et al., 2009; Glindemann & Geller, 2003; Harford, Wechsler, & Seibring, 2002; Paschall & Saltz, 2007). There has been some movement toward fraternities establishing alcohol-free housing as a means of reducing risky drinking. Sororities have a history of providing alcohol-free houses, yet members still display higher levels of drinking than students who are not members of sororities (Ragsdale et al., 2012). In general, implementation of alcohol-free housing has not been found to reduce high levels of drinking (Crosse, Ginexi, & Caudill, 2006). In a study of one national college fraternity, Caudill et al. (2006) found that chapters that implement an alcohol-free policy have almost identical drinking levels compared to chapters that do not have an alcohol-free policy. However, fraternities continue to grapple with reducing the impact of alcohol use on their chapters in terms of issues such as the deterioration of living facilities and stabilizing rising liability insurance costs through the development of guidelines for alcohol-free fraternity housing (Whipple, 2005). Thus, there is limited research on whether there are any differences in drinking behaviors based upon type of Greek housing and whether decreases in drinking occur over time.

Based on a quantitative study of an alcohol-free fraternity, Robison (2007) found that members joined for environmental factors such as cleaner living conditions, better academic conditions, the ability to separate home and party life, and friendships built on a common bond. Most of the members did drink but drank at different locations. The fraternity was able to maintain its membership through focusing on recruitment, promoting the benefits of environmental factors, providing social alternatives, focusing on brotherhood and friendship, and enforcing alcohol-related rules. Information was not provided for drinking levels, but through examining grade point average, Robinson stated that this fraternity consistently ranked in the top tier academically. However, by-products of alcohol consumption still occurred, such as disturbing the peace, vandalism and threatening behavior. In some cases, students created other opportunities for drinking, such as car bars, where members would park a car in a nearby location and drink from the car. Therefore, it would appear that dry houses have a different set of risk factors. As with some of the other descriptions of alcohol-free fraternities, information on level of drinking was not reported.

Given that Greek membership is correlated with more negative consequences when members drink (LaBrie et al., 2011; Nguyen et al., 2011; Soule et al., 2015) and that there is a lack of research determining the differences in binge drinking based upon type of Greek housing and across an academic year, the purpose of the current study was to investigate the alcohol consumption of Greek houses (dry sorority, wet fraternity, dry fraternity) for two independent samples (fall and spring semesters). It is the policy of the National Panhellenic Council that College Panhellenic planned or sponsored events be alcohol free (National Panhellenic Conference, 2015). At this university, there were no sorority houses that allowed alcohol, but the inclusion of data on the drinking patterns of female members provides another aspect of drinking patterns of those involved in the Greek community. We hypothesized that members of dry sorority houses would report lower alcohol consumption than members of wet and dry fraternity houses for both fall and spring semesters, and that members of dry fraternity houses would report lower alcohol consumption than members of wet fraternity houses for both fall and spring semesters.

Methodology

Participants and Procedures

The population for this study was students residing in Greek housing at a Midwestern university during the 2012–2013 academic year ($N = 735$). Recruitment of participants was conducted to obtain two independent samples in the fall semester of 2012 and the spring semester of 2013 via announcements at fraternity and sorority chapter meetings. A total of 385 Greek members living in Greek housing took part in the fall recruitment, resulting in a response rate of 50.3%. Respondents with missing or invalid data ($n = 22$, less than 6%) were eliminated via listwise deletion, leaving a total number of 363 participants who were classified in the fall semester group. For spring, 379 Greek members participated, resulting in a response rate of 49.5%. Respondents with missing or invalid data ($n = 7$, less than 2%) were eliminated via listwise deletion, leaving a total number of 372 participants classified in the spring semester group.

During regular scheduled house meetings, the first author asked participants to complete a researcher-designed survey consisting of five demographic questions (i.e., Greek house, gender, age, cultural/racial background, academic year). The Alcohol Use Disorders Identification Test–Consumption (AUDIT-C) was utilized to obtain information about participants' alcohol use (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001; Bush, Kivlahan, McDonell, Fihn, & Bradley, 1998). Prior to administration, the participants were provided with narrative and visual aids that defined one drink as one 12-ounce beer, one 8.5-ounce malt beverage, one 5-ounce glass of wine, one mixed drink containing one (1.5-ounce) shot of alcohol, or one single (1.5-ounce) shot of liquor. On the Audit-C, the following three questions assess frequency of drinking: (a) How often do you have a drink containing alcohol? (Never = 0 points, Monthly or less = 1 point, 2–4 times a month = 2 points, 2–3 times a week = 3 points, 4 or more times a week = 4 points); (b) How many drinks containing alcohol do you have on a typical day when you are drinking? (1 or 2 = 0 points, 3 or 4 = 1 point, 5 or 6 = 2 points, 7–9 = 3 points, 10 or more = 4 points); and (c) How often do you have six or more drinks on one occasion? (Never = 0 points, Less than monthly = 1 point, Monthly = 2 points, Weekly = 3 points, Daily or almost daily = 4 points). Responses to each item are scored from 0–4, generating a maximum possible score on the AUDIT-C of 12. Higher scores reflect higher intensity of drinking. For men a score of 4 or above and for women a score of 3 or above indicates hazardous drinking or an active alcohol use disorder (Bush et al., 1998). The AUDIT-C has been found to be a valid screening tool for alcohol misuse for men and women, with optimal screening thresholds for alcohol misuse among men being a score of 4 and for women a score of 3 (Bradley et al., 2007; Frank et al., 2008), and valid and reliable for assessing alcohol consumption in college students (Barry, Chaney, Stellefson, & Dodd, 2015). Prior to each administration of the survey, the purposes and procedures of the study, confidentiality of data, and participants' rights were explained to respondents. All participants gave informed consent prior to completing the survey. All procedures were approved by the first author's Institutional Review Board, and participants were not offered any incentive for completing the survey. Demographic information regarding participants for fall and spring semesters is provided in Table 1.

Data Analysis

The Statistical Package for Social Sciences software (version 21) was utilized to screen and analyze the data. All statistical analyses are reported with alpha set at 0.05. Preliminary analyses were conducted to check the data for any outliers or errors, and no violations of linearity, normality and homoscedasticity were found. The frequencies of each variable were checked for minimums and maximums. Again, no errors or outliers were found.

Table 1

Demographic Variables by Group

	Fall Semester 2012		Spring Semester 2013	
	<i>n</i>	%	<i>n</i>	%
Greek House:				
Sorority – Dry	148	40.8	234	62.9
Fraternity – Dry	50	13.8	58	15.6
Fraternity – Wet	165	45.5	80	21.5
Gender:				
Female	148	40.8	234	62.9
Male	215	59.2	138	37.1
Age:				
18–20	268	73.8	287	77.2
21 and older	95	26.2	85	22.8
Ethnicity:				
African American	2	.6	5	1.3
Asian/Pacific Islander	3	.8	4	1.1
Caucasian	344	94.8	351	94.4
Hispanic/Latino	1	.3	2	.5
Native American	5	1.4	4	1.1
Multi-Racial	8	2.2	6	1.6
Academic Year:				
Freshman	84	23.1	107	28.8
Sophomore	128	35.3	138	37.1
Junior	82	22.6	74	19.9
Senior	69	19.0	51	13.7
Graduate	0	0	2	.5

Results

For the fall semester sample, a one-way analysis of variance (ANOVA) was used to test for AUDIT-C score differences among the Greek house variable. AUDIT-C scores differed significantly across the three house categories, $F(2, 360) = 39.958, p = .000$. Scheffe post-hoc comparisons of the three groups indicated that the sorority dry house group ($M = 5.02, 95\% \text{ CI } [4.60, 5.44]$) had significantly lower scores than the fraternity dry house group ($M = 7.94, 95\% \text{ CI } [7.40, 8.48]$), $p = .000$ and the fraternity wet house group ($M = 7.42, 95\% \text{ CI } [6.97, 7.88]$), $p = .000$. AUDIT-C scores were not significantly different between the fraternity dry house group and the fraternity wet house group at $p = .489$. When looking specifically at how often participants consume six or more drinks on one occasion, significant differences were found among the Greek house variable. AUDIT-C scores differed significantly across the three house categories, $F(2, 360) = 40.858, p = .000$. Scheffe post-hoc comparisons of the three groups indicated that the sorority dry house group ($M = 1.22, 95\% \text{ CI } [1.07, 1.38]$) had significantly lower scores than the fraternity dry house group ($M = 2.40, 95\% \text{ CI } [2.17, 2.63]$), $p = .000$ and the fraternity wet house group ($M = 2.10, 95\% \text{ CI } [1.93, 2.26]$), $p = .000$. Scores were not significantly different between the fraternity dry house group and the fraternity wet house group at $p = .175$.

When looking at the spring respondents, a one-way ANOVA showed that AUDIT-C scores differed significantly across the three Greek house categories, $F(2, 369) = 9.526, p = .000$. Scheffe post-hoc comparisons of the three groups indicated that the sorority dry group ($M = 4.76, 95\% \text{ CI } [4.41, 5.11]$) had significantly lower scores than the fraternity dry house group ($M = 5.97, 95\% \text{ CI } [5.15, 6.79]$), $p = .011$ and the fraternity wet house group ($M = 6.09, 95\% \text{ CI } [5.48, 6.70]$), $p = .001$. AUDIT-C scores were not significantly different between the fraternity dry house group and the fraternity wet house group at $p = .967$. When looking specifically at how often participants consume six or more drinks on one occasion, significant differences among the Greek house variable were found. AUDIT-C scores differed significantly across the three house categories, $F(2, 369) = 10.450, p = .000$. Scheffe post-hoc comparisons of the three groups indicated that the sorority dry house group ($M = 1.07, 95\% \text{ CI } [.95, 1.19]$) had significantly lower scores than the fraternity dry house group ($M = 1.57, 95\% \text{ CI } [1.29, 1.85]$), $p = .002$ and the fraternity wet house group ($M = 1.53, 95\% \text{ CI } [1.30, 1.75]$), $p = .002$. Scores were not significantly different between the fraternity dry house group and the fraternity wet house group at $p = .966$.

These findings supported our hypothesis that members of dry sorority houses would report lower alcohol consumption than members of wet and dry fraternity houses for both fall and spring semesters. However, the second hypothesis, that members of dry fraternity houses would report lower alcohol consumption than members of wet fraternity houses for both fall and spring, was not supported. Table 2 details Greek house scores for the three AUDIT-C questions.

Table 2*Mean Scores and Standard Deviations by Semester and Greek House Responses to AUDIT-C Questions*

Question by House	Fall Semester 2012			Spring Semester 2013		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Question 1:						
Sorority – Dry	148	1.96	.95	234	1.76	.92
Fraternity – Dry	50	2.50	.71	58	2.03	.99
Fraternity – Wet	165	2.45	.97	80	2.21	.94
Question 2:						
Sorority – Dry	148	1.89	.98	234	1.91	1.11
Fraternity – Dry	50	3.10	.86	58	2.36	1.19
Fraternity – Wet	165	2.87	1.18	80	2.35	1.19
Question 3:						
Sorority – Dry	148	1.22	.97	234	1.07	.93
Fraternity – Dry	50	2.40	.81	58	1.57	1.06
Fraternity – Wet	165	2.10	1.08	80	1.53	1.01
Total AUDIT-C:						
Sorority – Dry	148	5.02	.42	234	4.76	.35
Fraternity – Dry	50	7.94	.54	58	5.97	.82
Fraternity – Wet	165	7.42	.45	80	6.09	.61

Limitations

This study has four main limitations. First, this study used a convenience sample of Greek members from one university that is not likely to represent the population of all Greek members. The second limitation is that volunteers may have answered the survey questions differently than members of the population who did not agree to participate would have. Another limitation is that the samples might not be truly independent; some participants could have filled out the survey in both the fall and spring. The final limitation is related to the survey being a self-report measure; participants may have provided answers that did not represent their true behaviors. However, previous researchers have found a statistically significant relationship between college respondents' self-reported alcohol use when compared to the report from a collateral informant (Hagman, Cohn, Noel, & Clifford, 2010; Laforge, Borsari, & Baer, 2005).

Discussion and Implications

Regardless of whether Greek houses have a dry or wet status, drinking levels appear to be high and exceed what is considered safe on the AUDIT-C for both men and women living in Greek housing. Sororities have generally had policies that prohibit alcohol use in sorority houses, yet report levels of drinking that are considered hazardous. The lack of differences in drinking levels between men who

live in dry fraternity houses versus wet fraternity houses is disappointing, but not totally unexpected given previous studies (Caudill et al., 2006; Crosse et al., 2006). It appears that residents in the Greek system accept the norms of heavy drinking that are associated with Greek membership. Although members may have some benefits from living in dry houses, such as a cleaner environment and less disruption to academic performance, the risks of alcohol abuse continue.

The cross-sectional research provides the most interesting results, with a significant difference between drinking levels in the fall semester compared to the spring semester. In particular, a general linear univariate analysis revealed that the scores of the fall groups and the spring groups were significantly different, $F(1,729) = 26.179$, $p = .000$, with a significant interaction effect, $F(2, 729) = 38.901$, $p = .005$, where fraternity members, whether living in a dry or wet house, reported higher AUDIT-C scores than sorority members living in Greek housing. Because this study is not a repeated measures design, the results do not evaluate changes in individuals. It is not possible to determine whether some of the same students took the survey both semesters, but there is probably some overlap in the two populations. The one environmental change that occurred between the two assessment periods was the implementation of alcohol education programs that a majority of Greek students (75.8%) attended in the fall. We cannot determine that this educational program facilitated the decrease in risky drinking and need to further examine the possibility that continued programming about how to drink alcohol safely and the effects of acute alcohol intoxication may expand students' knowledge and thus impact their choices. Another consideration may be football tailgating. Glassman, Dodd, Sheu, Rienzo, and Wagenaar (2010) assessed college students at one university to examine their extreme ritualistic alcohol consumption, which is defined as consuming 10 or more drinks on game day for a male, and eight or more drinks for a female. Glassman et al. found that participants who were male, White, a Greek community member and of legal drinking age reported disproportionately higher rates of alcohol consumption on game day. Although tailgating is not observed as a major event on this campus, there may be other variables that contributed to higher drinking levels in the fall semester versus the spring semester.

Directions for Future Research

This research study offers contributions and implications for professional counselors. As a result of these findings, some important considerations for future research have emerged. First, if Greek members in dry houses are engaging in risky drinking behaviors at the same degree as members in wet houses, it is important to ascertain where they are drinking since they are not allowed to drink in their residence. Consequently, examining where the drinking occurs and how the alcohol is obtained would be beneficial. If these students are selecting other avenues for drinking that may encourage risky behaviors, such as driving, then dry houses may present some additional risks that need to be addressed. Also, little is known about members of Greek organizations who live in non-Greek housing. Do these students engage in drinking patterns similar to those who live in Greek housing when they attend Greek activities? How might their drinking patterns change when involved in activities in their non-Greek setting? In addition, drinking patterns among females in the Greek system generally reflect risky drinking patterns. Even though alcohol is not permitted in the living environments of the sororities in this sample, females still drink at high levels. More investigation into the role that the interaction of fraternities and sororities plays in levels of drinking needs to be conducted. The question of whether females drink more when engaged in fraternity activities needs to be addressed.

The second research consideration is related to other communities of which the Greek members may be a part. College athletes have been found to drink more alcohol and engage more often in binge drinking than non-athletes (Hildebrand, Johnson, & Bogle, 2001; Nelson & Wechsler, 2001). In fact, Huchting, Lac, Hummer, and LaBrie (2011) compared independent samples of Greek members' and athletes' drinking patterns and found that athletes experienced significantly greater conformity reasons for drinking (i.e., social pressures that push an individual to conform and engage in alcohol use) than Greek members. Greek members experienced significantly more social problems from drinking. However, it is unknown whether there are differences between drinking behaviors of Greek members who are athletes and those who are not. This could be important information to assist clinicians in determining where to target prevention strategies. The final research consideration relates to gaining a better understanding of how individual Greek member's drinking patterns change over an academic year. Therefore, future studies should include identifiers for participants to determine whether individual changes occur.

Conclusion

Consistent with other research, banning alcohol in Greek housing does not appear to reduce levels of drinking. Students may benefit from alcohol-free environments for reasons other than reducing drinking, but alcohol-free environments seem to have little impact on student drinking behaviors. There may even be some concerns about the risks involved in drinking away from one's residence such as driving while intoxicated. The larger issue around alcohol use in the Greek system is how to challenge the established drinking norms in ways that encourage students to drink safely. Helping students focus on the deeper meaning of Greek membership that promotes a sense of community and enhances the values of the fraternity or sorority may be a direction for future interventions.

Conflict of Interest and Funding Disclosure

The authors reported no conflict of interest or funding contributions for the development of this manuscript.

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