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Examining Gender Differences for Gambling Engagement and Gambling Problems Among Emerging Adults

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Abstract

Gambling is fast becoming a public health problem in the United States, especially among emerging adults (18–25 year olds). Since 1995, rates have recently doubled with around 7–11 % of the emerging adult population having problems with gambling (Shaffer et al. in Am J Public Health 89(9):1369–1376, 1999; Cyders and Smith in Pers Individ Diff 45(6):503–508, 2008). Some states have lowered their gambling age to 18 years old; in turn, the gambling industry has recently oriented their market to target this younger population. However, little is known about the gender variation and the factors placing emerging adults at risk for getting engaged and developing problems with gambling. The purpose of the study was to determine the risk factors accounting for gender differences at the two levels of gambling involvement: engagement and problems. Mediation analyses revealed that impulsive coping and risk-taking were significant partial mediators for gender differences on engagement in gambling. Men took more risks and had lower levels of impulsive coping than women, and those who took more risks and had lower levels of impulsive coping were more likely to engage in gambling. Risk-taking and social anxiety were the significant mediators for gender differences in problems with gambling. Men took more risks and were more socially anxious than women, and greater risk-taking and more socially anxious individuals tended to have more problems with gambling. Implications for counseling preventions and intervention strategies are discussed.

Keywords

Gender differences; Gambling; Risk factors for gambling; Addiction among emerging adults

Introduction

In the United States, problem gambling is recognized as a growing public health concern (Jacobs 1989; Shaffer et al. 1999). In the last decade, problem gambling has almost doubled with rates around 5 % of the population. Gambling opportunities also have rapidly increased, especially for emerging adults, 18–21 years old. In 2001, the rates of problem gambling were the highest amongst these young adults, with 7 % of college students meeting the criteria for problem gambling (Shaffer and Hall 2001). The transitional phase from ages of 18 to 25 years constitutes a separate period of the life course known as

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emerging adulthood (Arnett 2005). A notable characteristic of this developmental period is the high prevalence of many types of addictions (Baer 2002; Kahler et al. 2009).

Experts have suggested that emerging adults are at greater risk for developing gambling problems compared to adults; however, only a few studies have focused on this population of young adults (Shaffer et al. 1999). The rates for engagement in gambling were the highest for the emerging adults compared to adults and adolescents, with 11 % of emerging adults at-risk for developing problem gambling (Cyders and Smith 2008). In a sample of college students, 42 % engaged in gambling and 7 % of the sample was gambling at problematic levels (O'Connor et al. 2009). In 1999, Shaffer, Hall, and Bilt conducted a meta-analysis comparing the prevalence rates using the South Oaks Gambling Screen and found that college student gamblers had the highest prevalence rate of problem gambling compared to adolescents and adults. Clearly more research needs to address gambling among emerging adults and the risk factors associated with both engagement and problem gambling.

Gender Differences Among Gamblers

Men and women have different levels of gambling involvement (Stoletenberg et al. 2007), with men having higher levels of engagement and problems than women (Stoletenberg et al. 2007). In a national telephone survey examining the demographic patterns of gambling participation in the United States, men gambled more frequently and had higher losses and wins (Welte et al. 2004). Findings also indicated that 2.9 % of women were problem gamblers compared to 4.2 % of men. Winters et al. (1998) found that 91 % of college men and 84 % of college women reported engagement with gambling (gambling at least once during the prior 12 months period). Of these emerging adults who gambled, 14 % of men and 3 % of women gambled at problematic levels. Gender differences seem to occur as early as young adulthood, but little is known about the risk factors accounting for these differences in gambling involvement. What factors are placing men more at risk for gambling and for having more problems? To create more specific programs and accurately assess problem gamblers, it is important for clinical and counseling programs to consider the specific risk-factors that can account for these gender differences in gambling.

Risk Factors for Gambling Engagement and Problems

Researchers started examining risk-factors for gambling involvement in response to the increased prevalence of problem gambling (O'Connor et al. 2009; d'Acremont and Van der Linden 2005). Impulsivity emerged as a major risk factor related to gambling involvement and behaviors (McDaniel and Zuckerman 2003; Nower et al. 2004; Demaree et al. 2008). In 2000, the Diagnostic and Statistical Manual for Mental Disorders-IV classified problem gambling as an impulse-control disorder (DSM-IV; American Psychiatric Association 2000). Recent studies have investigated different aspects of impulsivity as separate risk factors for addictive behaviors (Clarke 2004). Impulsive coping, sensation seeking, and risk-taking are aspects of impulsivity associated with gambling engagement and problems (Cyders and Smith 2008; O'Connor et al. 2009; d'Acremont and Van der Linden 2005).

Impulsive coping involves the tendency to act or to respond rashly when upset (Cyders and Smith 2008; Zermatten et al. 2005). Individuals who tend to be impulsive copers are more

likely to engage in addictive behaviors, such as substance abuse, when faced with emotional distress (Cyders and Smith 2008). Zermatten et al. (2005) found that impulsive coping was related to difficulty in suppressing compulsive behaviors. Impulsive coping also was associated with alcohol abuse (Whiteside and Lynam 2001) and tobacco craving (Billieux et al. 2007). Cyders and Smith (2008) found that impulsive coping was the only factor predicting increase in gambling behaviors. These findings strongly suggest that impulsive coping is a significant risk factor for gambling and gambling problems. However, little is known about gender differences in impulsive coping as it relates to gambling.

Two other aspects of impulsivity involve sensation seeking and risk-taking, and these also are major predictors of addictive behaviors (Magid et al. 2007; Worthy et al. 2010). Studies often have used these two types of impulsivity in an interchangeable fashion (Zuckerman and Kuhlman 2000; Romer et al. 2010), but there seems to be characteristics that distinguish one from the other. Some researchers have referred to sensation seekers as individuals who search for novel, complex, and intense sensations and experiences (McDaniel and Zuckerman 2003; Breen and Zuckerman 1999). Sensation seekers seem to be motivated mainly by engaging in new experiences to enhance physical sensations or arousal (Zuckerman 2009). Sky-diving and bungee jumping are examples of highly novel and complex activities that are physiologically stimulating (McDaniel and Zuckerman 2003). Cyders and Smith (2008) found that sensation seeking was positively related to gambling frequency. Moreover, among college students, sensation seeking was positively related to engagement in gambling (McDaniel and Zuckerman 2003). Risk taking, on the other hand, involves activities in which one must tolerate the possibility of great losses to obtain greater material or psychological gain (Paunonen and Jackson 1996). The risky experience need not be novel or different in nature. For example, placing a large amount of money into a business investment for monetary gains is considered very risky, but in this case, day-trading is an every day event involving repetitive activities. Neighbors et al. (2002) found that both sensation seeking and risk-taking were positively related to gambling engagement. Clearly, more research is needed to clarify how these different aspects of impulsivity are related to gambling engagement and problems.

Men tend to have higher levels of sensation seeking and risk-taking than women (Clarke et al. 2005; Harris and Jenkins 2006). Nyber and Gregersen (2007) found that men were higher in sensation seeking and risk taking than women, and these factors mediated the gender differences on reckless driving. Consequently, the overrepresentation of men in car accidents has been related to sensation seeking and risk-taking (Wagner 2001). Gender differences in addictions also are often explained through the higher levels of sensation seeking and risk-taking among men (Dalton et al. 2010). In a meta-analysis of 150 studies, researchers found greater risk-taking among males than females with nearly half of the effects greater than .20 (Byrnes et al. 1999). Brynes and colleagues suggested that risktaking and sensation seeking among men may explain their greater involvement in substance use, such as smoking and drinking. In a study examining sensation seeking as a mediator of gender differences in smoking, men smoked more than women and sensation seeking was related to longer amounts of time spent inhaling while smoking which mediated the gender difference (Zuckerman et al. 2002). Harris and Jenkins (2006) examined mediators for gender differences on four different domains of risky behaviors: gambling, health,

recreation, and social. They found that perceptions of severity of potential outcomes partially mediated gender differences on gambling. Specifically, men were more likely to perceive positive outcomes for gambling compared to women. Sensation seeking and risk-taking can explain gender differences in certain reckless and addictive behaviors. However, can these types of impulsivity also explain the gender differences in gambling involvement?

Even though women may have higher levels of psychological distress, young adult men may have higher levels of social anxiety compared to women (Merikangas et al. 2002). There are unique social pressures for young adult men that may lead to involvement in addictive behaviors. Wells et al. (2009) examined social pressures and drinking and found that young men reported social pressures involving sexual competition, male rivalry, and heightened concerns with one's social image. Social anxiety also is related to other addictive disorders, such as alcoholism, drug abuse, food addiction and cigarette smoking (Kayloe 1993; Regier et al. 1998). Furthermore, social anxiety and other anxiety disorders often develop prior to the onset of these addictions (Brady and Hartwell 2004; Merikangas et al. 2002). Xu et al. (2012) found that social anxiety disorder mediated gender differences on alcohol use and drugs. Men were more likely to use alcohol and illicit drugs to relieve symptoms of social anxiety disorder. Since gambling is a social activity (McNeilly and Burke 2001) and emerging adult men may have higher levels of social anxiety, social anxiety may be the reason emerging adult men have higher levels of gambling involvement. As such, social anxiety was examined as a possible mediator for gender differences in engagement in gambling and in gambling problems.

Present Study

Most of the research on addictive behaviors has focused on when these behaviors become problems or become pathological in nature. However, this approach may overlook risk factors related to the progression into an addiction (Zane and Huh-Kim 2005). Therefore, two levels of involvement are especially critical when examining addictive behaviors: (a) *engagement* in the addictive behavior (gambled vs. never gambled) and (b) *problems* in the addictive behavior. This study examined gambling amongst emerging adults at these two levels of involvement. The present study examined (1) gender differences at the two levels of gambling involvement: engagement and problems; and (2) if different aspects of impulsivity mediated or accounted for gender differences in gambling. Risk factors related to impulsivity for gambling engagement were investigated as well as risks for problem gambling. Given the major trends in gambling research, the study tested the following hypotheses:

1. More men will gamble and have more gambling problems compared to women.
2. Gender differences in gambling engagement and gambling problems will be accounted for by specific aspects of impulsivity: impulsive coping, sensation seeking, and risk taking.
3. Social anxiety also will mediate gender differences in gambling engagement and problems.

Method

Participants

The sample included college student respondents consisting of 430 (57.9 %) women and 313 (42.1 %) men. In this sample, 371 (49.9 %) of the participants gambled and 57 (7.7 %) had problems. Participant ages ranged from 18 to 20 years old with a mean of 18.7 years (SD = . 74). Participants were recruited from the psychology subject pools at the University of California, Davis and the University of Illinois, Urbana-Champaign. There were no site differences related to gender. With respect to ethnicity, 331 (44.5 %) were Asian Americans and 412 (55.5 %) were White Americans. Gender and ethnic distributions of the university samples were similar to the demographics of the two campuses, with one exception of the Urbana-Champaign sample which had a larger representation of women. The Urbana-Champaign sample consisted of 45 % men and 55 % compared to that university's gender distribution of 54 % men and 46 % women. The study sample consisted of 64 % Whites and 36 % Asian Americans compared to the expected ethnic distribution of 69 % Whites and 31 % Asian Americans at this university (assuming that only those two ethnic groups were sampled). The Davis sample consisted of 41 % men and 59 % women which was similar to that university's gender distribution of 45 % men and 55 % women. The study sample was 51 % Whites and 49 % Asian Americans compared to that university's expected ethnic distribution of 47 % Whites and 53 % Asian Americans.

Measures

Participants completed a set of questionnaires consisting of self-report measures and a demographic questionnaire. The measures included the South Oaks Gambling Screen (SOGS-RA; Winters et al. 1993), UPPS impulsivity scale (Whiteside and Lynam 2001), Jackson Personality Inventory (JPI; Jackson 1997), the Mood and Anxiety Symptom Questionnaire (MASQ; Clark and Watson 1991), the Social Interaction Anxiety Scale (SIAS; Mattick and Clarke 1998), and the Social Phobia Scale (SPS; Mattick and Clarke 1998).

Gambling Engagement—Engagement in gambling behavior was represented by a dichotomous variable based on whether the individual had ever gambled in one's lifetime.

Gambling Problems—Problem gambling was assessed with the South Oaks Gambling Screen-Revised Adolescent. The SOGS-RA has been one of the most frequently used problem gambling screens for young gamblers. The SOGS-RA is a lifetime measure of the amount of negative consequences or disruption in various life domains for respondents as a result of their gambling behavior. Problem gambling behavior was represented by a dichotomous variable based on whether the individual had problems. Compared to the 20-item adult version, the 12-item SOGS-RA does not ask about specific sources of borrowing that may be less available to adolescents and young adults. The SOGS-RA contains 11 *yes* or *no* items (e.g., *Did you ever gamble more than you intended to?*) and a four point Likert scale item (How often have you gone back another day to try and win back money you lost gambling? Every time/Most of the time/Some of the time/Never). Each item is scored either 1 (affirmative) or 0 (nonaffirmative). The four point Liker scale item is scored 1 if

respondent indicates ‘‘every time’’ or ‘‘most of the time’’ and is scored 0 otherwise. An overall score of 0–1 indicates no problems with gambling and a score 2–4 indicates problem with gambling. The SOGS-RA is a validated and commonly used measure in gambling research (Stinchfield 2002). It was found to have adequate stability and internal consistency reliability (Poulin 2002). The criterion for problem gambling was a score of two or more and the criterion for pathological gambling was a score of four or more. The reliability (Cronbach's α) of this measure was .82 in this study.

Aspects of Impulsivity—The study assessed *impulsive coping, sensation seeking,* and *risk taking*. The UPPS Impulsivity Scale (Whiteside and Lynam 2001) measured *impulsive coping* and *sensation seeking. Impulsive coping* was measured by the urgency subscale. Urgency refers to an impulsive coping style focused on engagement in impulsive behaviors to reduce negative emotions (e.g., When I feel bad, I will often do things I later regret in order to make myself feel better now). The sensation seeking subscale of the UPPS refers to the tendency to enjoy activities that are exciting and a willingness to try new experiences that may be dangerous (e.g., When I want something, I will some times go ‘‘out on a limb’’ to get it) or (I rarely, if ever, take risks when there is another alternative (reversed coded)). Whiteside and colleagues (2005) validated this multidimensional model of impulsivity and found core aspects of impulsivity related to several forms of psychopathology, including problem gambling. The reliability for the urgency and sensation seeking subscales in this study were .87 and .91 respectively. *Risk taking* was assessed by the 22-item *risk-taking* subscale of the Jackson Personality Inventory (JPI; 1992). The risk-taking subscale of the JPI is the most commonly used scale measuring risk-taking (Carland et al. 1996). The items consisted of true and false responses addressing risk-taking behaviors and risk preference (e.g., in games I usually ‘‘go for broke’’ rather than playing it safe). Carland et al. (1996) validated this measure in a study examining risk-taking propensities of business entrepreneurs. The reliability for the risk-taking subscale was .79 for this study. Risk-taking and sensation-seeking were moderately correlated, $r = .44$, $p < .01$. Both variables were entered into each regression analyses to control for the effect of one variable on the other.

Psychological Distress—*Social anxiety* and *depression* were the two types of psychological distress examined in the study. Social anxiety was assessed by the combined scales of the Social Interaction Anxiety Scale (SIAS; Mattick and Clarke 1998) and the Social Phobia Scale (SPS; Mattick and Clarke 1998). The SIAS consisted of 20 items that were rated from 0 (*not at all characteristic or true of me*) to 4 (*extremely characteristic or true of me*). The items addressed how participants would react to social situations in dyads or groups (e.g., I have difficulty talking with other people, or I get nervous if I have to speak with someone in authority (*teacher, boss*, etc.)). The SPS consisted of 20 items that were rated on a similar 0–4 scale as the SIAS. Items included situations where participants were being observed by others (e.g., *speaking and eating in public*). Both SIAS and SPS have good construct validities (Dong-mei et al. 2007) and are often examined together (Hedman et al. 2010; Dong-mei et al. 2007). These scales were internally consistent with Cronbach's α of .91 and .96 respectively. Since they were highly correlated ($r = .75$), the two scales were summed together to obtain an index of social anxiety.

Depression was assessed by the Anhedonic Depression subscale from the Mood and Anxiety Symptom Questionnaire (MASQ; Clark and Watson 1991). The MASQ has two subscales, *depression* and *anxiety*. A recent study on validity of the MASQ showed that the *depression* subscale had good validity with young adults; however, *anxiety* subscale showed poor discriminant validity (Buckby et al. 2007). Therefore, only the *depression* subscale was used in the study. The MASQ Anhedonic *Depression* subscale consists of 22 items about feelings, sensations, and problems that respondents had during the past week (e.g., *felt really slowed down*), and they reported on these experiences using a 5-point Likert scale response format (1 = none; 5 = extremely). Depression was not highly correlated with anhedonic anxiety but was significantly related to overall subjective distress (Watson et al. 1995). The reliability for this subscale was .94.

Socioeconomic Status—Socioeconomic status was coded according to the Nam-Powers-Boyd Occupational Status Scores for 2000 (OSS; Nam and Boyd 2004). The OSS scores ranged from 1 (e.g., dishwashers or cafeteria attendants) to 100 (e.g., physicians). The scores reflected the respondent family's socioeconomic status, prestige, social class, and income associated with occupations identified by the 2000 US Census. The higher of the two primary caretaker scores was used in this study. This procedure is commonly used to assess emerging adults' socioeconomic status (Nam and Boyd 2004). The sample was in the lower middle class range with a score of 77.27 (*SD* = 21.96).

Procedures

The study design involved a cross-sectional web-based survey of emerging adult university students. Respondents were selected from the undergraduate psychology subject pool at the targeted campuses. Students at UC Davis and UI at Urbana-Champagne students volunteered for the study through the Psychology experimental website at each of the respective campuses. Attitudes towards gambling and gambling behaviors may differ by geographical region so the inclusion of samples from different regions will make the total sample more representative of the population. Therefore, data was collected at a West-coast university and a Midwest university to increase the generalizability of the sample. There were no gender differences related to site location. Site location also was used as a control variable throughout the analyses. Students were given course credit for their participation. Respondents selected the study from a list of non-descriptive experiments posted by the Psychology Department. After selecting the study, the respondents were provided a link and completed the questionnaire independently at a location and time of their choice. The study was described to the participants as a survey about the types of activities in which they engage during their leisure time. First, the respondents were briefed and ensured about the confidentiality of their responses. After respondents gave their consent, they were instructed to start. At the end, respondents were debriefed, offered information for counseling and support services, and given research credit for their participation.

Results

Relationship Between Risk-Factors and Gambling Involvement

Of the entire sample, 49.9 % reported having gambled and of those who gambled, 7.7 % were determined to be at risk for gambling problems. Table 1 provides the non-parametric Spearman's correlations between risk factors for gambling engagement. Gender, risk-taking, and sensation seeking were in the expected direction. Gender was related to engagement in that men were more likely to have gambled compared to women. Risk-taking and sensation seeking were positively related to engagement. Social anxiety and impulsive coping also were associated to engagement; however, these risk factors were negatively related. There were gender differences in risk-taking, sensation seeking, and impulsive coping among the whole sample. Men had less impulsive coping, took more risks, and were higher in sensation seeking than women. Greater risk-taking, more sensation seeking, and less impulsive coping were related to more gambling. Table 2 shows the relationship between the risk factors and gambling problems for those individuals who had gambled. All correlations were in the expected direction except for sensation seeking, which was not significantly related to gambling problems. Men and Asian Americans had more problems with gambling. Depression, social anxiety, impulsive coping, and risk-taking were positively related to problems. Risk-taking was the only factor related to both gender and gambling problems. Men took more risks than women and greater risk-taking was related to more problems with gambling.

Gender Comparisons

Chi-squared tests were conducted to examine the associations between gender and gambling engagement and problem gambling. In terms of engagement in or frequency of gambling, men (69 %) gambled twice as much as women (36 %). There also were significant gender differences with problem gambling with 20.1 % of male gamblers having gambling problems compared to 7.8 % of the female gamblers. Logistic regressions were then conducted to determine whether there were significant gender differences in gambling engagement and problems. Age, family socio economic status, ethnicity and research site were controlled for in every regression analyses. Regression analyses showed that men were twice ($OR = 2.40$, $B = .88$, $p < .01$) as likely to engage in gambling and more than three times ($OR = 3.61$, $B = 1.28$, $p < .001$) as likely to have problems compared to women. Overall, the rates of gambling involvement exceeded past national rates, with emerging adult women having slightly more gambling problems and emerging adult men having problems three times the national prevalence rate (6.27 %) (Shaffer et al. 1999).

Mediation Effects

A major focus of the study was to test if certain risk factors could account for gender differences in gambling engagement and problems in gambling. Therefore, mediation tests were conducted to test whether certain risk factors significantly mediated the gender differences on the two levels of gambling involvement. As indicated in Table 3, impulsive coping ($OR = .85$, $B = -.16$, $p < .05$), risk taking ($OR = 1.38$, $B = .08$, $p < .001$), and social anxiety ($OR = .72$, $B = -.33$, $p < .01$) were significant risk factors for gambling engagement.

As for gambling problems, risk taking (*OR* = .63, *B* = .15, $p < .01$) and social anxiety (*OR* = 1.67, *B* = .54, $p < .01$) were significantly related.

A mediator variable is a variable that accounts for a significant portion of variance of the influence that an independent variable has on a dependent variable (Baron and Kenny 1986). In order to demonstrate a mediation effect, a series of regression analyses must be conducted and demonstrated to be significant. The following conditions are required for each meditational analysis: (1) the independent variable must be related to the dependent variable, (2) the independent variable must be related to the mediator, (3) the mediator variable must be related to the dependent variable, and (4) the relationship between the independent variable and the dependent variable was significantly reduced when controlling for the mediator (Baron and Kenny 1986). Age, family socio economic status, and ethnicity also were included as controlled variables for these analyses. Sobel tests were conducted to determine the significance of the meditational effects (Preacher and Leonardelli 2001; Sobel 1982).

As seen in Fig. 1, all conditions were satisfied to conduct the mediation tests for impulsive coping and risk-taking on engagement. The conditions for social anxiety were not satisfied for engagement, therefore, social anxiety was not a significant mediator. After accounting for the control variables and all the other risk-factors, gender was significantly related to gambling engagement. Men gambled more than women. Next, gender was related to impulsive coping and risk-taking. Men had lower levels of impulsive coping ($\beta = .19$, *B* = −.44, $p < .001$) and took more risks ($\beta = .26$, *B* = 2.05, $p < .001$) compared to women. The relationships between impulsive coping and risk-taking with gambling engagement also were significant. Less impulsive coping (*OR* = .85, *B* = −.16, $p < .05$) and higher levels of risk-taking (*OR* = 1.38, *B* = .08, $p < .001$) were related to more engagement. Finally, the relationship between gender and gambling engagement was significantly reduced after controlling for the effect of the all the risk-factors, including impulsive coping and risk-taking. These indirect effects were significant, with impulsive coping ($z = 1.94$, $p < .05$) and risk-taking ($z = 3.25$, $p < .01$) significantly mediating the effect of gender on gambling engagement. However, impulsive coping and risk-taking did not fully mediate the gender effect on gambling engagement. Gender still had an influence on gambling engagement after controlling for impulsive coping and risk-taking.

As seen in Fig. 2, all conditions were met to conduct the mediation tests for social anxiety and risk-taking. After accounting for the control variables and all the other risk-factors, gender was significantly related to problem gambling. Men had more problems with gambling compared to women. Next, gender was related to social anxiety and risk-taking. Men were more socially anxious ($\beta = B = .25$, $p < .001$), and took more risks ($\beta = .26$, *B* = 2.05, $p < .001$) compared to women. The relationships between social anxiety and risk-taking with problem gambling also were significant. Individuals who were more socially anxious (*OR* = 1.67, *B* = .54, $p < .01$) and took more risks (*OR* = 1.17, *B* = .15, $p < .01$) were more likely to have gambling problems. Finally, the relationship between gender and problem gambling was significantly reduced after controlling for the effect of the all the risk-factors, including social anxiety and risk-taking. These indirect effects were significant, with social anxiety ($z = 2.17$, $p < .05$) and risk-taking ($z = 2.78$, $p < .01$) significantly

mediating the effect of gender on gambling engagement. However, social anxiety and risk-taking did not fully mediate the gender effect on gambling engagement. Gender still had an influence on problem gambling after controlling for social anxiety and risk-taking.

Discussion

This study examined gender differences among emerging adults at two levels of gambling involvement, engagement and problems and tested if certain aspects of impulsivity and social anxiety could account for these differences. The study found (1) gender differences in both gambling engagement and problem gambling among emerging adults, (2) risk-taking and impulsive coping partially accounted for the gender differences in gambling engagement, and (3) risk-taking and social anxiety partially accounted for the gender differences in problem gambling.

Even with an increase in gambling opportunities for women (Welte et al. 2002), gender differences were still found for young adults. Emerging adult men were twice as likely to have gambled and almost three times more likely to have gambling problems compared to emerging adult women. There are a number of reasons why young adult men may be gambling more and having more problems. First, adult men seem to expect more positive benefits from gambling than women even at the early stages of adulthood. Leonard and Blane (1992) found that young adult men had higher levels of involvement in addictive behaviors because of more positive expectancies. Men also may be minimizing the risk of gambling while maximizing the perceived benefits. For example, heavy smokers tend to deemphasize health risks of cigarettes while perceiving smoking as exercising their personal right to smoke (Hermansoon and Hansson 2007). Similarly, emerging adult men minimize the health risks of drinking, and instead, perceive drinking to help with socializing and romantic interactions (Zimmerman and Monika 2010). Second, men may gamble more due to gender differences in role socialization (Hraba and Lee 1996). For men, masculinity is often achieved or proven, and many times this involves acts of skilled and fearlessness in certain situations (Sibley and Harre 2008). Gambling, especially high stakes gambling may provide men the opportunity to show how skilled and fearless they can be. Given this social norm, it is not surprising that men are engaged in more gambling that involves games of skill, such as black jack or poker (LaPlante et al. 2006).

As hypothesized, risk-taking was a major factor accounting for the gender differences in gambling engagement and problems. It is not only more socially acceptable for men to take risks (Davidson and Freudenburg 1996); it is socially expected of men early in life (Hagan and Kuebli 2007). Morrongiello and Hogg (2004) examined the reactions of mothers to their children’s risk-taking and found that parents expect sons to have more risk-taking behaviors compared to daughters. Men who take more risks are seen as more successful, and therefore, more attractive and more capable of providing resources for the family (Davidson and Freudenburg 1996). As such, young adult men may gamble and take risks to appear more socially desirable and attractive to women.

Impulsive coping partially mediated gender differences for gambling engagement. Less impulsive coping was related to more engagement in gambling. This is contrary to past

research in which higher levels of impulsive coping were related to more gambling (King et al. 2010; Myrseth et al. 2009). Post hoc analyses were conducted to determine exactly where the gender differences existed on the impulsive coping measure. Men significantly scored higher than women on three of the items: (1) I have trouble resisting my cravings (for food, cigarettes, etc.), (2) *When I am upset I often act without thinking*, and (3) I am always able to keep my feelings under control (R). These items did not appear to reflect impulsive coping per se, but instead referred to the ability to control emotions. Men appeared to perceive more control over their emotions compared to women. As with risk-taking, men are socialized at an early age to control their emotions (Addis and Mahalik 2003). Moreover, this perception of emotional control has been found to be related to greater risk-taking (Eriksson and Brent 2010; Sapienza et al. 2009). Eriksson and Brent (2010) found men who perceive themselves as having control over their emotions were more likely to bet more in gambling. These findings suggest that men perceive themselves as able to handle their emotions under distress, and those with this perception of emotional control are more likely to gamble.

Social anxiety was a partial mediator of gender differences in gambling problems. This finding seems unique to emerging adulthood since women are usually more socially anxious compared to men in other age periods (Weinstock 1999). Men in emerging adulthood may be under more pressure to thrive in social interactions compared to women. For example, men are expected to take more social risks, especially when initiating interactions with women in a social setting (Jewkes et al. 2010). Substance use involving alcohol and/or other drugs are commonly used by emerging adults to cope with these social pressures to interact (Leonard and Blane 1988). Since gambling provides a structured setting for brief, limited social interactions, emerging adult men may be gambling for affiliative reasons. Future studies can examine how men regulate their emotions to better understand why social anxiety and risk taking are related to gambling problems.

There were a number of limitations in the study. College students were sampled, and this population may have unique factors placing them at risk for gambling involvement that are not representative of other emerging adults. College students may be at greater risk for financial problems due to the greater availability of credit cards combined with the fiscal pressures of rising tuition, fewer part-time jobs, and a declining economy (Worthy et al. 2010). Major credit card companies often target and market to university and college students providing them with lenient qualifying criteria, low rates, no annual fees, and other credit benefits. As such, it is unclear if these results can be generalized to emerging adults who are not pursuing a college education. Second, the analyses were correlational in nature. The risk factors may actually be the consequences or outcomes of gambling engagement and problems. To address this possibility, a supplemental set of analysis were conducted in which engagement in gambling and problems were entered as possible mediators of these risk factors. For example, the conditions for gambling engagement as a mediator were checked for gender differences and impulsive coping. With respect to engagement in gambling, the meditational paths for impulsive coping and risk-taking were not significant. However, the mediation paths for problem gambling were significant for both social anxiety ($z = 2.160$, $p < .05$) and risk-taking ($z = 2.225$, $p < .05$). These analyses raise the possibility that gender differences social anxiety and risk taking may actually occur due to gambling

problems rather than serve as risk factors. It is also possible that risk-taking and social anxiety may have a bi-directional relationship with gambling problems. The directional nature of these effects should be further explored in future gambling studies using experimental or longitudinal designs.

The findings have a number of important implications for intervention programs targeting young adult men. Young adult men seem to be more vulnerable to participating in gambling and having problems with gambling relative to women. They are twice as likely to engage in gambling and almost three times as likely to have gambling problems. Most counseling programs do not address gambling problems for young adult men. However, these findings suggest that it may be useful to routinely consider gambling issues and problems when assessing young adult men for mental health problem. The study also found that risk-taking seems to be a major risk factor in accounting for gender differences in both levels of gambling involvement. Young adult men seem to engage in more gambling and have more gambling problems because of their tendency to take more risks than women. It appears counseling programs should assess for high levels of risk-taking among young adult men and develop interventions to effectively reduce risk-taking. However, creating programs to target risk-taking may be challenging given that risk-taking is a key aspect of masculinity for young men (Bradley and Wildman 2002). Men are socialized at an early age to take risks. Therefore, it is not surprising that gambling, especially high-stakes gambling, appeal to young adult men who are developing and defining their gender identity. Perhaps intervention programs could focus on helping men redefine their masculinity in a more socially responsible way. For example, Gloria and Peregoy (1996) presented a sociocultural alcohol/drug counseling approach for counselors working with Latino user/ abusers that addressed issues of gender roles, particularly those aspects of masculinity associated with machismo. The program made efforts to reorient the way Latino men thought about their masculinity. Rather than focusing on the ultra-masculine aspects of machismo in terms of aggression towards women and heavy drinking, the program oriented Latino men to think about machismo in more traditional ways centered on supporting the family and promoting traditional Latino values. In a similar way, counselors can address gender identity issues among young adult men that enhance masculine behavior but in a way that does not involve risk-taking. Men and women may also perceive risk differently (Gustafson 1998). According to Menon (2011), gender differences in risk-taking are due to the familiarity for different situations. Women take more social risks while men take more financial risks due to differences in gender role socialization (Menon 2011). Perhaps emerging adult men perceive the gambling environment as more familiar and therefore, they are more likely to take risks while gambling compared to women.

Ethnic differences also were found in this study, with Asian Americans having higher rates of gambling problems compared to Whites. This finding was consistent with past research on ethnic differences and gambling problems (Lesieur et al. 1991; Zane et al., in press). For example, Lesieur et al. (1991) surveyed university students and found that the incidence of pathological gambling was high among men compared to women. Furthermore, Asian Americans were more likely to be pathological gamblers compared to Whites. Perhaps future studies should address both gender and ethnic differences simultaneously to clarify how these factors relate to gambling involvement.

The results of this study indicate that gambling is becoming a major mental health problem for young adults, especially among young adult men. A number of evidence-based practices have been developed for gambling problems, but few counselors and other mental health care providers have been trained in these interventions (Kaminer 2007; Westphal and Abbott 2006). There is clearly a need for counseling programs and staff to develop more assessment and treatment skill proficiencies specifically designed to address this increasing problem among young adults.

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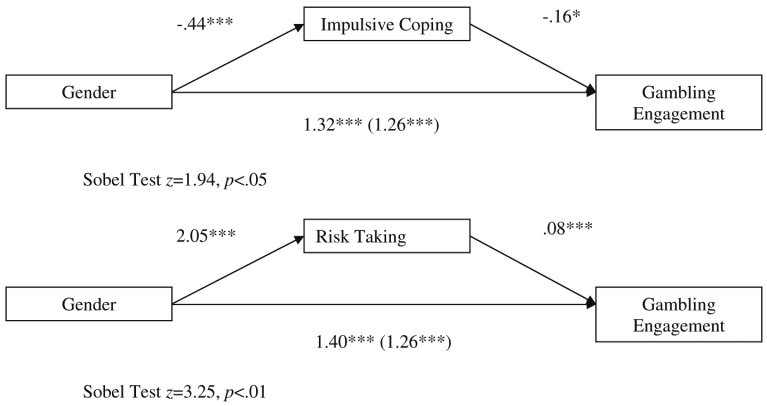

Fig. 1.

Mediation between gender and gambling engagement. NOTE: For gender variable, Male = 1; Female = 0. *$p < .05$, **$p < .01$, ***$p < .001$

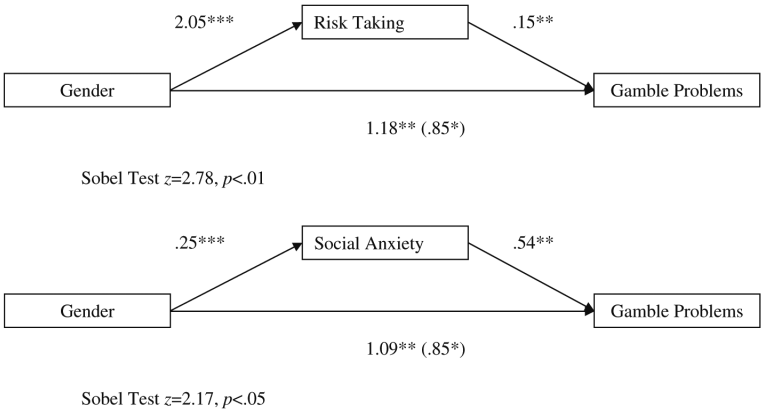

Fig. 2.

Mediation between gender and gambling problems. *NOTE*: For gender variable, Male = 1; Female = 0. *$p < .05$, **$p < .01$, ***$p < .001$

Table 1

Spearman correlations of the study variables from the whole sample (N = 743)

Variable	1	2	3	4	5	6	7	8	9	10
1. Engagement (Gambled = 1, No Gambled = 0)	–									
2. Gender (Male = 1, Female = 0)	0.33**	–								
3. Depression	−0.01	0.00	–							
4. Social anxiety	−0.10**	0.06	0.47**	–						
5. Impulsive coping	−0.10**	−0.07*	0.27**	0.29**	–					
6. Risk-taking	0.21**	0.27**	0.01	−0.08*	0.15**	–				
7. Sensation-seeking	0.11**	0.09*	−0.11**	−0.16**	0.14**	0.44**	–			
8. Age	0.05	0.06	0.05	0.01	0.00	−0.00	−0.04	–		
9. Family SES	0.04	0.08*	−0.05	−0.06	−0.01	0.05	0.08*	−0.02	–	
10. Ethnicity (Asian Americans = 1, Whites = 0)	0.02	0.09*	0.23**	0.27**	0.13**	0.06	−0.16**	−0.02	−0.24**	–

***$p < 0.001$

*$p < 0.05$,

**$p < 0.01$,

Table 2

Spearman correlations of the study variables from gamblers only (N = 371)

Variable	1	2	3	4	5	6	7	8	9	10
1. Problems (Problems = 1, No Problems = 0)	–									
2. Gender (Male = 1, Female = 0)	0.18**	–								
3. Depression	0.11*	−0.00	–							
4. Social anxiety	0.22**	0.09	0.48**	–						
5. Impulsive coping	0.21**	−0.03	0.29**	0.33**	–					
6. Risk-taking	0.21**	0.27**	0.01	−0.08	0.17**	–				
7. Sensation-seeking	0.01	0.12*	−0.15**	−0.18**	0.07	0.48**	–			
8. Age	−0.02	−0.01	0.02	−0.03	0.05	−0.01	−0.04	–		
9. Family SES	−0.04	0.20**	−0.02	−0.05	0.05	0.14**	0.18**	0.18**	–	
10. Ethnicity (Asian Americans = 1, Whites = 0)	0.15**	0.04	0.28**	0.33**	0.16**	−0.12*	−0.24**	0.03	−0.30**	–

*** $p < 0.001$

* $p < 0.05$,

** $p < 0.01$,

Table 3

Logistical regression analyses for gambling engagement and gambled with problems

	Gambling engagement (N = 743)			Gambled with problems (N = 371)		
	B	**SE**	**Exp(B)**	**B**	**SE**	**Exp(B)**
Gender (Male = 1, Female = 0)	**1.26** ***	0.17	3.53	**0.85** *	0.40	2.32
Depression	0.01	0.01	1.01	−0.01	0.01	0.99
Social anxiety	**−0.33** **	0.10	0.72	**0.54** **	0.20	1.67
Impulsive coping style	**−0.16** *	0.08	0.85	0.29	0.15	1.34
Risk-taking	**0.08** ***	0.02	1.38	**0.15** **	0.05	1.17
Sensation seeking	0.01	0.06	1.01	−0.12	0.14	0.90
Age	0.11	0.11	1.12	−0.11	0.2	0.90
Family SES	−0.00	0.00	0.06	−0.01	0.22	0.90
Ethnicity (Asians = 1, Whites = 0)	0.16	0.19	1.18	−0.01	0.01	0.99
Constant	−2.612	2.20	0.07	1.32	4.40	3.75

Bold values indicate significant predictors for the two levels of gambling involvement

* $p < 0.05$,

** $p < 0.01$,

*** $p < 0.001$