

Personality factors associated with problem gambling behavior in university students

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Abstract

This study investigated sex differences and personality factors associated with gambling behavior in a non-clinical sample of young men and women. The participants were 212 university students (62 men and 150 women) and their mean age was 18.7 years. The South Oaks Gambling Screen (SOGS) was used to assess problem gambling behavior and the NEO Five-Factor Inventory Form S (College Age) was used to assess personality traits. The results indicated that men were more likely to endorse indicators of gambling problems than were women, with sex differences in different endorsed gambling activities. Of the five personality factors investigated, low Openness to experience and low Agreeableness were most strongly associated with higher scores on the SOGS, indicative of potentially problematic gambling behavior. Further analysis illustrated that for men in particular, low Openness to experience was a key personality factor in relation to higher SOGS scores.

Résumé

La présente étude s'est penchée sur les différences entre hommes et femmes et les traits de la personnalité associés au comportement de jeu dans un échantillon non clinique de jeunes hommes et femmes. Ont participé à cette étude 212 étudiants (62 hommes et 150 femmes), dont l'âge médian était de 18,7 ans. L'instrument de mesure South Oaks Gambling Screen (SOGS) a été utilisé pour évaluer les problèmes de jeu compulsif et l'inventaire de personnalité NEO Five-Factor Inventory (NEO-FFI) Form S (College Age) a été utilisé pour évaluer les traits de la personnalité. Les résultats ont montré que les hommes avaient beaucoup plus tendance que les femmes à avoir un problème de jeu compulsif et qu'il existait des différences entre les sexes quant aux activités de jeu. Parmi les cinq traits de la personnalité étudiés, un faible score pour l'ouverture à l'expérience et pour le caractère agréable était les deux principales caractéristiques associées à des scores

élevés au questionnaire SOGS, ce qui indique des habitudes de jeu potentiellement problématiques. Une analyse plus approfondie a montré que pour les hommes en particulier, un faible score pour l'ouverture à l'expérience était un trait de personnalité essentiel par rapport à des scores SOGS élevés.

Introduction

The American Psychiatric Association (APA) has classified pathological gambling as an Impulse Control Disorder in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR)* (APA, 2000), describing it as a diagnosable mental disorder in cases where there is evidence of loss of control over gambling, progression of time and/or money spent gambling, preoccupation with gambling, and a disregard for the consequences of continued involvement in gambling. In the literature, pathological gambling and problem gambling are terms used to refer to gambling behavior that is not under control, resulting in negative consequences over a range of life domains. Comparing the two terms, it is frequently interpreted that pathological gambling represents a more severe manifestation than problem gambling (Reith, 2007).

Despite widespread gambling activity among the general population, estimates of the lifetime prevalence rate for disordered gambling in Canada and the United States range from 2% to 4% of adults and 6% to 11% of university students (Shaffer & Hall, 2001). Williams, Connolly, Wood, and Nowatzki (2006) reported prevalence rates for students at a Canadian university to be 1.4% for severe problem gambling and 6.2% for moderate-risk gambling. In a critical review of the literature, Johansson, Grant, Kim, Odlaug, and Gotestam (2009) concluded that younger age (less than 29 years) is a significant risk factor for problematic gambling. This is important to consider as estimates indicate that 42% to 85% of university students engage in gambling activity, with 3% to 23% gambling on a weekly basis (LaBrie, Shaffer, LaPlante, & Wechsler, 2003; Lesieur et al., 1991). These results indicate that this propensity for early gambling behavior may, for some students, develop into problematic gambling with serious consequences for academic performance, work activities, and relationships (Winters, Bengston, Door, & Stinchfield, 1998).

Previous studies have found gender differences in the prevalence rates of pathological and at-risk gamblers. Males appear to be consistently at greater risk of problem gambling than females (Johansson et al., 2009), although the ratios reported vary from 3.5:1 to 10:1 (Govoni, Rucpich, & Frisch, 1996). In the literature on youth with significant problem gambling, Jacobs (2004) reported the ratio of boys to girls ranged from 3:1 to 5:1. These ratios are further supported by the fact that men with gambling problems typically report beginning to gamble in adolescence compared to women who often start later in life (Grant & Kim, 2002;

Ibanez, Blanco, Moreryra, & Saiz-Ruiz, 2003; Ladd & Petry, 2002; Potenza et al., 2001). Furthermore, gender differences exist in the types of gambling activities pursued. Males typically prefer games with an element of strategy or skill (e.g., cards, sports betting, casino games) whereas females tend to prefer non-strategic games (e.g., bingo, lottery tickets) (Adebayo, 1998; Burger, Dahlgren, & MacDonald, 2006; Desai, Maciejewski, Pantaloni, & Potenza, 2005; Lesieur et al., 1991).

Although the pathological gambling research literature continues to broaden and deepen, there is much more to be understood about this disorder. Effective prevention and treatment strategies are still developing (McCaslin, 2003). Moreover, the current generation of young adults in North America is the first to grow up exposed from childhood to widespread legalized, government-operated gambling. Monaghan and Derevensky (2008) point out that gambling is rarely presented in a realistic way in the media as it is usually presented very positively with few, if any, references made to negative consequences. The authors suggest that this depiction is supported by findings that children and adolescents frequently gamble for money with their parents and other family members, with many reporting their parents purchase lottery tickets for them as gifts. Accordingly, a Statistics Canada study (Marshall & Wynne, 2003) reported that while most provinces restricted the legal age of gambling to 18 and over, one-half of young men and one-third of young women (age 15 to 17 years old) gambled in 2002. Although they gambled on lotteries and instant-win tickets, youth participation rates were highest for betting on cards or board games (outside of casinos) and games of skill (such as pool or darts). The impact of the increase in gambling accessibility is only beginning to be understood. It is known that the increase in gambling accessibility provides a greater opportunity to gamble and, therefore, leads to an increased likelihood that some individuals will become pathological gamblers (Petry, 2004).

Reviewing the prevalence rates of pathological gambling in the general population, it is clear that only a small proportion of people who gamble do so abnormally. Research is needed to explore the experiences and characteristics of those who gamble abnormally. Investigating the personality correlates of problem gambling is an important pursuit to assist in a more complete understanding of the developmental course of the disorder and to inform targeted prevention and treatment approaches.

Despite an increase in research into the personality factors associated with problem gambling, there is a lack of consistency in the findings. For instance, while some studies have highlighted the importance of sensation-seeking in problem gambling (Alessi & Petry, 2003; Gupta, Derevensky, & Ellenbogen, 2006; Powell, Haroon, Derevensky, & Gupta, 1999), others have found no significant relationship between gambling behavior and this factor (Blaszczynski, Wilson, & McConaghy, 1986; Breen & Zuckerman, 1999; Cyders & Smith, 2008; Hammelstein, 2004). Further study has indicated that sensation-seeking appears to be related to gambling behavior generally, not to severity of gambling problems (Langewisch & Frisch,

1998); however, others note inconsistency in this finding (Cyders & Smith, 2008). A second major construct that has been investigated in relation to problem gambling is impulsivity, with numerous studies illustrating a positive correlation (Breen & Zuckerman, 1999; Nower, Derevensky, & Gupta, 2004; Slutske, Caspi, Moffitt, & Poulton, 2005; Steel & Blaszczynski, 1998; Vitaro, Arseneault, & Tremblay, 1997), but not universally (Allcock & Grace, 1988; Gerdner & Svensson, 2003). Others have also found a relationship between pathological gambling and psychological distress, neuroticism, and negative affect (Blaszczynski, Wilson, & McConaghy, 1986; Slutske, et al. 2005; Steel & Blaszczynski, 1998). Conversely, Cyders and Smith found a relationship between gambling and positive emotions, with increases in gambling occurring in positive mood states. Clearly there is much inconsistency and variability in the literature exploring the relationship between personality traits and gambling behavior. This variability may be a reflection of the true heterogeneous nature of problem gamblers, but it is also possible that it is a reflection of the variability in measures used and populations sampled. The literature demonstrates the use of a wide range of single construct measures to assess personality characteristics as they relate to gambling. It is possible that greater clarity and consistency in results are attainable through the use of a well-established approach to classifying and measuring personality. The Five Factor model of personality is uniquely suited to the task.

The Five Factor model of personality and the Revised NEO Personality Inventory (NEO PI-R) to assess these factors have been extensively researched and broadly applied (Costa & McCrae, 1992; McCrae & Costa, 2003). The five personality domains as outlined by Costa and McCrae are: Neuroticism (e.g., anxiety, anger, depression, impulsiveness); Extraversion (e.g., warmth, assertiveness, excitement-seeking, positive emotions); Openness to experience (e.g., feelings, actions, ideas, values); Agreeableness (e.g., trust, altruism, compliance, modesty); and Conscientious (e.g., competence, order, dutifulness, self-discipline). Two studies have used versions of the NEO PI-R to investigate personality characteristics in pathological gamblers. First, Bagby et al. (2007), in a study of pathological gamblers and non-pathological gamblers, discovered that pathological gamblers scored significantly higher on the Neuroticism domain and significantly lower on the Conscientiousness domain, as measured by the NEO PI-R, relative to non-pathological gamblers. The second study, conducted by Myrseth, Pallesen, Molde, Johnsen, and Lorvik (2009), also compared pathological gamblers to non-pathological gamblers using the NEO-FFI (a short version of the NEO PI-R) and found that high scores on the Neuroticism domain and low scores on the Openness to experience domain were related to pathological gambling. With only two studies investigating this important personality taxonomy as it relates to problematic gambling, more research is required to clarify the relationship of the Five Factor domains and gambling, and to extend the generalizability of the findings. Bagby et al. solicited participants to complete their study on gambling through advertisements in local newspapers. Myrseth et al. used the same method of participant recruitment through newspaper advertisement, in addition to referrals for those seeking gambling treatment. These participant

recruitment strategies introduce the potential of a self-selection bias, possibly favoring those who were distressed or concerned about their gambling, thereby impacting the generalizability of the results.

The goal of this study was to investigate the role of sex differences and personality factors in problematic gambling behavior in a non-clinical, non-treatment-seeking sample of young men and women in university. This population was chosen based on the previously noted estimates that the majority of university students gamble (LaBrie et al., 2003; Lesieur et al., 1991) and that a higher proportion engage in problematic or pathological gambling than in the general population (Shaffer & Hall, 2001). This population was also chosen in an effort to obtain a more representative depiction of traits among those who gamble, and to allow for analysis of sex differences. Assessing non-clinical, non-treatment-seeking individuals is important because much of the research is based on treatment-seeking pathological gamblers — a population that is estimated to characterize only 2% of the overall population of pathological gamblers and therefore cannot be taken to adequately represent the characteristics of the general population of people who gamble (Wallisch, 1996). Finally, as Gupta, Derevensky, and Ellenbogen (2006) have noted, investigating personality traits in young people who gamble has the potential to provide unique insights into the interaction between personality and gambling because it is likely that the problem gambling behavior has not yet significantly impacted personality characteristics at this young age.

Based on previous research, especially the Myrseth et al. (2009) study using the shortened version of the NEO PI-R to investigate personality characteristics and gambling, it was hypothesized that the greater the extent to which participants endorsed problematic gambling behavior, the higher they would score on the Neuroticism domain and the lower they would score on the Openness domain. Due to the lack of previous research exploring sex differences as they relate to personality characteristics and gambling in this population, an exploratory approach to this aspect was adopted.

Method

Participants

The participants were 212 university students on a small university campus. Sixty-two participants were men and 150 were women. They ranged from 17 to 31 years of age, with a mean age of 18.70 years. The mean ages of the men and women were similar: 18.51 ($SD = 1.31$) and 18.77 ($SD = 1.95$) years, respectively.

Measures

The South Oaks Gambling Screen (SOGS) (Lesieur & Blume, 1987) was used to assess gambling activities and problem gambling behavior. The SOGS has been

widely used in gambling research with evidence to support adequate reliability and validity. The NEO Five-Factor Inventory (NEO-FFI) Test Booklet-Form S (College Age) (Costa & McCrae, 1992), a 60-item version of the NEO PI-R, was used to assess the five-factor personality domains (Neuroticism, Extraversion, Openness to experience, Agreeableness, and Conscientiousness). Form S is for self-report. Cronbach's alpha was calculated for each of the personality domains in the current study: 0.83 (Neuroticism), 0.77 (Extraversion), 0.76 (Openness to experience), 0.80 (Agreeableness), and 0.80 (Conscientiousness). The use of the NEO-FFI allowed a brief, comprehensive measure of the Five-Factor Model, reducing the time commitment required of participants, thus potentially increasing participation. The use of this version of the NEO PI-R is consistent with previous research investigating personality and gambling (e.g., Myrseth et al., 2009).

Procedure

After receiving ethics approval from the university ethics review board, the measures were administered by a student research assistant at the end of introductory psychology classes. The measures were counterbalanced to control for potential order effects. The instructors were not present while the research assistant invited students to participate in the study. Participation was voluntary and anonymous.

Results

The SOGS was scored to determine the number of participants who were engaging in problem and at-risk gambling behavior. Scores on the SOGS can range from 0 to 20; scores of 3–4 indicate potential pathological gambling and scores of 5 and higher indicate probable pathological gambling (Lesieur & Blume, 1987). Fifteen, or 7.1%, of the participants in this study scored 3 or 4 (8 men and 7 women). Seven, or 3.3%, of the participants (4 men and 3 women) in this study scored 5 or higher.

The percentage of men and women who participated in the various types of gambling is shown in Table 1. Chi-square analyses were conducted to query relationships between sex and type of gambling. Sex differences in three types of gambling were not investigated due to infrequency and or inaccessibility (i.e., betting on horses, dogs, or other animals; betting in casinos; and playing the stock and/or commodities market). Due to the number of comparisons that were conducted, a Bonferroni correction was used ($p = .006$). Men were more likely than women to play cards for money, $\chi^2(1, N = 210) = 16.47, p < .001, \Phi^2 = .08$; to bet money in sport pools, $\chi^2(1, N = 211) = 46.65, p < .001, \Phi^2 = .22$; to bowl, shoot pool, play golf, or some other game of skill for money, $\chi^2(1, N = 210) = 24.30, p < .001, \Phi^2 = .12$; to buy sports lottery tickets such as Sports Select or Proline, $\chi^2(1, N = 210) = 41.29, p < .001, \Phi^2 = .19$; and to bet money over the Internet, $\chi^2(1, N = 211) = 15.51, p < .001, \Phi^2 = .07$. No other significant relationships between sex and type of gambling were found.

Table 1
Sex differences in types of gambling

Question	Participation (%)	
	Yes	No
Played cards for money*		
Men	73.8	26.2
Women	43.0	57.0
Bet on animals		
Men	3.3	96.7
Women	0.7	99.3
Bet money in sports pools*		
Men	55.7	44.3
Women	11.3	88.7
Played dice games for money		
Men	25.0	75.0
Women	12.1	87.9
Bet money in casinos		
Men	13.6	86.4
Women	9.4	90.6
Bought lottery tickets		
Men	65.0	35.0
Women	59.7	40.3
Played bingo for money		
Men	44.3	55.7
Women	49.7	50.3
Played the stock and/or commodities market		
Men	4.9	95.1
Women	3.3	96.7
Played slot machines, poker machines, video lottery terminals, or other gambling machines		
Men	30.0	70.0
Women	20.0	80.0
Bowled, shot pool, played golf, or other game of skill for money*		
Men	51.7	48.3
Women	18.0	82.0
Bought sports lottery tickets *		
Men	39.3	60.7
Women	4.7	95.3
Bet money over the Internet *		
Men	18.0	82.0
Women	2.7	97.3

* $p < 0.001$

Overall, men had significantly higher SOGS scores than women (mean difference = 0.78, $p = .006$) (see Table 2). Sex differences on the NEO-FFI personality domains were also analyzed. Men's and women's scores did not differ significantly

Table 2
Sex differences in study variables

	<i>Women</i> (<i>n</i> =150)		<i>Men</i> (<i>n</i> =62)		<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
SOGS**	0.68	1.30	1.46	1.97	0.467
NEO-FFI					
Neuroticism**	25.07	7.20	21.52	8.83	0.441
Extraversion	30.55	5.96	29.40	6.62	0.183
Openness	25.92	6.62	27.37	7.30	0.206
Agreeableness***	32.32	5.66	28.26	7.96	0.596
Conscientiousness***	30.36	6.08	26.39	6.49	0.632

Note. SOGS = South Oaks Gambling Screen; NEO-FFI = NEO Five-Factor Inventory.

** $p < .01$. *** $p < .001$.

on Extraversion or Openness to experience ($p > .05$). Women scored higher than men on Neuroticism (mean difference = 3.55, $p = .003$), Agreeableness (mean difference = 4.06, $p < .001$), and Conscientiousness (mean difference = 3.97, $p < .001$) (see Table 2). Women scoring higher than men on these three personality domains are consistent with the published college age norms (Costa & McCrae, 1992).

A simultaneous or forced entry multiple regression analysis was used to determine if participants' SOGS scores could be predicted from participants' sex; Neuroticism, Extraversion, Openness to experience, Agreeableness, and Conscientiousness scores; and five interactions terms (sex by each of the personality domains). Meyers, Gamst, and Guarino (2006) noted that when interaction terms are included in a regression model, the predictor and moderator variables should be centered. The primary purpose is to facilitate the interpretation of the interaction; however, it can also reduce the chances of multicollinearity (Meyers et al., 2006). Thus, the scores on the personality domains were centered. Also based on Meyers et al.'s recommendation, the interaction terms that were not significant in the initial regression analysis were removed and the regression analysis was conducted a second time. An alpha level of .05 was used for all analyses.

The overall regression model was significant, $F(8, 201) = 4.74$, $p < .001$, $R^2 = .16$ (R^2 adjusted = .13). Sex, Openness to experience, Agreeableness, and the Openness to experience x Sex interaction significantly predicted SOGS scores (see Table 3 for predictors of problem gambling). Specifically, men had higher SOGS scores, that is, were more likely to endorse problem gambling than were women. Further, as participants' scores on Openness to experience and Agreeableness decreased, their SOGS scores increased.

Table 3
Predictors of problem gambling

Variable	<i>B</i>	<i>Beta</i>	r^2	<i>T</i>	<i>P</i>
Sex	-.617	-.179	.0256	2.472	.014
Neuroticism	.003	.013	.0001	.186	.853
Extraversion	.008	.029	.0007	.403	.687
Openness	-.087	-.380	.0462	3.325	.001
Agreeableness	-.075	-.309	.0324	2.783	.006
Conscientiousness	-.010	-.042	.0014	.570	.570
Openness × Sex	.113	.404	.0520	3.525	.001

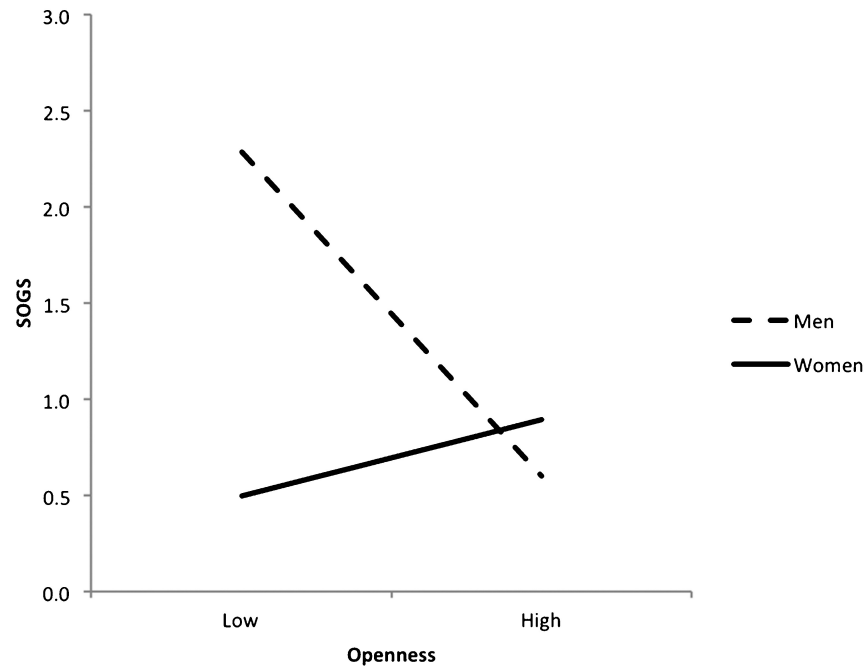
The Sex and Openness to experience significant main effects needed qualifying due to the significant interaction. For the interaction between Openness to experience x Sex, $t(201) = 3.53, p = .001, \beta = .40, r^2 = .05$, simple slope analyses (one for men and the other for women) were conducted. For men, Openness to experience scores significantly predicted SOGS scores, $t(206) = -3.63, p = .001, \beta = -.35, r^2 = .12$. For women, Openness to experience scores did not significantly predict SOGS scores, $t(206) = 1.47, p = .144, \beta = .14, r^2 = .02$. Thus, for men, but not women, as their scores on Openness to experience decreased, scores on the SOGS increased (see Figure 1).

Discussion

Consistent with previously noted prevalence rates (e.g., Shaffer & Hall, 2001; Williams et al., 2006), the results of this study indicated that 3.3% of the sample engaged in probable pathological gambling. Further, men generally scored higher on the SOGS than women and there were sex differences in preferred gambling activities (i.e., men were more likely than women to gamble using cards, on games of skill, on sports lotteries/pools, and using the internet). Two of the five personality factors investigated were associated with potentially problematic gambling behavior among this non-clinical sample of participants — Openness to experience and Agreeableness. Further analysis illustrated that for men in particular, Openness to experience was a key personality factor in relation to higher SOGS scores. Men who scored higher on the SOGS were more likely to be low in the Openness to experience factor. This was not true for women. For both sexes the lower the scores on Agreeableness the higher the SOGS scores.

In the NEO PI-R manual, Costa and McCrae (1992) state that a person who scores low on Agreeableness “is egocentric, skeptical of others’ intentions, and competitive rather than cooperative” (p. 15). As noted earlier, evidence of pathological gambling includes preoccupation with gambling and a disregard for the consequences of continued involvement in gambling, behavior compatible with egocentrism. This appears to be consistent with our finding that as problematic gambling behavior increased, the participants’ scores on Agreeableness decreased. It is also in line with

Figure 1. Sex by Openness to experience interaction in SOGS scores



Gerdern and Svensson's (2003) finding that adolescent males with problem gambling scored lower on cooperation and were less likely to change their behavior to accommodate others. They concluded that gambling problems in adolescent males seem to be more closely related to an asocial rather than impulsive presentation. Blaszczynski, Steel, and McConaghy (1997) and Steel and Blaszczynski (1998) have also documented asocial tendencies in pathological gamblers, which they coupled with impulsivity – referred to as the antisocial-impulsivist concept.

In describing Openness to experience (O), Costa and McCrae (1992) state in the NEO PI-R manual that “men and women who score low on O tend to be conventional in behavior and conservative in outlook. They prefer the familiar to the novel, and their emotional responses are somewhat muted [...] it seems likely that closed people simply have a narrower scope and intensity of interests” (p. 15). Given the relationship between higher scores on the SOGS and decreased Openness scores for males in our study, the results suggest that the more males engage in problematic gambling behavior, the more conventional, set in their ways, and emotionally muted they may be. Myrseth et al. (2009) also found that low scores on Openness were associated with problem gambling. They speculated that low scores on Openness may put individuals at risk of developing gambling problems as they may not be as able to explore other, more positive means to achieve mental escape from reality or negative psychological states. This is speculative and the authors emphasized the tentative nature of the finding, noting that it is a unique finding that has not been replicated. Our study has replicated this finding and extended its generalizability to a non-clinical sample of young adults. We concur with Myrseth

et al.'s interpretation. Studying how individuals with a more conventional and conservative approach and with narrow interests and a tendency to stick to the familiar may shed light on the onset and continuation of gambling. Given the very high prevalence of recreational gambling in the general population, it is quite likely that an individual would engage in some form of gambling during his or her lifetime. With potentially limited options for psychological release, the gambling behavior may begin to serve as a release for those low in Openness. The tendency to be unlikely to try new things and to stick to the familiar may reinforce the use of gambling to achieve this psychological goal. More research into this personality construct and its relationship to gambling is needed, but it appears to be a factor that may offer new insight into the developmental course of problem gambling.

Although the two previous studies using the NEO PI-R with pathological gamblers found a relationship between high scores on Neuroticism and pathological gambling (Bagby et al., 2007; Myrseth et al., 2009), the present study failed to replicate that finding. One explanation for this disparity is a key difference in participants. Myrseth et al.'s participants were treatment-seeking pathological gamblers (and a contrast group of non-pathological gamblers). Bagby et al.'s participants were defined as non-treatment-seeking pathological gamblers (and a contrast group of non-pathological gamblers) who were solicited through advertisements in local newspapers to participate in a study on gambling. It is plausible that the self-selection process favored those who were potentially distressed or concerned about their gambling — a factor motivating them to participate in a gambling study. In contrast, the present study consisted of non-treatment-seeking, non-clinical university students who did not have to actively seek out the study; the study was presented at the end of a class, thereby limiting the self-selection bias. In this study, Neuroticism was not associated with problematic gambling behavior. This lack of a relationship sheds light on the previously cited findings. Instead of conceptualizing Neuroticism as a risk factor for problem gambling, it is possible that it is a consequence of it (as noted by Myrseth et al., 2009). The participants in the previous two studies may have had high scores on the Neuroticism domain as a *result* of their pathological gambling. Further, the participants in these previous studies were older than participants in the present study, with the potential to have been gambling longer (based on age alone), likely with access to more money and the potential for significant consequences on family members, including dependents. It is also possible that the lack of a relationship between problem gambling and Neuroticism is unique to young adults. Cyders and Smith (2008) noted that increases in gambling in college students were related to positive mood states, not anxiety, anger, and depression, characteristic of high scores in the Neuroticism domain. More research is needed to understand the role of Neuroticism and age in problem gambling.

The findings of this study must be interpreted within the context of its limitations.

This study investigated the personality traits and gambling behavior of a non-clinical population of young men and women in university. Participants were students in introductory psychology classes and were generally homogenous in terms of race, ethnicity, and socioeconomic status. Although this population is worthy of study, it would be equally important to extend this investigation to more diverse populations in future research. The sample size of men and women was very discrepant. While we did find sex differences, more equal numbers of men and women is desirable for comparison purposes. The limitations of self-report measures, especially on what may be considered socially undesirable behavior (i.e., problem gambling), also apply in this study. The sample was accessed on a university campus (i.e., a non-clinical setting), and information on the clinical characteristics of the participants was not collected. Finally, there was low variability in participants' SOGS scores, but this is consistent with a non-clinical, non-treatment-seeking population.

Conclusions

The results of this study indicate interesting relationships between sex, gambling, and personality factors and may be another point of inquiry for future research into problem gambling etiology and tailored gambling prevention and treatment. Examining the characteristics of people with problem gambling behavior can help inform prevention and treatment approaches, as effective strategies must take into consideration the underlying motivation for gambling (Chevalier, Geoffrion, Allard, & Audet, 2002). It is becoming increasingly clear that although there are commonalities in the characteristics of people who problem gamble, there are important differences that must be explored.

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