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The interactive effects of avoidance coping and dysphoric mood on problem gambling for female and male gamblers



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Abstract

A study involving 83 female and 72 male gamblers tested the direct and interactional effects of avoidance coping and five dysphoric moods on problem gambling via regression analysis. Important differences were found between female and male gamblers. For female gamblers, loneliness, boredom, anxiety, depression and avoidance coping were all positively related to problem gambling. Additionally, interactions between these mood states and avoidance coping significantly predicted problem gambling; female gamblers with high dysphoria and high avoidance coping showed substantially more symptoms of problem gambling than those scoring high on only one variable. In contrast, loneliness and stress were the only significant predictors of problem gambling for males —neither avoidance coping nor any of the interactional relationships between mood and coping predicted problem gambling. These results support previous qualitative studies and suggest that female problem gamblers gamble as an escape from dysphoric moods. Even though male problem gamblers expressed more negative affect than male non-problem gamblers, there was no evidence to suggest that negative mood was a precursor rather than an outcome of gambling behaviour.

Key words: women, gambling, avoidance, coping, depression, anxiety, loneliness, boredom

Gambling today is far from being a secret vice undertaken by a deviant few. In Australia, and indeed in most Western countries, gambling has been transformed into a respectable and popular leisure activity (Trevorrow & Moore, 1998). A recent inquiry into Australia's gambling industries found that 82% of Australian adults had participated in at least one gambling activity in the 12 months preceding April 1999. It also found that women were just as likely to gamble as men (Productivity Commission, 1999). In addition, the Productivity Commission (1999) report estimated that one per cent of the Australian adult population were experiencing severe gambling problems, and another one per cent had moderate but significant problems. Problem gambling amongst women appears to be increasing, and female and male problem gamblers are now evenly represented at counselling services in Australia. Similarly, other Western studies estimate that females represent one-third to one-half of the problem gamblers in the general population (Getty, Watson & Frisch, 2000; Hraba & Lee, 1996; Mark & Lesieur, 1992; Productivity Commission, 1999). However, few studies have investigated this change in what has historically been seen as a male issue.

There have been many theories to explain problem gambling —ranging from a focus on individual pathology to a focus on social factors. However, it is probable that most of these theories were developed with male problem gamblers in mind, and certainly the vast majority of past research about problem gambling has concentrated on males, with samples of gamblers consisting of all or almost all male participants. Other studies that included female and male problem gamblers failed to systematically assess gender differences (e.g., Blaszczyński, McConaghy & Frankova, 1990; Delfabbro, 2000; Mark & Lesieur, 1992; McCormick, 1994). This is somewhat understandable because historically the majority of problem gamblers receiving counselling were male (Blaszczyński et al., 1990; Mark & Lesieur, 1992). Today, however, the widely held assumptions that problem gambling is a male problem and that what is true for males is also true for females needs to be challenged.

On the basis of case material, Lesieur and Blume (1991) implied that women's gambling may be differently motivated from men's gambling. They concluded that women use gambling to escape personal and family problems, whereas men are more likely to gamble for excitement and financial gain. Similarly, two other studies which investigated the motivations of male and female problem gamblers found that female problem gamblers were significantly more likely to say they were gambling to escape isolation, depression, anxiety and worry compared to male problem gamblers. On the other hand, male problem gamblers were more likely to say they were gambling to win or to improve their self-worth (Loughnan, Pierce & Sagris, 1996; Pierce, Wentzel & Loughnan, 1997). These studies suggest that

gambling motivations may not be homogeneous across gender and that women may be gambling to temporarily escape negative moods and situations, rather than for excitement or to win money.

Qualitative research by Brown and Coventry (1997) also sheds light on the motivational processes involved for a sample of women who defined themselves as problem gamblers. Through telephone interviews, most of these women reported that they gambled initially for social reasons rather than as a means of increasing stimulation. However, as time went on gambling became a method of distraction from everyday problems, a way of avoiding dysphoric states, such as loneliness, boredom, anxiety, depression and stress. As more problems arose from gambling, dysphoric moods increased, leading to a cycle of "escaping" through gambling, with resulting financial loss and family problems, dysphoric mood, etc.

A review of quantitative research into problem gambling interestingly revealed evidence of elevated dysphoric states, such as loneliness, depression, boredom and anxiety in both male and female problem gamblers (e.g., Blaszczynski & McConaghy, 1988; Blaszczynski et al., 1990; Coman, Burrows & Evans, 1997; McCormick, Russo, Ramirez & Taber, 1984; Trevorrow & Moore, 1998). Indeed, the few studies that compared male and female problem gamblers dysphoric emotions showed mixed results. Some found that female problem gamblers had significantly higher levels of dysphoria compared to male problem gamblers (Specker, Carlson, Edmonson, Johnson & Marcotte, 1996; Steel & Blaszczynski, 1996). In contrast, others have found no differences (Becoña, Lorenzo & Fuentes, 1996; Ohtsuka, Bruton, DeLuca & Borg, 1997). Therefore, these quantitative studies suggest that it is possible for both male and female problem gamblers to have elevated levels of dysphoria. However, the studies mentioned earlier suggest that female problem gamblers are more likely to gamble to escape these feelings (Brown & Coventry, 1997; Lesieur & Blume, 1991; Loughnan et al., 1996; Pierce et al., 1997).

If female problem gamblers, in particular, are deliberately choosing to gamble to escape dysphoric emotions their gambling could fundamentally be seen as a form of coping, albeit a maladaptive form. The Folkman and Lazarus (1988) model of stress proposes that individuals appraise potential stressors and search for a coping strategy to reduce the threat. These strategies can range from active attempts to "solve the problem," through to emotional responses, help-seeking or attempts to escape from the situation, either physically or mentally. Therefore, coping resources are theorised to mediate the impact of stressors (Billings & Moos, 1984), although it is clear that some strategies will be more effective than others. Avoidance or escapist coping refers to activities or cognitions used by people to divert attention away from a source of distress

(Folkman & Lazarus, 1988). This method of coping is very common and can range from culturally acceptable activities such as jogging to destructive behaviours such as taking drugs or alcohol (Folkman & Lazarus, 1988). It is possible that gambling could be used in a similar same way to divert attention away from a distressing issue.

In fact, there is some evidence of excessive reliance on avoidance coping in both male and female problem gamblers. For example, a study by Scannell, Quirk, Smith, Maddern and Dickerson (2000) found that female gamblers with low control over their gambling behaviours used avoidance coping significantly more than females with high control over their gambling. Similarly, McCormick (1994) found that male substance abusers with gambling problems used avoidance coping strategies significantly more than those without gambling problems. In addition, one study that directly compared male and female problem gamblers found that they were very similar in their use of avoidance coping (Getty, Watson & Frisch, 2000).

In sum, prior research suggests that both coping style and dysphoric emotions may be important factors in explaining problem gambling; however, it is less certain that they are equally important for males and females. Recent qualitative data can be interpreted to suggest that it may not be negative mood that leads to problem gambling per se—but the use of gambling as an escape from dysphoric mood (Brown & Coventry, 1997). In other words, the effect of emotional stressors on problem gambling may be moderated by coping tendencies. This complex relationship requires an assessment of the combined effects of high dysphoric mood and high avoidance coping (as opposed to assessing only the simple or direct effects of high scores on either of these variables). To the authors' knowledge, no prior research has directly tested the extent to which the interaction between dysphoric mood and coping style predicts problem gambling.

Therefore, an initial aim of this study was to partially replicate prior research by investigating the differences between males and females and between problem gamblers and non-problem gamblers on dysphoric mood and avoidance coping. In line with prior research (e.g., Blaszczynski, et al, 1990; McCormick, 1994; Scannell, Quirk, Smith, Maddern & Dickerson, 2000; Trevorrow & Moore, 1998), it was expected that problem gamblers would score higher on avoidance coping and all measures of dysphoric mood than non-problem gamblers. Due to the mixed results of prior studies (Becoña et al., 1996; Getty et al., 2000; Steel & Blaszczynski, 1996), an exploration was undertaken to determine whether there would be significant differences between male and female gamblers or male and female problem gamblers on avoidance coping or dysphoric mood.

The main aim of this study was to test the interactional model discussed above by assessing the emotion-moderating effects of coping for both male and female gamblers, using more sophisticated analyses than those used in prior research. Three steps were taken in testing this model. Firstly, it was hypothesised that female and male gamblers with higher levels of dysphoric emotion (depression, anxiety, loneliness, stress or anxiety) would show more symptoms of problem gambling than those with lower levels of dysphoric emotion. Secondly, it was hypothesised that both male and female gamblers who had a high tendency to use avoidance coping would exhibit more problems with their gambling. Finally, it was hypothesised that these avoidant styles of coping would become very maladaptive when paired with dysphoric emotions. When placed together these factors were expected to interact to predict problem gambling more effectively than either dysphoric mood or avoidant coping alone. Whether or not these effects would differ for male and female gamblers was explored because past research did not allow for a clear hypothesis of either difference or similarity in process.

Methods

Participants

Current gamblers (who had gambled for money at least once in the past 12 months) 18 and older were recruited for this study. The sample comprised 155 participants: 83 females (M=28.4 years, SD=13.5 years) and 72 males (M=30.1 years, SD=12.9 years). Ninety-five participants were first-year psychology students at a university in Melbourne, Australia, 13 were recruited via a gambling counselling organisation in a suburb of Melbourne and 47 were accessed via broader community contacts. Unfortunately, the anonymous method of data collection did not allow for demographics to be collated on specific sub-samples.

Materials

Participants completed a questionnaire that included questions about gambling behaviour and demographics as well as measures of coping, problem gambling and several measures of dysphoric mood (loneliness, anxiety, depression, stress and boredom). All of these mood states were included because they had been implicated in prior gambling research, but not all had been tested on both male and female gamblers or in conjunction with coping strategies.

Loneliness measurement

The UCLA Loneliness Scale (Russell, Peplau & Cutrona, 1980) rates feelings

of loneliness the participant may have experienced in relation to other people. Twenty items are rated on a four-point scale, where 1 = *never* and 4 = *often*. The measure has 10 positively scored items (e.g., *I feel isolated from others*) and 10 negatively scored items (e.g., *I do not feel alone*); overall loneliness scores are calculated by summing all items. Higher scores indicate higher levels of loneliness. The measure has shown excellent internal consistency ($\alpha = .94$). That it showed positive correlations with several other loneliness scales and a lack of relationship with conceptually distinct emotions indicate that the measure has construct validity (Russell, 1982).

Depression, anxiety and stress measurement

The Depression, Anxiety, Stress Scale (DASS21) (Lovibond & Lovibond, 1995) is a shortened version of the full DASS, consisting of 21 items querying the participant's feelings over the past week. All items are rated on a four-point scale, where 0 = *did not apply to me* and 3 = *applied to me very much, or most of the time*. The measure has three sub-scales that have questions (seven in each) relating to depression (e.g., *I felt down-hearted and blue*), anxiety (e.g., *I felt I was close to panic*) and stress (e.g., *I found it hard to wind down*). Scores are summed and multiplied by two so that they can be directly compared to Australian normative samples based on the full-scale DASS. Higher scores relate to higher levels of depression, anxiety and stress. The measure has shown high internal consistency (depression $\alpha = .81$; anxiety $\alpha = .73$; stress $\alpha = .81$) and good evidence of test-retest reliability and construct validity (Lovibond & Lovibond, 1995).

Boredom measurement

The Boredom Proneness Scale (Farmer & Sundberg, 1986) is a 28-item true-false scale designed to capture the participant's tendency to become bored. The measure particularly relates to feelings of emptiness and loneliness associated with boredom. It also measures the ability of individuals to access adaptive resources and their level of connectedness to environments or situations. The measure has 18 positively scored items (e.g., *Time always seems to be passing slowly*) and 10 negatively scored items (e.g., *I am good at waiting patiently*). Items are summed and high scores indicate higher boredom proneness. The measure has good reliability ($\alpha = .73-.79$; test-retest reliability at one week = .83) and has shown validity via moderate to strong positive relationships with other boredom scales and self-reports of boredom (Farmer & Sundberg, 1986).

Coping measurement

Billings and Moos' (1984) coping scale was used to assess avoidance coping.

This measure involves asking respondents to think of a stressful event that occurred in the last three months. It then asks them to indicate the frequency of use of 28 different coping strategies to resolve the event. The use of each strategy is rated on a four-point scale, where 1 = *never used* and 4 = *often used*. The measure has three subscales, two of which contain two individual factors. Scores for each factor are obtained by calculating the mean response of all items contained in the factor. However, as the focus of this study was on avoidance/escapist coping, only the avoidance factor (labelled emotional discharge) has been fully described here. Emotional discharge (avoidance coping) has six items and relates to attempts made by the individual to reduce tension by refocusing on potentially distracting behaviours, such as smoking or eating (e.g., *Tried to reduce tension by drinking more*). The fairly low alpha for this factor ($\alpha = .41$) was argued by Billings and Moos (1984) to be due to the likelihood that only one or two distracting strategies would be utilised by an individual, thereby reducing the use of alternative responses and setting an upper limit on the reliability coefficients. For the purposes of this study, this level of internal consistency was considered sufficient.

Problem gambling measurement

The South Oaks Gambling Screen (SOGS) is a 23-item instrument with 20 scored items designed to indicate the severity of problem gambling (Lesieur & Blume, 1987). The screen is based on the Diagnostic and Statistical Manual of Mental Disorders' (DSM-III) (American Psychiatric Association, 1980) problem gambling criteria and is consistent with later versions of the DSM. Questions cover problem gambling indicators such as chasing losses, gambling more than intended, feeling guilty about gambling, borrowing money to gamble and reactions of others to the individual's gambling. Scores range from 0 to 20. A score of 5 or more indicates problem gambling, and a score of 10 or more indicates severe problem gambling. The SOGS is a widely used measure of problem gambling and has shown high internal consistency and test-retest reliability as well as correlating highly with the DSM-III-R criteria for problem gambling (Lesieur & Blume, 1987).

Procedure

The authors employed several methods to recruit participants for this study. From a Melbourne university, 95 first-year psychology students were recruited as part of their class requirement. From the wider community, 47 participants were recruited as a convenience sample and 13 problem gamblers were recruited through a Melbourne problem gambling counselling centre. Questionnaires were distributed either in classes, through a sample of gamblers available to the researchers or through counsellors at the gambling counselling centre. All questionnaires were completed voluntarily and

anonymously on the participants' own time and returned in a postage-paid return envelope to the researchers.

Results

Descriptive statistics

All participants were current gamblers. Scores on the SOGS ranged from 0 to 18 and had a mean score of 2.97 (SD=3.88). Thirty-two participants were designated as problem gamblers (a SOGS score of five or more): 21 were male and 11 female. The average SOGS score was significantly higher for male gamblers (Mean males = 3.65; Mean females = 2.39, $F(1,153)=4.20$, $p<.05$).

Alpha reliabilities of scales used in this study were as follows: Loneliness (.93), Boredom (.82), Depression (.91), Anxiety (.88), Stress (.87), Avoidance Coping (.49), Problem Gambling (.86). All reliabilities were considered adequate for research purposes while acknowledging that the low reliability for avoidance coping was related to the nature of this activity as previously discussed.

Gambling behaviours

In order to gain an overall picture of their favoured forms of gambling, participants were asked to list the types of gambling they participated in most often. Percentages were calculated and are shown in Table 1.

Table 1
Percentage of female and male gamblers by their most frequent form of gambling

	Females	Males
Gambling type	%	%
Poker machines	41	33
Lotto/scratch-it	31	21
Bet on horses/dogs	4	17

Play cards	11	10
Bet on sports	1	4
Table games at casino	4	7
Bingo	5	1
Other	4	6

Note: Percentages will not sum to exactly 100% due to rounding.

As the table illustrates, poker-machine gambling was by far the most popular form of gambling for both males and females, and lotto and scratch-it tickets were also popular for both genders. However, betting on horse or dog races appeared to be popular only with male gamblers. Table 2 highlights the favoured forms of gambling for problem gamblers.

Table 2
Number of female and male problem gamblers by their most frequent form of gambling

Gambling type	Females	Males	n ^a
Poker machines	6	8	56
Lotto/scratch-it	4	2	40
Bet on horses/dogs	0	8	15
Play cards	1	0	16
Bet on sports	0	0	4
Table games at casino	0	1	8

Bingo	0	1	5
Other	0	1	7

Note: Problem gambler= SOGS score of 5+

n^a = Total number of participants who designated this as their favourite form of gambling.

This pattern of popularity is similar to other gamblers, albeit with more sharply defined gender preferences. As illustrated, a substantial proportion of men and women who prefer to play poker machines displayed problematic gambling behaviours. Male problem gamblers also showed a strong preference for horse or dog races, while female problem gamblers showed a preference for lotto or scratch-it tickets.

Initial analysis of measures

In order to partially replicate prior research, a series of initial analyses were conducted. A two-way multivariate analysis of variance (MANOVA) was performed on participants' levels of dysphoric mood. The independent variables were gender (male, female) and gambler type (problem gambler, non-problem gambler). A two-way analysis of variance with the same independent variables was performed on avoidance coping scores. Table 3 shows the means of the dependant variables.

Table 3
Mean scores for male and female problem and non-problem gamblers on dysphoric mood and avoidance coping

	Non-problem gamblers (n ranges from 119-123)			Problem gamblers (n ranges from 31-32)		
	Females	Males	Total	Females	Males	Total
Variables	M	M	M	M	M	M
Anxiety	6.39	8.12	7.11	13.45	12.29	12.69
Depression	8.13	9.76	8.80	17.45	14.86	15.75
Stress	14.42	12.75	13.72	20.55	17.24	18.38
Boredom	8.92	11.27	9.89	12.91	14.33	13.84
Loneliness	34.24	37.10	35.43	46.50	45.10	45.55

Avoidance	2.04	2.02	2.04	2.45	2.23	2.31
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Note. SOGS scores 0–4 = non-problem gamblers, SOGS scores 5+ = problem gamblers

Results indicated that problem gamblers differed significantly from non-problem gamblers on dysphoric mood (Pillai's Trace = .130, $F(5,145)=4.35$, $p<.01$, $R^2=.13$). Univariate analyses revealed that problem gamblers were significantly more anxious ($F(1,149)=10.38$, $p<.01$, $R^2=.07$), depressed ($F(1,149)=16.14$, $p<.001$, $R^2=.10$), stressed ($F(1,149)=8.71$, $p<.01$, $R^2=.06$), bored ($F(1,149)=12.42$, $p<.01$, $R^2=.08$) and lonely ($F(1,149)=20.23$, $p<.001$, $R^2=.12$) than non-problem gamblers. Problem gamblers also used significantly more avoidance coping ($F(1,147)=8.80$, $p<.01$, $R^2=.06$) than non-problem gamblers.

There were no significant differences between the genders on dysphoric mood or avoidance coping, nor any significant interactions between gender and gambler type on these variables. A power analysis indicated that the study had sufficient power to detect a moderate interaction effect.

Regression analyses

A series of hierarchical multiple regressions were used to test the hypothesised model that the relationship between dysphoric mood and problem gambling would be moderated by avoidance coping. It was expected that participants who scored high on a measure of dysphoric mood and high on the use of avoidance coping would exhibit substantially more problems than those who scored high on only one of the predictors. These regressions also assessed predicted relationships between problem gambling and (a) dysphoric mood and (b) avoidance coping. Separate regressions were performed for each mood state and all independent variables were centred to prevent problems with multicollinearity (Tabachnick & Fidell, 2001). For each regression, mood state and avoidance coping were entered at stage one and the interaction between mood state and avoidance coping were entered at stage two (Cooper, Russell, Skinner, Frone & Mudar, 1992). All analyses were performed separately for males and females in order to examine the relationships between mood, coping and problem gambling for each gender.

To facilitate interpretation, one of the significant interactions has been presented graphically, using the regression equation to generate a predicted score on problem gambling for each group, which represents all possible combinations of low and high (Cohen & Cohen, 1983). Low and high scores were operationalised using one standard deviation below and one standard

deviation above the mean, respectively, giving two regression lines.

Hierarchical regression analyses for females

Table 4

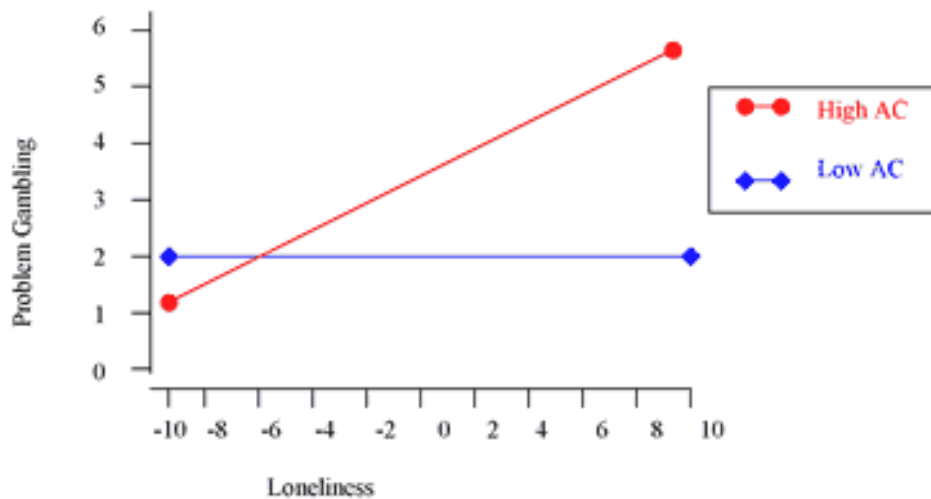
Summary of hierarchical regression analyses showing main and interactive effects of dysphoric mood and avoidance coping on problem gambling for females

Predictor variables	Loneliness	Anxiety	Depression	Boredom	Stress
	R ² Δ β	R ² Δ β	R ² Δ β	R ² Δ β	R ² Δ β
Stage 1	.31***	.23***	.25***	.19***	.17**
Mood	.41***	.34**	.37**	.30*	.21+
AC	.28*	.27*	.22*	.21+	.30**
Stage 2	.10**	.10**	.04*	.06*	.03+
Mood	.31**	.34**	.32**	.22+	.20+
AC	.28**	.18+	.18+	.20+	.26*
Mood x AC	.33**	.32**	.21*	.26*	.18+
Total R2	.41**	.33***	.28***	.25***	.20**

Note. N=83, R²Δ=R² change, β=Beta, AC=Avoidance Coping, p<.10+, p<.05*, p<.01**, p<.001***

A summary of the regression results for female gamblers is shown in Table 4. In the first regression, loneliness and avoidance coping at stage one accounted for 31% of the variation in problem gambling, and as expected, both factors significantly predicted problem gambling. Lonely women and women who had a tendency to use avoidance coping tended to experience more gambling problems. At stage two, the interaction between loneliness and avoidance coping was entered. It accounted for an additional 10% of the variation in problem gambling, over and above what was explained by loneliness and avoidance coping directly. Together the model was able to explain 41% of the variance in problem gambling. The interaction (shown in Figure 1) is now the strongest predictor of problem gambling. As illustrated, female gamblers who scored high on both avoidance coping and loneliness showed substantially more symptoms of problem gambling than female gamblers showing high scores for either variable.

Figure 1
Interaction between avoidance coping (AC) and loneliness for female gamblers



Click diagram for larger image.

An examination of the other regressions showed a similar pattern of results. Avoidance coping and all mood states, except stress, significantly predicted problem gambling. In all cases, women who scored high in negative mood or who had a tendency to cope by avoiding were more likely to show more symptoms of problem gambling than those who scored low in those variables. The introduction of the mood by avoidance coping interaction enabled an additional 3% to 10% of the variation in problem gambling to be accounted for, over and above what was accounted for by the mood or avoidance coping directly (see Table 4). All interactions between mood and avoidance coping were significant with the exception of the interaction involving stress. An examination of the significant interactions revealed that, as was the case with loneliness, women who scored high in negative mood and who showed a strong tendency to cope by avoiding showed substantially more symptoms of problem gambling than women who scored high in just one variable.

It should be noted that the addition of the interaction term did not substantially increase the predictive ability of the model for the regressions involving depression and boredom. However, the pattern of relationships was consistent for all regressions, and in each case, the total model accounted for a substantial percentage of the variance.

Hierarchical regression analyses for males

Table 5 **Summary of hierarchical regression analyses showing main and**

interactive effects of dysphoric mood and avoidance coping on problem gambling for males

Predictor variables	Loneliness R ² Δ β	Anxiety R ² Δ β	Depression R ² Δ β	Boredom R ² Δ β	Stress R ² Δ β
Stage 1	.10*	.04	.06	.07+	.07+
Mood	.31*	.18	.24+	.25*	.26+
AC	.02	.03	.03	.02	.02
Stage 2	.02	.02	.01	.03+	.01
Mood	.34*	.27+	.26+	.23+	.27*
AC	.00	.03	.02	.00	.02
Mood x AC	-.16	-.17	-.08	-.17	-.08
Total R²	.12*	.06	.07	.10+	.08

Note. N=72, R²Δ=R² change, β=Beta, AC=Avoidance Coping, p<.10+, p<.05*

A summary of regression results for male gamblers is shown in Table 5. The picture is quite different for males compared to females. None of the mood by avoidance coping interactions were predictive of problem gambling. Also, contrary to expectations, avoidance coping failed to predict problem gambling in any of the regressions. A power analysis indicated that the study had a 73% chance of detecting even weak correlations in the population.

Loneliness and stress were the only mood states able to significantly predict problem gambling, although the relationship between problem gambling and the predictors of depression, boredom and anxiety approached significance. Men who scored high on these negative emotions tended to show more symptoms of problem gambling than those who scored low.

Discussion

This study provides important insights about the gambling processes of males and females; however, this data needs to be viewed in the light of several limitations. The sample was drawn from disparate sources, so it may not accurately represent the general population. Of particular concern is the over-representation of university students who may differ from the general population in terms of age, gender or education. It is possible that the inclusion of so many university students has biased the results of the study.

The rationale for the broad recruiting strategy was (a) to over-represent the number of problem or potential problem gamblers in the sample (those scoring five or more on the SOGS) through targeting a source of known problem gamblers; and (b) to target a wide range of adults who gamble, using both student and community recruitment. A second limitation was the cross-sectional nature of the study. Cause-effect relationships cannot be assumed between the key variables of coping, mood and problem gambling. Findings of the current study should be seen as supporting other work that suggests cause and effect. A third limitation of the study concerned the measure of avoidance coping. This measure was less than optimal as it questioned coping on a single occasion, targeted only a few of the many possible avoidant coping behaviours and was not a highly reliable measure. Replication of this study with a range of more developed scales would be of value. Finally, given the practical difficulties of sampling, this study did not focus on any particular gambling type, and factors predicting problem gambling may vary across gambling types. Nevertheless, it was clear that poker-machine gambling was the most favoured form of gambling in the sample and by problem gamblers. It is within the context of these limitations that the following discussion and conclusions must be viewed.

The results of this study revealed that problem gamblers, both male and female, were significantly more likely to be depressed, anxious, stressed, bored or lonely than non-problem gamblers and were more likely to use an avoidance coping style to deal with stressful events or feelings. This initial analysis supported prior research findings (e.g., Becoña et al., 1996; Getty et al., 2000; Ohtsuka et al., 1997), suggesting that avoidance coping and dysphoria are important variables associated with problem gambling for both males and females. Such a conclusion, however, does not tell the whole story, and should not be used to justify the application of a "male model" of problem gambling to female gamblers. Further investigation with more sensitive methods of analysis revealed substantial differences in the way avoidance coping and dysphoria predicted problem gambling for males compared to females. It is to a discussion of these analyses that we now turn.

An interactional model of dysphoric mood and avoidance coping

An interactional model of problem gambling predicts that the effects of dysphoric mood on problem gambling will be moderated by avoidance coping. From such a model it would be expected that gamblers who scored high on both dysphoric mood and avoidance coping would show substantially more symptoms of problem gambling than gamblers who scored high on only one of these variables. These predictions were strongly supported for female but not for male gamblers.

As expected, female gamblers with high levels of dysphoria tended to experience more symptoms of problem gambling than those with low dysphoria. This prediction was supported for all mood states, except stress, giving strong support to prior research that found that women with gambling problems experience higher levels of negative mood (Brown & Coventry, 1997; Trevorrow & Moore, 1998). Secondly, as expected, female gamblers who scored high on avoidance coping tended to exhibit more problems with their gambling. Again, these results were consistent with prior research (Getty et al., 2000; Scannell et al., 2000).

Thirdly, the hypothesis that there would be a significant interaction between avoidant coping and dysphoria, such that female gamblers with high dysphoria and high avoidance coping would tend to show more symptoms of problem gambling than those high in just one variable, was supported. The introduction of a variable representing the mood by avoidance coping interaction significantly improved prediction of problem gambling for women. Again, this was true for all mood states except stress. Overall, these results gave strong support to the interactional model of avoidance coping and dysphoric mood for female gamblers. They suggest that while avoidance coping and dysphoric mood are both important factors in problem gambling, female gamblers who score high on both variables may be particularly vulnerable to problem gambling. These results are in tune with prior qualitative research that found that female problem gamblers reported gambling specifically as a means of escaping emotional problems (Brown & Coventry, 1997; Loughnan et al., 1996; Pierce et al., 1997).

The results of regressions involving male gamblers were markedly different to those involving female gamblers. Male gamblers who experienced loneliness or stress tended to have more symptoms of problem gambling. However, none of the other mood states were significantly correlated with problem gambling. Therefore, these results show very little support for prior research that found evidence of elevated loneliness, boredom, depression and anxiety in male problem gamblers (McCormick et al., 1984; Ohtsuka et al., 1997). These inconsistent findings cast some doubt on the applicability of negative mood in explaining male problem gambling.

Secondly, contrary to expectations, there was no relationship between avoidance coping and problem gambling for the male gamblers. These results appear to be contrary to prior research that found that male problem gamblers use significantly more avoidance coping than male non-problem gamblers (Getty et al., 2000; McCormick, 1994). One explanation for these apparently contradictory findings may be the use of more sophisticated methods of analysis in the current study. The regression analyses used in this study scrutinised the relationships between avoidance coping and problem

gambling separately for male and female gamblers rather than simply comparing the average level of avoidance coping. Possibly, avoidance coping is high (on average) in male problem gamblers but is not predictive of problem gambling.

Thirdly, the hypothesis that there would be a significant interaction between avoidance coping and dysphoria, such that male gamblers with high dysphoria and high avoidance coping would tend to show more symptoms of problem gambling than those high in just one variable, was not supported. None of the regressions were able to significantly predict the dependent variable via an interaction between mood and avoidance coping. These results cast considerable doubt on the applicability of this interactional model for male gamblers.

Gendered avoidance strategies?

The tendency for female gamblers to see gambling as a form of distraction rather than a source of excitement or money may, in part, be due to social restrictions on gambling access for females. There is some evidence that female gamblers tend to gamble on a narrower range of activities compared to male gamblers; many showing a strong preference for poker machines over other forms of gambling (Hraba & Lee, 1996; Productivity Commission, 1999; Slowo, 1997). The tendency for female gamblers, particularly regular gamblers, to play poker machines rather than other forms of gambling may be because these venues are seen as more socially acceptable for females. Local hotels and clubs have made considerable efforts to ensure that their poker-machine venues are attractive and comfortable for women, even for women who are alone (Błaszczynski, Walker, Sagris & Dickerson, 1999). In contrast, it doesn't appear that other betting venues such as horse racing outlets have made the same sort of efforts to encourage female gamblers.

Different forms of gambling may satisfy different psychological needs. People who play poker machines often cite "escape" as their reason for gambling while racing and casino gamblers report gambling for "excitement" (Hraba & Lee, 1996; Slowo, 1997). If women are regularly exposed to a form of gambling that lends itself to escapism rather than excitement, it is possible that women who are searching for a socially acceptable means of escape find it in gambling—or in other words, poker-machine gambling. Indeed, a study investigating gambling in Australia (Productivity Commission, 1999) found that the vast majority of female problem gamblers seeking help had problems with poker machines. The Commission even went so far as to say that the "feminisation" of problem gambling appears strongly associated with the spread of gaming machines in Australia.

In contrast, male gamblers who relied heavily on avoidance coping did not show any particular tendency to display more problems with their gambling than those who showed less reliance on avoidance coping. Prior research has found that male gamblers tend to see their gambling as a source of excitement or money rather than as a means of escape (Pierce et al., 1997; Slowo, 1997), although this information is controversial (Blaszczynski, Wilson & McConaghy, 1986). Perhaps males who rely on avoidance strategies have a tendency to turn to other forms of avoidance.

It is widely accepted that many people drink alcohol to regulate negative emotions and that those who do so tend to drink more often and may be at greater risk of developing drinking problems than purely social drinkers. However, although this stressor-drinking model is quite popular, Cooper et al. (1992) found that the effect of negative life events on drinking behaviour was moderated by coping in a manner similar to what is discussed in this study. They found that negative life events only predicted alcohol use and drinking problems in men who relied heavily on avoidance coping. In contrast, men who scored low in avoidance coping did not display additional drinking problems when faced with more stressors.

It is possible, therefore, that socialisation encourages men and women to choose different methods of avoidance coping. Drinking and particularly drinking to excess are generally more socially acceptable for men than women (Broom, 1994; Cooper et al., 1992). Similarly, gambling and gambling on poker machines have become acceptable forms of entertainment for women (Blaszczynski et al., 1999). Societal values that play a big part in determining which behaviours are acceptable for men and women may also be indirectly influencing which behaviours are more likely to become maladaptive forms of coping for each gender.

Counselling implications

The results of this study have implications for the counselling methods used with women. In terms of female problem gamblers, ongoing battles with gambling and other maladaptive behaviours may be an indication that some therapies focus too narrowly on overt gambling behaviours or cognitions and too little on underlying factors, such as poor coping strategies or dysphoria. If, for instance, a woman is gambling to escape loneliness, then counselling strategies that focus entirely on her gambling behaviour are unlikely to be successful in the long term. Even if problem gambling is successfully halted, it is possible that she may simply turn to another form of avoidance, such as excessive drinking or eating to cope with her ongoing loneliness.

The results of this study have also shown that effective counselling for female

problem gamblers should include an active search for underlying factors such as dysphoric mood or maladaptive coping strategies. Female problem gamblers who display a lack of sophistication in their use of coping strategies may find that counselling that integrates an element of coping enhancement provides long-term assistance. This may involve expanding a limited coping repertoire or simply increasing understanding around the appropriate use of various coping strategies. Counselling of female problem gamblers may also need to include an active search for underlying emotional problems. If women are gambling because of dysphoric emotions then the overt behaviours should be seen as symptoms rather than the cause of problems.

McCorrison (1999) argues that if counsellors can identify the "needs" that are satisfied by gambling, they can then work with clients to find alternate methods of satisfying these needs. In this way, they can help clients make problematic gambling behavior redundant.

Conclusion

The results and conclusions of this research are starkly different from previous research that investigated the relationship between avoidance coping and problem gambling for male gamblers (Getty et al., 2000; McCormick, 1994). It is possible that these contrasting results are an aberration of the current sample. However, the sample size was quite large and the results of the initial analysis supported those of prior research, which suggested that male and female problem gamblers had elevated levels in avoidance coping. This implies that the current sample was not substantially different to past samples. It seems that the deviation of the results and conclusions of this research stemmed directly from the differing methods of analysis used. It is therefore important for future studies to replicate the research methodology with other samples of male and female gamblers.

Future research replicating the current study's interactional model may also find that controlling gambling type (perhaps restricting participation to current poker machine gamblers) would ensure that gender differences observed are not confounded by gambling preference (Delfabbro, 2000). Additionally, where possible, coping tendencies should be assessed on several occasions rather than the single episode measured in the present study, ensuring a more accurate assessment of stable coping tendencies (Folkman, Lazarus, Gruen & DeLongis, 1986). Of course, there are likely to be many different causal paths to problem gambling; this study has attempted to isolate one potentially causal relationship between mood, coping skills and problem gambling.

In summary, this study indicates that the motivations of female problem

gamblers may differ from those of male problem gamblers. Female gamblers who were high in both avoidance coping and dysphoric mood showed substantially more symptoms of problem gambling than those high in just avoidance or dysphoria. These results supported prior qualitative research and suggest that some female gamblers may be gambling to escape dysphoric mood, and that these females may be particularly susceptible to problem gambling (Brown & Coventry, 1997). In contrast, there was no evidence that this combination of high avoidance coping and high dysphoric mood substantially increased the risk of problem gambling for males suggesting this model may not be applicable to male gamblers.

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Figure 1

Interaction between avoidance coping (AC) and loneliness for female gamblers

