

# Binge drinking and sports participation in college: Patterns among athletes and former athletes

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## Abstract

This study draws on a nationally representative sample to examine the relationship between participation in organized sport and alcohol use. We build on prior studies by re-examining the relationship between participation in organized sport and binge drinking and how this varies by both race and gender. We expand upon previous research by analyzing the long-term effects of involvement in organized athletics among both current and former sport participants and how this compares to patterns of binge drinking among the general college student population. To do so, our analysis compares rates of binge drinking among current college athletes, former athletes, and college students who were never involved in interscholastic sport. We find that: (1) organized sports participation is associated with binge drinking; (2) that this relationship holds across racial and gendered lines; (3) that the effects of exposure extend beyond time of involvement. The paper concludes with a discussion of possible explanations for the relationship between binge drinking and athletics, and the long-lasting effect of participation in organized sport.

## Keywords

alcohol, athletes, binge drinking, college, former athletes, sport

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## **Introduction**

Sports occupy a prominent role in the social landscape of youth in the United States. In 2011 alone, over four million boys and three million girls participated in organized high school sports (National Federation of State High School Associations, 2013) with approximately 56% of youth attending high school (50% of females and 62% of males) in the United States having played on at least one sport team at school or in their community (Youth Risk Behavior Surveillance Survey, 2011). Generally, these high numbers are not a cause for concern; in fact, they are often celebrated. Participation is equated with school involvement and character building and is read as a sign of a healthy community. Yet, academic studies have not always validated the celebration. Research on whether sport serves as a deterrent to deviant activity and as a character-building practice has been mixed at best (Eitle et al., 2003; Miller et al., 2005c). In addition, while sport is generally associated with healthy behavior, athletes often engage in activities—such as excessive alcohol use (Nelson and Wechsler, 2001)—that run counter to this ideal (Grunseit et al., 2012; Nattiv et al., 1997; Nattiv and Puffer, 1991; O'Brien et al., 2007). Even less is known about the longer-term effects of participation after the involvement in organized athletics ends—a situation in which the majority of the pre-mentioned seven million will soon find themselves.<sup>1</sup>

In this study we examine alcohol use and binge drinking during college among current athletes, athletes whose participation in sport ended in high school, and students who did not participate in organized sport. In doing so, we contribute to the growing body of literature centered on sports, college, and alcohol consumption by using a nationally representative sample of college students, focusing on how alcohol use may be related to the gender and race of athletes and former athletes, and extending the temporal frame of involvement in athletics. The subject is a particularly timely one, considering the increasing concern about the health and social impact of binge drinking among college students from academics, policy makers, and health professionals (Palmer, 2011).

## **Literature review**

Substance abuse, in particular binge drinking, remains one of the most prevalent and widespread social problems. Alcohol remains a leading cause of morbidity and mortality among adolescents and young adults. In the United States alone, the economic cost of excessive drinking has been estimated at US\$223.5 billion, with binge drinking accounting for 76.4% of the total (Bouchery et al., 2011). In addition, the problem is only compounded by the continued and pervasive “culture of intoxication” among youth (Martinic and Measham, 2008), with sport serving as a central site of alcohol consumption (Wenner, 1998). For this reason, from a public health perspective, understanding the relationship between sport participation and substance use has significant potential benefits for prevention efforts. Yet, the relationship remains an area not adequately studied in relation to the significant social influence of sport.

The need for further research is made even more evident by the lack of clear information and conceptual agreement in this area of study. Research findings reveal

relationships between sport participation and substance use that are at best uneven and multifaceted. In some cases, sport appears to have a protective influence. This includes lower rates of cigarette smoking and use of some illicit drugs, as well as an increase in a range of healthy behaviors, including physical activity, fruit and vegetable consumption, and improved emotional well-being among sport participants compared to non-participants (Nattiv et al., 1997; Nattiv and Puffer, 1991). However, even within these relationships there is variance by gender, race, age, a “jock” self-identity and team affiliation (Ford, 2007; Miller et al., 2005b; Pate et al., 2000; Peretti-Watel et al., 2002; Pfeiffer et al., 2006; Steptoe and Butler, 1996). In other cases, research has highlighted the negative impact of sport participation, including increased use of alcohol, chewing tobacco, and anabolic steroids (Bahrke et al., 2000; McCabe et al., 2007; Melnick et al., 2001; Miller et al., 2005a, 2007; Nattiv and Puffer, 1997; Nelson and Wechsler, 2001, 2003; Peretti-Watel et al., 2002; Walsh et al., 1994).

The lack of agreement on the effects of participation in sport extends beyond substance abuse to the larger topic of deviance and success. Some studies confirm the association between high school sports and positive academic outcomes including higher grade point average (GPA), fewer disciplinary referrals, lower absenteeism and dropout rates, higher college aspirations and attendance, and stronger commitment to school (Eccles and Barber, 1999; Marsh, 1993; Sabo et al., 1993; Snyder and Spreitzer, 1992; Whitley, 1998). On the other hand, recent studies have also suggested that participation in sport increases the likelihood of engaging in deviant activity (Feldman and Matjasko, 2005; Miller et al., 2007). To further complicate matters, others have suggested that the relationship depends on the type of deviance being measured (e.g., Hartmann and Massoglia, 2007) and the type of sport being studied (e.g., Kreager, 2007). At the very least, this lack of consistency and the continued uncertainty about the mechanisms involved suggests the need for further study and improved datasets that provide better measures of sport participation to uncover what may make sports protective or risky for various health and social outcomes.

In this article, we enter the rather murky debate by focusing on the relationship between US athletic participation and alcohol consumption in college. While alcohol has become a primary health concern on college campuses, there remains limited focus on the relationship between substance use, of all types, and athletics (Eitle et al., 2003). This is surprising considering the omnipotent presence of alcohol or alcohol-related advertising at professional sporting events (Palmer, 2011). Of particular interest to us is the practice of binge drinking, as it relates to numerous negative effects including school failure, medical issues, and increased risky activities like drinking and driving (Nelson and Wechsler, 2003; Nelson et al., 2009). Alcohol is an important factor in facilitating negative behavior, including violence, impaired driving, injury, sexual assault, risky sexual behaviors, and death (Hingson et al., 2009; Koss and Gaines, 1993; Nelson et al., 2009; Perkins, 2002). In addition, the practice is not limited to a fringe minority. According to recent studies, approximately two in five college students engage in binge drinking (Johnston et al., 2012). The danger is not relegated to the individual alone, as there is also an increased chance of experiencing negative effects for those who do not binge drink themselves but live in the same environment as a large number of binge drinkers (Wechsler et al., 1998).

Previous studies that have focused specifically on the relationship between athletic participation and alcohol have found a positive relationship between alcohol consumption and athletics. Quantitative research has shown a correlation at both the high school (Eitle et al., 2003) and college level (Leichliter et al., 1998; Nattiv and Puffer, 1991). Qualitative studies have supported these findings and characterized sport and alcohol consumption as key demonstrations of a hegemonic form of masculinity (Capraro, 2000; Curry, 1998). Research also suggests that when athletes do drink, especially at the college level, they are more likely to binge drink (Nelson and Wechsler, 2001). Unfortunately, this relationship continues even with greater exposure to health-promoting information (Nelson and Wechsler, 2001).

One group of students that remain ignored is the ex-athlete. In studies of sports, deviance, alcohol use, and masculinity, the emphasis is consistently on the athlete during their time of athletic participation. This holds across discussions of youth, high school, college, and professional athletes, as well as the casual hobbyist (Hartmann and Massaglia, 2007). The few exceptions to this have been qualitative and have often focused on the role sport, and memories of past glory, play in defining a masculine identity (e.g., Messner, 1993). The question remains, does sport have a lasting effect on participants and what happens when the threat of team-related discipline no longer serves as a deterrent?

The article proceeds as follows. Firstly, we introduce the longitudinal dataset on which our analysis is based, as well as the measures and methods used for analysis. Then, we seek to answer the following foundational questions: (1) do athletes and former athletes drink more than college students who have never participated in interscholastic sport?; (2) how do the rates of binge drinking between current athletes and former athletes in college compare?; and (3) do patterns of alcohol use vary by race and gender? Finally, we conclude by presenting potential explanations for these patterns and discussing implications of our findings, especially regarding the long-term effects of athletic participation past the period of actual involvement.

## **Methods**

### **Subjects**

Study participants ( $n = 24,799$ ) were drawn from the 1999 and 2001 Harvard School of Public Health College Alcohol Study (CAS)—a survey of students attending a nationally representative sample of 119 four-year colleges and universities in the United States. The sample also includes an oversample of all women's, and historically black and small enrollment schools. Students were selected at random based on lists provided by the registrar at each school. The sampling methods and design of the CAS are described in greater detail elsewhere (Wechsler et al., 1994, 1998, 2002). Participation in the survey was voluntary and the identity of the respondent was anonymous. The overall response rate was 59% in 1999 and 52% in 2001. No differences were noted in our study variables comparing the 1999 and 2001 datasets, so they were pooled for the purposes of this analysis. Details on the demographic characteristics and distribution in each survey are discussed in greater detail elsewhere (Wechsler et al., 2000, 2002).

## Questionnaire

The CAS is a 20-page paper-and-pencil questionnaire mailed directly to students. The survey asked respondents to report on personal characteristics, activities, and behavior related to alcohol use. The questionnaire was distributed and completed during the spring of each survey year.

Athlete status during high school and college was determined by using self-reported responses to two questions. Athletes in colleges were identified by response to the question: "In the past 30 days, how many hours per day on average have you spent on each of the following activities? Average number of hours per day: 0, 1, 2, 3, 4, 5+." Playing or practicing intercollegiate athletics was one of eight activities listed. One question in the list of eight activities asked respondents about their time spent in other physical activities (e.g., intramural athletics, jogging, biking) and this question helped distinguish members of intercollegiate athletic teams from regular exercisers. Athletes were defined as those students who participated in athletics an average of one or more hours per day. Athlete status during high school was determined by the question "Did you participate in high school athletics?" Response categories were: "No;" "Yes, earned a varsity letter;" and "Yes, did not earn a varsity letter." Those who responded "Yes, earned a varsity letter" were considered to be high school athletes (Nelson et al., 2007; Nelson and Wechsler, 2003). Participation in intramural sports was measured via a separate question on the survey. The final sample included 12,685 respondents who were athletes in high school and 3880 respondents who were athletes in college among a total of 24,799 college students.

A "drink" was defined as twelve ounces of beer (one can), a four ounces of wine (glass), twelve ounces of wine cooler, or one shot of liquor. Binge drinking was defined as consuming five or more (four for women) drinks in a row on one or more occasions during the past two weeks. Although this terminology is considered controversial in some circles, it is commonly used to describe a dangerous and costly public health problem and is a strong predictor of adverse social consequences, and thus remains a standard measure of risky alcohol use among college students (Kanny et al., 2007; National Institute on Alcohol Abuse and Alcoholism (NIAAA), 2004; Wechsler et al., 1995; Wechsler and Austin, 1998; Wechsler and Nelson, 2006, 2008).

## Statistical analyses

Differences in subjects' characteristics between athletes and non-athletes during high school and college were computed. In addition, odds ratios (OR) were computed using logistic regression to determine the degree of difference between the groups of interest and by age (under 21 years; 21 years and over), gender (male; female), and race/ethnicity. The association between athlete status and binge drinking was examined in a multi-variable analysis and controlled for factors related to being an athlete and to binge drinking, including race/ethnicity, age (under 21 years; 21–23 years; 24 years and older), and year in school. Logistic regression using the Generalized Estimating Equations was used to account for the effects of clustering by school. All analyses were performed using SAS version 9.3 software.

**Table 1.** Binge drinking by athlete status in high school and college ( $n = 24,799$ ).

Athletic involvement	Population %	% Binge drink in high school	% Binge drink in college	% change in binge drinking from high school to college
Not ever an athlete	45	22.4	35.2	57%
Athlete in high school but not college	39	33.9	51.4	52%
Athlete in high school and college	12	33.4	58.1	74%
Not an athlete in high school, but athlete in college	4	19.6	39.5	101%

## Findings

Alcohol consumption was strongly associated with athlete status during high school and college. Our first set of analyses compares binge drinking among college students by athlete status (i.e., athletes in both high school and college, former athletes, those who never participated in sport, and those who participated in collegiate, but not high school sports). This allows us to examine our initial question on the relationship between sport participation and alcohol use.

Table 1 compares rates of binge drinking among athletes and non-athletes in high school and college. There are three main findings that we want to highlight. The first, most basic, and most important is that a large increase in binge drinking occurs from high school to college regardless of the student's participation in sports. Two in five college students report binge drinking in college, which is an increase of over 50% from the rates reported in high school. In other words, college students drink to excess a lot—and a lot more in college than they did in high school.

The second finding captured in Table 1 is that athletes and former athletes report higher levels of binge drinking in college than those who have never participated in interscholastic sport. During high school, one in three respondents who were athletes in high school engaged in binge drinking, compared with one in five who did not participate in organized sport. The importance of athlete status is only magnified during the transition to institutions of higher learning. In college, former athletes (students who ended sport participation in high school) engaged in binge drinking at a much higher rate than those who did not play sport at any level (51% and 35%, respectively), while over 58% of students who were athletes at both levels participated in binge drinking. This means that over one out of every two college athletes, and one out of every two former athletes, have engaged in binge drinking during their college years. There is also evidence that the most powerful impact is at initial exposure to organized athletics. This can be seen in the dramatic increase in binge drinking for those who did not play sport in high school but did so at the college level.

The third key piece of information presented in Table 1 involves the difference in binge drinking between current college athletes and those who ended their involvement with organized athletics when graduating from high school. This finding suggests a more

**Table 2.** Binge drinking by athlete status in high school and college, stratified by sex ( $n = 24,799$ ).

Sex	Population % <sup>a</sup>	% binge drink in high school	% binge drink in college	% change in binge drinking from high school to college
Not ever an athlete				
Male	18	24.5	39.8	63%
Female	27	21.1	32.1	52%
Athlete in high school but not college				
Male	19	36.6	55.0	51%
Female	21	31.6	48.1	52%
Athlete in high school and college				
Male	7	34.8	60.4	73%
Female	4	31.2	54.2	74%
Not an athlete in high school, but athlete in college				
Male	1	20.8	43.9	111%
Female	2	17.5	31.5	80%

<sup>a</sup>Does not total 100% due to rounding.

pervasive and longer lasting impact of participation in organized sport than has been previously identified or demonstrated, and makes clear that the impact extends beyond first exposure. For instance, as highlighted earlier, continued participation in sport was associated with the highest percentage of binge drinking, with 58% of students who were athletes in both college and high school engaging in binge drinking during college. The lasting relationship for those no longer participating in interscholastic sport is observed in over half of the ex-athletes in our sample being engaged in binge drinking in college—comparatively more than those who never participated in interscholastic sport. The relationship between sport participation and alcohol persists well beyond the years of direct, active involvement in athletics.

### *Binge drinking and athlete status by race and gender*

When controlling for sex, race, and ethnicity, a few important patterns emerge, as shown in Table 2. In comparing rates of binge drinking by male and female athletes across all levels of athletic participation, we find similar percentages of binge drinking among male and female athletes, although in each case a slightly higher percentage of male respondents had engaged in binge drinking. Similar rates of binge drinking were evident at both the high school and collegiate levels, with the lone exception being athletes who did not participate in organized sport in high school—although this was not statistically significant.

These results demonstrate that the positive association between participation in sport and binge drinking holds for both males *and* females. It is worth stressing that over half of the females who participated in sport at both the high school and college levels engaged in binge drinking, a level considerably higher than females who never participated in sport. Similarly, former female athletes also engaged in binge drinking at levels

significantly higher than non-athletes (48% to 32%). This finding does not necessarily eliminate masculinity as a potential explanatory variable; however, as we will discuss shortly, it does signal the need for a more nuanced understanding of the performance of gender by both male and female athletes. These patterns also clearly call for public health officials to take seriously the relationship between sport and alcohol for female, as well as male, athletes.

When stratifying by race, as shown in Table 3, a few important patterns emerge. Firstly, white respondents engaged in binge drinking at a dramatically higher level than any other group. In most cases, the percentage of white students who had engaged in binge drinking was at least twice as large as their counterparts in other racial categories. In fact, the white non-athlete, the sub-category with the lowest percentage of binge drinkers (40%), still had a higher percentage than all other sub-groups with the exception of that very small group composed of Native American and other respondents that did not identify as white, African-American, or Asian, ex-athletes and students who competed in sports at both the high school and college level.

Secondly, the relationship between sport and binge drinking held across white, African-American, Asian/Pacific Islander, and Native American/Other respondents. In all cases, people exposed to organized sport drank the most, with first exposure resulting in the largest increase in binge drinking. First exposure to sport at the college level had a particularly dramatic impact on African-American members of our sample. However, it is important to note that even with this dramatic increase, the white counterpart still engaged in significantly higher rates of binge drinking (21% to 53%).

Finally, the findings presented in Table 3 indicate that the longer lasting impact of exposure to sport holds across all racial and ethnic subgroups. In all cases, former athletes drank significantly more than their respective never-an-athlete counterpart.<sup>2</sup> This stands out as one of the most important findings of our research and adds to understanding of the timing and persistence of the drug–sport relationship.

## **Discussion and conclusion**

Our research yields three main findings. Firstly, participation in organized sport is positively associated with binge drinking. This pattern exists at both the high school and collegiate level and supports previous assertions of a positive relationship between sport and drinking. The second main finding is that the relationship between sport participation and alcohol use holds true across racial and sex division. In fact, participation in sport is associated with a higher percentage of binge drinking than a comparable group who has not participated in sport whether or not they are females or males, or identify as any specific racial group. This is an important finding that underscores the need to answer the question as to why any exposure to athletics results in higher binge drinking. In addition, it suggests that public health officials should also seek to understand the significance of the first exposure to sport, the time when the greatest increase in binge drinking occurs, and that prevention efforts to target binge drinking may need to target sports participants specifically.

Our third main finding is that the relationship between exposure to organized sport and binge drinking extends beyond the time of active engagement in sport as an athlete.



**Table 3.** Binge drinking by athlete status in high school and college, stratified by race/ethnicity ( $n = 24,799$ ).

<i>Race/ethnicity</i>	<i>Population %</i>	<i>% binge drink in high school</i>	<i>% binge drink in college</i>	<i>% change in binge drinking from high school to college</i>
<b>White (75%)</b>				
Not ever an athlete	32	26.5	40.2	52%
Athlete in high school but not college	33	36.8	55.4	50%
Athlete in high school and college	9	29.4	52.5	78%
Not an athlete in high school, but athlete in college	2	38.2	64.3	69%
<b>African-American (7%)</b>				
Not ever an athlete	4	6.9	13.9	102%
Athlete in high school but not college	2	10.8	21.8	102%
Athlete in high school and college	1	4.4	20.6	365%
Not an athlete in high school, but athlete in college	<1	13.3	32.3	144%
<b>Asian (8%)</b>				
Not ever an athlete	5	10.4	20.3	96%
Athlete in high school but not college	2	18.6	33.3	79%
Athlete in high school and college	1	8.4	23.0	172%
Not an athlete in high school, but athlete in college	1	15.2	32.4	113%
<b>Other (9%)</b>				
Not ever an athlete	4	21.1	33.8	60%
Athlete in high school but not college	3	29.2	41.5	42%
Athlete in high school and college	1	14.6	33.0	126%
Not an athlete in high school, but athlete in college	<1	23.8	43.9	84%

This result establishes, in other words, that ex-athletes continue to engage in higher consumption of alcohol even after their participation has ended. Specifically, we find that over 15% *more* former athletes binge drink in college than those who never played in sport, an amount nearly identical to those who continued on in sport through their

collegiate years. This finding is perhaps the most original in this paper and reveals a contextual and temporal element of the link between athletic participation and alcohol use that has not previously been identified or discussed in the research literature.

These findings should be interpreted with some caution. For one, they are cross-sectional associations, which are limited for causal inference. It is possible that an unmeasured variable explains the observed relationship between sports involvement and binge drinking. It is also important to consider that the CAS data are based on retrospective, self-reported responses to survey questions and thus subject to potential bias associated with response distortion, recall problems, and survey non-response. Misclassification of respondents according to their participation in sports is another potential source of error in our analysis, and speaks to the need for more nuanced measures and categorization of exposure to sport (Cf. Kreager, 2007; Vest and Simpkins, 2013), as well as more consistency in the measurement of sport involvement (Peretti-Watel, 2009).

Even with these limitations, we remain convinced that self-report questionnaires surveys are generally considered to be reliable and valid (Del Boca and Darkes, 2003; Dollinger and Malmquist, 2009; Midanik, 1988) and in this case have allowed us to uncover and confirm some basic, empirical associations between alcohol use and sport participation that are important in themselves and that have important theoretical and policy implications. Indeed, for us the next steps are to not only to replicate and confirm these patterns, but also to begin to understand the mechanisms underlying them.

There are a number of potential explanations for the relationships between sport and binge drinking as well as the persistence of the effect, a variety of mechanisms that could be at work, and some of those have already been speculated about in the literature. These include the time commitment required by sport, which may occupy participants and keep them from engaging in risk behavior, the substantial adult supervision associated with sport, and the incompatibility of substance use with successful sport performance (Wichstrøm and Wichstrøm, 2009). Others have speculated that policies prohibiting substance use and other risky behaviors may help reduce those behaviors specifically among sport team members (Nelson et al., 2007; Nelson and Wechsler, 2001). However, as our data demonstrates, sport is not associated with lower risk of binge drinking, as the above would suggest. Peretti-Watel's recent commentary (2009), in which they identified three hypotheses to account for a positive relationship between sport participation and substance use, provides help in understanding the inconsistency of findings in this area.

Firstly, withdrawing from participation in sport and its presumed protective effects, whether due to declining opportunities for participation, increased competition, or injury, may leave former athletes particularly vulnerable to later substance use. Secondly, the orientation of sport participants to achieve could enhance motivation to use substances in order to boost performance or as a coping mechanism to reduce the negative psychological aspects of competitive sport, such as anxiety or stress. Thirdly, sport participation and drug use may serve as similar outlets for thrill- or sensation-seeking motives or for the expression of masculine traits or values.

Others have suggested that it is possible that sport may differentially expose participants to risk factors for substance use that may manifest as behavior at a later time when

the protective aspects of sport participation (e.g., motives to perform, adult supervision, sport-specific substance use policies) are no longer present. The two most common sources of exposure come in the form of advertisements for alcoholic beverages or substance use at parties that sport participants are more likely to attend (Nelson and Wechsler, 2003). It may also be that physical activity associated with sport participation is a protective mechanism against substance abuse and that continuing physical activity despite no longer participating in sport could moderate the sport participation and substance use relationship (Kulig et al., 2003). These hypotheses all deserve further elaboration, testing, and refinement to understand the relationship between sport and substance use and identify potential avenues for intervention and prevention.

In moving forward, we suggest that a focus on the structural and cultural elements of sport provides a key framework for understanding the linkage between sport participation and alcohol. One likely socio-structural explanation is that increased alcohol consumption may be a latent function of the fraternal bond that is developed during sports participation. The fraternal bond of sports shared by team members is often viewed in a positive light (Miller, 2007). However, the insulation also enables behaviors that would be classified as deviant in larger society to become accepted within the tight-knit group—whether this takes the form of violent or risk-filled behaviors (Kraeger, 2007).<sup>3</sup> The effects of the socialization could then continue past the days of participation and would only be magnified if the networks formed during sporting years persist into collegiate years and continue to encourage the same deviant behaviors. This is particularly worrisome, as the social pressure of networks has been demonstrated to be a driving force in the excessive levels of alcohol consumption by collegiate athletes (Weitzman et al., 2003).<sup>4</sup> For public health officials, an appreciation of the power of peer networks and socialization also provides a potential point of intervention, as the insular nature of the team could also foster healthy behavior patterns (Vest and Simpkins, 2013).

The cultural relationship between masculinity and athletics is a second potentially explanatory factor. The masculinity explanation has become a common trope in studies of sports and deviance. When a link or correlation is shown to exist but the mechanism is not quite evident, masculinity often serves as an accepted concluding suggestion.<sup>5</sup> In part this is because it makes intuitive sense. As Wenner (1998) reminds us, beer and liquor are central players in “a high holy trinity of alcohol, sports, and hegemonic masculinity” (cited in Messner and De Oca, 2005: 1). In addition, scholars of gender, in particular Connell (2000, [2005] 1995; see also Connell and Messerschmidt, 2005), have highlighted the manner in which sport serves as a stage to perform certain elements of hegemonic masculinities. This is central to the critiques of modern athletics, which notes, “the conditions of contemporary athletics embed youth in value systems marred by homophobia, sexism, racism, and ruthless competition” (Kraeger, 2007: 706). In these settings *doing* gender involves an active rejection of the feminine and an emphasis on independence, competition, and a lack of fear of the consequences of actions. Suffice to say, drinking is one of the performances associated with the appropriate “macho” behavior (Peralta, 2007).

This gendered framework, while widely discussed, is not perfect. One limitation is that research has generally remained at the level of content or textual analysis (Edwards, 2006).<sup>6</sup> This means that how the messages are consumed and how they translate to actual

practices remains unknown. Even more problematic is that users of this approach often reinforce a narrow definition of masculinity that ignores the drinking habits of woman athletes as well as forms of masculine identities outside the hegemonic core (Palmer, 2011). In our research we find that not only do female athletes and former athletes engage in binge drinking, but also they do so at rates comparable to the males. Almost one out of every two female former athletes has participated in binge drinking and over half of the female respondents who participated in sport in high school and college have engaged in binge drinking. However, this does *not* mean that the story has nothing to do with masculinity. On the contrary, we believe our findings call attention to the need to follow the work of scholars who expand our understanding of masculinity and take seriously masculinity as something that can be performed and embodied by people of any sex and gender (e.g., Halberstam, 1998; Sedgwick, 1995) and move forward with a “a more nuanced consideration of the gendered nature of drinking” (Palmer, 2011: 179). Rather than beginning research with the assumption that alcohol use is part of the “male domain” and suggesting that drinking is “male dominated, male identified, and male centered” (Capraro, 2000: 307), we would call for greater fluidity in how we conceive of gender-coded actions and performances. This suggests the need for more fine-tuned analysis of networks of women athletes both during their time and, perhaps even more importantly, after their time of participation as well as in-depth, qualitative examinations of *their* potentially gendered cultural framing of binge drinking.<sup>7</sup>

Racial identity also provides an interesting area for further exploration. In prior research using these data we have found that white students are more likely to take up binge drinking when they come to college compared with non-white students (Weitzman et al., 2003)—a finding supported by Peralta (2007), who associates the consumption of alcohol and public drunkenness with the performance of a white, hegemonic masculinity (see also: Peralta and Steele, 2009). Of particular interest to us is the manner in which binge drinking interacts with participation in sport. We suspect that involvement in sport may be an effect modifier of the relationship between race/ethnicity and binge drinking, such that non-white students who are involved in sports are more likely to binge drink (i.e., at the same levels as their white peers), while non-white students who are not involved in sports tend to binge drink at relatively lower levels.

There are also a number of other explanations that are simply difficult to measure or examine in research of this type. For instance, our analysis suggests a direct, even causal, relationship between participating in sport and consumption of alcohol. However, when examining athletics it is notoriously difficult to rule out the influence of self-selection; that is, participants who have certain qualities before joining organized sports are the ones who are drawn to organized sports (cf. Eitle and Eitle, 2002). There is the possibility that there are factors outside of the general sociological purview, including any physiological change that may take place as a result of the sport lifestyle. It is also important to keep in mind that alcohol marketing through sports is pervasive. Beer and sports “go together” in ways that are constantly paired through experiencing sports (Nelson and Wechsler, 2003). That marketing capitalizes on sport identity and belonging—even past the point where one can hope to parse them out.

Our findings, combined with the array of potential explanations, suggest the need for further study of the relationship between substance abuse and exposure to sport. In

particular there is a need for research that takes seriously the continued effect on the athlete once time in organized sport draws to a close. A life course-oriented understanding of the effects of sport will require both quantitative and qualitative research. Currently, there are few detailed longitudinal datasets on sport.

More qualitative work on the subject would also further elucidate the underlying mechanisms at play. In particular, we suggest a renewed emphasis on the sub-cultural elements of sport. This will shift focus to the rules, norms, and identity-building practices associated with sport and will provide particular insight into the dramatic increase in binge drinking in the transition from high school to college associated with first exposure to organized sport, as well as the practices of former athletes. However, up to this point, much of the research on the culture of drinking and athletics has approached the issue from a marketing perspective. For instance, previous research has focused on and demonstrated the alcohol industries' continuous targeting of sporting fans (Sperber, 2000; Wenner and Jackson, 2009), a group to which many of the former-athlete college students may have recently joined.

From a more cultural, identity-based perspective, attempts to hold on to a sporting community that ex-athletes are no longer tied to through participation could provide a path to excessive drinking. Drinking may also provide a substitute for the community-building experience that ex-athletes become accustomed to during their days of organized sports. Rather than 6:00 a.m. practices and competition, bonds are forged through excessive consumption and debauchery (Dietler, 2006; Palmer, 2009). However, research on the sub-cultural aspects of consumption remains limited. Quality work of this type has the potential be a key site of interdisciplinary engagement between sociologists and scholars in public health, as understanding the context and meaning behind binge drinking for this group has direct implications for prevention efforts to lower alcohol consumption on college campuses.

So what do we make of all of this in a more general sense? What do we make of sport and its role in promoting or protecting against risky activities and behaviors given these findings? Sport is often celebrated, even prescribed. Yet, the evidence here demonstrates sport is also associated with risky, undesirable behaviors.

Dunning and Waddington (2003) allude to both the Epicurean and Dionysian forces of sport when describing participation as resulting in both pro-social, normative effects as well as less desirable, more narcissistic, and socially dysfunctional outcomes. In addition, Hartmann and Massoglia argue that the "thrill-seeking, hyperphysical nature of contemporary athletics likely has a good deal to do with the relationship between sports participation and drunk driving...it is impossible to rule out the claim that the social status of athletes and athletics may create in some young athletes a sense of entitlement that they are above the law" (2007: 499). Further, Miller et al. (2005) provide evidence for the dual effect as they find a separation in the positive effects of sport for youth who identify as athletes and a negative effect for those who identify as jocks. This research establishing a link between sports participation and binge drinking illustrates and supports the claims that sport participation cultivates both positive and negative character traits and behaviors.

The realization that sport has multiple and competing impacts points to a more nuanced and bifurcated understanding of its social impact, both as an object of social

analysis and as a focus of public policy. This bifurcated understanding provides a frame to make sense of how sport can lead to increased alcohol consumption, violence towards women, and risky behavior, while at the same time building social capital, confidence, and community. The next steps will be analyzing and better understanding the social variables and contextual factors that shape and determine the differential impacts and outcomes of involvement in athletics.

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## Notes

1. Participation in organized sport declines throughout adolescence and into young adulthood, and may be associated with the lack of opportunities for youth who are not advanced, skilled athletes (Koplan et al., 2005). A nationally representative study of US college students found that 51% were varsity athletes in high school, but only 15% participated in organized intercollegiate sport in college (Nelson et al., 2007).
2. The only exception is the Asian-American former athletes who are the lone group to have a higher percentage of binge drinking than their athletes at both levels counterparts. However, due to the size of this group it is unlikely to have much statistical significance.
3. See Vest and Simpkins (2013) for a quantitative examination of the insularity of sport teams and the power of peer influence within the closed circle.
4. Athletes are one of the groups most heavily targeted by informational campaigns. The failure of these campaigns demonstrates that the power of social networks for education simply does not work if the athletes are part of a network of binge drinkers (Nelson and Wechsler, 2001).
5. While I am not denying the strong possibility that performance of a certain type of gender role most likely plays a key role in the high level of alcohol consumption of the ex-athlete, one of the other problems with turning to masculinity is that it is too often presented as a catch-all hypothesis at the end of statistics-based studies. The danger of this approach is the creation of a circular argument—hegemonic masculinity includes these types of action, these types of actions occurred because of hegemonic masculinity—that reifies our definition of hegemonic masculinity without providing further insight into the more nuanced mechanisms that are operating.
6. The edited collection by Wenner and Jackson (2009) serves as an excellent example of this type of work.
7. See Fallon and Jome (2007) for an illustration of a study that takes seriously the manner in which women athletes negotiate the many, often discrepant, gendered expectations that come with participation in a physical sport. This article illustrates the complexity, but also possibility, of performing both masculine and feminine traits.

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