Problem Gambling: An Exploration of the Role of Global Personal Hopefulness, Short-Term Gambling Hope, and Illusion of Control Beliefs.

This is the Published version of the following publication

The publisher's official version can be found at

Note that access to this version may require subscription.

PROBLEM GAMBLING: AN EXPLORATION OF THE ROLE OF GLOBAL PERSONAL HOPEFULNESS, SHORT-TERM GAMBLING HOPE, AND ILLUSION OF CONTROL BELIEFS[1]

Spiro Ginakis & Keis Ohtsuka

School of Psychology (F089), Victoria University, Melbourne, VIC 8001, Australia
E-mail: Keis.Ohtsuka@vu.edu.au; sginakis@dodo.com.au

ABSTRACT

The present study investigated if global personal hopefulness, short-term gambling hope (fantasy hope), and illusion of control beliefs predict problem gambling. 113 university students and members of the general public answered the questionnaire on global personal hopefulness, short-term gambling hope, illusion of control beliefs and the harm to self with regard to gambling. It was hypothesised that global personal hopefulness, illusion of control, and short-term gambling hope would predict harm to self scores (problem gambling). A hierarchical regression analysis showed support for the hypothesis. Global personal hopefulness, illusion of control, and short-term gambling hope accounted for 62 % of the variance in harm to self scores. The implication to addiction research and the utility of hope in gambling were discussed.

Introduction

'General Theory of Addiction' (Jacobs, 1986) defines addiction as a bid by the addict to self-regulate their mood. The theory stipulates that two factors act to predispose the individual to addiction. First, the individual suffers of a chronic irregular, or abnormal, physiological arousal state – either 'hypertensive or hypotensive'. Second, a sufficiently traumatic childhood event manifests as a deep sense of personal inadequacy, feelings of guilt, shame, and rejection. A hypotensive individual seeks to elevate their arousal, whereas a hypertensive individual seeks to reduce their level of arousal. Under the influence of this emotional deficit the predisposed individual attempts to alleviate their disphoric arousal state.

Jacobs (1997) proposed that participation in the addictive activity brings about a 'dissociative' state, which is central to providing the addict with relief from their hyper- or hypotensive arousal state. Moreover, Jacobs indicated that the depth of the dissociative state achieved by an addict, while indulging in the addictive activity, is greater than that reached by a non-addict.

According to Jacobs (1986), his theory encapsulates the essence of a wide range of potentially addictive behaviours such as sex, eating, working, and gambling. His definition of *addiction* – "a dependent state acquired over time by a predisposed person in an attempt to relieve a chronic stress condition" – includes any activity or substance that brings about some relief from a chronic stress state (Jacobs, 1997, p. 3). He argues that an addiction such as gambling or alcoholism is not perpetuated by the addicts' inability to abstain from the

---

[1] Ginakis, S., & Ohtsuka, K. (2005). Problem gambling: An exploration of the role of global personal hopefulness, short-term gambling hope, and illusion of control beliefs. *Gambling Research, 17*(2), 7-16.

addiction for fear of withdrawal symptoms but because the addiction provides a way of life, a means of coping with stress.

Negative emotional states are associated with addiction relapse. Brown (1989) suggests that arousal is probably the major reinforcer for regular gamblers. Relapse is triggered by the need to reach and maintain a subjective level of excitement or escape rather than by the motivation for monetary gain. Further, he argues that for the addict relapse is purposeful and functional. Relapse serves the purpose of maintaining hedonic tone in the short-term, during times of increased stress, at the expense of the medium to long-term. Brown suggested that addiction is a learned behaviour that provides the addict with a way of controlling their emotional states.

A qualitative study on problem gambling also revealed that problem gamblers use addiction as a method of emotional control (Ricketts & Macaskill, 2004). Their 'self-confessed' problem gamblers predominantly used gambling to deal with negative emotional states, whereas the normal gamblers indicated a range of alternative emotion management strategies.

Regarding the mechanism by which addiction takes hold, Jacobs (1997) stated that predisposed individuals may choose to act adaptively by working towards gaining recognition and acceptance; alternatively, individuals may take an antisocial path, involving crime as a means to vent feelings of anger and achieve excitement. Further, he reasoned that the individuals most at risk of developing an addiction are those who react to negative feelings with denial and actively indulge in compensatory fantasies of being loved, successful, and respected. Jacobs emphasised that the *dissociative* state achieved by indulging in the addictive activity appeals to the individual who is already using fantasy as a means of coping with stress.

One such potent fantasy documented in the literature is gambler's hopes of winning a large amount of money at gambling (Ladouceur & Sevigny, 2002; Lynch, 1990; Walker, 1992). Lynch (1990) investigated the motives of regular poker machine players utilising a qualitative approach. He commented that his respondents were evidently "aware of hope as a commodity", and suggested that players may find their hopes and fantasies more rewarding than monetary payouts (p. 201). Comments such as, "[I like] the thrill of thinking you are going to get that big one", and "[I play] to relax and hope to win the pot at the end of the rainbow", were common descriptions of respondents' motives for gambling (p. 202). Lynch concluded that regular poker machine players often express thoughts of hope. He suggested that poker machine "playing keeps hope itself alive" (p. 203).

Gambling involves hope in that the gambler must be hopeful of a positive outcome with each wager. Although the level of hope felt by the gambler may not be a true reflection of an objective measure of the actual odds, a certain level of hope is involved in each wager. In this sense, the positive emotions associated with hope are felt by the gambler regardless of the outcome of the wager. Thus feelings of hope can be seen to be very much a constant in the gambling experience. That is, each spin of the wheel, each hand of cards dealt, or each horse race provides a fresh opening in which the gambler may feel a sense of hope. The hope associated with each wager cannot be overlooked as a powerful reinforcer in itself; even if the wager is lost, a sense of hope has been felt (Lynch, 1990). By examining the role of hope in gambling behaviour the focus is shifted away from the powerful excitement associated with a gambling win, and placed on the behaviour that occurs between wins. Wins in

gambling are rare and unpredictable; whereas, the hope involved in placing a bet is predictable and easily achieved.

Hope is defined as the "construction of, and response to, the perceived future, in which the desirable is subjectively assessed to be probable" (Nunn, 1996, p. 228). There are three key elements to hope; *temporality* - a future orientation, *desirability* - perceived want or need, and *expectancy* - belief in the fruition of the goal. Hopefulness is understood as a global and stable trait of one's life that applies across all domains of one's experience, personal, professional or communal. Hope and optimism are distinctively different in that optimism does not involve *conation* (Nunn, 1996). In contrast, belief in one's own ability or power of agency is strictly a differentiating aspect of hope (Snyder, 2002).

Helpin (2001) suggested that hope serves to motivate people to engage with their environment in novel ways to bring about the fruition of future goals in spite of seemingly insurmountable difficulties. Clarke (2003) also viewed hope as serving a creative function by inspiring purposeful and vital activity in the present. However, Clarke identified two types of hope: *positive* hope that is genuine and realistic and *false* hope that is based on the denial of reality. He proposed that positive hope is adaptive in nature because it is conducive to confronting and overcoming considerable obstacles. By encouraging purposeful activity in the present, positive hope can bring about change in the future. Conversely, false hope that is based on the denial of reality precludes purposeful action and is therefore maladaptive.

Overall, a sense of hope can be viewed as adaptive since it compels one to view desired goals with optimism and possibility, and promotes constructive actions in the present. Hope allows one to feel a sense of certainty about the future although objectively the future is uncertain. This future oriented aspect of hope has positive implications for the present, in that it promotes a sense of contentment and acceptance of the present, through the anticipation of a desired for future. A hopeful disposition is associated with low anxiety and depression, and general well being (Swanston, Nunn, Oates, Tebbutt, & O'Toole, 1998).

Langer (1975) forwarded the notion of *illusion of control,* to explain the inordinate level of control that people claim to have over chance events. She defined illusion of control as "an expectancy of a personal success probability inappropriately higher than the objective probability would warrant" (p.313). This illusion is most obvious when observed in gambling situations but is not restricted to gambling situations. It can be observed in any situation that is governed by chance. Langer argues that illusion of control results when games of chance are treated as tasks that involve skill. When playing card games governed by only chance, participants displayed behaviours that would normally be employed to increase the chances of success in games of skill. Langer ascribed this behaviour to the failure to recognise the distinction between chance activities and tasks requiring skill. When participants were made aware of the chance nature of the activity (intrusion of reality), their illusion of control dissipated.

The aim of the current study was to examine the role of hope in gambling. In light of the relevance of hope to psychological wellbeing and the largely acknowledged relationship between illusion of control and persistence in gambling, it was hypothesised that global personal hopefulness, illusion of control beliefs and short-term gambling hope, together, would predict harm to self scores. Specifically, higher levels of global personal hopefulness would predict lower levels of harm to self, and that, higher levels of illusion of control and short-term gambling hope would predict higher levels of harm to self.

Method

Participants

The sample comprised 113 adult participants (54 males, Age $M = 36.66$, $SD = 14.06$; 59 females, Age $M = 33.79$, $SD = 8.89$). The participants' ages ranged between 19 and 77 years with an overall mean age of 35.13 ($SD = 11.61$). Of 220 surveys, 113 completed surveys were returned (51.4% return rate). Of the 220 surveys approximately 100 were distributed to university students enrolled in undergraduate courses, the remaining 120 were distributed to the general public using a convenience sampling technique. Sixty-two percent of participants had completed a degree course or higher, 18 % held a TAFE or trade qualification, and the remainder had completed year 10.

Materials and Measures

Problem gambling behaviour was examined using the Victorian Gambling Screen (VGS) (Tovim, Esterman, Tolchard, & Battersby, 2001). This screen was standardised based on the Australian population. The VGS is a self-report measure consisting of 24 items that are scored on a 7-point scale. For the present study, only 5 possible answers were used (0 = Never, to, 4 = Always). Although VGS includes three sub-scales: the *harm to self scale*, the *enjoyment of gambling scale*, and the *harm to partner scale*; only the *harm to self scale* (15 items) was used for this study. Possible score range was from 0 to 60, with higher scores indicating higher levels of harm. The scale assesses the level of harm sustained by the gambler, the level of control over gambling, lying to oneself or others about gambling, gambling as an escape, feelings of guilt about gambling, and affordability of one's gambling activities. Internal reliability analysis of the harm to self scale gave a Cronbach's alpha of .95.

Global personal hopefulness was measured using the Hunter Opinions and Personal Expectations Scale (HOPES) (Nunn, Lewin, Walton, & Carr, 1996). The 20 items comprising HOPES were designed to reflect seven domains of hope: perceived mastery or control; meaning, reflective of purpose in life; perceived future interpersonal support; perceived future self worth; investment in future such as planning and conceptualising of future events; energy, motivation, sense of drive, and excitement for the future; and appreciation of reality including the realistic appraisal of positive possibilities.

The 20 items which are measured on a 5-point scale (0 = Not at all, to, 4 = Extremely well). Ten of the 20 items comprise the Hope Sub-scale (HS), and the other 10 items make up the Despair Sub-scale (DS). Summing each sub-scale items produces the hope scale score and the despair scale score. Adding 40 points to the hope scale score and subtracting the despair score determines the Global Personal Hopefulness score (HS + 40 – DS = GPH). Internal reliability analyses revealed Cronbach's alphas of .89 for the hope sub-scale and .8 for the despair sub-scale.

The **Illusion of Control Beliefs** scale (ICB) was originally developed by Moore and Ohtsuka (1997) as part of the *Youth Gambling Questionnaire* and later used by Ohtsuka and Hyam (2003) as a self report measure of illusion of control beliefs regarding gambling. In addition to the original 5 ICB items, a few new items were either created or adapted from Neill's (2003) 10 item illusion of control scale. The present ICB scale consists of 10 items which are rated on a 5-point Likert- type scale (1 = Strongly disagree, 2 = disagree, 3 = neither, 4 =

agree, 5 = Strongly agree). A total ICB score ranged from 10 to 50 with higher scores reflecting higher levels of illusion of control. The 10 items assess beliefs concerning perceived chances of winning a major jackpot, ability to mentally influence or predict gambling outcomes, and perceived benefits of practice influencing the chances of success. An internal reliability analysis gave a Cronbach's alpha of .88.

The **short-term gambling hope** scale was developed for the present study as a measure of the transitory or fleeting sense of hope that gamblers experience leading up to and during betting, or in anticipation of a gambling session. The construction of this scale was influenced by Lynch's (1990) research, which strongly suggested that hope itself might be a potent reinforcer of gambling behaviour. The name chosen for this construct, 'short-term gambling hope', was selected to describe gambler's indulgence in positive thoughts of winning immediately before a bet, however, these hopeful fantasies may also involve a desire for future, dependent on significant winnings. Hence, short-term gambling hope is a measure of a type of false hope that mostly sustains wishful fantasies.

The short-term gambling hope scale comprises 5 items which are scored on a 5–point scale (0 = Does not apply to me at all, to, 4 = Applies to me very strongly). Scoring involved addition of each item score, and scores ranged from 0 to 20, with higher scores reflecting a higher degree of short-term gambling hope. An internal reliability analysis revealed a Cronbach's alpha of .85.

Demographic data was collected regarding sex, age, education level, country of birth, and culture. All surveys were compiled in a six-page questionnaire that took approximately 15 minutes to complete.

Procedure

Ethics approval was granted from the University Human Research Ethics Committee before the commencement of the current study. Using convenience sampling, participants were asked if they wished to participate in the survey. Volunteers were given a questionnaire pack comprising a letter for invitation, informed consent information, the questionnaire, and a pre-paid envelope, and asked to complete the anonymous survey in their own time. Completed surveys were returned via mail. Data were collated and analysed using the SPSS Ver. 12.

Results

For all statistical analyses, an alpha level of .05 was used to determine statistical significance. A multivariate analysis of variance was conducted to examine the score differences for all predictor variables between participants designated in the *Not at Risk* (NR) group and those in the *Borderline and Problem Gamblers* (B&PG) group. The *Not at Risk* group (*n*=96) scored 8 or less on the harm to self scale, whereas those in the *Borderline or Problem Gamblers* group (*n*=17) scored 9 or more.

The variable score differences presented in Table 1 were subjected to *t*-tests for independent samples to validate the apparent group differences. A Bonferroni procedure was employed to keep a set-wise Type 1 error rate to .05 and an alpha level of .0083 was used to determine statistically significance of six *t*-tests. The results indicated that there were statistically significant differences in mean score between the not at risk group and the borderline and problem gambler group. Specifically, borderline and problem gamblers showed lower levels

of global personal hopefulness ($t(111) = -2.95$, $p = .004$, two tailed), higher levels of despair (sub-scale measure) ($t(111) = 3.06$, $p = .003$, two tailed), higher levels of illusion of control ($t(111) = 3.11$, $p = .001$, two tailed), higher levels of short-term gambling hope ($t(109) = 8.84$, $p = .001$, two tailed), and higher levels of enjoyment of gambling ($t(110) = 3.61$, $p = .001$, two tailed), than the not at risk group. The hope sub-scale measure did not significantly differ ($t(111) = -1.86$, $p = .065$, two tailed).

Table 1

Means and Standard Deviations of All Predictor Variables for Not at Risk Group (NR) ($n = 96$), and Borderline & Problem Gambler Group (B&PG) ($n = 17$).

Group	NR		B&PG	
Variable	*M*	*SD*	*M*	*SD*
Global Personal Hope	62.25	9.74	54.77	9.16
Hope Sub-Scale	29.54	6.35	26.47	5.80
Despair Sub-Scale	7.29	5.48	11.70	5.51
Illusion of Control	16.95	6.55	23.59	8.11
Short-term Gambling Hope	1.32	2.08	7.18	4.25
Enjoyment of Gambling	2.99	2.73	5.47	1.77

A hierarchical multiple regression analysis was conducted to test the hypothesis that global personal hopefulness, illusion of control beliefs and short-term gambling hope, together, would predict harm to self scores. More specifically, it was expected that higher levels of global personal hopefulness would predict lower levels of harm to self, and that, higher levels of illusion of control and short-term gambling hope would predict higher levels of harm to self. The multiple regression model was statistically significant ($F (3, 110) = 60.35$, $p < .01$), indicating that the independent variables as a group significantly predicted harm to self. Specifically, global personal hopefulness, illusion of control, and short-term gambling hope, collectively account for 62% (adjusted $R^2 = .618$) of the variance in the harm to self (see Table 2). Only short-term gambling hope proved to be a significant independent predictor, $t(110) = 10.47$, $p < .01$.

Moreover, each of the three steps in the analysis proved to be statistically significant. Step 1, with global personal hopefulness as the predictor variable, the model explained 8 percent (adjusted $R^2 = .083$) of the variance in the dependent variable harm to self, $F(1, 110) = 10.97$, $p < .01$. Step 2, with global personal hopefulness and illusion of control as the predictor variables, the model explained 23 percent (adjusted $R^2 = .234$) of the variance in the dependent variable harm to self, $F(2, 110) = 17.82$, $p < .01$. Further, with the addition of illusion of control to the model there was a significant increase in the variance accounted for in harm to self, ($\Delta R^2 = .157$), $\Delta F(1, 108) = 22.50$, $p < .01$. Step 3, with global personal hopefulness, illusion of control and short-term gambling hope as the predictor variables, the model explained 62 percent (adjusted $R^2 = .618$) of the variance in the dependent variable harm to self, $F(3, 110) = 60.35$, $p < .01$. Further, with the addition of short-term gambling hope to the model there was a significant increase in the variance accounted for in harm to self ($\Delta R^2 = .380$), $\Delta F (1, 107) = 109.58$, $p < .01$.

Table 2
Summary of Hierarchical Regression Analysis for Variables Predicting Harm to Self ($N = 113$).

Variable	B	$SE\ B$	β
Step 1			
Global Personal Hopefulness	-.24	.07	-.30**
Step 2			
Global Personal Hopefulness	-.17	.07	-.22*
Illusion of Control	.44	.09	.41**
Step 3			
Global Personal Hopefulness	-.09	.05	-.11
Illusion of Control	-.01	.07	-.01
Short-term Gambling Hope [a]	1.82	.17	.76**

Note. [a] $N = 111$; **$p < .01$; *$p < .05$

Discussion

The *short-term gambling hope* construct was modelled on Lynch's (1990) findings that for gamblers, hope was a significant non-monetary reward. Lynch concluded that his respondents' gambling was not sustained by their desire for wealth but by their 'dreams of hope', suggesting that for regular gamblers hope is an end in itself. Lynch's qualitative findings have been validated by the present results, particularly in light of the large contribution of short-term gambling hope to the overall regression model.

Rather than regarding gambler's hopeful fantasies in a negative light, Lynch viewed his respondent's 'dreams of hope' as a regular part of gambling. Others may not agree with Lynch's acceptance of false hopes and would link such hopes to maladaptive behaviour.

Clarke (2003) identified two types of hope: a positive hope that encourages adaptive behaviour, and a negative, or false hope, which promotes false beliefs about reality. His views are supported by the present findings. Global personal hopefulness, a measure of a positive sense of hope, was found to be inversely related to problem gambling behaviour and short-term gambling hope, or false hope, was found to be positively related to problem gambling behaviour. As would be expected according to Clarke's perspective, lower scores on global personal hopefulness and higher scores on short-term gambling hope were found to predict problem gambling behaviour. This point regarding the relationship between false hope and maladaptive behaviour is further illustrated by comparing the mean short-term gambling hope score between the *not at risk* and *borderline and problem gambler* groups. The group comprising the borderline and problem gamblers had a short-term gambling hope mean score over 5 times higher than that of the not at risk group.

Jacobs (1997) stated that individuals that are most prone to addiction indulge in compensatory fantasies and pretend that all is well. Jacobs claimed that the predisposed individual is drawn to activities that will act as an escape and help the person to achieve a dissociative-like state, which they use to regulate their mood. Gambling is just such an activity, indulging in *short-term gambling hope* is in a sense a dissociative-like state. The gambler engaged in the betting and preoccupied by thoughts of hopeful fantasy is engrossed in the experience and is oblivious to other concerns. The degree to which the gambler dissociates depends on a number of factors, including the excitement of a win, which would

intensify the experience, however it is clear that short-term gambling hope and Jacobs's dissociative-like state is related. The present results regarding short-term gambling hope support Jacobs's theory since short-term gambling hope was found to be a clear predictor of problem gambling behaviour.

Another finding that supports Jacob's theory is that lower scores of global personal hopefulness predicted higher scores of harm to self (problem gambling). It is reasonable to expect individuals fitting Jacob's description of those predisposed to addiction to score lower on global personal hopefulness. However, only 8 % of the variance in harm to self scores was accounted for by global personal hopefulness scores alone. Since the global personal hopefulness measure is a self-report scale, it is open to deception, be it intentional or unintentional on behalf of the respondent. Denial may be a possible explanation for such a low rate in the accounted variance.

Regarding the close association between the illusion of control and short-term gambling hope constructs, the findings of the current study present an interesting theoretical question. The construct designed to measure gamblers hopeful fantasies, short-term gambling hope, accounted for most of the variance in harm to self scores when added to a regression model containing illusion of control beliefs and general personal hope. Since there was a substantial overlap in the predictive power of illusion of control and that of short-term gambling hope, it raises questions regarding the nature of these constructs. The present illusion of control scale is modelled on Langer's (1975) definition - perceived control over gambling outcomes. Short-term gambling hope is a measure of false hope that reflects one's hopeful fantasizing about gambling winnings. It is reasonable to conclude that the two constructs are related but measure distinct psychological constructs regarding false hope or illusory beliefs regarding positive gambling outcomes.

The findings of the current study suggest that illusion of control beliefs make up a part of the short-term gambling hope construct or vice versa. Perhaps, illusion of control might be viewed as an accomplice to wishful thinking with regard to gamblers' perceptions of positive gambling outcomes.

Although there is a significant amount of overlap between the two constructs, short-term gambling hope is distinct from illusion of control. This is evident by examining the items that comprise the short-term gambling hope scale.

Illusion of control items question respondent's beliefs about probability of gambling outcome, whereas short-term gambling hope items requires respondents to reflect on their feelings and motives for their gambling. An example of this is Item 1 of the short-term gambling hope survey, "When I think about winning a jackpot, or a large bet, I feel hopeful about the future", and Item 4 "I mostly gamble when I feel down about things". The short-term gambling hope items probe not only false hope but also feelings and motivations about gambling.

The issue of gambling motivation also touches on the use of gambling as a mood regulator. Many researchers believe that regular gamblers, especially addicted individuals, use gambling as a means of controlling their negative emotional states (Brown, 1989; Jacobs, 1986, 1997; Ricketts & Macaskill, 2004). The present results regarding short-term gambling hope may offer some insight into the way in which gambling activity alleviates negative emotional states. Considering that the borderline and problem gambler group scored higher

on short-term gambling hope, a lack of hope, or need for hope itself, may be seen as a considerable motivator for gambling participation. Viewing lack of hope as a motivator for gambling activity, by the addicts, goes a step further in explaining Jacob's (1997) dissociative-like states. Understanding Jacob's dissociative-like states as a state of hopeful fantasy, or as Lynch (1990) put it, indulging in 'dreams of hope', provides another way of understanding the issues underlying problem gambling.

References

Brown, R. F. I. (1989). Relapses from a gambling perspective. In M. Gossop (Eds.), *Relapse and addictive behaviour* (pp. 107 -- 132). London: Routledge.

Clarke, D. (2003). Faith and hope. *Australasian Psychiatry, 11*, 164 – 168.

Helpin, D. (2001). The nature of hope and its significance for education. *British Journal of Educational Studies, 49*, *4*, 392 – 410.

Jacobs, D. F. (1986). A general theory of addictions; a new theoretical model. Journal *of Gambling Behavior, 2*, 15 – 31.

Jacobs, D. F. (1997). *A new paradigm for understanding and treating addictive disorders*. Retrieved July 17, 2004, from Loma Linda University, School of Medicine Web Site: http://www.llu.edu/

Ladouceur, R., & Sevigny, S. (2002). Symbols presentation modality as a determinant of gambling behavior. *The Journal of Psychology, 136*, 443 – 448.

Langer, E. J. (1975). The illusion of control. *Journal of Personality and Social Psychology, 32*, 311 – 328.

Lynch, R. (1990). Working-class luck and vocabularies of hope among regular poker-machine players. In D. Rowe, & G. Lawrence (Eds.), *Sport and leisure: trends in Australian popular culture* (pp. 189 – 208). Sydney: Harcourt Brace Jovanovich.

Moore, S. M., & Ohtsuka, K. (1997). Gambling activities of young Australians: Developing a model of behaviour. *Journal of Gambling Studies, 13*, 207 – 236.

Neill, E. (2003). *The state/trait distinction in illusion of control beliefs and locus of control within a gambling context*. Unpublished honours thesis, Victoria University, Melbourne, Australia.

Nunn, P. K., Lewin, J. T., Walton, M. J., & Carr, J. M. (1996). The construction and characteristics of an instrument to measure personal hopefulness. *Journal of Psychological Medicine, 26*, 531 – 545.

Nunn, P. K. (1996). Personal hopefulness: a Conceptual review of the relevance of the perceived future to psychiatry. *British Journal of Medical Psychology, 69*, 227 – 245.

Ohtsuka, K., & Hyam, P. (2003). Internal and external attribution of success and failure in gambling and non-gambling situation. In G. Coman, M. Walker, A. Jackson, & P. Thomas (Eds.), *The proceedings of the 12th National Association for Gambling Studies Conference, Melbourne* (pp. 357 – 369). Alphington, Australia: The National Association for Gambling Studies.

Ricketts, T., & Macaskill, A. (2004). Differentiating normal and problem gambling: a Grounded theory approach. *Journal of Addiction Research and Theory, 12*, 77 – 87.

Snyder, C. R. (2002). Hope theory: Rainbows in the mind. *Journal of Psychological Inquiry, 13*, 249 – 275.

Swanston, H. Y., Nunn, K. P., Oates, R. K., Tebbutt, J. S., & O'Toole, B. I. (1998). Hoping and coping in young people who have been sexually abused. *European Child & Adolescent Psychiatry, 8*, 134 – 142.

Tovim, D. I., Esterman, A., Tolchard, B., & Battersby, M. (2001). *The Victorian gambling screen*. (ISBN No. 07 311 1440X). Victorian Casino and Gaming Authority. Melbourne, Australia: Gambling Research Panel.

Walker, M. B. (1992). *The psychology of gambling*. Oxford, UK: Pergamon.