

# Fantasy Sports: A Growing Concern Among College Student-Athletes

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**Abstract** Participation in fantasy sports has become increasingly popular. Typical gambling activities such as poker, sports wagering and, sports lotteries, share many similar characteristics with fantasy sports playing. Research has shown that not only are college students more likely to partake in risky behaviors (gambling, alcohol and drug use), but those who partake in fantasy sports are also more likely to experience gambling-related problems. However, no published studies have examined the relationship between student-athletes and fantasy sports participation. Using data from the 2004, 2008 and 2012 National Collegiate Athletic Association (NCAA) studies assessing gambling behaviors and problems among U.S college student-athletes, this study aims to explore the prevalence and growth in fantasy sports among student-athletes. Further, it examines whether, in the 2012 study, student-athletes qualifying as at-risk or having gambling problems participate more often in fantasy sports. Overall a steady increase in fantasy sports participation (for money or fun) in college was found looking at these three cross-sectional studies. Additionally, approximately half of college student-athletes who qualified as at risk or having gambling problems were found to have participated in fantasy sports wagering.

**Keywords** Fantasy sports · Gambling · Student-athlete · NCAA · College

Participation in sports-related fantasy games has become increasingly popular among internet users (Deakin Research Communications 2011). However, relatively little research has been conducted to explore the relationship between fantasy sports, gambling, and the participants who involve themselves in such activities. Fantasy sports allow participants to draft imaginary or virtual teams made up of real professional or college athletes and compete against other teams using the real-life statistics on the individual players during a given season (Martin and

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Nelson 2014). According to the Fantasy Sports Trade Association (FSTA), in 2014 there were over 41 million people engaged in fantasy sports playing in the USA and Canada combined. Research by the FSTA has illustrated that over three-quarters of players are under the age of 35 years, male (80 %), Caucasian (89.8 %), and not married (51.5 %) (Deakin Research Communications 2011) and almost half (46.9 %) of these participants paid fees to participate in their fantasy sports leagues (Fantasy Sports Trade Association 2014). These fees are typically collected prior to the sports season and paid out to the winner of the league at the end of the season. The league fees are not only payment for access to the league, but participants have the chance of winning back their league fee, along with the fees paid by other participants (Martin and Nelson 2014). The majority of fantasy sports participants in the U.S and Canada play within professional football (77 %) and baseball (33 %) leagues. However, other sports such as, NASCAR (21 %), professional basketball (20 %), college football (20 %), professional hockey (18 %), golf (15 %), and professional soccer (12 %) reportedly also have an ample amount of fantasy players (Martin and Nelson 2014). More recently, fantasy sports wagering has added daily or weekly opportunities to wager, with some states within the U.S sanctioning this behavior (Martin and Nelson 2014).

The economic impact of fantasy sports has been reported to be approximately \$3.6 billion per year (Fantasy Sports Trade Association 2014), which includes dues paid by participants, subscriptions and advertising. Since, ultimately league fees are distributed to a league winner at the end of the season (or daily when available), when playing for money, wagering on fantasy sports can be considered a form of gambling.

## History of Fantasy Sports

The history of fantasy sports is often linked to a meeting at *La Rotisserie Française* restaurant in New York City where Dan Okrent, often referred to as the creator of fantasy baseball rules, organized a league with a group of individuals whose performance was based on the statistics of actual Major League Baseball (MLB) players. By the early 1990s, fantasy baseball had expanded to other sports including football and basketball. The beginnings of fantasy sports resembled gambling in that money was placed at risk for an expected gain as well as affording participants with a source of social interaction (Weiss et al. 2011).

Players in such fantasy sports leagues essentially function as virtual managers of their respective “teams.” Using a wide variety of data and statistics on actual players, participants can either draft or bid on players to form their teams (Schirato 2011).

## Student-Athletes

One of the largest groups of young adults in Western countries consists of college students. Research has highlighted that many college students in general are exploring their newly-acquired independence and often partake in a wide diversity of high-risk behaviours (e.g., frequent alcohol use, illegal drug use, cigarette smoking, and gambling). Within this setting, student-athletes are suggested to be at particular risk for participation in high-risk behaviours (St-Pierre et al. 2013; Yusko et al. 2008a, 2008b). It has been suggested that gambling and problem gambling behaviors have become an increasing concern among student-athletes (Huang et al. 2007). Male college students have been shown to be more likely to gamble and

gamble with more money than their female counterparts resulting in increased experiences of gambling-related problems. Although there are no studies thus far that have addressed the onset of fantasy-sports participation with student-athletes, it is likely that a large proportion of players are first introduced to this form of gambling in their college-aged years (Martin and Nelson 2014).

## Gambling and Fantasy Sports

While U.S and Canadian federal law have yet to declare fantasy sports playing as an illegal activity (Lee et al. 2011), the National Collegiate Athletic Association (NCAA) prohibits its student-athletes from partaking in such activities when cash prizes and entry fees are required (National College Athletics Association 2014). A student-athlete participating in a fantasy league involving their own team risks permanently losing their NCAA eligibility, while a student-athlete participating in any fantasy sports league may be subject to suspension for an entire season (New 2014).

Research has suggested that both gambling and fantasy games share many similar major characteristics. Gambling has typically been associated with a variety of activities including casino games, poker, lotteries, sports wagering, horses and dogs. Similar to such activities, fantasy sports often result in possible monetary loss or gain. Many fantasy leagues require entry fees as well as fees for trades and acquisitions. For these fees, participants are monetarily rewarded based on overall standing and performance. For higher pay-out game providers, participant entry fees can range from \$20 to \$5000 (Lee et al. 2011). On average, fantasy sports players reportedly spend \$111 dollars on “league related costs, single player challenge games, and league related material over a 12 month period,” making fantasy sports an estimated \$3.6 billion industry (Fantasy Sports Trade Association 2014). Furthermore, fantasy sports players will often consume an average of 17.89 hours per week following their sport and 8.67 hours per week on fantasy playing (Fantasy Sports Trade Association 2014). The amount of time spent on fantasy sports continues to grow with the emergence of 24-hour TV channels, the Internet, and a three hour morning radio show dedicated to fantasy sports (Sieroty 2014). Given the excessive time and money spent on fantasy sports, as well as, the uncertainty of results, these popular activities have the potential to become addictive.

## Gender and Gambling

Results from previous literature, have shown unique gender differences in gambling preferences. For example, Delfabbro and Winefeld (2000) suggested that females were more likely to participate in games of chance such as bingo and lottery while males were more likely to participate in games of skill including cards. Additionally, previous NCAA studies have shown that 35 % of male student-athletes reported wagering on sporting events in the past year as compared to 10 % of their female counterparts (Huang et al. 2007). Females also tended to prefer less social and non-strategic forms of gambling while males tended to prefer the strategic and social aspects of gambling (Potenza et al. 2001). Fantasy sports can be viewed as a form of gambling that is both social and strategically based. As such, they often share characteristics with games of skill (Weiss et al. 2011). However, as in most forms of gambling there are still certain elements of chance present in fantasy sports (Halverson and Halverson 2008), which reliably defines this activity as gambling.

## Problem Gambling

Gambling behavior can be viewed along a continuum ranging from non-gambling to social/occasional gambling to at-risk gambling to problem/pathological gambling (Derevensky 2007). Young adults, in general, are especially vulnerable to problem gambling, with higher rates than the general adult population. Specifically, the incidence of problem gambling among college-aged students has been estimated at 7.8 % (Emshoff and Perkins 2008), while the overall prevalence for problem gambling among the adult population is estimated at 1–3 % (Carruthers et al. 2006). Student athletes, a subset of this population, have been shown to be two times as likely to be problem gamblers than their student non-gambler counterparts (Oster and Knapp 1998), although recent studies have indicated that both groups are at equal risk for problem and pathological gambling (Kerber 2005). For example, Huang et al. (2007) reported results from the first national survey of gambling among U.S. college student-athletes (completed in 2004), indicating 4.7 % of student-athletes meeting the DSM-IV criteria for at-risk and/or pathological gambling. Furthermore, in a subsequent national study of U.S. college student-athletes (completed in 2008), St-Pierre et al. (2013) reported 7.6 % of student-athletes meeting criteria for at-risk and/or pathological gambling.

Pathological gambling now referred to as disordered gambling represents a “persistent and recurrent maladaptive gambling behavior that leads to significant [harmful] legal, financial, physical, and psychosocial consequences” (Shin et al. 2014, p. 205). According to the DSM-5 there are nine criteria that are used to diagnose a gambling disorder (GD); 1) preoccupation, 2) tolerance, 3) inability to cut down or quit, 4) withdrawal, 5) “chasing” one’s loses, 6) lying, 7) committing illegal acts to support gambling, 8) jeopardizing or losing significant relationships, job, educational or career opportunities due to gambling, and 9) relying on others to provide money to relieve a desperate financial situation resulting from gambling (American Psychiatric Association 2013). Individuals who meet four of the nine criteria qualify for a gambling disorder; however, due to the relatively low rate of pathological gambling in the general population studies often examine gambling related problems which is defined by endorsement of 2–3 criteria (Martin and Nelson 2014).

While there is considerable consensus that gambling and wagering among young adults is rather common, a small proportion of this population experience serious gambling-related problems (Derevensky 2007). Although problem gambling is not always easily detected, those who suffer from this addiction may face serious negative consequences (financial, social, psychological, etc.). As younger gamblers are competent users of newer media outlets and are exposed to remote gambling opportunities (Griffiths and Parke 2010), it should come as no surprise that online gambling has been associated with fantasy sports and gambling.

Fantasy sports, primarily played via the internet may well be particularly attractive to athletes who spend considerable time emulating professionals and studying competitions. Considering both the growth of fantasy sports and its economic impact on society and the individual, additional research is warranted. As previously noted, fantasy sports wagering are very popular among participants under the age of 35 years. As such, college-aged students are quite likely to partake in fantasy games (New 2014). The principle objective of the current study was to assess rates of participation in fantasy sports for NCAA student-athletes over an eight-year span, while considering differences in gender participation. Additionally, data from the most recent survey was assessed to see if the likelihood of at-risk/probable problem gamblers (PPG) playing fantasy sports was higher than the general student-athlete population.

## Method

The current study employed data from the 2004, 2008 and 2012 NCAA national survey of college student athletes designed to assess college students gambling behaviors. All NCAA member institutions were approached to participate and were asked to survey one of three athletic teams, with similar methodology being employed for all three cohorts. A random stratified sampling procedure was utilized in order to provide a sufficiently large and representative sample within NCAA divisions and sports. This was a self-report, anonymous, and voluntary survey, and all student-athletes from the sampled teams were given the opportunity to participate in the survey. Faculty Athletics Representatives (FARs) were asked to have a student administer the survey and study protocols which were designed to increase anonymity of participants and schools. As a result, no individual student identity nor the schools' identities are available. In the most recent survey, there was an estimated response rate of 65 % school participation, based on the number of surveys received, which was similar to the 2004 and 2008 response rates. Data was extensively reviewed through a series of validity checks and Item Response Theory (IRT) techniques, in order to identify possible irregular patterns of responses. Cases that had strong evidence of insincere response patterns were excluded.

Due to some changes in survey strategy techniques from the 2004, 2008 and 2012 surveys, steps were also taken to equate results as much as possible. As a result, comparisons are limited to students playing one of 22 sports (11 women's sports, 11 men's sports), that were sampled appropriately in each NCAA division (Division I, II, III) and within each administration year. Additionally, when results were combined across sport, gender and division, the sample data from 2004, 2008 and 2012 surveys were weighted in comparison to the 2008 participation rates within these 22 sports and three divisions. The comparative data available for 2004 surveys included a total of 19,354 athletes, 2008 surveys included 19,371 athletes, while the 2012 surveys included 22,935 athletes.

## Measures

### **Gambling Activities Questionnaire – Adapted (GAQ; Gupta & Derevensky 1996)**

The GAQ is designed to assess four general domains related to gambling behavior, including descriptive information, cognitive perceptions, familial gambling, and comorbidity with other high-risk and delinquent behaviors. For this study, a modified version of the GAQ was administered to collect descriptive information regarding the frequency of participation in 11 common gambling activities for money over the previous 12 months (“not at all”, “less than once a month”, “at least once a month”, “at least once a week”, and “daily”). Further, the questionnaire included six questions collecting descriptive data regarding participation in fantasy sports leagues (e.g., frequency, amount of money wagered, type of league). The frequency of gambling behavior across various types of activities was used to categorize participants as non-gamblers (did not engage in any gambling activities in the previous 12 months) and gamblers (endorsed gambling at least once in any activity in the past 12 months).

**Diagnostic Statistical Manual–IV–Text Revision (DSM–IV–TR; American Psychiatric Association 2000)** The DSM-IV-TR provides a list of 10 diagnostic criteria for pathological gambling, including: preoccupation with gambling; loss of control; need to increase wagers to achieve same level of excitement (tolerance); withdrawal symptoms;

escape; chasing of losses; lying to family; illegal activities to pay for gambling; disruptions to family or employment; and borrowing money to pay for gambling debts. The questionnaire was from the DSM-IV-TR in that it contained one item corresponding to each of the diagnostic criteria, and endorsed responses to each of the 10 items were summed to create a DSM Gambling Screen score. Scores ranged from 0 to 10, with higher scores indicating endorsement of more criteria. Standard cut-off scores for problem gambling classification were used to categorize past-year gamblers as “social gamblers” (DSM score of 0–2), “at-risk gamblers” (DSM score of 3–4), and “probable pathological gamblers (PPG)” (DSM score of 5 or more). This questionnaire format has been found to exhibit satisfactory reliability (e.g., Cronbach’s  $\alpha = 0.92$ ), validity and classification accuracy (e.g., specificity = 0.98) (Stinchfield et al. 2005). As an example internal consistency of the 10-item scale in the 2012 sample was acceptable with a Cronbach’s coefficient  $\alpha = 0.79$ , and with an average correlation between the items of  $r = 0.32$ .

## Results

### Participation in Fantasy Sports

Overall, in 2004 70.7 % of males and 48.9 % of female student-athletes reported gambling for money during the past 12 months. Over the following years there was a slight decrease in overall gambling behavior. In the 2008 survey 66 % of males and 39 % of female student-athletes reported gambling for money during the past 12 months, and in the 2012 survey, 57 % of males and 39 % of female student-athletes reported gambling for money during the past 12 months (Table 1). While overall gambling for money (at least among males) has seen a slight decrease, there has been a general increase in fantasy sport wagering among college student-athletes.

Additionally, comparison results between 2004 and 2012 indicated a steady increase in participation of fantasy sports playing among college student-athletes. In particular, there was a 15.3 % increase from the 2004 results to the 2008 results of college student-athletes who participated in free fantasy sports leagues, while this trend seemed to plateau over the next four years with only a 0.7 % increase from the 2008 survey (Table 2). Participation in leagues with entry fees and prize money was lower, although still significant considering NCAA regulations, and increased minimally but relatively steadily throughout the eight years (Table 2). Specifically, 20 % of college student-athletes admitted to participating in fantasy sports games for a fee in 2012. In relation to student-athletes attitudes towards fantasy sports playing results illustrated that in the 2008 study 71.9 % and in the 2012 study 37.6 % of student-athletes acknowledged that they considered participating in a fantasy league with fees and prize money as gambling.

**Table 1** Percentage of student-athletes gambling for money during the previous 12-months

	2004	2008	2012
Male	70.7 %	66 %	57 %
Female	48.9 %	39 %	39 %

In addition, male participation was consistently higher than female participation. Specifically, male participation in free fantasy sports leagues was consistently approximately 6–7 times more likely than female participation in all three survey years. In leagues with an entry fee and prize money, male participation stayed relatively consistent between 2004 and 2008 (males being approximately 6–7 times more likely than females), with an increase in the 2012 results (males 10 times more likely than females to participate) (Table 2).

Of considerable interest was the type of fantasy sports in which athletes participated. Data was separated by gender and NCAA sport played. Results indicated that compared to other student-athletes, male baseball (40.6 %), football (37.2 %), and ice hockey players (43.2 %) participated most often in their own fantasy sports leagues than any other optioned sports league. Additionally, male golfers, and soccer players participated in pro football leagues most often (38.5 %, 22.3 % respectively) and in the same fantasy league as their own sport second most often (18 %, 19.5 %). While minimal, female ice hockey players participated most in ice hockey fantasy leagues (4.3 %), and female basketball, softball, and soccer players participated in pro football fantasy leagues most often (2.9 %, 4.4 %, 2.1 % respectively) and their own sport fantasy leagues second most often (2.1 %, 1.3 %, 1.6 %). Percentages are lower for females as only 8.4 % and 1.8 % of female NCAA student-athletes participated in free or fee based fantasy leagues during the past 12-months.

### At Risk/Problem Gamblers and Fantasy Sports

With the steady increase throughout the years of fantasy sports playing among NCAA student-athletes, it was desirable to calculate in the 2012 sample the students who qualified as at-risk or problem gamblers and observe their likelihood of playing fantasy sports. Results demonstrated that among those male students considered at risk or having a gambling problem (1.9 %), more than half engaged in free fantasy leagues. Additionally, approximately half also played in fee-based fantasy leagues. Almost half of female student-athletes at-risk/PPG (0.1 %) reported playing free fantasy leagues, and a quarter of them reported playing fee-based fantasy leagues (Table 3). In comparison, of those student-athletes who qualified as non-problem gamblers (i.e., non-gamblers and social gamblers), approximately half reported playing fantasy sports for free and less than a quarter reported playing fantasy sports for monetary gain. There was a vast difference between female non-problem gamblers and at-risk/PPG's, demonstrating a 35.9 % increase in free fantasy sports playing, and a 23.2 % increase of fee based fantasy sports playing among females who are at-risk/PPG (Table 3).

Most male at-risk or problem gamblers (40.9 %) were engaged in between two and five fantasy leagues, and 33.7 % of these NCAA student-athlete fantasy players spent on average between \$10–\$149 dollars on league related fees within a 12-month period. Furthermore, over-half of both male (65.5 %) and female (66.7 %) at-risk or problem gambling student-athletes

**Table 2** Participation of fantasy sports among college student-athletes, by gender

	Male			Female			Overall		
	2004	2008	2012	2004	2008	2012	2004	2008	2012
Participation in free fantasy league	37.6 %	50 %	50.7 %	5.5 %	8.4 %	8.4 %	43.1 %	58.4 %	59.1 %
Participation in fantasy league with entry fee and prize money	15.5 %	17 %	18.7 %	2.7 %	2.4 %	1.8 %	18.2 %	19.4 %	20.5 %



**Table 3** Comparison of Non-Problem Gamblers and At-Risk/Problem Gamblers Participation in Fantasy Sports

	Male		Female	
	Non-PPG	At-Risk/PPG	Non-PPG	At-Risk/PPG
Participation in free fantasy league	52.2 %	65.4 %	8.5 %	44.4 %
Participation in fee based fantasy league	18.4 %	48.1 %	1.8 %	25 %

do not consider fantasy sports participation as a gambling activity, compared to 79.6 % of male and 82.2 % of female non-problem gambling student athletes.

## Discussion

As expected male participation in fantasy sports leagues was consistently higher than female participation in all domains (for free or for monetary gain). Additionally, as fantasy sports popularity among the general adult population has increased during the past decade, so too has participation in fantasy sports playing among college student-athletes. Interestingly, male baseball, football and ice hockey players reported higher rates of participating in their own sport fantasy leagues than all other student-athletes. Additionally, female ice hockey players were also most likely to participate in fantasy leagues of their own sport (i.e., ice hockey), than other female student-athletes. Perhaps this is due to their respective sport's popularity as fantasy leagues, or an inherent competitive aspect within their sports. Further research looking into student-athlete perceptions would be necessary in order to provide additional information on their motives.

The results also illustrate a crucial change in attitudes toward gambling and fantasy sports playing during the past several years. A 34.3 % decrease in college student-athletes who considered fantasy sports a form of gambling was reported in spite of entry fees and the opportunity to win cash prizes. Moreover, over half of both female and male college student-athletes who were identified as at-risk or having a gambling problem do not consider fantasy sports participation as a form of gambling. In spite of NCAA regulations, sports wagering continues to be a popular and frequent activity among student-athletes and with the addition of social media, fantasy sports playing is becoming increasingly normalized among youth, including college student-athletes. Technological advances have become progressively influential in the lives of college youth, and outside gambling influences have used this method to gain access to student-athletes and others their age.

Although most college student-athlete gamblers wager small amounts of money, problem gambling can and does occur amongst the population, resulting in significant debt for these students. Results demonstrated that approximately half of student-athletes participated in fantasy sports for free and 21 % participated for monetary gain. Playing simulated gambling games has shown to be predictive of later gambling for monetary gain as well as problem gambling behaviors. For instance, in a study by King et al. (2014) simulated gambling had the strongest positive association with monetary gambling. Adolescents in this study who played simulated gambling activities wagered on races 5 times more than adolescents who did not engage in simulated gambling. Further, exposure or past involvement in simulated gambling activities was a significant predictor of at-risk problem gambling. In fact, when at-risk or



problem gamblers in this sample were examined, results indicated an increase in participation with more than half of males and approximately half of females who participated in free fantasy sports leagues; while, nearly half of males and a quarter of females at-risk or having a gambling problem participated in fantasy leagues for monetary gain. Additionally, this group was also more likely to participate in up to three fantasy leagues at a given time and spend more money on these leagues than student-athletes identified as social gamblers. The results obtained in this study are comparable to those obtained by Martin and Nelson (2014), who reported that 11.5 % of college student participants (non-athletes) indicated engaging in fantasy sports during the past year. Of those, 43.5 % had also wagered money on their fantasy leagues. Additionally, results indicated that those college students who participated in fantasy sports regardless of whether they played for money were more than five times likely to have gambling-related problems. Still, females who participated in fantasy sports (whether for free or monetary gain) were, similar to the current results, much more likely to experience gambling-related problems (three times more likely while males were nearly three times more likely to experience gambling related problems but only when playing for money) (Martin and Nelson 2014). Perhaps these gender-related differences are due to perceived normative behavior for females. That is, gambling is traditionally viewed and more accepted among males, thus it is possible that those females who play fantasy sports are more invested in the activity (whether they play for money or not) because it is not considered a “typical” female past-time, and thus it takes more motivation for them to participate (Martin and Nelson 2014).

### Limitations and Future Directions

This research allows a greater understanding of the relationships between gambling, and specifically problem gambling and fantasy sports participation among college student-athletes. However, this study is only an initial step toward understanding the impact of fantasy sports on problem gambling behaviors and several limitations should be noted. First, the data in the present study were based on self-report questionnaires. A series of checks, Item Response Theory Techniques, and filters were employed to confirm the validity of the data. However, it is impossible to evaluate each respondent’s true engagement in the questionnaire. Further, as with most self-report questionnaires there is a certain amount of bias that goes into respondents answers. Specifically, given the implications of some of the questions asked in the survey (i.e., those items that pertained to serious violations of NCAA rules, resulting in loss of eligibility or possible criminal charges), it is conceivable that a number of participants were cautious in reporting actual gambling activity level and problems. However, anonymity was ensured in order to help safeguard this limitation.

### Conclusion

Fantasy sports playing has witnessed a significant increase in popularity among this age group (Deakin Research Communications 2011). Recent results from this study and those of Martin and Nelson (2014) illustrate a steady increase in fantasy sports playing requiring an entry fee by college students in general as well as college student-athletes. However, attitudes towards perceiving fantasy sports playing as a form of gambling have decreased. This juxtaposition is of great concern and should be considered when creating educational and awareness programs for college students about gambling and fantasy sports playing. There needs to be increased

refinement of educational programs on gambling. Attention should be paid to newer and electronic/internet methods of gambling.

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