

The Relationship between Alcohol Consumption, Academic Success, and Athletic Identity in Collegiate Student-Athletes

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Upon entering college, students around the United States are exposed to alcohol and the potentially dangerous experiences and effects that come with consuming alcohol. Whether the individual is a general college student or a college student-athlete, the issues are prevalent. According to the 2014 United States Census, there are approximately 23 million students attending U.S. colleges. According to the National Collegiate Athletic Association (NCAA), there are 460,000 student-athletes across the United States (NCAA, 2017). When National Association of Intercollegiate Athletics (NAIA) student-athletes are included, the overall number then surpasses 500,000. A student-athlete (SA) can be defined as an individual who is enrolled in college classes and also participating in

a varsity athletic program on a collegiate level. Therefore, SAs comprise approximately 2 percent of the general student population. Taking into consideration this segment of the student populace (participants in university-sanctioned athletics), the differences shown between this group and the general student community in regard to consumption of alcohol are significant. Gordner (2014) found that 90% of college students who classified as a SA reported drinking alcohol; that is 8 percentage points higher than the rate for the overall student population.

Extensive research has been completed on the topic of collegiate SA and alcohol consumption, and researchers have concluded that college SAs consume a disproportionate amount of alcohol in comparison with their non-athlete

peers. Within NCAA Division I athletic programs (defined as generally having the largest student bodies, managing the largest athletic budgets, and offering the most generous amount of scholarships) (NCAA, 2017), research shows that SAs consume the most alcohol when compared to all other student groups (Barry, Howell, Riplinger, & Gardner-Piazza, 2015; Ford, 2007; Martens, Dams-O'Connor, & Beck, 2006). The general consensus through various studies concluded that male SAs consume more alcohol than female SAs, and that binge drinking rates were higher among SAs than in regular students (Ford, 2007; White & Hinson, 2013). It has also been suggested that out-of-season consumption rates are higher than in-season rates (Dams-O'Connor, Martin, & Martens, 2007; Martens & Martin, 2010; Thombs, 2000). In addition to research compiled about consumption, the second component of the SA experience is academics. Academic standards are set for most SAs by the university as well as by NCAA guidelines, which SAs must meet or exceed in order to retain eligibility (Carodine, Almond, & Gratto, 2001). The connection between alcohol consumption and academic success for some SAs does not pose a problem. For other SAs, though, this connection – the student experience plus alcohol – is detrimental to their athletic and/or academic performance.

Additional areas that need to be explored are connected to the identity of the SA, as well as the academic success of the SA. Academic success has been

defined differently by NCAA divisions (Division I: minimum GPA based on year in school; Division II: minimum GPA based on credit hours; Division III: minimum GPA determined by university, not athletic department) (Beron & Piquero, 2016), but the main research variables that came through studies are similar. A SA cannot identify with both being an athlete and a student at the same time without there being conflict (Rankin, et al, 2016). A conflicting finding between studies is the idea that the more an athlete internally identifies with being an athlete, the less prone they are to experience academic success (Anasari, Stock, & Mills, 2013; Rankin, Merson, Garvey, Sorgen, Menon, Loya, & Oseguera, 2016), whereas Bailey and Bhattacharyya (2017) found that teams that perform better athletically are more likely to have participants who perform better academically.

To address a gap in this literature, the purpose of the study was to understand the relationship between how student-athletes at a Division I university experience alcohol consumption, how their consumption affects their academic grade point average (GPA), and how athletic identity plays a role in their experiences. Vast amounts of information are available about college students and alcohol consumption (Dams-O'Connor et al., 2007; Ford, 2007; Lewis, Milroy, Wyrick, Hebard, & Lamberson, 2017; Martens, Dams-O'Connor et al., 2006; Pedersen & LaBrie, 2006; Zhou & Heim, 2014; Zhou, Heim, & Levy, 2016), but there remains a dearth of information and research

about SA alcohol consumption and how it affects their academic work. Due to the significant and visible number of students involved in collegiate athletics, understanding and examining the correlation between alcohol consumption and the effect it has on academic success can be beneficial for multiple entities within the college dynamic. Colleges across the country could better suit programs and resources to assist SAs who may fall into trouble academically or athletically, as a result of alcohol consumption.

Literature Review Student-Athletes and Alcohol Consumption

Researchers have found that SAs are more susceptible to high levels of alcohol consumption when compared to all other student groups on campus (Barry et al., 2015; Ford, 2007; Martens, Dams-O'Connor et al., 2006; Perkins & Craig, 2006; Yusko, Buckman, White, & Pandina, 2008). Martens and Martin (2010) stated that “the unique aspects of college athletes’ lives ... would result in college athletes endorsing a unique set of drinking motives that is distinct from those endorsed by non-athletes” (p. 2). These aspects can span areas such as stress and anxiety (from class, practice, and competition), peer pressure (proving to be part of the team, showing loyalty to friends) and lack of time management skills (factoring in the variety of commitments, as well as travel, associated with athletic participation).

In addition, the physical implications that high levels of drinking can have on the body can be drastic for athletes. Perkins and Craig (2006) discussed the body’s reaction to alcohol, which included psychomotor performance impairments (slow reaction time), dehydration (causal to muscle soreness, cramping, and headaches), vascular dilation (blood pressure reduction, which could result in migraines and fainting spells), and muscular protein synthesis (a limiter to muscle growth efficiency). For active SAs, these reactions can diminish the physical workload coaches prepare for them when they are in their athletic season, which can lead to less-than-expected performance.

For SAs who exhibit high levels of drinking, the issue can be exacerbated in the form and rate of binge drinking and heavy episodic drinking. Binge drinking is defined as consuming five or more drinks in one sitting for men and four or more drinks in one sitting for women (Martens, Dams-O'Connor et al., 2006; Porter & Pryor, 2007; Yusko et al., 2008). Moreover, frequent heavy episodic drinking is defined as three or more binge drinking episodes in a two-week time span (Martens, Dams-O'Connor et al., 2006; Porter & Pryor, 2007; Yusko et al., 2008). Examining these definitions along with the evidence from Barry et al. (2015), Ford (2007), Martens, Dams-O'Connor et al. (2006), and White and Hingson (2013) that established that athletes consume more than non-athletes, it can be

confirmed that athletes have a higher frequency of binge drinking and heavy episodic drinking (Lewis et al., 2017; Yusko et al., 2008). For male SAs, 61% reported binge drinking as compared to 43% of non-athletes. The results are similar for female SAs, with that classification reporting a 14-percentage-point higher prevalence (50% vs. 36%) than non-athletes in the binge drinking category (Martens, Dams-O'Connor et al., 2006). This preponderance carries over to heavy episodic drinking incidents – for males (29% for athletes vs. 18% for non-athletes) and for females (24% vs. 15%) (Martens, Dams-O'Connor et al., 2006). While there have been systematic reviews completed on the topics of sports and alcohol (Zhou & Heim, 2014), and collegiate SAs and their drinking prevalence (Martens, Dams-O'Connor et al., 2006), providing researchers with additional materials to comprehend the frequency of consumption and difference between student groups is necessary for the future of alcohol consumption behavior studies.

There are various measures to understand alcohol consumption, the most common being the Alcohol Use Disorders Identification Test (AUDIT), which was developed by the World Health Organization (WHO). This 10-item tool is a resource that looks deeper at behaviors of alcohol-related problems in a variety of different studies. This tool has been validated by numerous studies in alcohol-related fields. Examples of these studies include: (1) understanding binge drinking differences between genders in

college students (Olthius et al., 2011), (2) showing the risk status in college students for alcohol consumption habits (DeMartini & Carey, 2009), (3) conducting workplace alcohol screening in police forces (Davey, Obst, & Sheehan, 2000), (4) identifying alcohol use and depression disorders in primary care patients (Chishinga et al., 2011), and (5) enhancing nursing practices (Leung & Arthur, 2000). For any score greater than 8 out of a total score of 40, behaviors indicate hazardous or harmful alcohol use.

Student-Athletes and Academic Success

While a college student has many duties, one of his or her top priorities is academic success. The term “student-athlete” (SA) provides a philosophical breakdown of what is expected of that individual over the course of his or her college career. Many of these young men and women do choose and do attend an American college with athletics playing a leading – or the leading – factor; some may see intercollegiate athletics as a springboard to particular gains (status, money, or career, etc.). However, university-defined – as well as NCAA-defined – levels of academic success are what allow such students to participate in the sport (or sports) they love. Therefore, the order to these terms, leading to the moniker “student-athlete,” is appropriate. Academic factors that may push SAs toward alcohol consumption include not being motivated to find a future career path (be it athletic or non-athlet-

ic), transitioning out of collegiate or elite sports (Cosh & Tully, 2014), poor time management between class and practice, and pressure for maintaining a high level of performance academically and athletically (Lewis et al., 2017). However, SAs who focus on their academic duties and work with professors on a personal level throughout college are more likely to succeed academically and be more motivated to complete assigned academic work (Ting, 2009).

Some research has been done to understand how academic performance might be hindered by excessive alcohol consumption. Academic-related negative consequences that all students face when consuming copious amount of alcohol can include not attending class or falling behind in class, doing poorly on exams, or overall having poor grades (Porter & Pryor, 2007; Pritchard & Wilson, 2003; White & Hingson, 2013). In fact, 25% of college students in a particular study reported these consequences due to the frequency of their drinking (White & Hingson, 2013). The same study also indicated that students who binge drink and fall into the “heavy episodic” drinking categories were “5.9 times more likely to perform poorly on exams and papers, 5.4 times more likely to have missed a class, and 4.2 times more likely to have memory loss” (White & Hingson, 2013, p. 209). When students’ academic success is diminished by alcohol consumption, and that classroom performance falls under that defined success level, the

result for those involved in intercollegiate athletics is ineligibility.

The legal concern on Privacy of academic information could restrict researchers in regard to which academic measure they can apply to their studies. While most academic studies are based off grade point average (GPA), some academic institutions do not allow the release of such data as the result of privacy policies. A valid option is to utilize a metric known as Academic Progress Rate (APR) (Bailey & Bhattacharyya, 2017). APR looks at academic-focused achievements throughout academic terms for each athletic team in question (Bailey & Bhattacharyya, 2017). For this tool, a perfect score of 1,000 points would constitute that a given SA remains academically eligible as well as returning to school the following academic term (Bailey & Bhattacharyya, 2017). Utilizing APR is a great option for researchers who have been restricted by accessibility to student files for their studies.

GPA is considered to be the most utilized (Bailey, Rosenthal, & Yoon, 2016; Zimmerman, Caldwell & Bernat, 2002) and most recognizable academic grading instrument. This metric was available for this study since it was an approved component of the survey questionnaire and participating SAs had the ability to self-report their individual academic performance based on a selection of GPA ranges. The metric represents the average accumulated final grades earned in courses over a specific amount of time. The

traditional scale for GPA is on a 4.0 scale, where an academic “A” is issued a 4.0 and decreases to an academic “F,” which is issued a 0.0. A perfect GPA is a 4.0 on this scale, meaning the student has received an “A” in all academic classes. The minimum qualification for eligibility varies between universities; however, the figure normally falls somewhere between a 2.0 and a 3.0.

Student-Athletes and Athletic Identity

Through the term SA, knowing whether being a student or an athlete takes precedence in that individual’s mind can preemptively show a researcher where their priorities land. It is stated that “athletic and academic identities cannot be perceived as one identity without athletes experiencing conflict” (Rankin et al., 2016, p. 704). A narrative from one interviewed SA stated, “Regardless of what other people say, all of what you do is telling you that you are there for sports, and academics come second” (Jayakumar & Comeaux, 2016, p. 289). In addition, Jayakumar and Comeaux (2016) indicated that while most SAs enter college feeling optimistic, their academic role on campus is personally devalued as early as the second semester, simply due to the demand athletic programs expect out of their athletes. The results showed that there is an internal conflict for SAs at the collegiate level, paired with pressure from various university representatives (including deans and professors and coaches and athletic directors) determining where to prioritize.

Social norms are likely to determine the identity of the SA. Depending on

what a SAs friend group identified more with, the identity of that individual can shift greatly, even if that isn’t what they personally believe. For example, Dams-O’Connor et al. (2007) revealed that peer expectations predicted SA personal alcohol consumption, both during the athletic competition season and outside of that season. Massengale, Ma, Rulison, Milroy, and Wyrick (2017) found that a friend group that consisted of similar individuals (other SAs, potentially from the same team) may direct the course of alcohol consumption each individual experiences, and that the perceived approval of consumption would lead to a higher rate of binge drinking in that SA.

Campus climate is another portion of this equation that can make or break the SA experience. It can be defined as “current attitudes, behaviors, and standards of employees and students that concern the access for, inclusion of, and level of respect for individual and group needs, abilities, and potential” (Rankin et al., 2016, p. 702). Rankin et al. (2016) defined three influential factors of campus climate constitutes for college students, which include: (1) students’ experiences with the campus environment, (2) their perceptions about the environment, and (3) their perceptions of institutional actions. This article also discusses the biases that campus administration may place on athletic departments, which could hinder the growth of an all-inclusive campus climate. These biases included the questioning of SA intellectual abilities and qualifications, academic motivation, and

treatment by the university (Parsons, 2013; Rankin et al., 2016). In another study, it was stated that one-half of the SAs surveyed felt their professors were discriminating against them, and refused to assist with rescheduling exams due to athletic commitments (Jolly, 2008). If a SA was placed in a detrimental campus climate that focused on the biased differences between athletes and non-athletes, the SA may have a harder time adjusting to being an athlete. If the campus climate appreciates academics first and foremost, the SA may place focus and precedence on their academic work. Climate drives the feel of campuses nationwide, and it is up to administration and the student body to determine what they aspire to.

The existing literature showed connections between alcohol consumption, academic success, and athletic identity. The present study could be used to further understand how these three concepts interact with one another. For the heavily consuming SA, the individual's behavior is influenced by their friend group (athletes or non-athletes) and others within the campus community, all of which can work to diminish the student's academic identity and lead to a drop in academic success level.

Methods

Research Procedure and Data Collection

Data was collected from current SAs at a mid-sized Division I college (15,000 enrolled students, slightly under 600 intercollegiate SAs) in the Midwestern

region of the United States. Before the survey was distributed, 12 coaches, one from each varsity sports program at this university, were contacted to discuss the study and its implications for the university, as well as to seek access to their athletes in order to distribute the survey materials. The goal of these conversations was to increase the awareness and importance of the study and to ensure that the survey received a plentiful and representative number of responses. Six out of the 12 coaches responded and agreed to allow their athletes to take the survey. The other six coaches either did not respond to the initial communication or did not allow access to their athletes. The six who agreed to participate represent both men's and women's programs and represent a mix of both revenue-generating sports (Football, Women's Basketball, and Wrestling) and non-revenue-generating sports (Swimming & Diving, Softball, and two coeducational programs, Track & Field and Cross Country).

While non-personally-identifiable information – including gender, age, year in college, and sport participated in – were utilized and incorporated in the results and discussion sections of this study, personally identifiable factors, such as the names of participants, were kept anonymous during the entirety of the collection process. Participants were informed of potential risks while moving forward through this study in the introduction of their survey.

For sports programs whose coach provided approval to have his or her SAs

participate in the study and provided the access to accomplish that, one of two situations occurred. The primary researcher went to a team meeting and distributed paper copies of the survey for SAs to directly fill out, or the coach provided the primary researcher with an updated team roster along with email addresses. A total of 95 SAs filled out a paper copy of this survey, and an additional 144 SAs obtained access to complete an online survey form, and received a reminder if they did not respond to the initial request for participation. Therefore, a total of 239 SAs participated in this survey. Statistical information quantifying overall distribution and response rate is found in the Results section later in this paper.

Institutional Review Board (IRB) approval was obtained prior to any information being distributed to coaches or participants of this study. Respondents of this survey were given the option to put their name into a raffle for gift cards as an incentive to take part in this survey. The identifier information was placed separate from the survey response infor-

mation, and the names were subsequently destroyed in keeping with the anonymous nature and practices affiliated with this study.

Instruments

A survey instrument was utilized to understand the relationship between athletic identity, academic success, and alcohol consumption. This instrument was developed from reviewing literature and published research, and from questions designed by the study's principal researcher. A breakdown of survey questions by research study can be found in Table 1.

Athletic identity. This topic was measured by questions created by the principal researcher. Questions in this group included overall themes such as influence from peers and social environment on oneself, and where personal identity falls on an average day and on competition day, which is based on a scale of 1 (full-time student) to 10 (full-time athlete).

Academic success. Academic success was measured by survey questions

Table 1

Academic Success, Alcohol Consumption, and Athletic Identity Survey Questions

Author (Year)	Theme of Questions	Number of Questions
Anasari et al. (2013)	Academic Success	2
Park & Grant (2005)	Academic Success & Alcohol Consumption	2
Dams-O'Connor et al. (2007)	Alcohol Consumption	1
Pederson & La Brie (2006)	Alcohol Consumption	2
Balsa et al. (2011)	Alcohol Consumption	3
Principal Researcher	Athletic Identity	6

provided in the research study written by Anasari, Stock, and Mills (2012) and by Park and Grant (2005). Example questions from Anasari, Stock, and Mills (2012) include rating the level of importance of academics and rating academic performance in comparison to peers. Both questions are rated on a five-point Likert scale (1 = not at all important/much worse; 5 = extremely important/much better) related to the question matter. Example questions from Park and Grant (2005) include lists of action items driving academic success, including “trouble paying attention in class” and “missing class,” with which participants must identify how often they have experienced the action item in both a positive and negative perspective. GPA was also gathered by utilizing a range of GPA scores for SAs to self-report. Scores were broken up by .24 increments (e.g., 2.51- 3.0, 3.01 – 3.25, 3.26 – 3.5, 3.51 – 3.75, 3.76 – 4.0), beginning at 2.51, to receive the closest possible average of academic success. While there is an option to choose either “below 2.50” and “No GPA listed – 1st Year”, the lowest score range was chosen as it is commonly utilized as the score for academically ineligible SAs.

Alcohol consumption. Alcohol consumption was measured by survey questions from a variety of research studies which incorporated topics such as age of first alcoholic drink (Dams-O’Connor et al., 2007), comparison of consumption habits on competition days vs. non-competition days for the SA (Pederson &

LaBrie, 2006), total number of drinks consumed during last occasion drinking, and total number of times the participant had more than five alcoholic drinks in one sitting in the last month (Balsa, Giuliano, & French, 2011). Rationing behind the answer options for “age of first alcoholic drink” is to accommodate for the traditional age children are in each level of school (9 years of age and younger, elementary school; 10 to 13 years of age, middle school; etc.). Positive and negative alcohol consumption behaviors were measured, as well (Park & Grant, 2005). For both behaviors, responding with 1 would indicate never, 2 indicates sometimes, 3 indicates often, and 4 is always. Positive alcohol behaviors can include items such as feeling relaxed, being more creative, adding enjoyment to a meal, and forgetting school problems. Negative alcohol behaviors can include items such as having a hangover, missing a class, damaging property, and getting hurt or injured (Park & Grant, 2005). In addition to these questions, the AUDIT survey was utilized to provide a full perspective of alcohol consumption behaviors for the respondents. For any score greater than 8 out of a total possible score of 40, behaviors indicate hazardous or harmful alcohol use.

Analysis

Descriptive analysis was applied to comprehensively understand the connections between influences that friend groups and social environment have on

alcohol consumption, and the comparison of average positive and negative alcohol consumption experiences. In order to understand if SA identity varies between competition days and non-competition days, paired t-tests were utilized to test individual respondents' identity and consumption on competition days and non-competition days. Spearman's correlation coefficient and rank-order correlation were used to examine the relationship between the identity the SA has on competition days and non-competition days, and the level of alcohol consumption SAs participate in on competition days and non-competition days.

To further understand if SA alcohol behavior differs as the result of gender or sport, individual t-tests were utilized to test AUDIT scores and positive and negative alcohol behaviors with both genders. Due to the uneven group size and variance of sport participation, Kruskal-Wallis non-parametric one-way analysis of variance (ANOVA) was applied to test if the AUDIT score varied with the sport in which a given SA participates. Post Hoc tests, including Dunn's pairwise tests were used to determine which pair(s) contribute to differences under the overall significance. Finally, chi-square was utilized to test for the associations between GPA and genders. The assumption of normality and homogeneity of variance was tested prior to these analyses. All of the variables were approximately normally distributed. The statistical significance level was at the 0.05 level (p -value).

Results

A total of 239 SAs participated in this study. Seven responses were marked as incomplete (unanswered questions, stopped responses before survey finished) and therefore were not counted in the total number of valid responses. As a result, the total number of completed and valid responses was 232. Table 2 shows the demographic breakdown of SAs in the study.

The mean score of AUDIT responses was 5.38, with the standard deviation equaling 5.04. With the range for the AUDIT responses being 0 to 24 (out of the total range of 0 to 40 for the tool), 28% of participants had an AUDIT score higher than 8, which is indicative of a risky alcohol usage pattern or an experience with hazardous alcohol use. As shown through the AUDIT portion of this survey (Table 3), 89.6% of participants drink alcohol four times or less per month. Note that this category includes the option of zero drinks per month; even with that subset removed, the number of SAs who report drinking on a monthly basis is significant. A large number of participants (40.1%) drink five or more beverages on a typical day consuming alcohol. A total of 30.2% of participants consume six or more drinks on a day consuming alcohol at least once per month. Consuming five or more drinks at a given sitting is considered to be binge drinking (Martens, Dams-O'Connor et al., 2006; Porter & Pryor, 2007; Yusko et al., 2008). A majority of re-

Table 2

Demographic Data Presented by Category

	Frequency	Percent
Gender		
Male	161	69.4%
Female	69	29.7%
Year in School		
Freshman	72	31.0%
Sophomore	57	24.6%
Junior	51	22.0%
Senior	49	21.1%
Graduate	3	1.3%
Age		
18	50	21.6%
19	60	26.0%
20	40	17.3%
21	57	24.7%
22	18	7.3%
23	6	2.6%
Sport Played		
Cross Country	22	9.5%
Football	98	42.2%
Softball	15	6.5%
Swimming & Diving	40	17.2%
Track and Field	39	16.8%
Women's Basketball	14	6.0%
Wrestling	26	11.2%

search participants stated that they do not have trouble stopping consumption of alcohol once they've started (86.2%), are stated that they: are able to do what is expected when paired with their drinking habits (87.9%), do not need an alcoholic beverage in the morning to start their day (94.8%), do not feel remorse or guilt after drinking (70.7%), can always remember what had occurred after a night of drinking (70.7%), have never been injured while drinking (88.8%), and have never had an individual show concern of their drinking habits (96.6%). Such

responses may generally reflect a tendency toward little issue related to alcohol consumption.

Aside from the AUDIT responses, additional questions in regards to alcohol consumption were asked. A substantial sum of SAs (33.2%) binge-drunk during their last drinking occasion, and 86.3% reported that they had their first alcoholic drink when they were younger than the legal United States drinking age of 21. A majority of respondents (86.4%) consumed five or more drinks two times or less in the last month, 86.7% drink four

Table 3

Student-Athletes' AUDIT Frequency by Questions

	Frequency	Percent
How often do you drink?		
Never	53	22.8%
Monthly or less	59	25.4%
2-4 times per month	96	41.4%
2-3 times per week	21	9.1%
4 or more times per week	3	1.3%
Number of drinks of typical day drinking?		
1-2	89	38.4%
3-4	50	21.6%
5-6	59	25.4%
7-9	15	6.5%
10 or more	19	8.2%
How often do you have 6+ drinks?		
Never	88	37.9%
Less than monthly	74	31.9%
Monthly	44	19.0%
Weekly	25	10.8%
Daily or almost daily	1	0.4%
How often not able to stop drinking?		
Never	200	86.2%
Less than monthly	21	9.1%
Monthly	5	2.2%
Weekly	2	0.9%
Daily or almost daily	4	1.7%
How often able to not do what's expected?		
Never	204	87.9%
Less than monthly	26	11.2%
Monthly	2	0.9%
How often need a drink in the AM?		
Never	220	94.8%
Less than monthly	8	3.4%
Monthly	3	1.3%
Daily or almost daily	1	0.4%
Feelings of guilt/remorse after drinking?		
Never	164	70.7%
Less than monthly	53	22.8%
Monthly	11	4.7%
Weekly	3	1.3%
Daily or almost daily	1	0.4%

Table 3 (continued)

	Frequency	Percent
Often can't remember what occurred?		
Never	159	68.5%
Less than monthly	57	24.6%
Monthly	9	3.9%
Weekly	3	1.3%
Daily or almost daily	4	1.7%
Injured during drinking		
No	206	88.8%
Yes, but not during the last year	14	6.0%
Yes, during the last year	12	5.2%
Shown concern about consumption habits		
No	224	96.6%
Yes, but not during the last year	2	0.9%
Yes, during the last year	6	2.6%

*Rounding through SPSS led to a total percentage that equaled slightly above or below 100% for items.

or fewer beverages on competition day, and 80% do not drink on non-competition days.

The mean score of negative alcohol behaviors was 1.12 ($SD = .23$) on a four-point Likert scale (1= never, 4= always), which includes items such as having a hangover, missing class, and arguing with friends (Table 4). These items were reported to occur almost never with the participants. The mean score of positive alcohol behaviors was 1.52 ($SD = .69$) on the same four-point Likert scale as negative alcohol behaviors, which includes items such as feeling relaxed, increased creativity, and forgetting school problems. These items were reported to occur between never and sometimes for responders. It was found that females

had lower mean scores for both positive ($M = 1.14$) and negative ($M = 1.06$) alcohol behaviors as compared to males ($M = 1.30$, $M = 1.59$). The Cronbach's α of negative and positive alcohol behaviors items of the study was .85 and .95, which showed a great internal reliability of the instrument. A majority of participants stated academics to be important (94.4%), stated their academic success is the same or better than their peers (93.9%), and have a GPA higher than 3.01 (65.9%) (Table 5).

A majority of respondents (64%) have a friend group that consists mostly of SAs. Identities of SAs are influenced in some way by their social environment (62.5%), but generally not influenced by their friend group to consume alcohol

Table 4

Positive and Negative Alcohol Behavior Average by Question

	Mean	Standard Deviation
Negative Alcohol Behaviors ($\alpha = .85$)	1.12	.230
Have a hangover	1.43	.613
Miss class	1.05	.213
Trouble paying attention in class	1.15	.505
Trouble doing homework	1.12	.380
Behind in school	1.09	.316
Regret something	1.20	.444
Forget where you were	1.10	.381
Argue with friends	1.10	.327
Unplanned sex	1.13	.466
Not using protection	1.12	.498
Damaged property	1.06	.309
Trouble with police	1.03	.244
Got hurt or injured	1.03	.205
Overdose	1.01	.197

(63.2%), and are not influenced by their social environment to consume alcohol (61%). For SAs who responded to this survey, athletic identity on a non-competition day had a mean score of 5.97 ($SD = 1.72$) on a scale of 1 (full-time student) to 10 (full-time athlete), while athletic identity on a competition day had a mean score of 9.06 ($SD = 1.34$) on the same scale.

The results of the paired t-tests indicated that there was a significant difference in the respondents' identity during a competition day and on a non-com-

petition day [$t(230) = -25.36, p < .001$], and the alcohol consumption habits of respondents during a competition day and on a non-competition day [$t(231) = 4.15, p < .001$]. In addition, the result of independent t-tests indicated there was a significant difference in the respondent's gender as compared to his or her AUDIT score [$t(194) = 4.56, p < .001$], negative alcohol behaviors [$t(226) = 3.33, p = .001$], and positive alcohol behaviors [$t(180) = 3.39, p = .001$].

Due to the variables being ranked, Spearman's correlation was utilized to ex-

Table 5

Student-Athlete Academic Success Frequency by Question

	Frequency	Percentage
Importance of Academics		
Not at all important	1	0.4%
Not important	1	0.4%
Somewhat important	11	4.7%
Important	99	42.7%
Extremely important	120	51.7%
Academic Standing Compared to Peers		
Much Worse	1	0.4%
Worse	13	5.7%
Same	76	33.2%
Better	102	44.5%
Much Better	37	16.2%
Grade Point Average		
No GPA listed – first year	35	15.1%
Under 2.5	7	3.0%
2.51-2.75	16	6.9%
2.76-3.0	21	9.1%
3.01-3.25	24	10.3%
3.26-3.5	39	16.8%
3.51-3.75	38	16.4%
3.76-4.0	52	22.4%

*Rounding through SPSS led to a total percentage that equaled slightly above or below 100% for items.

amine the relationship between GPA and AUDIT scores. A negative correlation was found between the GPA of respondents with their AUDIT scores [$r(232) = -.242, p = .001$]. Positive correlations were found between GPA and importance of academics [$r(197) = .267, p < .001$], as well as between identity on non-competition day and alcohol consumption [$r(231) = .237, p < .001$], and between identity on competition day and alcohol consumption [$r(232) = .282, p < .001$].

Due to the uneven group size and variance of sport participation, Kruskal-Wallis non-parametric one-way analysis of variance (ANOVA) was applied

to examine if the SA's AUDIT score varied with the sport in which he or she participates. The results showed an overall statistical difference among different sport categories, $\chi^2(6) = 46.78, p < .001$. The further pairwise comparisons showed a statistical difference between Cross Country and four other sports groups – Football ($p < .001$), Swimming & Diving ($p < .001$), Women's Basketball ($p = .004$), and Wrestling ($p < .001$); and between Track & Field and two other sports groups – Football ($p = .048$) and Wrestling ($p = .001$). The AUDIT mean scores of Cross Country and Track & Field were 1.05 and 2.41, respectively,

while the AUDIT mean score was higher for athletes in Football ($M = 5.79$), Swimming and Diving ($M = 6.73$), Women's Basketball ($M = 6.18$), and Wrestling ($M = 5.52$). Softball was not included, as it was not statistically different from Cross Country and Track and Field; however, the mean score was 3.27.

Chi-square tests were run to see a breakdown in GPA for each gender. The GPA of participants did differ by gender, which resulted in significant findings [$\chi^2(6) = 37.94, p < .001$]. Females ($M = 7.04$) had generally higher GPAs than males ($M = 5.59$) in this study.

Discussion

The three purposes of this study were to understand the relationship between: (1) how SAs experience alcohol consumption (please fix this phrase. Clarify the relationship between which two things...), (2) how their academic GPA is effected, and (3) if athletic identity sways their motivation to perform academically and athletically better. Consistent with prior research, results from this study indicated that SAs consume a large amount of alcohol that can be defined as binge drinking (Martens, Dams-O'Connor et al., 2006; Porter & Pryor, 2007; Yusko et al., 2008), and that SAs are more likely to struggle academically if alcohol consumption rates are high (Porter & Pryor, 2007; Pritchard & Wilson, 2003; White & Hingson, 2013). While the overall findings were generally consistent with past research in regard to differences between genders and motivation, sport sub-cul-

ture presented itself as being a potential response to why SA consumption habits are higher than non-athletes.

Alcohol Consumption in Collegiate Sports

As shown through results from the AUDIT portion of the survey, it was uncovered that just under one-third of SAs (30.2%) binge-drink on a regular basis (once per monthly or more frequently). In addition, it was found that just over one-quarter of respondents fall into the category of hazardous drinking. While individually, certain SAs had scores that surpassed this suggestive intervention scale, collectively, no sport had a mean score higher than 8, which the World Health Organization (the creator of this screening tool) deems to be worthy of a brief intervention with a licensed professional. For both positive and negative alcohol behaviors, SAs' average scores ranged between never and sometimes. Similar to mean AUDIT scores, individual SAs had scores that leaned more toward often to always; collectively, the SA group fell more toward the "never" end of this spectrum. Although it might seem that only a small portion of SAs reported alcohol behaviors that were more frequent than the majority, there still is a concern for the individuals who do experience both positive and negative alcohol behaviors on a more regular basis than their peers.

Another important finding of this study is the alcohol consumption differences between sports. In this study, many

team sports (e.g., Football, Swimming & Diving, Women's Basketball) had a higher average AUDIT score than individual sports (ex. Track and Field, Cross Country). It is important to examine scores between sports, as it could provide further information to this research area. Consistent with results from Martens, Watson, and Beck (2006), Swimming and Diving athletes engaged in higher levels of drinking than the athletes from the other sports surveyed. Sport sub-culture, which can be defined as the rules, values, and morals that define a certain group, could provide reasoning to the divergent AUDIT scores between sports. For example, certain sports may have a more tolerant culture in regard to accepting heavy alcohol consumption, which could in turn influence SA's use of alcohol (Martens, Watson et al., 2006). Martens, Watson et al. (2006) also explains that this idea of sport sub-culture could promote different motivations for the SA to consume. It is possible that the camaraderie, socialization, and bonding within those teams could also lead to further consumption, rather than what is seen in individual sports. This may not be the case for all teams. There are circumstances where team sports may have lower consumption rates than individual teams, and that could boil down to the cultures and norms found traditionally within those sports, the expectations from coaches, the discipline that comes from the university or athletic department, or the training regimen that is needed to be followed. In either situation (team scores

higher than individual, or vice versa), further research is necessary into the motivation of alcohol consumption for specific sports, like Swimming and Diving, in order to find a deeper connection between different sports, which could provide additional pertinent information as to why certain sports have a higher alcohol consumption rate than others. Adequately differentiating types of sports can be a challenge due to the popularity of a sports team or the size of the team. Conducting a nationwide athletics study on specific sports could help clarify questions about certain sports and the consumption habits of their participants.

Alcohol Consumption, Academic Success, and Athletic Identity

In the United States, the average age of first alcoholic drink for men is 11 years old and for women it is 13 years old (Teenage Drinking, 2019). Both age figures are much younger than the legal drinking age of 21 years old. This current study, due to the majority of SAs reporting they had their first drinking experience before they turned 21, provides validity to this trend of consuming alcohol prior to reaching the legal U.S. drinking age. The influences and actions of campus life can expose pathways for some students to seek and obtain accessibility to alcohol. This includes a lack of alcohol-alternative events on campus, ease of purchasing or obtaining alcohol from older students, and homecoming events that promote drinking cultures on campuses (Cremeens, Usdan, Tal-

bott-Forbes & Martin, 2013). Understanding on-campus alcohol policies and the disciplinary actions (loss of scholarship, taken off roster for game, etc.) may provide additional structure to the individuals who were under penalties due to excessive consumption of alcohol.

On both competition days and non-competition days, a majority of respondents identify more with being a full-time athlete than being a full-time student. This poses a potential concern when dealing with academic distress in SAs. The less that the SA identifies with academics, the less likely they are to devote a generally expected amount of time to their studies. The same theme was found in terms of consumption habits on competition days and non-competition days. The more the SA identifies with being an athlete, the more likely they are to consume more on both competition days and non-competition days. This is consistent with the findings from Rankin et al. (2016) when they stated that if the identity sways one way more than another, there will be conflict, resulting in one of two variables failing. In this case, the more likely that an SA identifies with being an athlete, the more likely their academic life will be negatively impacted. This was verified through this study due to the negative correlation between academic success and AUDIT scores, and the positive correlation between identity and alcohol consumption. Through these correlations, the r value was considered to be significant, but it is a weak correlation, so it is necessary

to proceed with caution when analyzing further.

In addition, it is important to look at differences between genders on the topics of academics and alcohol consumption. Mirroring the findings of Beron and Piquero (2017), the study found that females generally have a higher GPA than males. Inversely, males were found to not only have higher AUDIT scores, but also experienced more positive and negative alcohol behaviors as compared to females; this echoes the findings from studies by Ford (2007) and White and Hingson (2013). A negative correlation was found between respondents' GPAs and their AUDIT scores. This signifies that as GPA increases, a given respondent's AUDIT score decreases, and vice versa. These results are comparable to those found by Porter & Pryor (2007), Pritchard and Wilson (2003), and White and Hingson (2013).

A positive correlation was found between GPA and the importance of academics to the respondents. The more the individual values their academics, the higher their GPA. This also links back to the gender difference for academic importance. Females were found to value academics more than males, which correlated in females having a higher GPA than males, which is consistent with Beron & Piquero (2017). Positive correlations were also found between athletic identity and their consumption on competition days and non-competition days.

These data points combined measure out to providing a potential reason why

we see major gender differences when it comes to academic success and consumption habits. For females who have been found to have higher a GPA than their male counterparts, their AUDIT score has been shown to decrease, which would lead to not experiencing positive or negative alcohol behaviors as frequently as males. In addition, the more the individual identifies with being an athlete, the more likely they will consume more on competition days and non-competition days, which is consistent with the male SA responses.

Practical Implications

To benefit SAs, athletic departments, and academic programs, the development of effective prevention and early intervention programs for SAs who may display a decline in academic performance or show signs of alcohol dependency is crucial to starting conversations and addressing possible issues. SAs, given the unique nature of their dual roles (student AND athlete), are under a tremendous amount of pressure and stress, and need an outlet to speak about their issues outside of practice or class. As Rankin et al. (2016) stated, an individual cannot identify as both parts without their being conflict, which results in one of two variables failing. For an athletic department, making resources known to all athletes and coaches about counseling may make a positive difference in the development of these individuals. Most campuses have counseling centers or professional resources within the athletic department

staff. Visibility and accessibility to these outlets early enough in the academic year and athletic season could prove beneficial. In addition, providing workshops for coaches, athletic trainers, and professors to discuss how to identify issues and disseminate information could benefit the department holistically. The NCAA, in partnership with the Sport Science Institute, has a number of resources available online to raise awareness of educational resources, best practices on campus, data and research, and summits and task forces to better address mental health on campus. These resources are available to students and campus professionals, and aim to help answer questions from both parties. In addition, there are also interactive educational modules that promote awareness and “destigmatize” the seeking of mental health care. A goal for the NCAA with this online database is to “create a culture where care seeking for mental health issues is as normative as care seeking for physical injuries.” (NCAA – Mental Health, 2019) Also, universities need to impress upon coaches and students that the primary role of the SA is student, not athlete. Putting policies and structure in place to support this idea, and to increase responsibility of actions, would impact how SAs view their primary identity. Such a change has been shown in research to generate positive impact on academic performance and, relatedly, alcohol deterrence. If these policies are set in place to increase responsibility within SAs, feedback could be received during orientation sessions

each year for SAs (or during mandated sessions for policy breakers) about attitudes, behavior, and culture. Hearing from the SA population directly will benefit the research field.

Limitations and Future Research Suggestions

Due to this study being a self-reported questionnaire, responses have a degree of uncertainty. Self-reporting GPA also posed an issue, as there is a wide range of variables that fall under one survey answer option. Accessing accurate GPA information from academic offices on campus could allow for further understanding of where academic success standards truly fall for SAs at one university. There were respondents who failed to respond to all questions as well, which caused for the total valid responses to be lower. Due to the fact that this survey is based on individual alcohol consumption, and that this survey was potentially introduced to them by their coach (if the principal researcher provided paper copies of the survey to the team), there may be underreporting of issues for fear that a coach, a counselor, etc., may be contacting the participant, even though this survey was explained as being confidential and anonymous. In addition, there was a significant percentage of the study respondents that reported they don't consume alcohol at all (22.8%). If the accuracy of this subset can be verified, future study could investigate what factors play a role in this group's decision-making process of whether to consume or

not when they are a collegiate SA.

This study was completed at one NCAA Division I institution in the Midwestern United States. The university that was utilized in this research study may not be as diverse when compared to the mean or average of all U.S. colleges. The overall student population at the university is 87% White, with 63.4% of undergraduates residing from the state in which the school resides. Asking other demographic information, such as race/ethnicity and other social demographics, would be beneficial for a future study to understand the population surveyed additionally. Such information was not derived from the students taking this survey. Sampling a larger variety of student-athletes from different universities may provide a different breakdown of responses. In addition to adding to the states in which this study were to take place, it is important to survey specific sports to further the information present about those SA groups. For example, conducting a nationwide study on Football teams and their consumption habits could assist further researchers in this topic in the future.

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