Fitting the mold: alcohol use and body image disturbances in athletes and greek-affiliated undergraduates

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The present study examined alcohol consumption and body image satisfaction in relation to student affiliation with varsity athletics and Greek organizations. Binge drinking, defined as the consumption of six or more drinks on one occasion, was also assessed. Results indicated that varsity athletes and Greek-affiliated students consumed alcohol more frequently and reported more binge drinking episodes compared to non-affiliated students. Additionally, students identifying with both at-risk groups (Greek-Athletes) were associated with the highest reported rates of binge drinking episodes. Greek-Athletes also yielded significantly lower body image satisfaction compared to all other participants. Findings suggest that counselors should aim prevention efforts at students affiliated with either varsity athletics or Greek organizations to reduce risk for binge drinking. Prevention efforts should also target students identifying with both at-risk groups to also address risk for body image disturbance.

Keywords: alcohol, binge drinking, body image, athletes

In addition to the problems associated with the binge drinking in college, undergraduates also report pressure to meet body image expectations. Among female college students, 58% report feeling pressured to weigh a certain amount (The National Association of Anorexia Nervosa and Associated Disorders, 2014). This body image preoccupation has been documented in university students cross-culturally, suggesting the relevance for this issue in diverse groups (Murugiah, 2012; Peltzer & Pengpid, 2012). It is likely difficult to maintain two competing lifestyles such as binge drinking and maintaining a target weight or appearance. It is likely that the best way to implement effective prevention is to target students who experience these lifestyles within their peer groups the most often. Exploring the relationship between various ways in which students identify themselves and the prevalence of binge drinking and body image satisfaction within those groups may aid in effective prevention.

Alcohol Use

Research suggests that increased alcohol use in the first year of college is related to social
pressure to conform and identify with a peer group (Capron & Schmidt, 2012; Murugiah, 2012). Therefore, students who identify with a formal peer group may be at increased risk for heavy alcohol use and binge drinking. One prominent group that students formally recognize is varsity athletes. The National Collegiate Athletic Association (NCAA) reports that there are more than 444,000 varsity athletes in the United States (NCAA, 2011). Research has identified athletic affiliation as a risk factor for higher rates and frequency of alcohol consumption compared to non-athletes (Ford, 2007; Frye, Allen, & Drinnon, 2010; Lewis, 2008). When exposed to a culture in which alcohol is consumed regularly, athletes who value identification with a peer group may conform and consume more alcohol. As illustrated in current literature, athletes binge drink more frequently and consume more alcohol overall than other undergraduates (Doumas, Turrisi, Coll, & Haralson, 2007; Leichliter, Meilman, Presley, & Cashin, 1998). This is likely because athletes perceive drinking as a social norm of their peer group and perceive acceptance as dependent on the ability to conform to group expectations (Ford, 2007).

Similarly, Greek organizations offer opportunities for peer-group identification and socialization (Capone, Wood, Borsari, & Laird, 2007). Identification with this group has also been strongly correlated with increased alcohol consumption. Specifically, members of Greek organizations tend to consume more alcohol than those who are not members of these organizations (Strano, Cuomo, & Venable, 2004). It is possible that increased alcohol consumption in Greek-affiliated students may be due to frequent social events where alcohol is served (Paschall & Saltz, 2007). Within these social events, alcohol consumption may serve as a platform for high status and approval of the group, potentially suggesting that higher rates of consumption lead to higher social status. Consistent with this theory, Greek-affiliated students consume more alcohol overall, and they also consume alcohol more frequently and experience more binge episodes compared to non-Greek-affiliated students (Huchting, Lac, Hummer, & LaBrie, 2011; Scott-Sheldon, Carey, & Carey, 2007). Given that varsity athletic participation and Greek-affiliation have both been associated with greater alcohol consumption (Ford, 2007; Huchting et al., 2011), it is critical to examine how these factors might combine to increase this risk.

**Body Satisfaction**

Students within a formal peer group who may be at higher risk for engaging in binge drinking may also be at a heightened risk for experiencing body image disturbance. The frequent binge drinking episodes that varsity athletes and students affiliated with Greek organizations experience leads to high caloric intake and increased risk for weight gain, which may also be associated body image disturbances (Bryant, Darkes, & Rahal, 2012). The pressures to conform to group norms may also apply to physical appearance. Social implications of identifying with an organized peer group may also indicate increased susceptibility to conform to social pressures associated with body image. Athletes may be at particular risk due to the emphasis on body weight and appearance in judged sports, such as swimming, gymnastics, and dance, which have all been associated with higher rates of eating-disordered behavior (Schwartz, Gairrett, Aruguete, & Gold, 2005). Although it seems likely that athletic participation and Greek-affiliation may alter students’ susceptibility to body image disturbance, the current literature comparing body image differences in these groups is mixed.

Contrary to the findings on judged sports, a review of the literature suggests that
historically, college athletes experience better body satisfaction than non-athletes, although this difference seems to be diminishing over time (Varnes et al., 2013). This change may be due to the increase in binge drinking in varsity athletes, which may be associated with poor body image satisfaction. However, gender differences in body image satisfaction suggest that the pattern of athletes experiencing better body satisfaction than non-athletes is likely more pronounced in females. Some studies find higher rates of eating disordered symptoms in female athletes compared to non-athletes, while others report no difference between the groups (Holm-Denoma, Scaringi, Gordon, Van Orden, & Joiner, 2009; Kirk, Singh, & Getz, 2001). One survey found that female varsity athletes report higher body satisfaction than non-athletes, but also endorse more disordered eating attitudes (Schwartz, Gairrett, Aruguete, & Gold, 2005), suggesting that the two are not necessarily related.

Additionally, the relationship between Greek-affiliation and body image remains unclear. Sorority membership has been associated with poor body image in some studies. Specifically, sorority members indicated higher rates of self-objectification and increased body shame after sorority rush (Rolnik et al., 2010). Again, for many pledges rush is associated with increased alcohol consumption due to hazing and therefore may lead to these unfavorable effects on body image (Kuh & Arnold, 1993). On the contrary, some studies report no significant difference in body satisfaction based on sorority affiliation (Allison & Park, 2004). Others find no relationship between sorority membership and eating behavior or attitudes (Morris, Parra, & Stender, 2011). This relationship becomes more ambiguous when considering gender as a factor. Currently no research on body image disturbance in fraternity men could be located. Due to the lack of clarity in the current findings, it is critical to further examine potential body image differences in these groups.

**Alcohol Use & Body Satisfaction**

Given the prevalence of alcohol use and body dissatisfaction in athletes and Greek-affiliated students, it is important to examine the relationship between these variables. Binge drinking in college students has been associated with poor dietary habits, unhealthy weight control, body dissatisfaction, and sedentary behavior (Laska, Pasch, Lust, Story, & Ehlinger, 2009). In an effort to avoid weight gain, some students report compensating for calories consumed from alcohol by exercising and dietary restraint (Bryant, Darkes, & Rahal, 2012; Burke, Cremeens, Vail-Smith, & Woolsey, 2010). This is particularly dangerous since habitually restraining calorie intake to compensate for planned binge drinking has been associated with eating disordered behavior (Khaylis, Trockel, & Taylor, 2009). The prevalence of body image disturbance and compensatory behavior in college students, particularly in women affiliated with sororities, highlights the need to investigate the relationship between alcohol consumption and body image in this group (Khaylis et al., 2009; Rolnik et al., 2010).

Despite evidence of a relationship between weight concern and alcohol use in both male and female undergraduates, some studies report no significant relationship between the two (Barry, Whiteman, Piazza-Gardner, & Jensen, 2013; Vickers et al., 2004). Given the contradictory evidence, the relationship between body dissatisfaction and alcohol use, particularly for college women, warrants further research.

The present study assesses the relationship between binge drinking and body image in undergraduate students based on their Greek-affiliation and varsity athletic status. It was hypothesized that alcohol use
would be positively associated with body dissatisfaction and that this relationship would be the most prominent in sorority women. It was expected that Greek-affiliated students would consume more alcohol than other students, and athletes would consume more alcohol than non-athletes. It was also anticipated that Greek-athletes would engage in the most binge drinking.

**Method**

**Participants & Procedure**

Undergraduates enrolled in a small, private college in the Mid-Atlantic region of the United States participated in the study ($N = 226$). The sample consisted of a relatively equal distribution of males ($n = 107$) and females ($n = 119$), ages 17 to 23 ($M = 19.95$). There were nearly equal distributions of freshmen ($n = 26.5\%$), sophomores ($n = 25.2\%$), juniors ($n = 22.6\%$), and seniors ($n = 23.5\%$). The large majority of the sample described their racial background as White/Anglo Caucasian ($n = 76.8\%$), with minority representations of American Indian/Alaskan Native ($n = 0.9\%$), Asian or Pacific Islander ($n = 3.6\%$), African American ($n = 9.4\%$), Hispanic ($n = 5.4\%$), and other ($n = 4.0\%$). Sixty-four participants reported Greek affiliation, and 83 participants reported varsity athletic involvement. The majority of students ($n = 170$) reported consuming alcohol, with 55 participants reporting that they were abstaining from alcohol at the time of the survey. Campus-wide fliers were distributed to recruit participants, who were entered into a raffle as an incentive for participation. Participants completed an informed consent form and the following assessments electronically or via paper-and-pencil. The Institutional Review Board of the institution approved all procedures.

**Alcohol.** The Alcohol Use Disorders Identification Test (AUDIT; Saunders, Aasland, Babor, De La Fuente, & Grant, 1993) is a 10-item questionnaire developed from a World Health Organization (WHO) project as an assessment for alcohol use disorders. The current study used four items assessing frequency of alcohol consumption, alcohol consumption on certain days or occasions, and feelings of guilt or remorse after drinking. Because the focus of the current study was to identify patterns of binge drinking rather than to make a diagnosis of an alcohol use disorder (AUD), the remaining six items of the AUDIT that assess specific criteria of AUD were not included in the survey.

The Daily Drinking Questionnaire (DDQ; Collins, Parks, & Marlatt, 1985), assesses the quantity and frequency of alcohol consumption. Weekly drinking and binge drinking were assessed based on self-report items describing participants’ usual drinking practices, how much they consumed in a typical week, and the maximum number of drinks consumed during a single occasion.

**Body Image Discrepancy.** The Figure Stimuli Scale (Bulik, Wade, Heath, Martin, Stunkard, & Eaves, 2001) was used to examine the discrepancy between an individual’s ideal and actual body image. After viewing nine pictures of body figures, participants identified which figure best matched their current body image and which matched their ideal body image. The greater distance between participants’ real and ideal body image, the higher the body dissatisfaction rating.

**Body Image Satisfaction.** The Body Image States Scale (BISS; Cash, Fleming, Alindogan, Steadman, & Whitehead, 2002) is a six-item questionnaire that was used to assess participants’ subjective perception of their body image, body weight, physical attractiveness, body satisfaction, and body size.
Results

Independent samples t-tests were conducted to detect differences based on gender. Women reported more body image discrepancy than men ($t(214) = 2.61, p < .01$), and men reported significantly higher weekly drinking ($t(185) = 5.91, p < .001$), alcohol use as assessed by the AUDIT ($t(109) = 4.38, p < .001$), and overall better body image ($t(217) = 3.25, p < .01$). One-way ANOVA was used to detect differences based on ethnicity and class standing. There was a significant effect of class standing on alcohol use. Freshmen drank significantly less than sophomores, juniors, and seniors as assessed by the AUDIT ($F(3,106) = 6.06, p < .01$) and the DDQ ($F(3,182) = 5.64, p < .01$). A significant difference was found for body image satisfaction based on race/ethnicity. Students identifying as African American reported better body satisfaction than those identifying as Hispanic ($F(5,211) = 2.28, p < .05$).

Independent samples t-tests were conducted to examine group differences based on Greek-affiliation and athletic status. As hypothesized, Greek-affiliated students reported significantly more weekly alcohol consumption than non-Greek-affiliated students ($t(185) = 2.63, p < .01$). Varsity athletes reported significantly more weekly alcohol consumption ($t(184) = 6.79, p < .001$) and overall drinking as assessed by the AUDIT ($t(108) = 5.11, p < .001$) than non-athletes. Athletic participation was also associated with greater body image satisfaction ($t(216) = 5.83, p < .001$) and lower body image discrepancy ($t(213) = 4.00, p < .001$).

Students affiliated with Greek organizations and varsity athletic teams (Greek-Athletes) reported significantly more alcohol consumption as assessed by the AUDIT ($t(108) = 2.76, p < .01$) when compared to other students. Students affiliated with Greek organizations and varsity athletic teams also reported significantly higher weekly alcohol consumption compared to all other students as assessed by the DDQ ($t(184) = 4.93, p < .001$). Additionally, Greek-Athletes reported significantly lower body image satisfaction compared to all other students ($t(216) = 2.49, p = .01$). Overall, Greek-affiliated students consume more alcohol than non-Greek affiliated students, and athletes consume more alcohol than non-athletes. Additionally, results suggest that students who are involved in both Greek organizations and varsity athletics consume the most alcohol and have the lowest body image satisfaction.

Body Image

It was expected that alcohol use would be associated with poor body image and that this relationship would be more pronounced in sorority women; however, findings were mixed. In the entire sample, the maximum number of drinks consumed per occasion was negatively correlated with perceived physical attractiveness ($r = -.19, p < .01$) and feeling one looks better than average ($r = -.28, p < .01$). However, contrary to hypothesis, consuming six or more drinks per occasion was associated with feeling one looks better than average ($r = .25, p < .01$) and perceived physical attractiveness ($r = .22, p < .01$). Also contrary to hypotheses, consuming greater numbers of drinks on one day was positively associated with perceived physical attractiveness ($r = .26, p < .01$) and feeling one looks better than average ($r = .29, p < .01$). These mixed results may, in part, be explained by discrepancies between subgroups of students.

Fisher r-to-z transformation was used to assess differences in correlations between alcohol use and body image between sorority women and non-sorority women (see Table 1). Consuming six or more drinks on one occasion was associated with greater weight satisfaction
for sorority women, but lower weight satisfaction for non-sorority women. For sorority women, weight satisfaction and belief that one looks “better than average” were associated with increased feelings of guilt after drinking; however, these variables were unrelated in non-sorority women. Feeling physically attractive was associated with higher maximum drinks per occasion for sorority women, but fewer maximum drinks for non-sorority women. As hypothesized, body image satisfaction was associated with greater alcohol use in women affiliated with a sorority, but this relationship did not hold for non-sorority women.

Discussion

Students who are affiliated with both Greek organizations and varsity athletic teams report the highest alcohol consumption; and therefore, they represent an at-risk population that warrants further attention. Furthermore, Greek-affiliated athletes report lower body image satisfaction than other students. This is surprising since athletes in the current sample reported higher body image satisfaction than non-athletes, and Greek-affiliated students did not differ from other students in body satisfaction. Poor body image in Greek-affiliated athletes may be related to the compounding effects of joining these groups, since uncomfortable induction rituals have been shown to increase dependence on group opinion (Keating, Pomerantz, Pommer, Ritt, Miller, & McCormick, 2005). This is consistent with findings suggesting that participation in sorority rush is associated with increased eating disordered behavior, and sports hazing culture is associated with negative emotional outcomes (Chin & Johnson, 2011; Rolnik et al., 2010). Given these findings, college counseling centers should provide outreach services to Greek-affiliated athletes since they appear to be at risk for body dissatisfaction and high alcohol consumption.

For women who are not sorority members, heavy drinking is negatively associated with body image and perceived physical attractiveness. It may be that due to the high caloric intake of alcohol, non-sorority women who consume more alcohol are more likely to be overweight, and hence, less satisfied with their weight. This is consistent with previous research suggesting that binge drinking has been associated with increased weight concern in college women (Vickers et al., 2004). Although heavy alcohol use is linked to poor self perception in non-sorority women, heavy drinking is associated with increased body satisfaction and feelings of physical attractiveness in women affiliated with sororities. This suggests that sorority affiliation may be a protective factor for body image satisfaction for those who drink heavily. Given the strong norms of heavy drinking in sororities, it may be that sorority culture places more value on social involvement and alcohol consumption than on body image or weight gain (Chauvin, 2012). This may lead sorority women to maintain positive body image, despite high alcohol use.

It is also possible that heavy drinking is associated with positive body image in sorority women due to self-selection. Specifically, these women may seek out Greek organizations because they share the same drinking patterns as sorority women prior to joining the organization. Research suggests that students low in neuroticism engage in more pre-college drinking and are more likely to join Greek organizations (Park, Sher, Wood, & Krull, 2009). If these students are already consuming more alcohol, it may not be the sorority that is associated with the high alcohol use, but rather a third underlying variable. Since neuroticism is associated with body dissatisfaction, it may be that women who decide to join sororities already engaged in heavy drinking and had
higher body satisfaction, in part due to low neuroticism (Swami et al., 2013). Lastly, it is possible that sorority women’s alcohol use is associated with increased attention from men, since men report finding women more sexually attractive when consuming alcohol (Friedman, McCarthy, Forster, & Denzler, 2004). Since Greek-affiliated men have been rated as more sexually aggressive, it may be that sorority women’s increased access to Greek-affiliated men renders them more likely to receive attention from men when drinking, and therefore associate alcohol use with increased self-attractiveness (Murnen & Kohlman, 2007). These findings suggest that sorority women may benefit from unique interventions to address the negative consequences of binge drinking. Furthermore, campus counselors should assess the link between heavy drinking and body image, particularly in non-sorority women. Student affairs personnel should design outreach programming to address healthy weight management, positive body image, and alcohol use for college women.

Overall, students affiliated with Greek organizations consumed more alcohol than other students. This may be the result of the culture of Greek organizations that support heavy drinking behavior (Huchting et al., 2011; Park, Sher, & Krull, 2008). These differences may also be explained by selection, through which Greek organizations select new members who consume more alcohol, perpetuating the culture of binge drinking in the organization (Park et al., 2009). Also consistent with hypotheses, varsity athletes reported significantly more alcohol consumption than non-athletes. This may also be explained by norms of heavy drinking in the culture of varsity athletics (Olthuis, Zamboanga, Martens, & Ham, 2011). This difference may also be due to the competitive drive within athletes, which may lead them to consume greater quantities of alcohol to challenge one another (Serrao, Martens, Martin, & Rocha, 2008). These findings suggest that colleges and universities should continue outreach to address alcohol safety, particularly for students affiliated with Greek organizations and varsity athletic teams.

Although Greek-affiliated athletes seem to be at the greatest risk for negative outcomes, several other demographic differences emerged. Alcohol consumption differed across class rank. Specifically, freshmen reported significantly less alcohol consumption than other students, suggesting that alcohol use may increase throughout college. This could be due to the more permissive norms of alcohol use in upperclassmen or increased ease of access to alcohol as students reach the legal drinking age (DeMartini, Carey, Lao, & Luciano, 2011). Interestingly, some studies find that as class rank and age increase, there is a decrease in alcohol use (Fromme, Wetherill, Neal, 2010; Harford, Wechsler, & Seibring, 2002). This difference may be accounted for by the timing of the data collection. Data was collected in the fall semester, the first semester for college freshmen. Thus, this pattern may have been less prominent if data were collected later in the school year, after under-age first year students have connected to resources to purchase alcohol.

Furthermore, body image differed by gender and athletic status. Specifically, women reported more body image discrepancy than men, and non-athletes endorsed more body image discrepancy than athletes. This is consistent with previous research demonstrating that women are less satisfied with their bodies than men (Çatikkaş, 2011; Frederick, Forbes, Grigorian, & Jarcho, 2007). Since varsity athletes must exercise regularly, non-athletes likely exercise less frequently than athletes, which may lead to lower body satisfaction (Malinauskas, Cucchiara, Aebly, Bruening, 2007). Given these findings, college counselors should monitor body image.
concerns, particularly in female students and those who are not involved in athletics.

Although several important findings emerged, results should be interpreted with caution given the limitations of the study. Given the lack of racial/ethnic diversity in the sample, further research is needed to determine how these findings apply to more diverse populations. Important group differences emerged with respect to body satisfaction. However, future research should assess BMI to allow for objective comparisons of weight and body type in athletes and Greek-affiliated students. Furthermore, it is difficult to interpret the relationships between body image and alcohol use without data assessing each student’s perception of the relationship between the two. Researchers should directly assess whether students consider their alcohol consumption when making decisions about dietary behaviors and body satisfaction. Lastly, due to the cross sectional nature of the study, no causal claims can be made. Additional research should examine alcohol use and body image longitudinally to allow for stronger conclusions about the relationship between alcohol consumption and body image in these groups.

This study contributes to the literature on alcohol consumption and body image in college students by highlighting the unique relationships between these variables in students affiliated with Greek organizations and varsity athletic teams. Furthermore, findings demonstrate the heightened alcohol risk for students who affiliated with both Greek organizations and Varsity athletics. It seems clear that college health personnel should target alcohol and body image intervention for this at-risk population.

References


### Appendix

#### Table 1

<table>
<thead>
<tr>
<th>Body Image Satisfaction (BISS)</th>
<th>Alcohol Use (DDQ)</th>
<th>Sorority Women</th>
<th>Non-Sorority Women</th>
<th>Z-Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight Satisfaction</td>
<td>6+ Drinks on One Occasion</td>
<td>0.14</td>
<td>-0.27</td>
<td>z = 1.91*</td>
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<tr>
<td>Weight Satisfaction</td>
<td>Feelings of Guilt/Remorse</td>
<td>0.33</td>
<td>-0.10</td>
<td>z = 2.05*</td>
</tr>
<tr>
<td>Feeling Physically Attractive</td>
<td>Maximum Drinks per Occasion</td>
<td>0.42</td>
<td>-0.12</td>
<td>z = 2.64**</td>
</tr>
<tr>
<td>Feeling One Looks Better Than Average</td>
<td>Feelings of Guilt/Remorse</td>
<td>0.51</td>
<td>0.08</td>
<td>z = 2.24*</td>
</tr>
</tbody>
</table>

Note. *p < .05, **p < .01. DDQ = Daily Drinking Questionnaire (Collins et al., 1985), BISS = Body Image States Scale (Cash et al., 2002).