THE ROLE OF MINDFULNESS IN PROBLEM GAMBLING AND IMPLICATIONS FOR TREATMENT

Steven de Lisle, BA(Hons)

Faculty of Medicine, Nursing and Health Sciences

School of Psychology and Psychiatry

Monash University

Melbourne, Australia

This thesis is submitted in partial fulfilment of the requirements for the degree of

Doctor of (Clinical) Psychology

April 2011

ii

This thesis is dedicated to my wife, Gay, and children, Jacqui, Kristy and Mark.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

ABSTRACT

Mindfulness-based interventions have been identified as a 'third wave' in the cognitive behavioural tradition which may improve problem gambling outcomes. However, there is a paucity of research that has investigated the mechanisms by which mindfulness may impart therapeutic benefit. The broader mindfulness literature suggests that mindfulness functions by promoting awareness and acceptance of present moment cognitive and emotional states associated with the experience of psychological distress. These states include rumination, thought suppression, and emotional dysregulation. While an inverse relationship has been found between dispositional mindfulness and problem gambling severity, no study has yet investigated whether such states mediate the relationship between dispositional mindfulness and psychological distress, and whether psychological distress is associated with indices of problem gambling behaviour, such as problem gambling severity, gambling expenditure, gambling frequency, gambling duration, gambling pre-occupation, and gambling urges. Furthermore, no study has yet investigated the efficacy of a manualised mindfulness-based intervention in improving problem gambling outcomes.

Investigation into the role of mindfulness in problem gambling behaviour and implications for treatment are the primary aims of this thesis. Measures of rumination, thought suppression, emotional dysregulation, and psychological distress were utilised with clinical samples and the relationship between dispositional mindfulness and problem gambling behaviour was explored. Following this, the efficacy of mindfulness-based cognitive therapy for problem gambling was investigated.

Description of the Overall Program of Research

Methodology of studies investigating mechanisms of mindfulness

Study 1. Gamblers Help Southern regularly survey current clients of this service to gain an extended understanding of their experience of the service. An additional survey questionnaire was distributed as part of this survey to consenting clients. It included demographic questions and questions relating to problem gambling behaviour using the Gambling Urges Scale (GUS) and single items relating to problem gambling severity, expenditure, frequency and duration. Psychological distress was measured using the Kessler-6 (K6). Measures of the mechanisms of mindfulness included the Rumination subscale of the Rumination-Reflection Questionnaire (RRQ), the Repair subscale of the Trait Meta-Mood Scale (TMMS), and White Bear Suppression Inventory (WBSI). Dispositional mindfulness was assessed using the Mindfulness Awareness Assessment Scale (MAAS). The participants were 78 (49 male and 29 female) self-identified problem gamblers who were new clients of a metropolitan Melbourne problem gambling service. Males ranged from 21 to 76 years of age (*Mdn*=43, *M*=44.6, *SD*=12.9) and females ranged from 37 to 76 years of age (*Mdn*=58, *M*=57, *SD*=10.8).

Study 2. A packet of problem gambling screening tools was developed by Gamblers Help City and the Problem Gambling Research and Treatment Centre to assess gambling behaviour and psychological functioning of new clients attending this service. The packet included demographic questions. Gambling behaviour was assessed using the Problem Gambling Severity index (PGSI) of Canadian Problem Gambling Severity Index (CPGI), and single items relating to gambling pre-occupation, gambling expenditure, gambling frequency and gambling duration. Psychological distress was measured using the K6. Measures of the mechanisms of mindfulness included three subscales from the Distress-Tolerance Scale (DTS). Finally, dispositional mindfulness was assessed using the

Cognitive and Affective Mindfulness Scale-Revised (CAMS-R). Participants were 205 (148 male, 55 female, 1 unreported) self-identified problem gamblers who were new clients of a metropolitan Melbourne problem gambling service. Males ranged from 21 to 67 years of age ($Mdn = 37$, $M = 38.4$, $SD = 11.3$) and females ranged from 25 to 74 years of age ($Mdn = 47$, $M = 46.2$, $SD = 10.5$).

Methodology of study investigating mindfulness-based intervention for problem gambling

A series of advertisements were placed in local newspapers seeking problem gamblers for a randomised controlled trial (RCT) of mindfulness-based cognitive therapy for problem gambling (MBCT-PG). However, recruitment attempts were insufficient for a formal RCT study. Consequently, several case studies were conducted to provide supporting evidence for the efficacy of MBCT-PG. Diagnostic information was based on the Structured Clinical Interview for Pathological Gambling (SCIP), a demographic questionnaire, and questions relating to problem gambling expenditure, gambling frequency, and gambling duration. A baseline of gambling behaviour was established prior to the intervention and participants completed pre-intervention, post-intervention, and follow up questionnaires. Psychological distress was measured using the Beck Anxiety Inventory and Beck Depression Inventory-II. The Five Facet Mindfulness Questionnaire (FFMQ) was used to assess process of change, treatment compliance was assessed using a diary to record mindfulness frequency and duration, and treatment acceptability was assessed using the Client Satisfaction Questionnaire.

Results and Interpretation

Study 1 and Study 2 were combined into one paper entitled 'Mechanisms of action in the inverse relationship between dispositional mindfulness and problem gambling behaviour'.

The treatment seeking sample of problem gamblers in Study 1 and Study 2 displayed significantly lower dispositional mindfulness scores than a normative sample of adult community members and university students. Study 1 found that psychological distress was significantly related to indices of problem gambling behaviour as measured by problem gambling urges, problem gambling severity, gambling expenditure, and gambling frequency. Study 1 had an insufficient sample size for a hierarchical regression analysis. However, statistically significant relationships were found between dispositional mindfulness, psychological distress, and the indices of problem gambling behaviour. These results suggest that psychological distress mediates the inverse relationship between dispositional mindfulness and the indices of problem gambling behaviour. Study 1 also demonstrated that there were statistically significant relationships between dispositional mindfulness, mechanisms of mindfulness (thought suppression, rumination, and emotional dysregulation), and psychological distress. This suggests that these mechanisms of mindfulness may act as mediators in the inverse relationship between dispositional mindfulness and psychological distress. A mediational analysis performed in Study 2 confirmed that 'attention being absorbed by negative emotions' is an important mediator in the inverse relationship between dispositional mindfulness and psychological distress. Moreover, Study 2 confirmed that psychological distress mediates the inverse relationship dispositional mindfulness and indices of problem gambling behaviour.

The case study was entitled 'Mindfulness-based cognitive therapy for problem gambling'. This article was accepted for publication in '*Clinical Case Studies'*. The participant abstained from gambling and anxiety and depression scores significantly reduced to sub-clinical levels over the assessment period. Exploration of mindfulness facets revealed MBCT-PG may be useful in promoting acceptance of distressing thoughts

and emotions. However, the participant did not maintain an intensive mindfulness meditation practice over the follow-up phase of the intervention.

Taken together, the results of this program of research indicate that mindfulness could play an important role in improving problem gambling intervention outcomes.

GENERAL DECLARATION

Monash University
Monash Research Graduate School

Declaration for thesis based or partially based on conjointly published or unpublished work

General Declaration

In accordance with Monash University Doctorate Regulation 17/ Doctor of Philosophy and Master of Philosophy (MPhil) regulations the following declarations are made:

I hereby declare that this thesis contains no material which has been accepted for the award of any other degree or diploma at any university or equivalent institution and that, to the best of my knowledge and belief, this thesis contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

This thesis includes 1 original paper published in a peer reviewed journal and 2 unpublished publications. The core theme of the thesis is the role of mindfulness in problem gambling and implications for treatment. The ideas, development and writing up of all the papers in the thesis were the principal responsibility of myself, the candidate, working within the Faculty of Medicine, Nursing and Health Sciences under the supervision of Dr. Sabura Allen and Dr. Nicki Dowling.

The inclusion of co-authors reflects the fact that the work came from active collaboration between researchers and acknowledges input into team-based research.

In the case of Chapter 2, Chapter 4 and Chapter 6 my contribution to the work involved the following:

Thesis chapter	Publication title	Publication status*	Nature and extent of candidate's contribution
2	Mindfulness and problem gambling: A review of the literature	Submitted for publication	80%
4	Mechanisms of action in the inverse relationship between dispositional mindfulness and problem gambling behaviour	Submitted for publication	70%
6	Mindfulness-based cognitive therapy for problem gambling	Published	80%

I have renumbered sections of submitted or published papers in order to generate a consistent presentation within the thesis.

Signed: …………………………………………………………………

Date: ………………………………

ACKNOWLEDGEMENTS

I wish to express my heartfelt thanks and appreciation to my two supervisors, Dr. Sabura Allen and Dr. Nicki Dowling for their supervision and guidance throughout the development and completion of this dissertation. Without their strong clinical and research experience, I could not have completed this thesis. Both Sabura and Nicki provided me with a great deal of support and encouragement, particularly at those times when I thought the research was just not going to work out. Not only are they proficient in academic, research, and clinical skills, they are genuinely nice people.

My sincere thanks also go to the participants of the case studies, Margaret, Amanda, Graham and Lauren (all pseudonyms but they deserve a special mention). Despite the innovative and unique nature of mindfulness-based interventions, these participants were still prepared to "give it a go" in spite of their personal difficulties. I wish them all well for the future. I would also like to express my appreciation to those who provided the survey data. Although these participants remain anonymous, their preparedness to provide information of an often personal nature is a tribute to their resolve to overcome their problem and to help others in the process.

A big thank you goes to all the staff at Gamblers Help who played a crucial role in approving, distributing, and collecting the survey data. Particular thanks go to Sanya Cosic of Gamblers Help (Southern) for her invaluable assistance with the Gamblers Help (Southern) survey. I would also like to extend my gratitude to Dr. Grace Couchman of the Clinical Psychology Centre at Notting Hill and Julie Barton of the Problem Gambling Research and Treatment Centre for organising rooms at both of the treatment centres. I am also grateful to Dr. John Reece of the School of Health Sciences at RMIT University for his specialised skills in statistical analysis of single case studies.

PREFACE

This thesis developed from a review of the problem gambling literature which revealed that up to 5% of the general population may have a gambling problem (Gerstein et al., 1999; National Research Council, 1999; Shaffer et al., 1999; Welte, Barnes, Wieczorek, Tidwell, & Parker, 2001). Despite the high prevalence rates, relatively few treatment efficacy studies have been conducted that meet criteria for empirically supported interventions. Of those that do meet such criteria, current indications are that CBT is a probably efficacious treatment for problem gambling (Gooding & Tarrier, 2009). However, there are limitations to current CBT approaches. These can be summarised as high attrition rates, high relapse rates, issues pertaining to the heterogeneous nature of the gambling population, failure to adequately address issues of co-morbidity, and inconsistency of structure in treatment delivery. Furthermore, more general issues relating to the usefulness of cognitive techniques in CBT may represent another limitation (Longmore & Worrel, 2007).

In consideration of these limitations, it is important to consider new and innovative treatment approaches that may enhance treatment effectiveness for problem gambling. Mindfulness represents one possibility. Mindfulness has been successfully applied to many presenting disorders. As such, research interest is now gathering into the role of mindfulness as a possible treatment for problem gambling (de Lisle, Dowling, & Allen, 2011; Lakey, Campbell, Brown, & Goodie, 2007; Toneatto, Vettese, & Nguyen, 2007). In understanding the role of mindfulness in problem gambling, Lakey et al. (2007) established that an inverse relationship existed between dispositional mindfulness and the severity of problem gambling behaviour. Therefore, a mindfulness-based intervention may be helpful in reducing the severity of problem gambling outcomes.

The current research is presented as a series of published and unpublished works that have been submitted for publication. Each manuscript represents a specific aspect of the study. The first paper provides a theoretical context for the research in terms of a literature review, the second paper discusses mechanisms of mindfulness in context of problem gambling, and the third paper presents results of mindfulness-based cognitive therapy for problem gambling. The introductory chapter of this dissertation provides an overview of problem gambling. It discusses the aetiology and the development of the disorder, current therapeutic approaches in treating the disorder, and the limitations of current treatments.

The first paper entitled 'Mindfulness and problem gambling: A review of the literature' is presented in Chapter 2. This paper presents the literature in relation to mindfulness, its mechanisms of action, and its potential to improve problem gambling outcomes. Chapter 3 then provides a background for how the research was conducted and the issues confronted by the candidate when conducting this research. The second paper entitled 'Mechanisms of action in the inverse relationship between dispositional mindfulness and problem gambling' is presented in Chapter 4. This paper discusses the role of psychological distress as a mediator in the inverse relationship between dispositional mindfulness and problem gambling behaviour. Furthermore, it discusses the mechanisms of action in the inverse relationship between dispositional mindfulness and psychological distress. Chapter 5 provides preliminary data in relation to a pilot study of mindfulness-based cognitive therapy for problem gambling. The third paper, entitled 'Mindfulness-based cognitive therapy for problem gambling' is presented in Chapter 6. This paper presents results of a case study of mindfulness-based cognitive therapy for problem gambling that was published in *Clinical Case Studies*. Chapter 7 then presents an integrated discussion of the current findings and implications for future research.

1. PROBLEM GAMBLING: AN OVERVIEW

For most people, gambling can be an entertaining past-time. For others, excessive expenditure of money or time spent gambling can result in adverse financial, personal, social, and familial consequences (National Research Council, 1999; Petry, 2005), the severity of which can range from inconsequential through to ongoing harm affecting the individual concerned or significant others (Walker, Toneatto, et al., 2006). According to the Diagnostic and Statistical Manual of Mental Disorders IV – Text Revision (DSM-IV-TR; American Psychiatric Association, 2000), the essential feature of pathological gambling is "persistent and recurrent maladaptive gambling behaviour that disrupts, personal, family, or vocational pursuits" (p. 671). The individual may be (1) pre-occupied with gambling, (2) need to gamble with increasing amounts of money, (3) have repeated unsuccessful attempts to discontinue gambling, (4) become restless and irritable when attempting to stop or control gambling, (5) gamble as a way of escaping from problems or dysphoric mood, (6) attempt to 'chase losses', (7) lie to conceal their extent of involvement, (8) commit illegal acts to finance gambling, (9) jeopardise or lose a significant relationship, job, or educational or career opportunity, or (10) rely upon others to help relieve financial difficulties caused by gambling. A diagnosis of pathological gambling is only given when at least five of these ten DSM-IV-TR criteria are met and when gambling behaviour is not better accounted for by a manic episode.

1.1. WHAT IS PROBLEM GAMBLING?

Since the inclusion of pathological gambling in the Diagnostic and Statistical Manual-III (American Psychiatric Association, 1980) as a psychiatric disorder, most research effort has been based on the assumption that pathological gambling is an

addiction (Dickerson, 1989; Petry, 2002). While there is an aetiological and clinical overlap between substance dependence and pathological gambling, this overlap is not a complete one (Tavares, Zilberman, & el-Guebaly, 2002). Consequently, an ongoing conceptual debate has emerged that revolves around two competing gambling models – the medical model and the dimensional model (Blaszczynski, Walker, Sagris & Dickerson, 1999; Moreyra, Ibáñez, Liebowitz, Saiz Ruiz, & Blanco, 2002). Under the medical model, gambling is assumed to fall into discrete categories, with pathological gambling conceived as a permanent, chronic, and irreversible condition (Wedgeworth, 1998). Other categories include: 'social gambling', which is gambling activity conducted with friends or colleagues and is limited in duration with predetermined losses; 'professional gambling', where risk is limited and high discipline is involved; and 'problem gambling' which is applied to people who do not meet the full DSM-IV-TR criteria for pathological gambling (Volberg, 2002). Under the medical model, debate continues as to whether pathological gambling is best understood as an addictive disorder, obsessive-compulsive spectrum disorder, or impulse control disorder (Blaszczynski, 1999).

While the terminology used in the DSM-IV-TR to describe disordered gambling is accepted in most countries (Amies, 1999; Dickerson, 1989; Productivity Commission, 1999), opponents of the medical model argue that gambling is best conceptualised as lying on a continuum ranging from no gambling through to problematic and severe gambling (Productivity Commission, 1999). According to the dimensional model, which is used in Australia, problematic gambling is not assumed to be a degenerative disorder. Instead, it is argued that gamblers can slide along the dimensional continuum (Blaszczynski, 1999). Therefore, use of the term 'pathological gambling' is avoided and the term 'problem gambling' is used as an all-inclusive term that describes the full range of disordered gambling (Productivity Commission, 1999). Under the dimensional model, problem

gambling "is characterised by difficulties in limiting money and/or time spent on gambling which leads to adverse consequences for the gambler, others, or for the community" (Neal, Delfrabbo, & O'Neil, 2005, p.125). For the purposes of this thesis, the term 'problem gambling' is used in accordance with the dimensional model as this model is viewed as capturing the wide diversity of gambling behaviour across the clinical and non-clinical population.

1.2. THE EXTENT OF THE PROBLEM

Twelve-month and lifetime prevalence rates for adult problem gamblers are estimated to range between 1.1 and 1.6% of the adult population (Shaffer, Hall, & Vander Bilt, 1999). However, up to 5% of the general population (Gerstein et al., 1999; National Research Council, 1999; Shaffer et al., 1999; Welte, Barnes, Wieczorek, Tidwell, & Parker, 2001) may have a gambling problem, with higher proportions possible in some population groups, such as those who abuse substances (Petry, Weinstock, Ledgerwood, & Morasco, 2008). In Australia, recent statewide gambling surveys indicate that between 1.4 percent and 3.1 percent of the adult population report problem or moderate risk gambling (Problem Gambling Research and Treatment Centre, 2011). Table 1 refers to most recent Australia wide prevalence rates for gambling.

Table 1

Australia Wide Prevalence Rates of Problem Gambling

State	12 month participation	Measure	Prevalence of problem gambling	Prevalence of moderate risk gambling
Queensland 2008-09	75%	PGSI (modified response categories)	0.37% (CI 0.2, 0.5)	1.6% (CI 1.2, 1.9)
Victoria 2008	73.07%	PGSI (modified response categories)	0.70% (CI 0.55, 0.90)	2.36% (CI 2.06, 2.70)
South Australia 2005	69.5%	PGSI (modified response categories)	0.40% (CI 0.3, 0.5)	1.20% (CI 1.1, 1.4)
Northern Territory 2005	73.0%	PGSI SOGS	PGSI: 0.64% (CI 0.40, 0.88) SOGS5+: 1.06% (CI 0.73, 1.43) SOGS10+: 0.23% (CI 0.07, 0.37)	
NSW 2006	69%	PGSI (modified response categories)	0.8% (no CI reported)	1.6% (no CI reported)
ACT 2009	69.8%	PGSI	0.5% (no CI reported)	1.5% (no CI reported)
Tasmania 2007	71.7%	PGSI	0.54% (CI 0.31, 0.77)	0.86% (CI 0.60, 1.20)

Source: Problem Gambling Research and Treatment Centre (2011)
Note: CI = Confidence Interval

According to the Problem Gambling Research and Treatment Centre (2011), the variations

observed in prevalence rates across each state in Table 1 may be due to a number of

factors. These relate mainly to gambling opportunities, the effectiveness of prevention and

education initiatives, and the maturity of gambling markets. Variations may also be the

result of measurement artifacts such as differences in measurement protocols; whether

lifetime or 12 month prevalence is measured; the population group measured; interview

methodology; and modification of scoring protocols (Problem Gambling Research and

Treatment Centre, 2011). What is clear is that problem gambling is a significant issue for

many thousands of Australians. Given the extent of the problem, it is important to understand how problem gambling develops.

1.3. AETIOLOGY OF PROBLEM GAMBLING

Traditional aetiological models for problem gambling fall under the domain of psychoanalytic, behavioural, and cognitive paradigms. However, problem gamblers differ across a wide range of characteristics, including personality, mood, type of gambling activity, cognitive distortions, and motivations (González-Ibáñez, Rosel, & Moreno, 2005; Raylu & Oei, 2002). Problem gamblers also differ in terms of co-morbid disorders, culture, employment, age, gender, education, marital status, and number of children (Fernández-Alba & Labrador, 2005; Westphal & Abbott, 2006). Given the heterogeneous nature of the problem gambling population, it not surprising that the reasons why some people develop a gambling problem and others do not are not well understood (Petry, 2005). More recent and advanced conceptualisations have attempted to take the heterogeneity of problem gambling into account by proposing gambling subtypes and biopsychological models.

Blaszczynski and Nower's (2002) *pathways model* differentiates problem gamblers according to the relevant contribution of biopsychosocial factors to three problem gambling subtypes. These problem gambling subtypes are categorised as: (1) gamblers who were emotionally healthy prior to starting gambling, (2) gamblers who have emotional issues such as stress or low mood and use gambling as an escape mechanism, and (3) gamblers who have a biological predisposition for impulsivity (Blaszczynski & Nower, 2002). The first subtype represents gamblers who have become habituated to gambling through a combination of ongoing gambling opportunities and reinforcement caused by the arousal associated with gambling for high stakes or by the action of neo-Pavlovian behavioural-completion mechanisms on drives (Blaszczynski et al., 1999). Co-morbid

psychiatric conditions are seen as a consequence of the learned behaviour. The second subtype in the pathways model represents those gamblers who have pre-morbid psychiatric conditions such as anxiety, depression, and substance use that pre-dispose them to use gambling as a maladaptive coping mechanism in response to psychological distress. The third subtype represents those gamblers with neurological deficits that result from either genetic inheritance or brain damage induced by accident, injury or substance use.

The presence of problem gambling subtypes similar to those conceptualised by the pathways model has been supported by several empirical studies. For example, González-Ibáñez, Jimenez and Aymami (1999) distinguished three subtypes of gamblers with characteristics consistent with the pathways model using a sample of 60 problem gamblers who were seeking treatment for their gambling. However, Sharpe (2003) considered that the sample used did not represent the broader spectrum of gamblers in the community and suggested that additional subtypes may therefore exist. Another study providing empirical support for the pathways formulation was a cluster analysis conducted by Lesieur (2001) using a sample of 156 in-patient problem gamblers. Lesieur identified both a two-factor and a three-factor model of problem gambling subtypes. The two-factor model classified problem gamblers as 'normal problem gamblers' and 'serious problem gamblers'. The three-factor model further sub-divided the 'serious problem gamblers' group into 'moderately impulsive action seekers' and 'impulsive escape seekers' (Lesieur, 2001).

The development of empirically supported problem gambling subtypes does have clinical implications in relation to the prevention and treatment of problem gambling. However, it is unclear how interaction of biopsychosocial factors in each problem gambling subtype, such as those proposed by the pathways model, uniquely contributes to the development of gambling-related pathology. In contrast, Sharpe's (2002) *biopsychosocial model* does not differentiate problem gamblers according to problem

gambling subtypes, suggesting instead that the interaction of biological, psychological and social factors are unique according to each individual.

The biopsychosocial model proposes that the interaction of genetic and early developmental factors contribute to a biological and psychological predisposition to problem gambling (Sharpe, 2002). Such factors increase the risk for a person to develop a gambling problem but do not guarantee that the disorder will develop. This requires exposure to environmental cues that contribute to affective states such as dysphoric mood, boredom, and sensation seeking. Such states may result in gambling used as a maladaptive coping strategy. Once a person with a predisposition for problem gambling becomes exposed to gambling, a perceptual filter then develops whereby the person begins to interpret the pattern of wins and losses they encounter as they continue to gamble. With continued exposure, the development of numerous gambling-related cognitive biases and distortions develop which tend to vary according to the unique biopsychosocial make-up of the individual. These cognitive distortions include illusions of control, biased evaluations, erroneous perceptions, and irrational thinking processes (Blaszczynski & Silove, 1995). While the pattern of cognitive distortions may vary according to each individual, common to each is the belief that gambling outcomes can be both predicted and controlled (Letarte, Ladouceur, & Mayrand, 1986).

Cognitive biases and distortions are strongly implicated in problem gambling behaviour (Joukhador, Maccallum, & Blaszczynski, 2003). With repeated associations between gambling and the pattern of wins and losses generated, these dysfunctional cognitions become more and more automatic and habitual (Boyer & Dickerson, 2003). For many gamblers, this marks the point where gambling has developed into a problem.

While both the pathways model and the biopsychosocial model have much in common, conceptualising problem gambling in accordance with the biopsychosocial model

facilitates the use of individually tailored interventions based on the appraisal of the unique contribution of biopsychosocial factors to a person's problem gambling behaviour. For this reason, Sharpe (2003) implied that the biopsychosocial model would offer a better framework from which to inform more effective treatment approaches than those suggested by classifying problem gamblers in accordance with Blaszczynski and Nower's (2002) pathways formulation. However, the practicalities of delivering individualised treatment options in this manner would be prohibitive from a service delivery point of view. While empirical evidence supporting the use of problem gambling subtypes in guiding the development of treatment programs is immature (Sharpe, 2003), more generalised tailored interventions based on gambling subtypes may provide for more resource efficient treatment options. These could take the form of brief interventions comprising psychoeducation and cognitive therapy for behaviourally conditioned gamblers; extensive cognitive-behavioural treatments for emotionally unstable problems gamblers; and psychopharmacological solutions for those gamblers with a biological pre-disposition for impulsivity (Rickwood, Blaszczynski, Delfabbro, Dowling, & Heading, 2010).

1.4. ASSESSMENT OF PROBLEM GAMBLING

Petry (2005) identified 25 instruments used to assess aspects of problem gambling behaviour. However, most instruments are rarely used. The following represents a brief summary of the most commonly used instruments.

The two-item Lie/Bet Questionnaire (Johnson, Hamer, Nora, & Tan, 1997), the four-item sub-scale of the Diagnostic Interview Schedule (DIS; Robins, Cottler, Bucholz, & Compton, 1996) and the Brief Bio-Social Gambling Screen (BBGS; Gebauer, LaBrie, & Shaffer , 2010) are designed as brief screening tools to assess problem gambling status.

However, there is consensus that DSM criteria be used to define treatment populations (Walker et al., 2006). Assessment of problem gambling status is usually based on semi-structured interview or scores obtained from the South Oaks Gambling Screen (SOGS; Lesieur & Blume, 1987). Semi-structured interviews have problems with reliability and validity, and, while the SOGS is highly correlated with DSM-IV-TR criteria (Stinchfield, 2002), the sensitivity of the SOGS has been criticised because of the high instance of false positives and insensitivity to changes over time (Petry & Armentano, 1999). Furthermore, the SOGS is limited when used with the dimensional conceptualisation of problem gambling (Battersby, Thomas, Tolchard, & Esterman, 2002). The Victorian Gambling Screen (VGS; Ben-Tovim, Esterman, Tolchard, & Battersby, 2001) is a well validated screen developed in Australia where the dimensional model is accepted and utilised. In addition, the Problem Gambling Severity Index (PGSI) of the Canadian Problem Gambling Index (CPGI; Ferris & Wynne, 2001) has been designed for use in the general population to capture aspects problem gambling that instruments such as the SOGS are insensitive to (Shead, Callan, & Hodgins, 2008). The PGSI has been adopted for use in Australia and Canada.

The Structured Clinical Interview for Pathological Gambling (SCIP; Walker, Anjoul, Milton, & Shannon, 2006) offers a structured assessment of gambling-related symptomatology according to diagnostic (DSM-IV-TR) criteria. Other measures that incorporate items based on DSM-IV-TR criteria are the National Opinion Research Centre Screen for Gambling Problems (NODS; Gerstein et al., 1999), which is commonly used in the United States, and the Diagnostic Interview for Gambling Severity (DIGS; Winters, Specker, & Stinchfield, 2002). The NODS-CLiP is a brief screening instrument that comprises three items from the NODS which have been found to identify pathological gamblers and problem gamblers (Toce-Gerstein, Gerstein, & Volberg, 2009). A recognised

strength of the DIGS is that it includes items that assess the impact of gambling on other domains of functioning. The impact of gambling has been an area of oversight in the research as intervention studies do not adequately assess the financial, personal, social, and familial problems associated with problem gambling or of the process of change as therapy progresses (Walker, Toneatto, et al., 2006).

Gambling frequency and expenditure are commonly assessed as outcome measures in most intervention studies. However, measuring frequency and expenditure is unreliable as these outcomes are relative to a person's available leisure time and disposable income, and may not communicate the full extent of their gambling problems (Blaszczynski et al, 1999). Also, self-reported expenditure estimates are imprecise due to confusion between net expenditure and turnover (Blaszczynski, Ladouceur, Goulet, & Savard, 2006). The Gambling Timeline Follow-Back method (G-TLFB; Weinstock, Whelan, & Meyers, 2004) assesses gambling behaviour over the previous 6 months. This method provides for a detailed record of gambling type, gambling duration, gambling expenditure, and net result of gambling. While the method demonstrates good psychometric properties, it is complicated to administer and explain. Furthermore, it takes up to 40 minutes to complete (Whelan, Steenbergh, & Meyers, 2007). The Addiction Severity Index – Gambling Subscale (ASI-G; Petry, 2003) is a much briefer measure that contains five items relating to days gambled, gambling expenditure, gambling problems, gambling-related distress and importance of treatment over the previous 30 days.

Several instruments are available which assess gambling-related cognitions. For example, the Gamblers Belief Questionnaire (GBQ; Steenbergh, Meyers, May, & Whelan, 2002) is a reliable and valid 21-item measure that assesses irrational beliefs about gambling. Also, the Gamblers Self-Efficacy Questionnaire (GSEQ; May, Whelan,

Steenbergh, & Meyers, 2003) measures a problem gamblers confidence to control their gambling in 16 situations.

In summary, there is a wide variety of tools available for assessing problem gambling status. Petry's (2005) recommendation that selection of the most appropriate assessment instrument be based upon the sample to be studied, the purpose of the assessment, the number of items, and psychometric properties is well advised. However, debate as to the most appropriate way to operationalise and measure problem gambling continues (Rickwood et al., 2010).

1.5. CO-MORBIDITY WITH OTHER DISORDERS

Problem gambling is often accompanied by other clinically relevant symptoms and behaviour. In a recent meta-analysis of the literature which has reported on the prevalence of co-morbid disorders in problem and pathological gambling, the highest mean prevalence was for nicotine dependence (60.1%), followed by substance use disorder (57.5%), mood disorders (37.9%) and anxiety disorders (37.4%) (Lorains, Cowlishaw, & Thomas, 2011). Other research has suggested that up to 75% of pathological gamblers meet DSM-IV-TR criteria for depression (McCormick, Russo, Ramirez, & Taber, 1984). Also, suicide attempt rates are high, with 17 to 24% of pathological gamblers in treatment reporting suicide attempts (Ciarrocchi & Richardson, 1989). In terms of addictive disorders, the lifetime prevalence of alcohol abuse for pathological gamblers ranges from 40 to 60% (Cunningham-Williams, Cottler, Compton, & Spitznagel, 1998), 10 to 30% for illicit drugs, and up to 85% have nicotine dependence (Daghestani, Elenz, & Crayton, 1996; Lesieur & Heineman, 1988). As for other disorders, 20% of pathological gamblers also meet the criteria for attention deficit/hyperactivity disorder (ADHD) (Specker, Carlson, Christenson, & Marcotte, 1995) and nearly 40% of pathological gamblers have antisocial

personality disorder (Cunningham-Williams et al., 1998). There is also evidence of other

co-morbid disorders including other mood disorders, communication disorders,

alexithymia, dyslexia and learning disabilities, and other impulse control disorders (Petry,

2005; Winters & Kushner, 2003).

In consideration of the high prevalence rates of co-morbid disorders in problem

gambling, it would be expected that the mechanisms by which co-morbid disorders

influence problem gambling behaviour would be well understood. However, few studies

have investigated whether co-morbid disorders are associated with treatment outcomes or

with high rates of attrition before treatment concludes (Whelan, Steenbergh, & Meyers,

2007).

1.6. PROBLEM GAMBLING INTERVENTIONS

While problem gambling appears to be a significant issue, the development of

interventions for problem gambling is considered where treatment approaches for alcohol

abuse was 30 or 40 years ago (McCown & Howatt, 2007). However, problem gambling

does appear to be amenable to treatment despite the relative immaturity of current

approaches. Overall success rates for psychological interventions are currently estimated at

70% at one-year follow-up and 50% at two-year follow-up (Pallesen, Mitsem, Kvale,

Johnsen, & Molde, 2005).

Interventions for problem gambling can be broadly categorised as

psychopharmacological or psychological. Psychopharmacological approaches fall under

the domain of the medical model of problem gambling. Under this paradigm, problem

gambling is viewed as a degenerative disorder that can be treated with medication in the

same way that many other psychiatric disorders are treated. Medications include the use of

serotonin reuptake inhibitors, mood stabilisers, opioid antagonists, and atypical

antipsychotics (Grant, Kim, & Potenza, 2003). Although psychopharmacological approaches have shown some efficacy in reducing problem gambling behaviour (Palleson et al, 2007), they are not a focus of this dissertation. Furthermore, there is no consensus as to an effective psychopharmacological approach for problem gambling (Rickwood et al., 2010). Moreover, modification of cognitive distortions, irrational beliefs, and dysfunctional attitudes do not appear to be conducive to biological approaches (Turkheimer, 1998).

On the other hand, psychological approaches tend to closely follow broad theoretical paradigms without consideration of factors that lie outside the basic tenets of the paradigm concerned. This limits consideration of biological, psychological, or environmental factors that may represent important variables for ongoing treatment success. Under the psychodynamic paradigm, treatment for problem gambling is based on breaking down defence mechanisms acquired in childhood that tend to perpetuate gambling behaviour, and replacing those mechanisms with more adaptive strategies (Boyd & Bolen, 1970; Rosenthal & Rugle, 1994). However, no controlled psychodynamic outcome studies have been conducted (López Viets & Miller, 1997), perhaps reflecting later research interest into the role of arousal-based conditioning (e.g. McConaghy, Armstrong, Blaszczynski, & Allcock, 1983; McConaghy, Blaszczynski, & Frankova, 1991) and cognition in perpetuating gambling behaviour (e.g. Breen, Kruedelbach, & Walker, 2001; Ladouceur, Sylvain, Boutin, Lachance, Doucet, & Leblond, 2003, 2001; Ladouceur, Sylvain, Duval, & Gaboury, 1989; Ladouceur, Sylvain, Letarte, Giroux, & Jacques, 1998; Sylvain & Ladouceur, 1992).

The behavioural and cognitive treatments that have subsequently developed are considered first and second wave, respectively, in what is now referred to as the cognitive-behavioural tradition. Other treatment approaches that have demonstrated efficacy include

Motivational Interviewing (MI), Motivation Enhancement Therapy (MET), Gamblers

Anonymous, minimal or brief interventions, and inpatient rehabilitation programs

(Problem Gambling Research and Treatment Centre, 2011; Rickwood et al., 2010).

Although the literature does not provide a strong basis for differentiation of the available

treatment options, cognitive-behavioural therapies (CBT) are cautiously recommended as

"best practice" for the psychological treatment of problem gambling (López Viets &

Miller, 1997; Westphal, 2008). MI and MET are also recommended as efficacious

approaches to reduce gambling behaviour and gambling severity (Problem Gambling

Research and Treatment Centre, 2011).

Early CBT studies were case report in nature and involved a maximum of four

participants (Arribas Saiz & Martinez Sanchez, 1991; Bannister, 1977; Bujold, Ladouceur,

Sylvain, & Boisvert, 1994; Ladouceur, Boisvert, & Dumont, 1994; Toneatto & Sobell,

1990). Each of these studies found that problem gamblers either abstained from gambling

or reduced gambling frequency to sub-clinical levels after the intervention, with outcomes

maintained at follow-up. Three other studies reported the results on much larger samples of

problem gamblers with similar results (Jiménez-Murcia et al., 2007; Robson, Edwards,

Smith, & Colman, 2002; Schwarz & Lindner, 1992). Also, other CBT studies have added a

motivational interviewing component to CBT with the aim of improving client attrition

(Freidenberg, Blanchard, Wulfert, & Malta, 2002; Wulfert, Blanchard, Freidenberg, &

Martell, 2006; Wulfert, Blanchard, & Martell, 2003).

The status of the literature as it currently stands suggests that CBT treatments for

problem gambling be used with cautious optimism (Gooding & Tarrier, 2009). Studies

have reported on the successful application of CBT in individual settings (Dowling, Smith,

& Thomas, 2006), group settings (Dowling, Smith, & Thomas, 2007), in combination with

other interventions such as motivational enhancement therapy (Carlbring & Smit, 2008;

Petry et al., 2008), with a goal of abstinence or controlled gambling (Dowling, Smith, & Thomas, 2009; Ladouceur, Lachance, & Fournier, 2009), over the internet (Carlbring & Smit, 2008), and in self-help workbooks (Hodgins, Currie, el-Guebaly, & Peden, 2004). Despite the positive outcomes observed in early CBT efficacy studies, non-randomised trials without suitable comparison groups are insufficient to establish the efficacy of any treatment (Chambless & Ollendick, 2001). Moreover, the differential impact of behavioural and cognitive techniques is unknown (Longmore & Worrel, 2007).

To fully appreciate the efficacy of CBT for problem gambling, the study design should be a randomised controlled trial (RCT) conducted under optimal conditions, including intensive training, supervision, selection of appropriate patients, and in-depth assessment (Chambless et al., 1998; Najavits, 2003). Table 2 provides a summary of RCT studies of CBT for problem gamblers that meet these optimal criteria in chronological order.

Table 2

Chronological Summary of Randomised Controlled Studies of CBT for Problem Gambling

Author/s	n	Type of Control	Structure of interventions	Content of Techniques	Follow-up	Assessment Measures	Results
Echeburúa, Báez, and Fernández-Montalvo, (1996)	64	3 intervention groups (A, B, C) and wait-list control (D)	A - individual stimulus control and exposure with response prevention; B-group cognitive restructuring 1 hour per week over 6 weeks, C- A+B, 1 hour sessions, 2 times per week for 6 weeks.	A – individual treatment involving - control of money, risky situations, gradual in vivo exposure with response prevention. B – group cognitive restructuring - link with others, identify cognitive distortions C – combined A+B	1,- 3-, 6- and 12- months	Structured interview on gambling history, DSM criteria assessed by SOGS, Gambling Dependant Variables Questionnaire assessing amount of money, frequency, duration of gambling, family and patient's perception of seriousness of frequency, time and money invested in gambling, and subjective need to play. BDI, STAI, Adaptation Scale assessing extent to which gambling affects daily life.	Most treated gave up gambling and had improved family, social, psychological functioning. Success higher in individual treatment group A than in Group B & C. Improvement gambling in control group between pre- and 6 month follow-up. No difference between combined and control.
Sylvain et al. (1997)	29	14 intervention; 15 wait-list	Individual CBT over 1 or 2 weekly sessions, 1 to 1.5 hours per week for max of 30 hours (avg. 16.7 hours).	CBT with 4 components – cognitive correction, problem solving, social skills training and relapse prevention	6 and 12 month follow-up	No. of DSM-III-R criteria met through clinical interview, SOGS (French version), perception of control, desire to gamble, self-efficacy perception, and frequency of gambling (no. of gambling sessions, no. of hours spent gambling) rated on a scale from 0-10.	Improvement in all outcome measures for treatment group. Therapeutic improvements maintained at 6- and 12- month follow-up.

(continued)

Table 2(Continued)

Author/s	n	Type of Control	Structure of interventions	Content of Techniques	Follow-up	Assessment Measures	Results
Milton, Crino, Hunt, and Prosser (2002)	40	CBT; CBT +compliance improvement	7 sessions of CBT; 8 sessions CBT + Compliance improvement	CBT – psychoeducation, cognitive restructuring, problem solving, relapse prevention. CBT+ compliance – CBT + positive reinforcement through praise, emphasis on attendance, results feedback, decisional balance sheet, removal of barriers to change	9 months	DSM criteria assessed by structured interview (SCIP), SOGS, % income gambled. BDI, STAI, Alcohol Use Disorders Identification Test (AUDIT) to screen for excessive alcohol, Drug Abuse Screening Test (DAST) assessing problems resulting from drug use, Contemplation Ladder to assess motivation to change, Problem Gambling duration - self reported years spent gambling at a problem level.	Compliance intervention reduced drop-out in treatment and had superior outcome at end of treatment. No difference in outcomes between treatments after follow-up.
Melville, Davis, Matzenbacher, and Clayborne (2004)	13	CBT; CBT+Node link mapping; Wait-list	16 group sessions – 90 mins twice weekly for 8 weeks.	Manual+CBT(randomness, problem solving and relapse prevention); Manual + CBT with node link mapping	6 months	DSM–IV criteria assessed through interview and SOGS, self-ratings of control of gambling, self-rated ability to refrain from gambling in 2 personally relevant situations, self-rated desire to gamble, no. of times gambling, no. of hours, no. of sessions of other gambling treatment in past 30 days, gambling bout duration, gambling expenditure, BDI-II, BAI.	Node link mapping superior to treatment without maps with larger decreases in depression and anxiety. Effects maintained at follow-up.
Dowling, Smith and Thomas (2006	19	Intervention group; wait-list control	12 CBT sessions of 1.5 hours over 22 weeks	Finance limit setting, alternative activity planning, cognitive correction, problem solving, communication training, relapse prevention, imaginal desensitisation	6 months	Gambling behaviour – frequency, duration, amount of money inserted, amount of money won/lost recorded in continuous diary records. Psychological functioning – BDI-II, STAI, Self-Esteem Inventory, DSM diagnostic criteria assessed using semi-structured interview, Goal Achievement Scale (GAS) for frequency, duration and expenditure.	Significant improvement in outcome measures for treatment group over treatment period. Improvement maintained at 6 month follow up, with 89% no longer meeting DSM-IV-TR criteria.

Table 2 (Continued)

Author/s	n	Type of Control	Structure of interventions	Content of Techniques	Follow-up	Assessment Measures	Results
Petry et al. (2006)	231	Group A -63 Gamblers Anonymous (GA); Group B – 84 GA referral plus CB workbook; Group C – 84 GA referral plus 8 sessions of individual CB therapy	Group A- Referral to GA, Group B - Referral to GA and then provided CBT in workbook format, Group C- Referral to GA then individual CBT, 1 hour per week for 8 weeks	CB workbook - handling debt, triggers, functional analysis, pleasant activities, self management planning, coping with urges, assertiveness training and gambling refusal skills, irrational thinking, coping with relapses.	6 and 12 month follow-up	Gambling behaviour - structured clinical interview for DSM-IV, SOGS. Gambling section of Addiction Severity Index assessed drug, alcohol, legal, family/social, psychiatric and medical problems. Gambling behaviour assessed by timeline follow-back method – calendar prompts to elicit frequency and intensity of past behaviours, days gambled and amount won/lost daily. Psychological measures – Brief Symptom Inventory (BSI) assessing past week psychiatric symptoms, Service Utilization Form evaluated type and frequency of services received (e.g. GA). Satisfaction with treatment evaluated. Collateral information obtained re- gambling frequency, dates, expenditure, times attended GA.	Gambling decreased for most participants in each group. CB treatment reduced gambling relative to GA alone during treatment, improvement in some outcomes for CBT group over CB workbook group with some outcomes maintained at follow-up.Individual CB improved some outcomes c/f CB workbook. Attendance at GA and no. of CB therapy sessions or workbook exercises completed associated with gambling abstinence.
Dowling, Smith, and Thomas (2007)	56	14 individual CBT; 17 group CBT; 25 wait-list control	12 CBT sessions of 1.5 hours ranging from 12 to 51 weeks; 12 weekly CBT sessions of 2 hours	Finance limit setting, alternative activity planning, cognitive correction, problem solving, communication training, relapse prevention, imaginal desensitisation	6 and 12 month follow-up	Gambling behaviour – frequency, duration, amount of money inserted, amount of money won/lost recorded in continuous diary records. Psychological functioning – BDI-II, STAI, Self-Esteem Inventory, DSM diagnostic criteria assessed using semi-structured interview	Improved gambling and psychological functioning for individual and group. Group not superior in psychological functioning c/f control. 92% in individual treatment no longer met DSM criteria for pathological gambling c/f 60% in group treatment.

(continued)

Table 2 (Continued)

Author/s	n	Type of Control	Structure of interventions	Content of Techniques	Follow-up	Assessment Measures	Results
Myrseth, Litlerè, Støylen & Pallesen (2009)	14	7 CBT; 7 wait-list control	6 group meetings held form Oct to Dec 2003, each of 2 hours duration	Education, handling economic problems, cognitive distortions, motivations and ambivalence, risk situations, relapse prevention	3 months	Gambling behaviour: SOGS, Money spent gambling Psychological measures: Montgomery-Asberg Depression Rating Scale, BAI, AUDIT, Gamblers Inventory of Negative Consequences. DSM diagnostic criteria assessed using semi-structured interview	Treatment Group improved on the DSM-IV Criteria for Pathological Gambling, but no improvement on gambling expenditure at post-treatment. Combining both groups at 3-months follow-up, there was a significant improvement on DSM criteria, gambling expenditure and negative consequences from pre-treatment to follow-up.
Carlring, Jonsson, Josephson & Forsberg (2010)	150	MI group, CB group therapy (CBGT), wait-list contr	4 sessions of MI delivered individually; 8 sessions of CBGT each held weekly	CBGT – psychoeducation, cognitiverestructuring, alternative behavioural strategies, identifying personalhigh-risk situations, increasing coping skills, imaginary exposure and response prevention. MI - standard MI principles, exploration of positive and negative consequences of gambling, mapping reasons for gambling.	6 and 12 month follow-up	Gambling frequency, time, expenditure; NORC DSM-IV Screen for gambling Problems; measures derived from timeline follow-back, BDI-II and BAI; a treatment credibility scale; alcohol use.	No difference between MI and CBGT. Significant decreases in outcome measures for both MI and CBGT up to 12-month follow-up.

Several RCT studies have also investigated delivery of CBT via the internet, self-directed workbooks and motivational interviewing (MI) (Carlbring & Smit, 2008; Hodgins, Currie, el-Guebaly, & Peden, 2004; Hodgins, Currie, & el-Guebaly, 2001). Each of these approaches has demonstrated positive outcomes. However, these approaches are considered less than optimal because face-to-face contact with a therapist does not take place (Whelan, Steenbergh, & Meyers, 2007). While the format of these interventions may be useful in facilitating uptake of treatment for problem gambling, this may be problematic for participants with severe co-morbid conditions. These studies have therefore been excluded from this analysis. As can be seen from Table 2, CBT appears to be an efficacious treatment for problem gambling. Gambling frequency and gambling expenditure are reduced, measures of depression and anxiety decline, the number of DSM-IV-TR criteria endorsed reduces to sub-clinical levels, maladaptive gambling beliefs are replaced, and social and familial functioning is improved. Despite these encouraging results, there are some notable limitations.

First, all treatment efficacy studies report high rates of client attrition as therapy proceeds. For example, Echeburúa et al. (1996) reported that 14 (22%) of 64 participants dropped out from treatment and Petry et al. (2006) reported that 50 (22%) of 231 pathological gamblers who began treatment did not complete evaluation at 1 month. Gamblers are also prone to truancy during therapy or arriving late (Dowling et al., 2007). Indeed, some gamblers refuse treatment even when it is offered (Dowling et al., 2006; Sylvain et al., 1997). The only RCT study specifically designed to improve client attrition for problem gamblers compared standard CBT with a CBT intervention incorporating compliance improvement (CI) techniques (Milton et al. 2002). The findings of this study indicated that the CBT-CI group displayed superior outcomes to that of the CBT only

group at the conclusion of the intervention but there was no difference between these groups after a nine month follow-up.

Second, relapse rates, where gambling behaviour returns to problematic levels, continues to be relatively high (Toneatto, Vettese, & Nguyen, 2007). Since problem gambling is recognised as a chronic condition or relapsing condition (Blanco, Ibanez, Saiz-Ruiz, Blanco-Jerez, & Nunes, 2000), current treatment approaches incorporate relapse prevention strategies as part of the therapy process to ensure benefits are maintained in the long term. In addition, other studies have investigated the effects of stimulus control and exposure with response prevention after CBT treatment has concluded and problem gambling behaviour has ceased (Echeburúa & Fernández-Montalvo, 2002; Echeburúa, Fernández-Montalvo, & Báez, 2000). Once abstinence was achieved, problem gamblers allocated to both group and individual relapse prevention had a higher success rate in remaining abstinent than did controls. However, the long term impact of relapse prevention strategies is unknown, with RCT studies failing to report outcomes beyond a twelve month follow-up. It has been estimated that over 30% of treatment seeking problem gamblers will relapse (Echeburúa et al., 1996).

Third, the heterogeneous nature of the problem gambling population limits our understanding as to the generalisability of current intervention findings. CBT outcome studies concentrate largely on adult male gamblers who meet stringent inclusion criteria, with only three other studies investigating other gambling populations. The first of these studies investigated the efficacy of CBT for female problem gamblers (Dowling et al., 2006; Dowling et al., 2007) and the other examined the efficacy of CBT for adolescents (Ladouceur et al., 1994). While pathological gambling status reduced to sub-clinical levels in both groups, the impact of interventions on problem gamblers representing other population groups remains unclear.

Fourth, most studies deal only superficially with co-morbid disorders. However, the issue of co-morbidity has led the Committee on the Social and Economic Impact of Pathological Gambling (National Research Council, 1999) to conclude that co-morbidity with other disorders may be one of the most important and influential pathways both into and out of problem gambling. If so, directly addressing gambling behaviour may not necessarily alleviate the distress a person may be feeling. Furthermore, ignoring the symptoms of other disorders disregards the usual recommendation to treat two co-occurring disorders at the same time (Najavits, 2003).

Fifth, all of the studies reviewed differed in relation to the structure of the interventions delivered, thereby impeding translation of research outcomes to clinical settings. Session frequency differed considerably between the studies, varying from 6 to 20 sessions on a daily, weekly or twice weekly basis, and session duration varied from one to two hours. Furthermore, interventions varied in terms of group or individual format, and the training, background and experience of the therapists delivering the intervention also differed.

Finally, although the previous limitations have been specific to the problem gambling literature, a more general limitation of CBT is relevant here. Three anomalous findings have been identified in the CBT literature concerning the role of cognitive techniques in CBT (Hayes, 2004). First, component analysis of CBT outcome studies fail to show that cognitive interventions add anything more to behavioural therapeutic outcomes. Second, CBT treatment seems to provide rapid, early improvement in symptoms before cognitive techniques are implemented. Third, changes made to the thoughts and beliefs that underpin a particular disorder do not seem to precede changes in symptoms. Therefore, the differential impact of behavioural and cognitive techniques in CBT is unclear (Longmore & Worrel, 2007).

In summary, CBT is a probably efficacious treatment for problem gambling. However, there are limitations to current CBT approaches which can be summarised in terms of high attrition rates, high relapse rates, issues pertaining to the heterogeneous nature of the gambling population, failure to adequately address issues of co-morbidity, and inconsistency of structure in treatment delivery. Furthermore, general issues relating to the usefulness of cognitive techniques in CBT is another possible limitation. In consideration of all these limitations, it is important to consider innovative therapeutic approaches that can enhance treatment effectiveness for problem gambling (Najavits, 2003). Mindfulness-based psychotherapy may achieve this aim.

2. MINDFULNESS AND PROBLEM GAMBLING: A REVIEW OF THE LITERATURE

2.1 INTRODUCTION TO THE FIRST PAPER

This chapter constitutes an article submitted for publication in the *Journal of Gambling Studies*. The purpose of the article was to provide a comprehensive review of the literature with respect to mindfulness and its potential for reducing the severity of problem gambling behaviour. It presents the literature in relation to mindfulness, its mechanisms of action, and its potential to improve problem gambling outcomes.

The format of this chapter is consistent with the *Journal of Gambling Studies* publication requirements. However, manuscript pagination has been replaced with thesis pagination.

2.2 DECLARATION FOR THESIS CHAPTER 2

Monash University

Declaration by candidate

In the case of Chapter 2 the nature and extent of my contribution to the work was the following:

Nature of contribution	Extent of contribution (%)
Conceptualisation of the paper, including identification of variables of interest, identification and review of the relevant literature, and preparation of the manuscript.	80%

The following co-authors contributed to the work. Co-authors who are students at Monash University must also indicate the extent of their contribution in percentage terms:

Name	Nature of contribution	Extent of contribution (%) for student co-authors only
Nicki Dowling	Guidance in the framing of the manuscript, review and provision of feedback on manuscript drafts.	NA
Sabura Allen	Guidance in the framing of the final manuscript, including review and provision of feedback on manuscript drafts.	NA

Candidate's Signature		Date

Declaration by co-authors

The undersigned hereby certify that:

(1) the above declaration correctly reflects the nature and extent of the candidate's contribution to this work, and the nature of the contribution of each of the co-authors.
(2) they meet the criteria for authorship in that they have participated in the conception, execution, or interpretation, of at least that part of the publication in their field of expertise;
(3) they take public responsibility for their part of the publication, except for the responsible author who accepts overall responsibility for the publication;
(4) there are no other authors of the publication according to these criteria;

(5) potential conflicts of interest have been disclosed to (a) granting bodies, (b) the editor or publisher of journals or other publications, and (c) the head of the responsible academic unit; and

(6) the original data are stored at the following location(s) and will be held for at least five years from the date indicated below:

Location(s)	**Problem Gambling Research and Treatment Centre, Melbourne University, Parkdale**

[Please note that the location(s) must be institutional in nature, and should be indicated here as a department, centre or institute, with specific campus identification where relevant.]

Signature 1		**Date**
		19/4/2011
Signature 2		

■■■

2.3 MANUSCRIPT OF PAPER 1

Running head: MINDFULNESS AND PROBLEM GAMBLING

Mindfulness and problem gambling: A review of the literature

Steven M. de Lisle[1], Nicki A. Dowling[2]

& J. Sabura Allen[1]

[1] School of Psychology and Psychiatry, Monash University, Melbourne, Victoria, Australia
[2] Problem Gambling Research and Treatment Centre, University of Melbourne, Victoria, Australia

Abstract

This article reviews the literature with respect to mindfulness and its potential for reducing the severity of problem gambling behaviour. Interest in the role of mindfulness as a treatment for problem gambling has gained the attention of researchers across Australia, the United States, and Canada. However, the literature is limited and current studies have severe methodological limitations. Despite this issue, investigations have revealed that dispositional mindfulness is related to less severe problem gambling outcomes and that psychological distress, overconfidence and risk willingness, myopic focus on reward and ego involvement may act as mediators in this relationship. Moreover, the literature indicates that the inverse relationship between dispositional mindfulness and psychological distress may be mediated by factors such as values clarification; emotional, cognitive, and behavioural flexibility; non-attachment; emotion dysregulation/distress intolerance; thought suppression; and rumination. This review discusses the theoretical and clinical implications of these relationships with respect to mindfulness-based interventions for problem gambling. It is recommended that the approach be considered with cautious optimism.

Keywords

Problem gambling, gambling, mindfulness, treatment, intervention

Currently, cognitive-behavioural therapies (CBT) are cautiously recommended as "best practice" for the psychological treatment of problem gambling (Ladouceur, Sylvain, Boutin, & Doucet, 1998; López Viets & Miller, 1997; Problem Gambling Research and Treatment Centre, 2011; Rickwood, Blaszczynski, Delfabbro, Dowling, & Heading, 2010). However, CBT does not work for all problem gamblers (López Viets & Miller, 1997; Westphal, 2008), highlighting the need for innovative treatment approaches that can enhance treatment effectiveness. Mindfulness-based interventions represent a 'third wave' that expands upon the CBT tradition by incorporating eastern approaches to the mind and body within a cognitive-behavioural framework (Hayes, Follette, & Linehan, 2004; Williams & Swales, 2004). A number of studies have already been conducted on the efficacy of mindfulness-based psychotherapy in the treatment of a wide range of diverse conditions, including substance abuse, chronic pain, stress, anxiety, depression, eating disorders, and borderline personality disorder (Baer, 2003; Kabat-Zinn, 2005; Linehan, 1993a, 1993b; Segal, Williams, & Teasdale, 2002). Research interest is now gathering into the role of mindfulness in the treatment of problem gambling with the aim of improving problem gambling outcomes (de Lisle, Dowling, & Allen, 2011a, 2011b; Lakey, Campbell, Brown, & Goodie, 2007; Toneatto, Vettese, & Nguyen, 2007). This article reviews the literature to consider the potential of mindfulness-based psychotherapy for problem gambling and the mechanisms by which mindfulness may impart therapeutic benefit.

The role of mindfulness in problem gambling

Mindfulness is defined as "the process of observing body and mind intentionally, of letting … experiences unfold from moment to moment and accepting them as they are" (Kabat-Zinn, 2005, p.23). In an effort to facilitate empirical investigations into mindfulness, a consensus panel was convened to provide an operational definition of the

mindfulness construct (Bishop et al., 2004). The panel derived a definition that comprised of two components: *self-regulation* and *orientation to experience*.

According to Bishop et al. (2004), self-regulation "involves sustained attention, attention switching, and the inhibition of elaborative processing" (p.233). Thus, a gambler with a higher degree of mindfulness should be able to sustain an awareness of gambling-related thoughts and feelings for a prolonged period of time. From this position, attention can then be switched from whatever is noticed to an alternative perspective. This perspective can represent any object to which attention can be turned once an individual notices that they have become distracted by a gambling stimulus. Bishop et al. considered this process helped to inhibit secondary elaborative processing of the thoughts, feelings and sensations involved in stimulus selection. Gamblers at the problematic end of the gambling continuum tend to report numerous gambling-related cognitive distortions and biases that are unique to this group (Joukhador, Maccallum, & Blaszczynski, 2003). So rather than experiencing the present moment through a filter of beliefs, assumptions and expectations about gambling, the ability of more mindful gamblers to self-regulate may help provide a wider perspective from which to view their gambling behaviour, thereby providing greater choice about what action to perform.

The other component is orientation to experience. Orientation to experience refers to the adoption of a sense of curiosity, openness and acceptance of present moment experience (Bishop et al., 2004). For problem gamblers with a higher level of mindfulness, this ability would afford the opportunity to dispassionately observe thoughts, feelings, and sensations come and go in the present moment. Bishop et al. considered that monitoring the stream of consciousness in this manner would allow individuals to see complex relationships between thoughts, feelings and sensations and to "discern the meanings and causes of experience and behaviour" (p. 234). For mindful gamblers, this capacity may

result in the decision not to initiate or prolong a gambling episode even when confronted by highly arousing or distressing emotions. Taken together, mindfulness training may be helpful in promoting awareness of previously unattended thoughts, feelings and physical sensations that drive maladaptive behaviour (Krasner, 2004) and represent a possible pathway by which the severity of problem gambling outcomes may be reduced.

There is emerging evidence relating to the role of mindfulness in problem gambling (de Lisle, Dowling, & Allen, 2011b; Lakey et al., 2007). In a non-randomised study of 185 undergraduate students who gambled at least weekly, Lakey et al. (2007) found that dispositional mindfulness was negatively related to gambling-related pathology after controlling for gambling frequency and trait self-control. Lakey et al. speculated that a higher level of dispositional mindfulness facilitated the development of greater present-centred awareness which then allowed for more adaptive behavioural choices. However, as the Lakey et al. study involved undergraduate students, these results can not be extended to the general population of treatment seeking problem gamblers.

To address this issue, a study conducted by de Lisle et al. (2011b) found that two samples of treatment seeking problem gamblers displayed significantly lower levels of dispositional mindfulness than normative samples of adult community members and university students. In investigating whether dispositional mindfulness was related to gambling behaviour in treatment seeking populations of problem gamblers, this study found that dispositional mindfulness was negatively related to gambling urges, gambling pre-occupation, problem gambling severity, gambling expenditure, and gambling frequency.

Both of these studies suggest that problem gambling outcomes may be improved by mindfulness training. However, only two studies have reported on the use of mindfulness-based psychotherapy for problem gambling. The first was a case study conducted by

Toneatto et al. (2007) of a male gambler 'in his sixties' who had not benefited from CBT. While CBT highlighted the cognitive distortions displayed by the participant in addition to providing him with both an intellectual understanding of the erroneous perceptions he held and an explanation of the deleterious consequences of maintaining his gambling, the participant failed to refrain from gambling. Over time, the participant began to use justification strategies such as "one more time won't hurt" and any intellectual understanding of cognitive distortions and psychosocial consequences of gambling was rapidly overwhelmed in favour of a resumption of gambling behaviour. After this, the participant agreed to participate in mindfulness training. This training taught the participant to observe what was happening in his mind and become aware of gambling-related thoughts and feelings with a sense of openness and curiosity. The result was a rapid dissolution of the urge to gamble. While gambling-related thoughts and feelings continued to occur, the intensity of these thoughts and feelings greatly diminished, allowing the subject to make more adaptive choices (Toneatto et al., 2007). However, no follow-up of the participant was reported, and detail of the mindfulness practice used was not specified.

The other study reported on a modified version of mindfulness-based cognitive therapy (MBCT) in the treatment of a female problem gambler in her sixties who failed to fully abstain from gambling following traditional CBT (de Lisle, Dowling, & Allen, 2011a). The subject refrained from gambling over the intervention phase and remained abstinent from gambling at a ten-week follow-up evaluation. Moreover, her depression and anxiety scores reduced to sub-clinical levels at the follow-up evaluation, suggesting that the intervention was helpful in reducing psychological distress. This study examined mindfulness at a facet level using the Five Factor Mindfulness Questionnaire (FFMQ; Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006) to gain more insight into the role of mindfulness in improving problem gambling outcomes. The facets are: (1) Observing -

openness to experience and attending to internal and external stimuli; (2) Non-Judging - the ability to accept current experience; (3) Acting with Awareness - attention to current activity and avoiding automatic pilot; (4) Describing - the ability to recognise and label emotional states; and (5) Non-Reacting - the ability to experience unpleasant inner phenomena without engaging in maladaptive behaviour. Investigation of her scores on these five facets of mindfulness revealed moderate improvement during the intervention when the subject was practising the mindfulness techniques. However, these scores declined over the follow up period when she discontinued the practice, leading the authors to suggest that she was at risk of relapse.

Taken together, the findings of these two case studies suggest that mindfulness-based psychotherapy may be useful in the treatment of problem gambling so long as participants engage in the practice of mindfulness. However, considering the limitations of case studies, randomised controlled trials are required to confirm any conclusions about the efficacy of mindfulness-based psychotherapy for problem gambling.

Models of mindfulness in context of problem gambling

Several theoretical models have been proposed to explain how mindfulness operates. These are the Differential Activation Hypothesis (DAH; Lau, Segal, & Williams, 2004), the Self-Regulatory Executive Function (S-REF) model of emotional disorder (Wells & Matthews, 1994, 1996), and the Intention Attention Attitude model (IAA; Shapiro, Carlson, Astin, & Freedman, 2006). The following discussion considers these models in relation to problem gambling.

Differential Activation Hypothesis

The DAH proposes that individuals previously diagnosed with depression are vulnerable to depressive relapse through automatic activation of negative mood states that result in a downward spiral of negative cognitions. MBCT was developed to interrupt this

process by assisting individuals to shift from a 'doing' mode of mind to a 'being' mode of mind through mindfulness training (Segal et al., 2002). The 'doing' mode is characterised by an attempt to shift from a current state of dissatisfaction to a more ideal state of affairs. If this shift cannot be achieved, then negative feelings are experienced and dysfunctional coping behaviours such as gambling may be initiated to reduce the discrepancy between modes of mind.

The DAH may be applied to problem gambling in several ways. For example, negative feelings may be automatically triggered after losing money and habitual patterns of thinking invoked in a vain attempt to restore the loss. In contrast, the 'being' mode is characterised by a state of mind where thoughts and feelings are recognised as objects that arise, become subject of awareness like any other present moment experience, and then disappear. Segal et al. (2002) liken this to a 'decentring' of mental experience. Shapiro et al., 2006) also refer this as 'reperceiving'. That is, the individual gains the ability to step outside of their current experience, thereby changing their relationship with it (Safran & Segal, 1990). Through adoption of a being mode, gamblers are placed in a position whereby the experience of any cognition that may precipitate or maintain gambling behaviour can be recognised and simply noted without the need for further action.

Self-Regulatory Executive Function model of emotional disorder

The S-REF model provides additional explanatory power for this process by offering a multi-level architecture within which information processing is supported by the interaction of three levels of cognition (Wells, 2002). The first is a level of stored knowledge or beliefs that are held in long term memory (beliefs are conceptualised as a meta-cognitive plan that guides the activities of the on-line processing system), the second is a level of on-line processing that supports the appraisal and execution of coping strategies that are reliant upon attention, and the third is a lower level of reflexive

processing that operates outside of awareness (Wells, 2002). According to this model, gambling behaviour can be viewed as the end result of the interaction between stored knowledge and beliefs, on-line processing in relation to the interpretation of events (such as encountering a gambling venue or interpretation of the pattern of wins and losses generated while gambling), and a lower level of processing operating outside awareness that drives underlying feelings and urges associated with gambling activity.

Overarching this process are two modes of cognitive processing – the object mode and the meta-cognitive mode (Wells, 2002). Gamblers with a low level of mindfulness would operate in the object mode, whereby the interaction of these three levels of cognition would result in a perceived reality that must be acted upon. Given a high risk situation, gambling behaviour would be automatically initiated followed by a subsequent strengthening of such cognitions. Alternatively, those with a high degree of mindfulness operate in the meta-cognitive mode. In this case, the interactions between these three levels of cognition would result in the realisation that mental events are subjective and simply come and go. In recognising mental events as impermanent, gamblers operating in this mode would be placed in a much better position from which to evaluate mental events as they arise and initiate meta-cognitive control behaviours such as redirecting attention. With practice, this process offers the potential to restructure maladaptive cognitions and facilitate the development of more functional responses.

Intention Attention Attitude model

While no model offers a definitive explanation as to how mindfulness operates, the IAA model compliments the earlier DAH and S-REF models by offering a tri-axiomatic model of mindfulness that is most consistent with the construct as it is currently understood. In this context, the IAA model conceptualises mindfulness as three interwoven components of intention, attention and attitude that occur simultaneously within a single

cyclical process (Shapiro et al., 2006). That is, *intentionally* observing the mind and body, *attending* to present moment experiences, with an *attitude* of acceptance. Shapiro et al. refer to these components as axioms since they are "the fundamental building blocks out of which other things grow" (p. 375).

For problem gamblers seeking to control or abstain from gambling, *intention* can be seen as the intention to begin and sustain a mindfulness practice with the aim of doing something about their problematic gambling behaviour. This vision is a dynamic and evolving process whereby the intention to sustain a regular mindfulness practice may move gamblers from the intention to regulate their gambling behaviour, to one of embarking on a journey of self-exploration, and which may finally culminate in self-liberation (Shapiro et al., 2006). The second axiom is *attention*, which involves paying attention to gambling-related thoughts and feelings in the present moment (Toneatto et al, 2007). Rather than challenging the content of thoughts and feelings, attention involves attending to events as they occur without the need to change anything. This leads to the third axiom which is *attitude*. The attitude that is brought to bear on whatever is being attended to is crucial. If the object of attention is judged as either good or bad, then an aversion or attraction to the object develops. This can become an issue for problem gamblers since factors such as intolerance of boredom, sensation seeking, avoidance of stress, or dysphoric mood all may contribute to a greater desire to engage in gambling behaviour (Sharpe, 2002). In developing an accepting attitude to the object attended to, gamblers can simply observe such states come and go rather than develop an attachment to the behaviours previously elicited by them.

The fundamental rationale for mindfulness-based psychotherapy for problem gambling is to teach problem gamblers to attend, with an attitude of discovery, observation and dispassionate awareness, to thoughts and feelings that may lead to gambling behaviour

(Toneatto et al., 2007). The interaction of intention, attention and attitude as described in the IAA model of mindfulness can be readily discerned in this description of the therapy. By fostering the development of these fundamental building blocks, mindfulness training may offer a way for problem gamblers to break out of the cognitive loop that develops from repeated associations between gambling, interpretation of the pattern of wins/losses, and the strengthening of gambling-related urges and desires by helping them to experience their cognitions without identifying with them or clinging on to them in any way.

Mechanisms of mindfulness

While these models provide an interesting theoretical framework for explaining how mindfulness may operate, the mechanisms by which mindfulness training may improve therapeutic outcomes remains a topic of speculation (Bishop, 2002; Bishop et al., 2004; Carmody, Baer, Lykins, & Olendzki, 2009). Mindfulness training involves acquisition of skills necessary to watch cognitions come and go and respond when noticed with reduced conviction as to their validity (Toneatto et al., 2007). The ability to experience cognitions in this manner has important implications given the apparent degree of automaticity of gambling-related cognitions (Boyer & Dickerson, 2003; McCusker & Gettings, 1997). Toneatto et al. (2007) argued that mindfulness practice facilitated behavioural change by modifying the relationship problem gamblers have with their gambling-related cognitions. This is achieved by reducing the degree of attachment to 'the seeming truth of their erroneous gambling-related perceptions', thereby assisting problem gamblers to react less automatically to habitual patterns of thinking.

However, mindfully attending to present moment experience has been conceived as a meta-mechanism of action which overarches other direct mechanisms associated with positive change (Shapiro et al., 2006). Overconfidence and risk willingness, myopic focus on reward, mechanisms related to ego-involvement, and mechanisms related to

psychological distress are suggested to act as mechanisms of action in the inverse relationship between dispositional mindfulness and problem gambling (Baer et al., 2006, Bowen, Witkiewitz, Dillworth, & Marlatt, 2007; Carmody et al., 2009; Coffey & Hartman, 2008; de Lisle et al., 2011b; Lakey et al., 2007).

Overconfidence and risk willingness

Lakey et al. (2007) found that the relationship between dispositional mindfulness and problem gambling was mediated by cognitive processes which underlie gambling-related risk-taking and decision-making tasks as assessed by the Georgia Gambling Task (Goodie, 2003) and the Iowa Gambling Task (IGT; Bechara, Damasio, Damasio, & Anderson, 1994). As such, problem gamblers with a higher level of dispositional mindfulness displayed greater accuracy in assessing gambling-related risk taking than less mindful gamblers. Lakey et al. speculated that a higher degree of mindfulness may help problem gamblers inhibit distraction from intrusive thoughts. In this way, problem gamblers could more effectively process risk relevant stimuli and reduce the level of bet acceptance.

Myopic focus on reward

Lakey et al. (2007) also found that performance on the IGT that measured myopic focus on reward partially mediated the relationship between mindfulness and problem gambling severity. As such, gamblers with a higher level of dispositional mindfulness could learn mixed reward and punishment contingencies better than less mindful gamblers. Lakey et al. suggested that a heightened degree of mindfulness may allow for better recognition of affective states caused by risk taking. This may help more mindful gamblers to be better attuned to the potential for loss rather than remain focussed on the potential for reward. In this way, Lakey et al. argued that greater dispositional mindfulness may temper impulsive risk taking when placing bets.

Ego-involvement

Given that performance on risk-taking tasks only partially mediated the relationship between mindfulness and problem gambling severity, Lakey et al. (2007) suggested that there are other potential mechanisms underpinning this relationship. Lakey et al. suggested that mechanisms relating to gambler's ego-involvement represented another possibility. However, Lakey et al. suggested that some symptoms displayed by problem gamblers, such as gambling pre-occupation, are examples of the tendency of problem gamblers to imbue gambling experiences with a heightened degree of egoic attachment to the outcome of these experiences. More mindful problem gamblers may be able to mitigate such egoic-involvement by fostering awareness of these experiences, thereby reducing the degree of attachment to them. As yet, however, no study has investigated whether ego-involvement mediates the relationship between dispositional mindfulness and problem gambling outcomes.

Psychological distress

Lakey et al. (2007) also speculated that mechanisms relating to psychological distress mediated the relationship between dispositional mindfulness and problem gambling. There is now substantial evidence that problem gambling is associated with significant personal distress (Dickerson, Baron, Hong, & Cottrell, 1996) and a range of psychiatric disorders, such as mood disorders, anxiety disorders, alcohol and substance dependence, personality disorders, and other impulse control disorders (Lorains, Cowlishaw, & Thomas, 2011; Petry, 2005; Winters & Kushner, 2003). This often manifests in terms of major depressive disorders, suicide attempts, and alcohol and substance abuse (Australian Institute of Gambling Research, 1995). Furthermore, gambling gives rise to different levels and types of harm, including personal, familial, social,

vocational, educational, financial and legal difficulties (Productivity Commission, 2010; Rickwood et al., 2010).

Several studies have established that an inverse relationship exists between dispositional mindfulness and psychological distress in a range of samples such as university students, community adults, and substance users (Arch & Craske, 2006; Bowen et al., 2007; Carmody et al., 2009; Coffey & Hartman, 2008; Shapiro et al., 2006). That is, a heightened degree of mindfulness is associated with less psychological distress. This relationship has also been identified in two treatment seeking samples of problem gamblers (de Lisle et al., 2011a). There is an emerging literature that has investigated the role of other psychological processes in mediating the inverse relationship between dispositional mindfulness and psychological distress (Arch & Craske, 2006; Bowen et al., 2007; Carmody et al., 2009; Coffey & Hartman, 2008; Shapiro et al., 2006). These additional mechanisms include values clarification; emotional, cognitive, and behavioural flexibility; exposure; non-attachment; emotion dysregulation/distress intolerance; thought suppression; and rumination (Bowen et al. 2007; Carmody et al., 2009; Coffey & Hartman, 2008; de Lisle et al., 2011b; Shapiro et al., 2006).

Of these, emotion dysregulation/distress intolerance, thought suppression, and rumination have been tested in problem gambling samples (de Lisle et al., 2011b). In this study, the tested model posited that rumination, emotional regulation/distress intolerance, and thought suppression mediate the relationship between dispositional mindfulness and psychological distress, which in turn leads to problem gambling. However, de Lisle et al. argue that it is equally plausible that these mechanisms also mediate the direct relationship between mindfulness and problem gambling behaviour, whereby increased mindfulness may help gamblers watch gambling-related thoughts and feelings come and go without feeling the need to act on them (Toneatto et al., 2007). There is no reason to believe that

self-regulation; values clarification; emotional, cognitive, and behavioural flexibility,

exposure, and non-attachment would not also explain problem gambling outcomes in

addition to psychological distress (Shapiro et al., 2006). The remainder of this review will

explore the possible role of these mediators in the development of psychological distress in

problem gamblers.

Values clarification. A mechanism of mindfulness in problem gambling may be

values clarification. Values clarification refers to the ability of individuals to recognise

what is truly meaningful in their life (Shapiro et al, 2006). For problem gamblers,

automatic processing relating to gambling may limit considerations of options that would

be more congruent with their needs and values (Brown & Ryan, 2003). A higher degree of

dispositional mindfulness may provide the opportunity to observe their values and reflect

upon them with greater objectivity, so that they can rediscover and choose behaviour that

is more consistent with their values (Brown & Ryan, 2003). Although there is evidence

that more mindful individuals act in ways that are more congruent with their values and

interests (Brown & Ryan, 2003), there has been no investigation of the role of values

clarification in problem gambling. However, Carmody et al. (2009) found that values

clarification was a partial mediator in the relationship between a composite mindfulness/

reperceiving variable and psychological symptom reduction. The mindfulness/reperceiving

variable was employed because Carmody et al. found no mediational relationship using

separate measures of mindfulness and reperceiving. However, values clarification and

emotional, cognitive, and behavioural flexibility emerged as partial mediators when

mindfulness and reperceiving scores were combined. In doing this, the authors concluded

that mindfulness and reperceiving (decentring) are highly overlapping constructs.

Emotional, cognitive, and behavioural flexibility. Emotional, cognitive, and

behavioural flexibility is another potential mechanism of mindfulness (Shapiro et al.,

2006). For some problem gamblers, gambling represents an automatic, habitual and rigid reflexive pattern of behavioural reactivity to life and emotional stress (Blaszczynski & Nower, 2002) that may result from conditioning and automaticity and being overly identified with their current experience (Shapiro et al., 2006). Emotional, cognitive, and behavioural flexibility may therefore represent another mechanism by facilitating greater freedom of choice and more adaptive and less automatic behavioural responses to stressors (Shapiro et al., 2006). There has yet to be an investigation of the role of emotional, cognitive, and behavioural flexibility in problem gambling. However, Carmody et al. (2009) found that emotional, cognitive, and behavioural flexibility was a partial mediator in the relationship between a composite mindfulness/ reperceiving variable and psychological symptom reduction.

Exposure. Exposure has been successfully used in the treatment of many disorders by desensitising individuals to distressing psychological states (Shapiro et al., 2006). Mindfulness operates in a similar manner by promoting awareness and acceptance of distressing psychological states, thereby lessening the intensity of distressing thoughts and feelings over time. This process may help problem gamblers experience strong emotions with greater objectivity and less reactivity though learning that emotions, thoughts, or body sensations are not so overwhelming or frightening (Shapiro et al., 2006). The degree to which mindfulness skills can lead to the ability to experience strong emotions or gambling urges without excessive reactivity in problem gamblers has yet to be explored. However, current indications are that exposure does not mediate the relationship between a composite mindfulness/ reperceiving variable and psychological symptom reduction (Carmody et al., 2009).

Non-attachment. Coffey and Hartman (2008) found that non-attachment is a mediator in the inverse relationship between dispositional mindfulness and psychological

distress. Individuals tend to avoid negative emotions and become attracted to positive ones. When an individual places external situational requirements on such experiences, then an attachment to that situation may result (McIntosh & Martin, 1992). For problem gamblers, this may result in an attachment to the outcome of their gambling. However, individuals with a greater level of dispositional mindfulness are more likely to accept current experience just as it is, and are less likely to become attached to the external conditions that may have precipitated such experiences (Brown, Ryan, & Creswell, 2007). Coffey and Hartman speculated that suspension of the tendency to evaluate experience as either positive or negative is incompatible with evaluating one's experience against the external criteria. Another explanation is that direct engagement with inner experience is intrinsically more satisfying than relying on external conditions to be met in order to feel happy (Coffey & Hartman, 2008). More research is required in order to assess these explanations further and to determine the degree to which non-attachment plays a role in the relationship between mindfulness and problem gambling.

Emotional dysregulation/distress intolerance. Emotional regulation refers to "the process of modulating one or more aspects of an emotional experience or response" (Chambers, Gullone, & Allen, 2009, p. 564). Emotion regulation is subsumed under the broader category of distress/tolerance, which represents an individual's overall capacity "to experience and withstand negative psychological states" (Simon & Gaher, 2005, p.83). Brown and Ryan (2003) demonstrated that people who scored higher on a psychometrically sound measure of mindfulness reported significantly greater self-regulated emotion and behaviour. Moreover, brain imaging studies support the hypothesis that mindfulness is effective in regulating affect (Davidson et al., 2003; Lazar et al., 2005). Coffey and Hartman (2008) found that emotion dysregulation mediated the inverse relationship between dispositional mindfulness and psychological distress in two samples

of introductory psychology students. Several studies also suggest that mindfulness training improves tolerance for strong impulses associated with substance use (Bowen et al., 2007), borderline personality disorder (Linehan et al., 2006) and binge eating (Kristeller & Hallett, 1999). Vohs and Baumeister (2004) considered that the ability to regulate impulses in this manner was essential in overcoming impulse control disorders such as problem gambling.

Despite speculation remaining as to how long mindfulness must be practiced in order to achieve a benefit (Arch & Craske, 2006; Taylor & Mireault, 2006), mindfulness training is thought to assist people cope with strong emotional states (Arch & Craske, 2006; Hayes & Feldman, 2004; Linehan et al., 1993a). Arch and Craske (2006) found that a non-clinical sample reported reduced negative affect and greater willingness to view highly negative images after mindfulness training. They concluded that mindfulness training improved the capacity to remain in contact with present moment thoughts and feelings by increasing tolerance of strong emotions. Similarly, Shapiro et al. (2006) considered that mindfulness training allows for the experience of strong emotions with greater objectivity and less reactivity.

Deficits in emotional regulation are strongly implicated in continued problem gambling behaviour (Blaszczynski & Nower, 2002; Lee, LaBrie, Grant, Kim, & Shaffer, 2008; Sharpe, 2002; Shead, Callan, & Hodgins, 2008; Stewart & Zack, 2008). It has been found that problem gamblers who have strong expectations that gambling augmented positive mood made significantly riskier choices than those gamblers who do not have this expectation (Shead et al., 2008). Moreover, there is substantial evidence that problem gamblers are motivated to gamble in order to reduce negative mood states or to improve positive emotions (Blaszczynski & Nower, 2002; Sharpe, 2002; Shead et al., 2008; Stewart & Zack, 2008). For those seeking excitement, this may take the form of horse racing,

whereas electronic gaming machine gamblers tend to gamble to avoid life stressors (Blaszczynski & Nower, 2002; Cocco, Sharpe, & Blaszczynski, 1995; Sharpe, 2002). In a treatment seeking population of problem gamblers, de Lisle et al. (2011b) found that the inverse relationship between dispositional mindfulness and psychological distress was mediated by attentional deficits in the experience of negative affect. In this way, problem gamblers may learn through mindfulness training to accept strong emotions by mindfully attending to present moment emotional states. This offers the potential to interrupt automatic responses to such states by teaching problem gamblers to step back from what is noticed and simply watch strong emotions come and go.

Thought suppression. Thought suppression may represent another mechanism in the inverse relationship between dispositional mindfulness and psychological distress (Coffey & Hartman, 2008; Bowen et al., 2007). A simple strategy employed by many problem gamblers when attempting to discontinue gambling is to suppress gambling-related thoughts (Ciarrocchi, 2002). However, thought suppression is known to paradoxically increase the frequency and intensity of unwanted thoughts (Wegner, 1989; Wegner & Erber, 1992). Consequently, unwanted thoughts may become more pronounced as individuals attempt to disengage from gambling.

Thought suppression is considered an important factor in the maintenance of a wide range of clinical disorders (Najmi & Wegner, 2008; Rassin, 2005). Addictive behaviour research has demonstrated that thought suppression can impede attempts to discontinue smoking (Toll, Sobell, Wagner, & Sobell, 2001) and alcohol use (Palfai, Monti, Colby, & Rohsenow, 1997). Similarly, participation in a mindfulness meditation course was found to result in greater decreases in attempts to avoid unwanted thoughts relating to alcohol use when compared to a control group (Bowen et al., 2007). Bowen et al. concluded that the

decrease in thought suppression partially mediated the effect of mindfulness practice on post-course alcohol use.

Coffey and Hartman (2008) found that thought suppression mediated the inverse relationship between dispositional mindfulness and psychological distress in two samples of introductory psychology students. The potential of mindfulness-based interventions to foster awareness and acceptance of intrusive thoughts represents a powerful strategy for dealing with behavioural problems (Kavanagh, Andrade, & May, 2004). While empirical evidence in relation to the problem gambling population is limited, de Lisle et al. (2011b) found significant negative relationships between dispositional mindfulness, thought suppression, and psychological distress.

Rumination. There is clear empirical support for the role of mindfulness in reducing ruminative thought generally (Borders, Earleywine, & Jajodia, 2010; Jain et al., 2007; Ramel, Goldin, Camona, & McQuaid, 2004; Shapiro, Brown, & Biegel, 2007). According to Segal et al. (2002), rumination involves a judgement and an evaluation about current experience. When such judgments result in attachment to an object or outcome, psychological well-being is negatively impacted (McIntosh & Martin, 1992). Shapiro et al. (2006) considered that mindfulness permits individuals to see the present moment as it is without judgment and to respond rather than react according to prior habit, conditioning or experience.

Rumination has been identified as a mediator of the relationship between mindfulness and psychological distress in two samples of introductory psychology students (Coffey & Hartman, 2008). Mindfulness training has also been negatively correlated with rumination (Kumar, Feldman, & Hayes, 2008). Other research has established a significant relationship between dysphoric affect and automatic ruminative thought patterns in those at risk of relapse from depression (Teasdale, Segal, & Williams, 1995).

Given the high rates of co-morbidity and distress associated with problem gambling, it is reasonable to assume that problem gambling is also associated with automatic ruminative thought patterns. Rumination in problem gambling also involves habitual patterns of thinking directed toward reliving past gambling experiences, planning to gamble, or thinking of ways to secure money with which to gamble (American Psychiatric Association, 2002). Atlas and Peterson (1990) also found that rumination after a loss was in turn associated with larger wagers on subsequent races and a tendency toward less successful wagers. Furthermore, Ratelle, Vallerand, Mageau, Rousseau, and Provencher (2004) showed that gamblers who were obsessive about gambling displayed poorer vitality and concentration in daily tasks, as well as increased rumination, anxiety, negative mood, and guilt than those who effectively controlled their gambling.

In exploring the relationship between dispositional mindfulness and psychological distress in problem gamblers, de Lisle et al. (2011b) found tentative evidence for the role of rumination in mediating the inverse relationship between dispositional mindfulness and psychological distress. Therefore, it is likely that mindful problem gamblers are more aware of the ruminative thought patterns associated with the experience of psychological distress. While the small sample size used in the de Lisle et al. study precluded any firm conclusions, it is possible that raising mindfulness may allow problem gamblers to dispassionately observe the tendency to dwell on unwanted thoughts and respond to such ruminations more adaptively. Since problem gamblers demonstrate a strong attachment to gambling behaviour (Orford, Morison, & Somers, 1996), increasing mindfulness may represent the antithesis of ruminative thought because it is intentional, is focussed on the present moment, and is non-judgmental (Williams, Teasdale, Segal, & Kabat-Zinn, 2007).

Proposed model of mindfulness mechanisms in problem gambling

Figure 1 provides a theoretical model of the relationship between mindfulness and problem gambling behaviour based on the previous review of the empirical and theoretical literature.
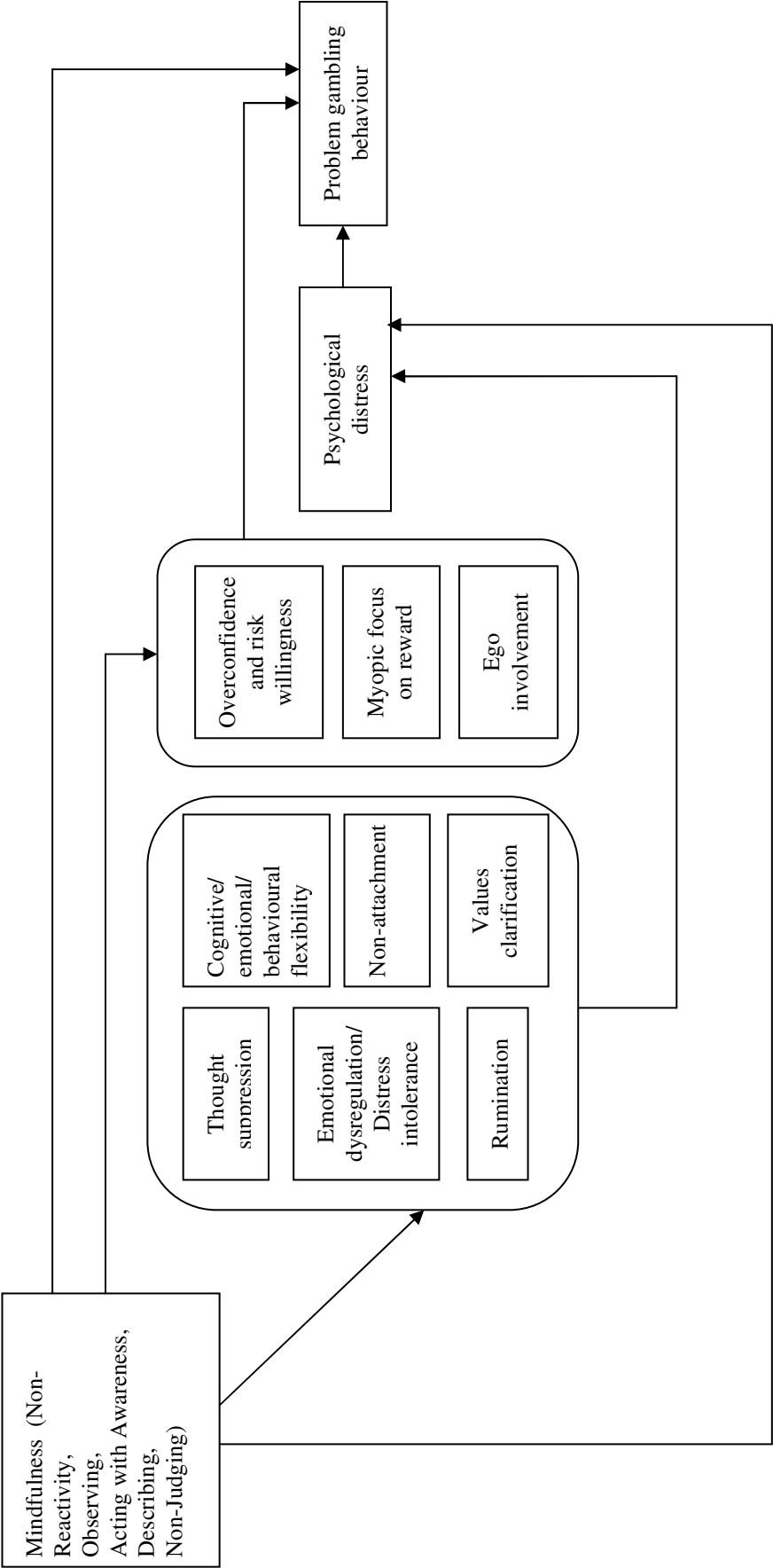
Figure 1. Proposed model of relationships between mindfulness, mechanisms of action, and problem gambling behaviour

Figure 1 displays the possible mechanisms of action underpinning the relationship between dispositional mindfulness and problem gambling behaviour. Mindful problem gamblers tend to display less severe problem gambling outcomes (de Lisle et al., 2011b; Lakey et al., 2007), which may operate through overconfidence and risk willingness, myopic focus on reward, and ego involvement (Lakey et al., 2007). This relationship also seems to be mediated through lower levels of psychological distress (de Lisle et al., 2011b). The model also highlights that the inverse relationship between dispositional mindfulness and psychological distress may be mediated by values clarification; emotional, cognitive, and behavioural flexibility; non-attachment; emotion dysregulation/distress intolerance; thought suppression; and rumination (Bowen et al., 2007; Carmody et al., 2009; Coffey & Hartman, 2008; de Lisle et al., 2011b; Shapiro et al., 2006). These mechanisms may also mediate the direct relationship between dispositional mindfulness and problem gambling behaviours, whereby increased mindfulness may help gamblers watch gambling-related thoughts and feelings come and go without feeling the need to act on them (Toneatto et al., 2007).

It is evident that the relationship between mindfulness and problem gambling behaviour is likely to be a very complex one. Mindfulness is a complex construct that should be investigated at a facet level in order to clarify the relationship between the facets and other variables of interest (Baer et al., 2006). Furthermore, the limited number of studies that have investigated the mechanisms of action, methodological limitations such as lack of randomised controlled trials and small sample sizes, lack of suitable assessment instruments, and continued debate as to an operational definition of the mindfulness construct (Carmody et al., 2009) limit understanding as to how mindfulness may improve problem gambling outcomes. Therefore, future studies may wish to explore these

relationships in more detail using appropriate measures and statistical procedures with large community and treatment-seeking samples.

Mindfulness-based interventions applicable for problem gambling

There are four mindfulness based approaches that may be appropriate in the treatment of problem gambling. These are Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 2005), Mindfulness-Based Cognitive Therapy (MBCT; Segal et al., 2002), Dialectical Behaviour Therapy (DBT; Linehan, 1993a, 1993b), Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999), as well as many different variants of these approaches (Baer & Krietemeyer, 2006). Although different, each approach attempts to operationalise and teach a way of paying attention to present-moment experience that has the potential to reduce symptoms and improve well-being for a wide range of the population (Baer & Krietemeyer, 2006). While an in-depth discussion of each approach is beyond the scope of this review, each integrates mindfulness within a cognitive-behavioural framework (Lau & McMain, 2005).

MBSR comprises eight weekly sessions intended for a group setting. It consists of discussion about the nature of stress, its impact on psychological and physiological functioning, instruction on body scanning, and various meditative techniques (Kabat-Zinn, 2005). In a meta-analysis of 64 health-related studies utilising MBSR, Grossman, Niemann, Schmidt and Walach (2004) concluded that MBSR may enhance coping with a broad range of clinical and non-clinical problems. Despite its success, MBSR has not yet been applied to the treatment of problem gambling.

MBCT utilises the framework developed for MBSR and incorporates training in specific cognitive skills for prevention of relapse from depression in a group setting (Segal et al., 2002). Since it was developed, MBCT is now considered of value for heterogeneous groups (Ree & Craigie, 2007). Furthermore, MBCT incorporates cognitive-behavioural

elements previously demonstrated as having positive benefit for problem gamblers, such as psycho-education, pleasure and mastery activities, dealing with difficulty, coping with triggers, and relapse prevention (e.g., Dowling, Smith, & Thomas, 2006, 2007; Dowling, 2009; Petry et al., 2006). There is preliminary support for adaptations of MBCT to other populations and psychiatric disorders, such as binge eating disorder (Baer, Fischer & Huss, 2005), children with symptoms of anxiety and depression (Semple, Lee, Rosa, & Miller, 2010), and older adults (Smith, 2006; Smith, Graham, & Senthinathan, 2007). An adaptation of MBCT has been successfully employed in the treatment of a female problem gambler (de Lisle et al., 2011a).

DBT is primarily used as an intervention for those with borderline personality disorder (Linehan, 1993a, 1993b). DBT is an open ended therapy conducted in individual and group contexts where mindfulness is developed through the application of mindfulness exercises in daily life rather than through formal meditative practices. In comparison, ACT is open-ended and does not require a formal mindfulness practice. ACT is a tailored individual therapy that focuses on developing acceptance of unwanted thoughts and feelings, as well as fostering commitment and action towards living life in accordance with ones values and goals (Harris, 2006). Although ACT has not yet been applied to problem gambling, an adaptation of DBT has been successful in reducing gambling, anger, and substance use in 42 participants with concurrent gambling and anger problems (Korman, Collins, McMain, & Skinner, 2005). While DBT and ACT are associated with behavioural change, neither of these therapies relies upon the intensive meditative practices advocated in MBSR and MBCT. However, these practices are considered crucial for promoting dispositional mindfulness that all individuals possess.

Limitations of mindfulness-based psychotherapy for problem gambling

The key limitation of a purely mindfulness-based intervention for problem gambling is that intensive daily meditative practices are required which may present a significant hurdle for many problem gamblers to overcome (de Lisle et al., 2011a). For example, problem gamblers seeking excitement may not be able to tolerate lengthy periods of stillness with no stimulation. However, recent research has demonstrated that meditation experience and home practice of the formal meditation exercises is significantly correlated with the degree of change in facets of mindfulness (Baer et al., 2008; Carmody & Baer, 2008). Furthermore, changes in mindfulness scale scores have been found to mediate the relationship between meditation practice and positive change (Carmody et al., 2009). Therefore, it appears important that problem gamblers incorporate a mindfulness practice into their daily routine in order to facilitate more adaptive behavioural change.

Shapiro (1992) suggested that the outcome of intensive meditative practices was related to the expectation that subjects had prior to starting a meditative practice. From this perspective, a mindfulness intervention may be most efficacious only when problem gamblers become convinced that the consequences of continuing to gamble are clearly seen to override any benefit derived from continued gambling. The broader mindfulness outcome literature suggests that the resolve to overcome psychological distress may be strengthened by three design features unique to mindfulness-based interventions that emphasise intensive meditative practices (Kabat-Zinn & Chapman-Waldrop, 1988). The first is that mindfulness practice is presented as a personal challenge that facilitates exploration of a person's potential to improve within a supportive framework. The second is that mindfulness practice offers a way of fostering well-being rather than operating as a series of reductionist techniques designed to achieve an immediate end, such as gambling abstinence. The third is that many different techniques are employed in mindfulness

training, such as yoga and a variety of meditation techniques, which increase the possibility that an individual will find a technique that is more congruent with their needs. While there is limited evidence to suggest that a mindfulness intervention may be an acceptable approach for problem gambling (de Lisle et al., 2011a; Toneatto et al., 2007), more research using randomised controlled trials is required to definitively demonstrate its efficacy. Since many problem gamblers tend to deny that gambling is a problem, are sceptical of treatment approaches, and attempt to control their behaviour themselves (Tavares, Martins, Zilberman, & el-Guebaly, 2002), convincing such a population of the therapeutic benefits of a mindfulness practice may be difficult.

To overcome this issue, a more open ended mindfulness therapy such as ACT or DBT may offer a wider scope from which to improve problem gambling outcomes. However, distilling the unique therapeutic impact of the various techniques employed in ACT and DBT may present considerable methodological difficulty. Consequently, the emphasis on intensive meditative practices advocated in inventions such as MBSR and MBCT may provide a better preliminary basis from which to discern the specific role of mindfulness in improving problem gambling outcomes.

Another limitation is that mindfulness may result in adverse consequences for some problem gamblers. While researchers have not extensively investigated potential adverse effects of mindfulness-based interventions, a recent review of the literature revealed tentative evidence for 'altered reality testing', depersonalisation, psychosis, mania, negative affect, exacerbation of depressive symptoms, anxiety, and obsessive rumination after learning to meditate (Melbourne Academic Mindfulness Interest Group, 2006). While current evidence for adverse effects of mindfulness is restricted to case studies and studies with methodological limitations, the exacerbation of such symptoms may be particularly problematic for those problem gamblers with co-morbid psychiatric conditions or reduced

cognitive capacity. Given the high likelihood of a co-morbid Axis I or Axis II disorder in

problem gambling (Lorains et al., 2011), any intervention that might potentially exacerbate

pre-existing psychopathology must be viewed upon with caution. However, since

mindfulness increases awareness of internal states, adverse effects may be understandable

in the short term. Given that deleterious consequences are possible, the consensus is that

mindfulness-based approaches should be used with caution and close supervision

(Melbourne Academic Mindfulness Interest Group, 2006). This appears particularly

relevant for those with a history of psychosis (Chan-Ob & Boonyanaruthee, 1999; Walsh

& Roche, 1979). As such, it is important that therapists are suitably qualified to deal with

unforseen contingencies.

There are also positive indicators for the application of mindfulness-based

interventions for problem gambling. There are indications that mindfulness-based

psychotherapy is comparable in effectiveness with CBT (Ree & Craigie, 2007).

Mindfulness-based interventions have also been successfully utilised with individuals with

a wide range of presenting issues in the same treatment group (Ree & Craigie, 2007). This

is in contrast to other treatment modalities that may treat different disorders separately

(Ree & Craigie, 2007). As the actual content of what is noticed is unimportant in

mindfulness practice, it is irrelevant if the event is symptomatic of depression, anxiety,

problem gambling, or any other disorder. As noted earlier, mindfulness-based approaches

have been successfully applied to many adult and childhood psychological disorders

including psychosis, borderline personality disorder, anxiety, and eating disorders (Baer &

Krietemeyer, 2006). In addition, the approaches are used in the treatment of many medical

conditions including chronic pain, fibromyalgia, psoriasis, and cancer (Baer, 2003), and in

improving inter-personal relations and stress reduction in the workplace (Baer &

Krietemeyer, 2006). These findings suggest that mindfulness-based interventions may be

successful in the treatment of problem gamblers, even if they display co-morbid disorders. However, much more research is required to establish the characteristics of those problem gamblers for whom a mindfulness intervention would be most suited.

Conclusions and future directions

Mindfulness-based interventions have the potential to improve outcomes for some problem gamblers. However, the paucity of research has precluded the demonstration of efficacy of any mindfulness-based intervention for problem gambling. Toneatto et al. (2007) suggested that mindfulness may be useful either as an adjunct to existing CBT interventions or as a relapse prevention strategy following standard CBT. However, there is currently no confirmatory evidence for this claim. Future research will also be required to evaluate the contribution of the purely mindfulness component of mindfulness interventions that include components such as psycho-education and cognitive therapy (Dimidjian & Linehan, 2003; Shapiro et al., 2006).

The literature indicates that mindfulness-interventions appear most efficacious where other treatment approaches have failed. For example, MBSR was developed for those with chronic pain who were previously unresponsive to other forms of medical intervention (Grossman et al., 2004; Kabat-Zinn, 2005), MBCT was developed for those who have experienced three or more prior episodes of major depression (Coelho, Canter & Ernst, 2007; Ma & Teasdale, 2004), and DBT was developed for borderline personality disorder, a disorder long known to be treatment resistant (Linehan, 1993a, 1993b). Accordingly, it is possible that previously unresponsive problem gamblers may benefit most from a mindfulness-based intervention. However, the significant commitment to a daily mindfulness practice required in interventions such as MBSR and MBCT may make these approaches unpalatable for many gamblers. Future research is required to understand which mindfulness intervention would be most appropriate and for whom.

Research effort should also be directed to understanding the potential for adverse consequences. Current understanding is restricted to participants who have practiced transcendental meditation rather than those who have attended a formal mindfulness intervention (Melbourne Academic Mindfulness Interest group, 2006). However, clients with a history of psychosis appear particularly at risk. As such, screening of participants prior to any mindfulness intervention is essential in order to assess psychiatric vulnerability. Such screening should be undertaken according to DSM-IV-TR diagnostic criteria using structured clinical interviews (Walker et al., 2006). Risk mitigation can only be performed by suitably qualified professionals. Such qualifications should also extend to appropriate training in the mindfulness intervention to be delivered. While training requirements for the various mindfulness interventions vary, accreditation in MBSR and MBCT require facilitators to adopt a personal mindfulness practice of their own. DBT and ACT accreditation is not as stringent in this regard. Current consensus is that mindfulness interventions should be provided by suitably qualified instructors with the skills necessary to deal with possible adverse reactions (Melbourne Academic Mindfulness Interest group, 2006).

While the number of randomised controlled trails of mindfulness interventions is increasing, there still remain many unanswered questions with respect to this approach (Bishop, 2002). The most fundamental of these is 'what is mindfulness?' and 'what are its mechanisms of action?' Potential mechanisms include overconfidence and risk willingness, myopic focus on reward, ego involvement, lower levels of psychological distress; self-regulation; values clarification; emotional, cognitive and behavioural flexibility; exposure; non-attachment, emotion dysregulation and distress intolerance; reduced thought suppression, and reduced rumination (Baer et al., 2006, Bowen et al., 2007; Carmody et al., 2009; Coffey & Hartman, 2008; de Lisle et al., 2011b; Lakey et al., 2007). Research efforts

have not clearly delineated the mechanisms of action with only partial support for the mediational aspects of these variables between mindfulness and psychological well-being (Carmody et al., 2009). Clearly, far more research is required to determine the role of these mechanisms and others in promoting psychological well-being and problem gambling outcomes. Unfortunately, there still exists a lack of psychometrically sound measures that assess these variables (Carmody et al. 2009, Dimidjian & Linehan, 2003). Moreover, continued debate as to the mindfulness construct continues to hamper mindfulness efficacy investigations.

In summary, this review has highlighted that mindfulness-based interventions for problem gambling is worthy of further exploration, but that they should be considered with some caution. Despite tentative evidence that mindfulness may improve problem gambling outcomes and psychological distress, the existence of non-randomised trials without suitable comparison groups are insufficient to establish the efficacy of any mindfulness-based treatment (Chambless & Ollendick, 2001). However, evidence is growing that mindfulness interventions have potential in improving outcomes for a wide range of presenting issues. Further research using randomised controlled methodologies is required to evaluate the degree to which mindfulness-based interventions improve therapeutic outcomes for problem gambling.

References

American Psychiatric Association. (2000). *Diagnostic and Statistical Manual of Mental Disorders, Text Revision* (4th ed.). Arlington, VA: Author.

Arch, J. J., & Craske, M. G. (2006). Mechanisms of mindfulness: Emotion regulation following a focussed breathing induction. *Behaviour Research and Therapy, 44*, 1849-1858.

Atlas, G. D., & Peterson, C. (1990). Explanatory style and gambling: How pessimists respond to losing wagers. *Behaviour Research and Therapy, 28*(6), 523-529.

Australian Institute of Gambling Research. (1995). A critical analysis of two national prevalence studies: The case for alternative strategies. Sydney: Macarthur University of Western Sydney.

Baer, R. A. (2003). Mindfulness training as a clinical intervention - a conceptual and empirical review. *Clinical Psychology Science and Practice, 10*, 125-143.

Baer, R. A., Fischer, S., & Huss, D. B. (2005). Mindfulness and acceptance in the treatment of disordered eating. *Journal of Rational-Emotive & Cognitive Behavior Therapy, 23*(4), 281-300.

Baer, R. A., & Krietemeyer, J. (2006). Overview of mindfulness and acceptance-based treatment approaches. In R. Baer (Ed.), *Mindfulness-Based Treatment Approaches: A Clinicians Guide to Evidence Base and Applications* (pp. 3-27). London: Academic Press.

Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report methods to explore facets of mindfulness. *Assessment, 13*(1), 27-45.

Baer, R.A., Smith, G.T., Lykins, E., Button, D., Krietemeyer, J., Sauer, S., et al. (2008). Construct validity of the Five Facet Mindfulness Questionnaire in meditating and

nonmediating samples. *Assessment, 15*, 329–342.

Bechara, A., Damasio, A. R., Damasio, H., & Anderson, S. W. (1994). Insensitivity to future consequences following damage human prefrontal cortex. *Cognition, 50*, 7-15.

Bishop, S. R. (2002). What do we really know about mindfulness-based stress reduction? *Psychosomatic Medicine, 64*, 71-84.

Bishop, S. R., Lau, M., Shapiro, S., Carlson, L., Anderson, N. D., Carmody, J., et al. (2004). Mindfulness: A proposed operational definition. *Clinical Psychology: Science and Practice, 11*(3), 230-241.

Blaszczynski, A., & Nower, L. (2002). A pathways model for problem and pathological gambling. *Addiction, 97*(5), 487-499.

Borders, A., Earleywine, M., & Jajodia, A. (2010). Could mindfulness decrease anger, hostility, and aggression by decreasing rumination? *Aggressive Behavior, 36*, 28-44.

Bowen, S., Witkiewitz, K., Dillworth, T. M., & Marlatt, G. A. (2007). The role of thought suppression in the relationship between mindfulness meditation and alcohol use. *Addictive Behaviors, 32*, 2324-2328.

Boyer, M., & Dickerson, M. (2003). Attentional bias and addictive behaviour: automaticity in a gambling-specific modified Stroop task. *Addiction, 98*(1), 61-70.

Brown, K. W, & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*(4), 822-848.

Brown, K. W, & Ryan, R. M., & Creswell, J. D. (2007). Mindfulness: Theoretical foundations and evidence for salutary effects. *Psychological Inquiry, 18*(4), 211-237.

Carmody, J., & Baer, R. A. (2008). Relationships between mindfulness practice and levels of mindfulness, medical and psychological symptoms and well-being in a mindfulness-based stress reduction program. *Journal of Behavioral Medicine, 31*, 23–33.

Carmody, J., Baer, R. A., Lykins, E. L. B., & Olendzki, N. (2009). An empirical study of the mechanisms of mindfulness in a mindfulness-based stress reduction program. *Journal of Clinical Psychology, 65*, 613-626.

Chambers, R., Gullone, E., & Allen, N. B. (2009). Mindful emotion regulation: An integrative review. *Clinical Psychology Review, 29*, 560-572.

Chambless, D. L., & Ollendick, T. H. (2001). Empirically supported psychological interventions: Controversies and evidence. *Annual Review of Psychology, 52*, 685-716.

Chan-Ob, T., & Boonyanaruthee, V. (1999). Meditation in association with psychosis. *Journal of the Medical Association of Thailand, 82*, 925-930.

Ciarrocchi, J. W. (2002). *Counseling problem gamblers: A self regulation manual for individual and family therapy*. San Diego: Academic Press.

Cocco, N., Sharpe, L., & Blaszczynski, A. P. (1995). Differences in preferred level of arousal in two sub-groups of problem gamblers: A preliminary report. *Journal of Gambling Studies, 11*, 221-229.

Coelho, H. F., Canter, P. H., & Ernst, E. (2007). Mindfulness-based cognitive therapy: Evaluating current evidence and informing future research**.** *Journal of Consulting Clinical Psychology, 75*(6), 1000-1005.

Coffey, K. A., & Hartman, M. (2008). Mechanisms of action in the inverse relationship between mindfulness and psychological distress. *Complementary Health Practice Review, 13*(2), 79-91.

Davidson, R. J., Kabat-Zinn, J., Schumacher, J., Rosenkrantz, M., Muller, D., Santoreli, S. F., et al. (2003). Alterations in brain and immune function produced by mindfulness meditation. *Psychosomatic Medicine, 65*, 564-570.

de Lisle, S. , Dowling, N. &, Allen, J. (2011a). Mindfulness-based cognitive therapy for problem gambling. *Clinical Case Studies*. Prepublished March 7, 2011, DOI:10.1177/1534650111401016

de Lisle, S. , Dowling, N. &, Allen, J. (2011b). *Mechanisms of action in the inverse relationship between dispositional mindfulness and problem gambling*. Manuscript submitted for publication.

Dickerson, M., Baron, E., Hong, S-M., & Cottrell, D. (1996). Estimating the extent and degree of gambling related problems in the Australian population: A national survey. *Journal of Gambling Studies, 12*(2), 161-178.

Dimidjian, S. D., & Linehan, M. M. (2003). Mindfulness practice. In W. O'Donohue, J. Fisher, & S. Hayes (Eds.), Cognitive behavior therapy: Applying empirically supported techniques in your practice. (pp. 229-237). New York: Wiley.

Dowling, N., Smith, D., & Thomas, T. (2006). Treatment of female pathological gambling: Efficacy of a cognitive-behavioural approach. *Journal of Gambling Studies, 22,* 355-372.

Dowling, N., Smith, D., & Thomas, T. (2007). A comparison of individual and group cognitive behavioral treatment for female pathological gambling. *Behaviour Research and Therapy, 45*, 2192-2202.

Dowling, N., Smith, D., & Thomas, T. (2009). A preliminary investigation of abstinence and controlled gambling as self-selected goals of treatment for female pathological gambling. *Journal of Gambling Studies, 25*(2), 201-214.

Goodie, A. S. (2003). The effect of control on betting: Paradoxical betting on items of high confidence with low value. *Journal of Experimental Psychology: Learning, Memory, Cognition, 29*, 598-610.

Grossman, P., Niemann, L., Schmidt, S., & Walach, H. (2004). Mindfulness-based stress reduction and health benefits: A meta-analysis. *Journal of Psychosomatic Research 57*, 35-43.

Hayes, S. C., & Feldman, G. (2004). Clarifying the construct of mindfulness in the context of emotion regulation and the process of change in therapy. *Clinical Psychology: Science and Practice, 11*(3), 255-262.

Hayes, S. C., Follette, V. M., & Linehan, M. M. (Eds.). (2004). *Mindfulness and acceptance: Expanding the cognitive tradition.* New York: Guilford Press.

Hayes, S. C., Strosahl, K., & Wilson, K. G. (1999). *Acceptance and Commitment Therapy.* New York: Guilford Press.

Harris, R. (2006). Embracing your demons: An overview of Acceptance and Commitment Therapy. *Psychotherapy in Australia, 12*(4), 2-8.

Jain, S., Shapiro, S. L., Swanick, S., Roesch, S. C., Mills, P. J., Bell, I., et al. (2007). A randomized controlled trial of mindfulness meditation versus relaxation training: Effects on distress, positive states of mind, rumination, and distraction. *Annals of Behavioral Medicine, 33*, 11-21.

Joukhador, J., Maccallum, F., & Blaszczynski, A. (2003). Differences in cognitive distortions between problem and social gamblers. Psychological Reports, 92, 1203-1214.

Kabat-Zinn, J. (2005). *Full Catastrophe Living – Using the Wisdom of your Body and Mind to face Stress, Pain, and Illness* (3rd ed.). New York: Bantam Dell.

Kabat-Zinn, J., & Chapman-Waldrop, A. (1988). Compliance with an outpatient stress-reduction program: Rates and predictors of program completion. *Journal of Behavioral Medicine, 11*(4), 333-352.

Kavanagh, D. J., Andrade, J., & May, J. (2004). Beating the urge: Implications of research into substance-related desires. *Addictive Behaviors, 29*, 1359-1372.

Korman, L., Collins, J., McMain, S., & Skinner, W. (2005). *Concurrent Gambling, Substance Use and Anger: Development of a Brief Integrated Treatment*. Ontario: Ontario Problem Gambling Research Centre.

Krasner, M. (2004). Mindfulness-based interventions: A coming of age? *Families, Systems, and Health, 22*, 207-212.

Kristeller, J. L., & Hallett, C. B. (1999). An exploratory study of a meditation-based intervention for binge eating disorder. *Journal of Health Psychology, 4*, 357-363.

Kumar, S., Feldman, G., & Hayes, S. C. (2008). Changes in mindfulness and emotion regulation in an exposure-based cognitive therapy for depression. *Cognitive Therapy and Research, 32*, 734-744.

Ladouceur, R., Sylvain, C., Boutin, C., & Doucet, C. (1998). *Understanding and Treating the Pathological Gambler*. Chichester: John Wiley & Sons, Ltd.

Lakey, C. E., Campbell, W. K., Brown, K. W., & Goodie, A. S. (2007). Dispositional mindfulness as a predictor of the severity of gambling outcomes. *Personality and Individual Differences, 43*, 1698-1710.

Lau, M. A., & McMain, S. F. (2005). Integrating mindfulness meditation with cognitive and behavioural therapies: The challenge of combining acceptance- and change-based strategies. *Canadian Journal of Psychiatry, 50*(13), 863-869.

Lau, M., Segal, Z. V., & Williams, J. M. G. (2004). Teasdale's differential activation hypothesis: Implications for mechanisms of depressive relapse and suicidal behaviour. *Behaviour Research and Therapy, 42*, 1001-1017.

Lazar, S. W., Kerr, C. E., Wasserman, R. H., Gray, J. R., Greve, D. N., Treadway, M. T., et al. (2005). Meditation experience is associated with increased cortical thickness. *Neuroreport, 16*, 1893-1897.

Lee, T. K., LaBrie, R. A., Grant, J. E., Kim, S. W., & Shaffer, H. J. (2008). The structure of pathological gambling among Korean gamblers: A cluster and factor analysis of clinical and demographic characteristics. *International Journal of Mental Health and Addiction, 6*, 551-563.

Lesieur, H. R., & Heineman, M. (1988). Pathological gambling among youthful multiple substance abusers in a therapeutic community. *British Journal of Addiction, 83*, 765-771.

Linehan, M. M. (1993a). *Cognitive-Behavioural Treatment of Borderline Personality Disorder*. New York: Guilford Press.

Linehan, M. M. (1993b). *Skill Training Manual for Treating Borderline Personality Disorder*. New York: Guilford Press.

Linehan, M. M., Comtois, K. A., Murray, A. M., Brown, M. Z., Gallop, R. J., Heard, H. L., et al. (2006). Two-year randomized controlled trial and follow-up of dialectal behavior therapy vs. therapy by experts for suicidal behaviors and borderline personality disorder. *Archives of General Psychiatry, 63*, 757-766.

López Viets, V. C., & Miller, W. R. (1997). Treatment approaches for pathological gamblers. *Clinical Psychology Review, 17*, 689-702.

Lorains, F. K., Cowlishaw, S., Thomas, S. (2011). Prevalence of comorbid disorders in problem and pathological gambling: Systematic review and meta-analysis of population surveys. Manuscript submitted for publication.

Ma, S. H., & Teasdale, J. D. (2004). Mindfulness-based cognitive therapy for depression: Replication and exploration of differential relapse prevention effects. *Journal of Consulting and Clinical Psychology, 72*(1), 31-40.

McCusker, C. G., & Gettings, B. (1997). Automaticity of cognitive biases in addictive behaviours: further evidence with gamblers. *British Journal of Clinical Psychology, 36*(4), 543-554.

McIntosh W. D., & Martin L. L. (1992). The cybernetics of happiness: The relation between goal attainment, rumination, and affect. In M. S. Clark (Ed.). *Review of personality and social psychology Vol. 14*. (pp. 222-246). Newbury Park: Sage Publications.

Melbourne Academic Mindfulness Interest Group. (2006). Mindfulness-based psychotherapies: A review of conceptual foundations, empirical evidence and practical considerations. *Australian and New Zealand Journal of Psychiatry, 40*, 285-294.

Najmi, S., & Wegner, D. M. (2008). Thought suppression and psychopathology. In A. J. Elliot (Ed.), *Handbook of approach and avoidance motivation* (pp.447-459). New York: Psychology Press.

Orford, J., Morison, V. & Somers, M. (1996). Drinking and gambling: A comparison with implications for theories of addiction. *Drug and Alcohol Review*, *15*, 47-56.

Palfai, T. P., Monti, P. M., Colby, S. M., & Rohsenow, D. J. (1997). Effects of suppressing the urge to drink on the accessibility of alcohol outcome expectancies. *Behavior Research and Therapy, 35*(1), 59-65.

Petry, N. M. (2005). *Pathological gambling: Etiology, comorbidity, and treatment*. Washington, D.C: American Psychological Association.

Petry, N. M., Ammerman, Y., Bohl, J., Doersch, A., Gay, H., Kadden, R., et al. (2006). Cognitive-behavioral therapy for pathological gamblers. *Journal of Consulting and Clinical Psychology, 74*(3), 555-567.

Problem Gambling Research and Treatment Centre. (2011). *Guideline for screening, assessment and treatment in problem and pathological gambling*. Melbourne: Monash University.

Productivity Commission (2010). *Gambling. Productivity Commission Inquiry Report*. Volume 1. Report no. 50. Canberra: Productivity Commission.

Ramel, W., Goldin, P. R., Carmona, P. E., & McQuaid, J. R. (2004). The effects of mindfulness meditation on cognitive processes and affect in patients with past depression. *Cognitive Therapy and Research, 28*(4), 433-455.

Rassin, E. (2005). *Thought suppression*. Oxford: Elsevier.

Ratelle, C. F., Vallerand, R. J., Mageau, G. A., Rousseau, F. L. & Provencher, P. (2004). When passion leads to problematic outcomes: A look at gambling. *Journal of Gambling Studies, 20*(2), 105-119.

Ree, M. J., & Craigie, M. A. (2007). Outcomes following mindfulness-based cognitive therapy in a heterogeneous sample of adult outpatients. *Behaviour Change, 24*(2), 70-86.

Rickwood, D., Blaszczynski, A., Delfabbro, P., Dowling, N., & Heading, K. (2010). The psychology of gambling. *InPsych, 32*(6), 11-21.

Safran, J. D., & Segal, Z. V. (1990). *Interpersonal Process in Cognitive Therapy*. New York: Basic Books.

Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse.* New York: Guilford Press.

Semple, R. J., Lee, J., Rosa, D., & Miller, L. F. (2010). A randomized trial of mindfulness-based cognitive therapy for children: Promoting mindful attention to enhance social-emotional resiliency in children. *Journal of Child and Family Studies, 19*(2), 218-229.

Shapiro, D. H. (1992). A preliminary study of long term meditators: Goals, effects, religious orientation, cognitions. *Journal of Transpersonal Psychology, 24*(1), 23–39.

Shapiro, S., Brown, K., & Biegel, G. (2007). Teaching self-care to caregivers: Effects of Mindfulness-Based Stress Reduction on the mental health of therapists in training. *Training and Education in Professional Psychology, 1*(2), 105-115.

Shapiro, S. L., Carlson, L. E., Astin, J. A., & Freedman, B. (2006). Mechanisms of mindfulness. *Journal of Clinical Psychology, 62*(3), 373-386.

Sharpe, L. (2002). A reformulated cognitive-behavioral model of problem gambling: A biopsychosocial perspective. *Clinical Psychology Review, 22*(1), 1-25.

Shead, N. W., Callan, M. J., & Hodgins, D. C. (2008). Probability discounting among gamblers: Differences across problem severity and affect-regulation expectancies. *Personality and Individual Differences, 45*, 536-541.

Simons, J., & Gaher, R. (2005). The distress tolerance scale: Development and validation of a self-report measure. *Motivation and Emotion, 29*, 83-102.

Smith, A. (2006). ”Like waking up from a dream”: Mindfulness training for older people with anxiety and depression. In R. Baer (Ed.), *Mindfulness-Based Treatment*

Approaches: A Clinicians Guide to Evidence Base and Applications (pp. 191-215). London: Academic Press.

Smith, A., Graham, L., & Senthinathan, S. (2007). Mindfulness-based cognitive therapy for recurring depression in older people: A qualitative study. *Aging & Mental Health, 11*(3), 346-357.

Stewart, S. H. & Zack, M. (2008). Development and psychometric evaluation of a three-dimensional Gambling Motives Questionnaire. *Addiction, 103*, 1110-1117.

Tavares, H., Martins, S. S., Zilberman, M. L., & el-Guebaly, N. (2002). Gamblers seeking treatment: Why haven't they come earlier? *Addictive Disorders & Their Treatment, 1*(2), 65-69.

Taylor, D. G., & Mireault, G. C. (2008). Mindfulness and self-regulation: A comparison of long-term and short-term meditators. *The Journal of Transpersonal Psychology, 40*(1), 88-99.

Teasdale J. D., Segal Z. V., & Williams J. M. G. (1995), How does cognitive therapy prevent depressive relapse and why should attentional control (mindfulness) training help?, *Behavioral Research and Therapy, 33*, 25-39.

Toll, B. A., Sobell, M. B., Wagner, E. F., & Sobell, L. C. (2001). The relationship between thought suppression and smoking cessation. *Addictive Behaviors, 26*, 509-515.

Toneatto, T., Vettese, L., & Nguyen, L. (2007). The role of mindfulness in the cognitive-behavioural treatment of problem gambling. *Journal of Gambling Issues, 19*, 91-100.

Vohs, K. D., & Baumeister, R. F. (2004). Understanding self-regulation. In R. F. Baumeister & K. D. Vohs (Eds.). *Handbook of self-regulation* (pp. 1-9). New York: Guilford Press.

Walker, M., Toneatto, T., Potenza, M. N., Petry, N., Ladouceur, R., Hodgins, D. C., et al. (2006). A framework for reporting outcomes in problem gambling treatment research: The Banff, Alberta Consensus. *Addiction, 101*(4), 504-511.

Walsh, R., & Roche, L. (1979). Precipitation of acute psychotic episodes in intensive meditation in individuals with a history of schizophrenia. *American Journal of Psychiatry, 136,* 1085-1086.

Washington, F. A. (2006). The relationship among rumination and distraction in pathological gamblers. *Dissertation Abstracts International: Section B: The Sciences and Engineering 67*(1-B), 573.

Wegner, D. M. (1989). *White bears and other unwanted thoughts: Suppression, obsession, and the psychology of mental control.* London: The Guilford Press.

Wegner, D. M., & Erber, R. (1992). The hyperaccessibility of suppressed thoughts. *Journal of Personality and Social Psychology, 63*, 903-912.

Wells, A. (2002). GAD, metacognition, and mindfulness: An information processing analysis. *Clinical Psychology: Science and Practice, 9*(1), 95-100.

Wells, A., & Matthews, G. (1994). *Attention and emotion: A clinical perspective*. Hove: Erlbaum.

Wells, A., & Matthews, G. (1996). Modelling cognition in emotional disorder: The S-REF model. *Behaviour Research and Therapy 33*, 579-583.

Westphal, J. R. (2008). How well are we helping problem gamblers? An update to the evidence base supporting problem gambling treatment. *International Journal of Mental Health and Addiction. 6*(2), 249-264.

Williams, J. M. G., & Swales, M. (2004). The use of mindfulness-based approaches for suicidal patients. *Archives of Suicide Research, 8*, 315-329.

Williams, M., Teasdale, J., Segal, Z., & Kabat-Zinn, J. (2007). *The Mindful Way through Depression*. New York: The Guilford Press.

Winters, K. C., & Kushner, M. G. (2003). Treatment issues pertaining to pathological gamblers with a comorbid disorder. *Journal of Gambling Studies, 19*(3), 261-277.

3. RESEARCH HISTORY

This chapter outlines the history of the current research to explore the efficacy of mindfulness-based cognitive therapy for problem gambling (MBCT-PG). Mindfulness-based cognitive therapy (MBCT) is an integration of components used in cognitive therapy and the mindfulness-based stress reduction program originally developed by Kabat-Zinn (2005). The essential feature of MBCT is that it teaches clients to become aware of present moment thoughts, feelings and bodily sensations with an attitude of non-judgmental acceptance. In this way, thoughts and feelings are seen by the client as subjective events that simply come and go, rather than a perceived reality that must be habitually enacted upon. While originally developed for prevention of relapse from depression, MBCT may be useful for problem gamblers because it teaches clients to disengage from the habitual dysfunctional cognitions commonly associated with problem gambling.

MBCT is considered applicable to heterogeneous groups (Ree & Craigie, 2007). However, because MBCT course content emphasises themes relating to prevention of relapse of depression, certain aspects of the course were modified in order to be of more relevance to problem gamblers. The mindfulness practices and techniques taught in MBCT-PG are identical to those used in MBCT. An MBCT-PG therapy manual was developed and course handouts prepared by the candidate after formal MBCT accreditation was obtained (see Appendix A).

Formal training in MBCT is required before clinicians can facilitate MBCT groups in the general community (Segal, Williams, & Teasdale, 2002). A personal mindfulness practice is also expected to be developed and maintained in order to gain familiarity with the mindfulness practices taught (Melbourne Academic Mindfulness Interest Group, 2006). The candidate received this training in 2007 as a certificate course conducted by the Monash University School of Psychology and Psychiatry. The certificate course is an eight

week program which follows the group format developed by Segal, Williams and Teasdale (2002). At the conclusion of the program, participants are required to attend a three-day weekend retreat in order to further develop MBCT skills. Facilitators were Professor Graham Meadows and Mr. Bob Sharples, who are recognised trainers and practitioners in MBCT.

Approval for this research was granted on 3 July 2008 by the Monash University Standing Committee on Ethics in Research Involving Humans (CF08/1123 2008000551) (see Appendix B). It was proposed that a pilot study and a larger randomised controlled trial be conducted in 2008 and 2009 to investigate the efficacy of MBCT-PG. The results of this research are presented in Chapter 5 and Chapter 6.

3.1. PILOT STUDY

The pilot study was conducted in 2008 to obtain preliminary data as to the efficacy of MBCT-PG and provide an opportunity to streamline the treatment protocol (see Appendices). The pilot study was to comprise an MBCT-PG only group comprising 12-15 treatment seeking self-identified problem gamblers. It was deemed inappropriate to recruit problem gamblers who had already independently sought assistance from existing gamblers help services. While permission from Gamblers HelpLine, a referral service for self-identified problem gamblers, was sought to refer callers to the research, this request was refused due to Gamblers HelpLine already referring callers to a relatively large number of other projects. Consequently, the recruitment phase of the pilot study commenced with the decision to place advertisements, posters, and flyers in local government areas (LGAs) known or likely to have a high prevalence of problem gamblers.

To ascertain the most suitable LGAs for recruitment, investigation of statistics available from the Victorian Commission for Gambling Regulation revealed the City of

Monash and City of Greater Dandenong as areas with significantly higher numbers of gaming machines per adult than the Victorian average. Gaming machine rates were used as a benchmark since electronic gaming machines have been associated with most gambling-related harm (Dowling, Smith, & Thomas, 2005; McMillen, Marshall, Ahmed, & Wenzel, 2004). The selected LGAs also had significantly greater gaming expenditures per adult when compared against the Victorian average (see Table 3 for latest statistics pertaining to metropolitan Melbourne).

Table 3

Electronic Gaming Machine Statistics – Metropolitan Melbourne – 2010

City / Shire	2010 Population (18+) Projection	VENUE NO.	EGM NO.	TOTAL NET EXPENDITURE 2009-10	Population (18+) per venue	Net EGM expenditure per adult	EGM per 1000 (18+)
City of Banyule	96,494	11	651	$59,644,350.22	8,772	$618	6.75
City of Bayside	72,255	6	225	$17,709,005.83	12,042	$245	3.11
City of Boroondara	131,281	5	205	$19,047,289.22	26,256	$145	1.56
City of Brimbank	137,542	15	953	$134,961,751.90	9,169	$981	6.93
City of Casey	190,745	13	899	$119,231,646.82	14,673	$625	4.71
City of Darebin	112,340	15	986	$87,395,139.83	7,489	$778	8.78
City of Frankston	98,724	10	596	$68,927,253.44	9,872	$698	6.04
City of Glen Eira	105,228	12	774	$75,278,883.13	8,769	$715	7.36
City of Greater Dandenong	104,882	15	944	$114,904,955.60	6,992	$1,096	9.00
City of Hobsons Bay	68,203	10	579	$49,836,821.55	6,820	$731	8.49
City of Hume	127,941	14	762	$101,275,032.09	9,139	$792	5.96
City of Kingston	114,841	17	944	$85,807,487.52	6,755	$747	8.22
City of Knox	119,697	11	855	$83,282,383.70	10,882	$696	7.14
City of Manningham	94,372	8	617	$64,835,228.33	11,797	$687	6.54
City of Maribyrnong	56,966	11	463	$56,179,153.68	5,179	$986	8.13
City of Maroondah	81,774	10	770	$67,290,864.26	8,177	$823	9.42
City of Melbourne	89,470	12	743	$65,574,982.67	7,456	$733	8.30
City of Monash	142,565	15	1,000	$121,199,336.56	9,504	$850	7.01
City of Moonee Valley	87,672	11	746	$75,473,013.36	7,970	$861	8.51
City of Moreland	119,398	15	765	$69,372,240.88	7,960	$581	6.41
City of Port Phillip	85,730	10	384	$28,196,036.07	8,573	$329	4.48
City of Stonnington	83,346	7	295	$22,341,508.77	11,907	$268	3.54
City of Whitehorse	122,657	7	554	$56,107,009.56	17,522	$457	4.52
City of Whittlesea	116,171	9	621	$94,451,837.62	12,908	$813	5.35
City of Wyndham	111,268	11	663	$81,735,012.55	10,115	$735	5.96
City of Yarra	67,766	8	308	$31,567,283.37	8,471	$466	4.55
Shire of Cardinia	53,917	4	225	$19,414,136.55	13,479	$360	4.17
Shire of Melton	76,373	6	407	$44,658,490.25	12,729	$585	5.33
Shire of Mornington Peninsula	115,043	18	842	$80,949,275.24	6,391	$704	7.32
Shire of Nillumbik	47,182	3	117	$9,953,208.67	15,727	$211	2.48
Shire of Yarra Ranges	111,390	8	427	$33,368,938.35	13,924	$300	3.83

Note: EGM denotes the total number of electronic gaming machines licensed as at 30 June 2010.
Population Figures Source: Estimated Resident Population VIF 2008 Projections. Projections by single year of age and sex for each Local Government Areas as at June 30th, 2010 (Department of Planning and Community Development).

Given the close location of the selected LGAs to the training facility in which the treatment was to take place (Monash Clinical Psychology Centre), a local newspaper with coverage in these municipalities was selected for advertising purposes. Posters and flyers were also positioned at Monash University – Clayton Campus, Monash Clinical Psychology Centre, local community centres, and in the private practices of consenting general practitioners and psychologists. Furthermore, a feature article was presented in a local newspaper which explained the research and provided contact numbers for interested parties (see Appendix C).

Despite the extensive recruitment methodology employed, relatively few inquiries were received from interested parties. Since only one case study had, at that time, reported on mindfulness for problem gambling (Toneatto, Vettese, & Nguyen, 2007), it was decided to proceed with the pilot study on the basis that it could be written up as a series of case studies. These case studies would provide additional evidence as to the efficacy of mindfulness in a treatment seeking population of problem gamblers. Once completed, the results from these case studies would form the basis of a press release so that the wider coverage afforded by newspaper and radio announcements facilitate recruitment of a sufficient number of participants for a larger randomised controlled study to be conducted over the course of 2008 and 2009.

Participants who consented to participate in the pilot study were invited to attend an evaluation interview where demographic details were obtained, problem gambling behaviour assessed, and informed consent provided (see Appendix D). Pre-intervention questionnaires and gambling diaries were also distributed for completion prior to the intervention. Post-intervention and follow-up questionnaires were provided during the course of therapy (see Appendix E). *Please note*: some questionnaires are not included in

Appendix E due to copyright. A flow diagram of participants through each stage of the

pilot study is provided in Figure 2.

Figure 2. Flow of participants through study protocol – pilot study.

As can be seen from Figure 2, recruitment numbers for the pilot study were limited, with only three people attending the first session of the intervention. One person was prepared to try the intervention but expressed a degree of scepticism toward the treatment protocol during the in-person evaluation. This person dropped out of the intervention after session 4. The remaining participants completed the program and attended a four-week follow-up session held at the Monash Clinical Psychology Centre. For a detailed description of the pilot study methodology and results, please refer to Chapter 5.

3.2. MAIN STUDY

In its original conceptualisation, the randomised controlled trial (RCT) was to comprise a MBCT-PG treatment group and a CBT treatment-as-usual (TAU) group. Participants were to be randomly allocated to one of these groups. Since previous PG treatment studies have reported a 20 to 50% drop out rate (López Viets & Miller, 1997), it was estimated that up to eight treatment programs (of approximately 12-20 participants each) would be required in order to achieve a maximum sample size of 100 participants. One of the supervisors had previously achieved this sample size for a treatment outcome study conducted in the same jurisdiction for her doctoral studies (Dowling, 2003). Ongoing advertising of the research was therefore required in order to achieve this number.

The aim of the main study was to compare the treatment outcomes of MBCT-PG with best practice CBT for problem gambling. A secondary aim was to explore the acceptability of MBCT-PG as an alternative treatment for problem gambling and compare treatment attrition rates for MBCT-PG and CBT for problem gambling. It was hypothesised that both groups would report improved gambling behaviour, improved readiness to change and have reduced psychological distress. It was also hypothesised that the CBT group would report reduced gambling-related cognitive distortions compared to

the MBCT group. Furthermore, it was hypothesised that the MBCT group would report a greater improvement in mindfulness when compared to the CBT group.

Table 4 outlines the proposed treatment protocol for the main study.

Table 4

Proposed structure of the MBCT-PG and CBT interventions

Session No.	MBCT-PG group	CBT group
1	Recognition of the tendency to be on automatic pilot and the danger of this to let gambling triggers lead to gambling behaviour. How to step out of this through awareness of each moment.	Functional analysis of gambling behaviour through analysis of gambling triggers, the positive and negative consequences of gambling, and brainstorming new ways to manage gambling triggers.
2	Dealing with barriers by becoming aware of the chatter of the mind and how this controls our reactions to everyday events.	Alternative activity planning.
3	Taking this awareness intentionally to the breath to aid in becoming more focussed and gathered.	Understanding cognitive biases associated with gambling.
4	Staying present through mindfulness to enable a wider perspective of everyday experience.	Understanding cognitive biases associated with gambling (continued).
5	Allowing present experience to be just as it is, without judgment.	Problem solving training, to help in cope with difficulties that led to gambling.
6	Recognition that thoughts are merely thoughts, not facts.	Social skills training for handling interpersonal problems.
7	Making plans for the best response to the signs of relapse.	
8	Maintenance of a good mindfulness practice.	Relapse prevention.

The poor recruitment seen in the pilot study resulted in the re-evaluation of the means by which sufficient numbers could be achieved for the main study. Inquiries with Monash University Media Communications after the pilot study revealed that a media release could only be provided if one of two criteria were met. The first was if the results of a major study were ready to be announced. The second was if the results were of a study that was new and innovative. However, a media release template was not provided as Media Communications considered that the pilot study did not satisfy these criteria. Media Communications advised the utilisation of the university-wide electronic newsletter for recruitment purposes. Since a recruitment methodology with wider media coverage than this newsletter had been used, this approach was deemed of little benefit in terms of broadening recruitment opportunities.

Newspaper and radio media coverage was considered the most effective means by which to recruit sufficient numbers for the larger randomised controlled trial. An article was published in the Australian Association for Cognitive and Behaviour Therapy (AACBT, 2008) Victorian Branch Newsletter in an attempt to gain professional, media, and participant interest. Furthermore, radio and newspaper outlets with coverage over metropolitan Melbourne were also contacted for this purpose. While no radio station responded, the Melbourne MX newspaper published a small article of the research along with contact details for interested people. It was also decided to relocate the treatment centre to a more centralised location with easier access to public transport. The Problem Gambling Research and Treatment Centre kindly made available a training facility at Melbourne University for this purpose at no cost.

Participants who consented to participate in the main study were invited to attend an evaluation interview where demographic details were obtained, problem gambling behaviour assessed, and informed consent provided (see Appendix D). Pre-intervention

questionnaires and gambling diaries were also distributed for completion prior to the

intervention. Post-intervention and follow-up questionnaires were provided during the

course of therapy (see Appendix E). *Please note*: some questionnaires are not included in

Appendix E due to copyright. A flow diagram of participants through each stage of the

RCT study is provided in Figure 3.
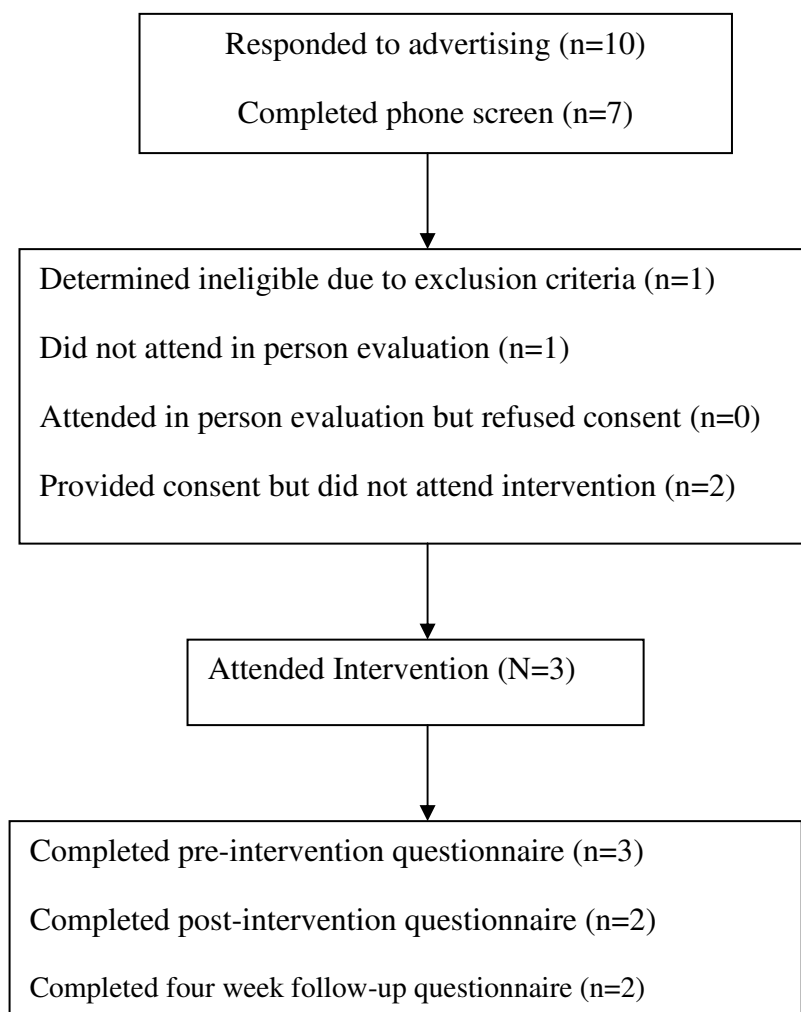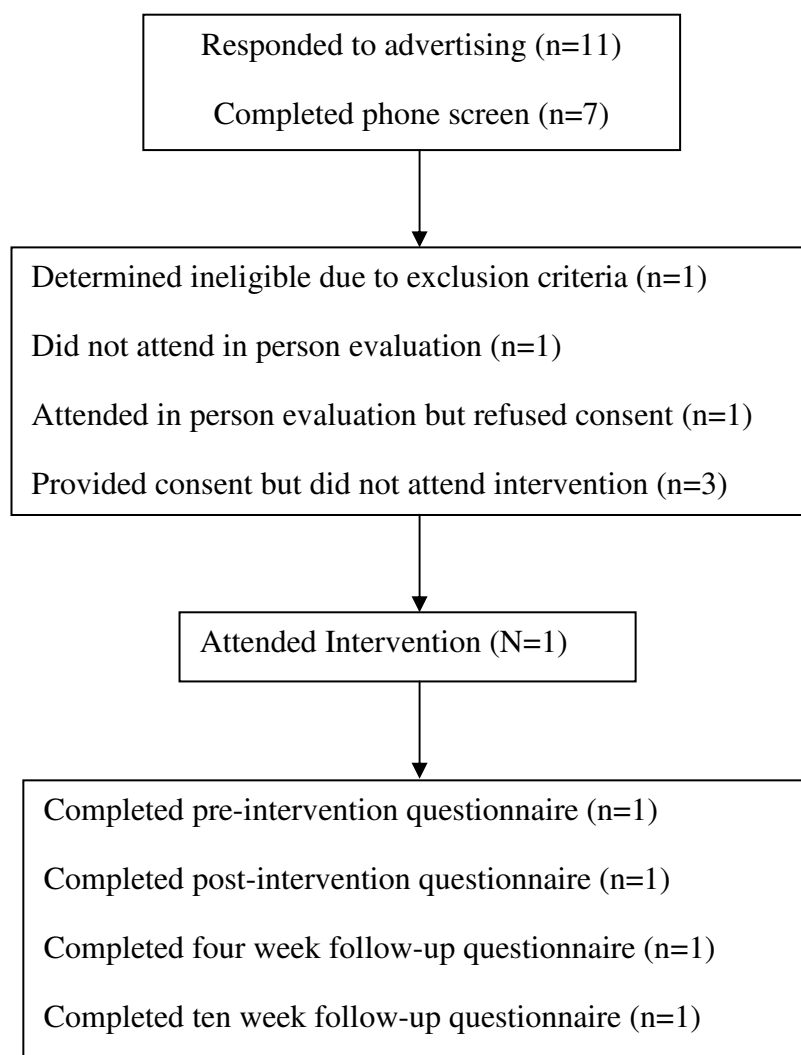
Figure 3. Flow of participants through study protocol – main study.

As can be seen from Figure 3, recruitment for the main study was again poor. Salient factors reported in previous research with respect to recruitment difficulties are denial that gambling is a problem, scepticism towards treatment, lack of access to low cost treatments, shame and secrecy, lonely attempts at self-control, and chasing losses in an attempt to bail out of problems caused by betting in the first place (Tavares, Martins, Zilberman, & el-Guebaly, 2002). These factors may have operated as major obstacles to this research. Consequently, the original proposal to conduct the RCT was abandoned in favour of another case study.

The results of this case study were accepted for publication in *Clinical Case Studies* and are presented in Chapter 6 using the format required for this journal.

3.3. FURTHER INVESTIGATIONS OF MINDFULNESS IN CONTEXT OF PROBLEM GAMBLING

Due to the poor recruitment numbers obtained in both mindfulness-based cognitive therapy studies, the candidate and supervisors concluded that obtaining adequate numbers for a RCT of mindfulness-based cognitive therapy for problem gambling would not be feasible in the candidature time remaining. To facilitate investigations into the relationship between the mindfulness construct and problem gambling outcomes, a review of the mindfulness and problem gambling literature revealed that there was an inverse relationship between dispositional mindfulness and problem gambling outcomes and that this relationship may be mediated by psychological distress (Lakey, Campbell, Brown, & Goodie, 2007). The general mindfulness literature also suggested that the inverse relationship between mindfulness and psychological distress was mediated by cognitive elements, including rumination, thought suppression and emotional dysregulation (Coffey

& Hartman, 2008). As no study had yet investigated these relationships, two additional studies were proposed to be conducted over 2009 and 2010.

Since both studies did not involve the treatment of problem gamblers, the ethical restrictions in relation to utilising clients already receiving assistance for their gambling problem no longer applied. Consequently, the candidate and supervisors consulted with Gambler's Help Southern with the aim of appending a questionnaire to a survey of current clients attending this service to investigate the relationship between dispositional mindfulness and problem gambling further (see Appendix F). Gambler's Help is an initiative of the Victorian State Government to provide support, advice, and information to gamblers and non-gamblers and operates in locations throughout metropolitan and regional Victoria in Australia. The Gamblers Help Southern survey is an initiative of this service which is conducted periodically to gain an extended understanding of client perceptions of the counselling service. The survey was voluntary and there was no obligation for clients to complete it. Permission was obtained from Gambler's Help Southern and ethics approval was granted by the Monash University Standing Committee on Ethics in Research involving Humans (Ethics number CF09/1544 – 2009000828) (see Appendix B). The questionnaire for this project was located on a separate sheet to that of the Gamblers Help Southern client survey sheet. It included no identifying details. The sheet was then removed by the participant's Gamblers Help counsellor and sealed in an envelope for later collection.

Gamblers Help City was also approached to seek approval for an additional mindfulness questionnaire to be appended to a proposed survey of Gamblers Help City clients. This survey resulted following the collaboration between Gamblers Help City and the Problem Gambling Research and Treatment Centre to evaluate gambling behaviour and

comorbidity in new clients. Ethics approval for this research (Ethics number CF09/1592 – 2009000829) was obtained and formal permission was granted by Gamblers Help City.

Instruments were included in both surveys with the intention of exploring the role of dispositional mindfulness in problem gambling. While the data from both surveys were originally intended to be written up as two separate studies, the Gamblers Help Southern study failed to achieve a sample size adequate for regression analyses. Because both studies were designed to assess the same research questions, the data from both surveys were presented in one manuscript. In essence, the paper explored the mechanisms of mindfulness which underlie the relationship between dispositional mindfulness, psychological distress and problem gambling outcomes. The following chapter discusses the results obtained in these two studies. It has been submitted to the *Psychology of Addictive Behaviours*.

4. Mechanisms of Action in the Inverse Relationship between Dispositional Mindfulness and Problem Gambling Behaviour

4.1 Introduction to the Second Paper

This chapter constitutes an article submitted for publication in *Psychology of Addictive Behaviors*. The purpose of the article was to investigate the role of dispositional mindfulness in problem gambling behaviour. As stated in Chapter 2, psychological distress may act as a mediator in the inverse relationship between dispositional mindfulness and problem gambling behaviour. Furthermore, the literature indicates that rumination, thought suppression, emotional dysregulation may act as mediators in the inverse relationship between dispositional mindfulness and psychological distress. Therefore, this article examined these relationships using hierarchical regression analysis in two clinical samples.

The format of this chapter is consistent with the *Psychology of Addictive Behaviors* publication requirements. However, for ease of reading, tables and figures are inserted in the text as they should appear and the manuscript pagination has been replaced with thesis pagination.

4.2 DECLARATION FOR THESIS CHAPTER 4

Monash University

Declaration by candidate

In the case of Chapter 4 the nature and extent of my contribution to the work was the following:

Nature of contribution	Extent of contribution (%)
Conceptualism of the model and model variables, identification of constructs and their operationalisation, data entry, data analysis and preparation of manuscript.	70%

The following co-authors contributed to the work. Co-authors who are students at Monash University must also indicate the extent of their contribution in percentage terms:

Name	Nature of contribution	Extent of contribution (%) for student co-authors only
Nicki Dowling	Assistance in the conceptualism of the model and model variables, including identification of constructs and their operationalisation. Further, provided guidance on the framing of the manuscript and review and feedback on draft manuscripts.	NA
Sabura Allen	Facilitation of conceptualism of the model and model variables, including identification of constructs and their operationalisation. Further, provided guidance on the development of the manuscript and review and feedback of draft manuscripts.	NA

Candidate's Signature		Date

Declaration by co-authors

The undersigned hereby certify that:

(7) the above declaration correctly reflects the nature and extent of the candidate's contribution to this work, and the nature of the contribution of each of the co-authors.

(8) they meet the criteria for authorship in that they have participated in the conception, execution, or interpretation, of at least that part of the publication in their field of expertise;

(9) they take public responsibility for their part of the publication, except for the responsible author who accepts overall responsibility for the publication;

(10)   there are no other authors of the publication according to these criteria;

(11)   potential conflicts of interest have been disclosed to (a) granting bodies, (b) the editor or publisher of journals or other publications, and (c) the head of the responsible academic unit; and

(12)   the original data are stored at the following location(s) and will be held for at least five years from the date indicated below:

Location(s)	**Problem Gambling Research and Treatment Centre, Melbourne University, Parkdale**

[Please note that the location(s) must be institutional in nature, and should be indicated here as a department, centre or institute, with specific campus identification where relevant.]

Signature 1		**Date**
	████████	19/4/2011
Signature 2		

■■■

4.3 MANUSCRIPT OF PAPER 2

Running head: MECHANISMS OF MINDFULNESS AND PROBLEM GAMBLING

Mechanisms of action in the inverse relationship between dispositional mindfulness and

problem gambling behaviour

Steven M. de Lisle[1], Nicki A. Dowling[2]

& J. Sabura Allen[1]

[1] School of Psychology and Psychiatry, Monash University, Melbourne, Victoria, Australia
[2] Problem Gambling Research and Treatment Centre, University of Melbourne, Victoria, Australia

Abstract

Previous studies have found an inverse relationship between dispositional mindfulness and problem gambling severity. This paper presents the findings from two studies of treatment seeking problem gamblers designed to explore the role of dispositional mindfulness in problem gambling. Treatment-seeking problem gamblers displayed significantly lower dispositional mindfulness scores than adult community members and university students. Dispositional mindfulness was significantly related to most indices of gambling, and psychological distress was an important mechanism in these relationships. Rumination, emotion dysregulation and thought suppression were also implicated as mediators in the inverse relationship between dispositional mindfulness and psychological distress. Taken together, the findings provide theoretical support for existing models of mindfulness which suggest that mindfulness operates by reducing psychological distress through these cognitive mechanisms. They also highlight mindfulness training as a new and innovative therapy that may improve treatment effectiveness for problem gambling by helping problem gamblers attend to present moment thoughts and feelings with a sense of openness and curiosity.

Keywords

According to the Diagnostic and Statistical Manual-IV-TR (DSM-IV-TR; American Psychiatric Association, 2000), pathological gambling is characterised "by recurrent and persistent maladaptive gambling behaviour" (p.663). This maladaptive gambling behaviour has traditionally been associated with adverse financial, personal, social, and familial consequences, not only for the individual concerned, but for their family and community (National Research Council, 1999; Petry, 2005; Shaffer & Hall, 2001). To meet DSM-IV-TR criteria for pathological gambling, a person must meet five out of ten criteria. In jurisdictions that tend to favour the medical model, the term 'problem gambling' is often applied to gambling that does not meet full DSM-TR-IV diagnostic criteria (Volberg, 2002). In contrast, in jurisdictions that tend to favour a dimensional model in which gamblers can slide along a continuum ranging from no gambling through to problematic gambling (Blaszczynski, 1999), the term 'problem gambling' is used as an all-inclusive term that describes the full range of disordered gambling (Productivity Commission, 1999). For the purposes of this paper, the term 'problem gambling' is used in accordance with the dimensional model.

Currently, cognitive and behavioural therapy (CBT) is considered the treatment of choice for problem gambling (Ladouceur, Sylvain, Boutin, & Doucet, 1998; López Viets & Miller, 1997; Rickwood, Blaszczynski, Delfabbro, Dowling, & Heading, 2010). However, CBT is not effective for all problem gamblers and relapse rates, where gambling behaviour returns to problematic levels, can be relatively high with estimates of up to 31% (Echeburúa, Báez, & Fernández-Montalvo, 1996; Toneatto, Vettese, & Nguyen, 2007). Moreover, CBT efficacy studies generally report high rates of client attrition as therapy proceeds (Echeburúa et al. 1996; Petry et al., 2006).

In consideration of the limitations of current approaches for problem gambling, it is important to consider innovative therapeutic approaches that can enhance treatment

effectiveness (Najavits, 2003). Mindfulness-based psychotherapy may achieve this aim by helping problem gamblers attend, with an attitude of discovery, observation and dispassionate awareness, to gambling-related thoughts and feelings (de Lisle, Dowling, & Allen, 2011; Toneatto et al., 2007). While there is evidence to suggest that mindfulness-based psychotherapy may improve therapeutic outcomes for problem gambling, the extent of current research efforts are limited to only two case studies (de Lisle et al., 2011; Toneatto et al., 2007). In both cases, subjects refrained from gambling after previous cognitive-behavioural interventions had failed. Moreover, the de Lisle et al. (2011) study found that the mindfulness intervention significantly reduced levels of co-morbid depression and anxiety to sub-clinical levels.

Mindfulness is an inherent state of consciousness that ranges from heightened states of clarity and sensitivity through to lower levels of habitual and automatic thoughts or actions (Brown & Ryan, 2003). Brown and Ryan suggested that individuals must differ in the frequency with which they deploy attention and awareness and that there must be intra-individual variations in the levels of mindfulness. According to the big-5 model of disposition and situation interaction (Reynolds & Karraker, 2003), behaviour is restricted to acts that do not contradict the dispositional tendencies of the person. So, given a high risk gambling situation, context-appropriate behavioural responses are elicited in accordance with the dispositional parameters of the individual concerned. From this perspective, gamblers with a relatively greater level of dispositional mindfulness may exhibit differing behavioural responses to those with a lower level of dispositional mindfulness. This dispositional conceptualisation of mindfulness is useful because it highlights mindfulness as an innate skill or tendency that can contribute to the behavioural responses of a given situation.

However, the extent of research efforts into dispositional mindfulness and problem gambling are currently limited. In a non-randomised study of 185 undergraduate students who gambled at least weekly, Lakey, Campbell, Brown, & Goodie (2007) found that dispositional mindfulness was negatively correlated with gambling-related pathology after controlling for gambling frequency and trait self-control. Based on this finding, Lakey et al. (2007) speculated that a higher level of dispositional mindfulness provided a level of present-centred awareness to gambling-related thoughts and feelings which facilitated the application of more adaptive behavioural choices. In understanding the mechanisms involved in this process, Lakey et al. found that the relation between dispositional mindfulness and problem gambling was mediated by cognitive processes which underlie gambling-related risk-taking and decision-making tasks. As such, gamblers with a higher level of dispositional mindfulness displayed greater accuracy in assessing gambling-related risk taking and could learn mixed reward and punishment contingencies better than less mindful gamblers. However, performance on risk-taking tasks only partially mediated the relationship between mindfulness and problem gambling severity, suggesting that other mechanisms were involved in this relationship. Lakey et al. speculated that mechanisms relating to psychological distress represented one possibility.

There is evidence that there is an inverse relationship between dispositional mindfulness and psychological distress in a range of samples such as university students, community adults, and substance users (Arch & Craske, 2006; Bowen, Witkiewitz, Dillworth, & Marlatt, 2007; Carmody, Baer, Lykins, & Olendzki, 2009; Coffey & Hartman, 2008; Shapiro, Carlson, Astin, & Freedman, 2006). That is, a heightened degree of dispositional mindfulness is associated with less psychological distress. Dickerson, Baron, Hong, and Cottrell (1996) noted that problem gambling is also associated with significant personal distress. This often manifests in terms of major depressive disorders,

suicide attempts, and alcohol and substance abuse (Australian Institute of Gambling Research, 1995). In a recent meta-analysis of the literature which has reported on the prevalence of co-morbid disorders in problem and pathological gambling, the highest mean prevalence was for nicotine dependence (60.1%), followed by substance use disorder (57.5%), mood disorders (37.9%), and anxiety disorders (37.4%) (Lorains, Cowlishaw, & Thomas, 2011). Problem gamblers also suffer from communication disorders, alexithymia, dyslexia and learning disabilities, personality disorders, and other impulse control disorders (Petry, 2005; Winters & Kushner, 2003). Furthermore, gambling gives rise to different levels and types of harm, including personal, familial, social, vocational, educational, financial and legal difficulties (Productivity Commission, 2010; Rickwood et al., 2010).

There is an emerging literature that has investigated the role of some psychological processes in mediating the inverse relationship between dispositional mindfulness and psychological distress (Arch & Craske, 2006; Bowen et al., 2007; Carmody et al., 2009; Coffey & Hartman, 2008; Shapiro et al., 2006). Rumination has been identified as a mediator in this relationship in two samples of introductory psychology students (Coffey & Hartman, 2008). Other research has established a significant relationship between dysphoric affect and automatic ruminative thought patterns in those at risk of relapse from depression (Teasdale, Segal, & Williams, 1995). Given the high rates of co-morbidity and distress associated with problem gambling, it is reasonable to assume that problem gambling is also associated with similar automatic ruminative thought patterns. Problem gamblers are also frequently pre-occupied by habitual patterns of gambling-related thinking (Atlas & Peterson, 1990; Ratelle, Vallerand, Mageau, Rousseau, & Provencher, 2004) directed toward reliving past gambling experiences, planning to gamble, or thinking of ways to secure money with which to gamble (American Psychiatric Association, 2000).

McIntosh and Martin (1992) considered that when individuals become attached to the outcome of such patterns of thinking, psychological distress may be experienced.

There is clear empirical support for the role of mindfulness in reducing ruminative thought in the general and clinical population (Borders, Earleywine, & Jajodia, 2010; Jain et al., 2007; Ramel, Goldin, Camona, & McQuaid, 2004; Shapiro, Brown, & Biegel, 2007). Since problem gamblers demonstrate a strong attachment to ruminative thoughts and persistent thoughts associated with gambling (Orford, Morison, & Somers, 1996), a higher level of dispositional mindfulness may enable gamblers to more effectively disrupt the connection between gambling and non-gambling cognitions and psychological distress, thereby placing them in a much better position to choose what action to perform.

Coffey and Hartman (2008) have also identified emotion dysregulation as a mediator in the inverse relationship between dispositional mindfulness and psychological distress in two samples of introductory psychology students. According to Simons and Gaher (2005), the capacity to tolerate strong emotions, appraise the experience of distress, regulate strong emotions, and to become absorbed by the presence of distressing emotions is collectively referred to as *distress tolerance*. Distress tolerance represents an individual's overall capacity "to experience and withstand negative psychological states" (Simon & Gaher, 2005, p.83). In this context, emotion dysregulation refers to the apparent inability of some individuals to regulate strong emotions (Chambers, Gullone, & Allen, 2009) and loads on the regulation facet of the overall distress tolerance construct (Simon & Gaher, 2005).

Emotion dysregulation is implicated in over half of the Axis I and Axis II DSM-IV-TR psychiatric disorders (Chambers, Gullone, & Allen, 2009) and is implicated in problem and pathological gambling (Blaszczynski & Nower, 2002; Lee, LaBrie, Grant, Kim, & Shaffer, 2008; Sharpe, 2002; Shead, Callan, & Hodgins, 2008; Stewart & Zack, 2008).

Although emotion dysregulation among problem gamblers has not been extensively researched, there is emerging evidence that there is heightened emotion dysregulation among problem gamblers (Lee et al., 2008) and that problem gamblers are motivated to gamble in order to reduce negative mood states or to improve positive emotions (Blaszczynski & Nower, 2002; Sharpe, 2002; Shead et al., 2008; Stewart & Zack, 2008).

Increasingly, mindfulness training is used as a clinical intervention to assist people cope with strong emotional states (Hayes & Feldman, 2004; Linehan, 1993a). Shapiro et al. (2006) considered that mindfulness training promoted the ability to regulate emotions more effectively by enhancing the ability of an individual to mindfully attend to present moment experience without reactivity. Arch and Craske (2006) found that a non-clinical sample reported reduced negative affect and greater willingness to view highly negative images after mindfulness training. Furthermore, Kumar, Feldman, and Hayes (2008) demonstrated that mindfulness training was negatively correlated with avoidance and rumination. In this way, a higher level of dispositional mindfulness may allow problem gamblers to step back from strong emotional states and simply observe such states come and go without engaging in a behavioural response. However, no study has investigated the role of mindfulness in promoting emotional regulation in problem gamblers.

Thought suppression may represent another mechanism in the inverse relationship between dispositional mindfulness and psychological distress (Bowen et al., 2007). Thought suppression is considered an important factor in the maintenance of a wide range of clinical disorders (Najmi & Wegner, 2008; Rassin, 2005). Furthermore, it is known that many problem gamblers attempt to suppress unwanted thoughts as they attempt to discontinue gambling (Ciarrocchi, 2002). However, attempts to suppress thoughts often lead to a paradoxical increase in the frequency and intensity of such thoughts (Wegner,

1989; Wegner & Erber, 1992). Thought suppression may therefore play a role in the relapse signatures of those attempting to discontinue gambling.

While the mechanisms of action are not fully understood, research suggests that acceptance of unwanted thoughts partially mediates the relationship between mindfulness therapy participation and addictive behaviour (Bowen et al., 2007). Rather than decreasing the frequency of unwanted thoughts, mindfulness training instead imbues participants with an adaptive coping response for such thoughts as they enter conscious awareness. It would therefore be expected that increasing the dispositional mindfulness of problem gamblers would increase awareness and acceptance of unwanted thoughts as they attempt to disengage from gambling activity.

Taken together, rumination, emotion dysregulation, and suppression of unwanted thoughts are likely contributors to continued problem gambling behaviour in those seeking to discontinue gambling. Importantly, these factors have already been identified as mediational mechanisms in the inverse relationship between mindfulness and psychological distress (Arch & Craske, 2006; Bowen et al., 2007; Carmody et al., 2009; Coffey & Hartman, 2008; Shapiro et al., 2006). Mindfulness interventions may be helpful in raising the awareness of problem gamblers that psychological distress and gambling-related thoughts are not necessarily an accurate reflection of reality that must be enacted upon. Problem gamblers may then learn to manage gambling and non-gambling related thoughts and feelings in a more direct and helpful way rather than using gambling as a means of decreasing the psychological distress associated with them.

This paper presents the findings from two studies of treatment seeking problem gamblers designed to explore the role of dispositional mindfulness in problem gambling. The first aim of these studies is to compare dispositional mindfulness scores of treatment seeking populations of problem gamblers with normative samples. It is hypothesised that

problem gamblers will display lower dispositional mindfulness scores than normative samples of adult community members and university students. A second aim is to explore the relationship between dispositional mindfulness and indices of gambling behaviour in a treatment seeking population of problem gamblers. It is hypothesised that dispositional mindfulness will be related to gambling pre-occupation, gambling urges, problem gambling severity, gambling expenditure, gambling frequency, and gambling duration. A third aim is to explore Lakey's et al. (2007) hypothesis that psychological distress mediates the relationship between dispositional mindfulness and these indices of gambling behaviour. It is hypothesised that psychological distress will mediate the relationship between dispositional mindfulness and gambling pre-occupation, gambling urges, problem gambling severity, gambling expenditure, gambling frequency, and gambling duration. A final aim is to explore the degree to which mechanisms of mindfulness mediate the relationship between dispositional mindfulness and psychological distress. It is hypothesised that rumination, emotion dysregulation/distress tolerance, and thought suppression will mediate the relationship between dispositional mindfulness and psychological distress.

STUDY 1

Method

Participants

Participants were 78 (49 male, 29 female) self-identified problem gamblers who were active clients of a metropolitan Melbourne problem gambling service. Males ranged from 21 to 76 years of age (*Mdn*=43, *M*=44.6, *SD*=12.9) and females ranged from 37 to 76 years of age (*Mdn*=58, *M*=57.0, *SD*=10.8). Most participants (60%) were not in a co-habiting relationship. Sixty one per cent of participants reported that they gambled exclusively on electronic gaming machines (EGMs). Smaller proportions reported that they engaged in

non-EGM activities such as horse racing (8%), casino betting (4%), and on multiple

gambling activities (25%). In relation to gambling severity, 13% reported that they had

never thought that their gambling had been a problem over the previous four weeks, 22%

reported they sometimes considered their gambling had been a problem, 16% considered

their gambling a problem most of the time, and 17% considered their gambling a problem

almost always. Gambling dollars spent over the previous fortnight (gambling expenditure)

ranged from $AUS0.00 to $AUS3000.00 (*Mdn*=0, *M*=242.33, *SD*=516.43). Days spent

gambling over the previous fortnight (gambling frequency) ranged from 0 to 14 days

(*Mdn*=0, *M*=1.74, *SD*=2.82).

Measures

The survey used for this research included items that assessed demographic characteristics,

dispositional mindfulness, possible mediators (rumination, emotion dysregulation, and

thought suppression), psychological distress, and indices of gambling behaviour (gambling

urges, problem gambling severity, gambling expenditure, and gambling frequency).

    Dispositional mindfulness. The Mindfulness Awareness Assessment Scale (MAAS;

Brown & Ryan, 2003) is a 15-item self-report measure which assesses attention to, and

awareness of, present moment experience. Items are arranged on a 6-point scale ranging

from (1) *almost always* to (6) *almost never*. Positive correlations between the MAAS and

theoretically related constructs, such as openness to experience, emotional intelligence, and

well being, provided moderate evidence for convergent validity. Negative correlations

between the MAAS and constructs such as rumination and social anxiety, as well as lack of

correlation with other unrelated constructs provided evidence for discriminant validity. The

scale has adequate internal consistency, ranging from .82 to .87 across samples (Brown &

Ryan, 2003). The internal consistency of the MAAS in the current sample was excellent (α

= .90).

Rumination. The Rumination subscale of the Rumination-Reflection Questionnaire (RRQ; Trapnell & Campbell, 1999) is a 12-item scale that measures the tendency to ruminate on events and experiences. Items are arranged on 5-point scale ranging from (1) *strongly disagree* to (5) *strongly agree*. Internal consistency is good, with Cronbach α ranging from .89 to .92 across samples (Trapnell & Campbell, 1999) and .85 in the current sample.

Emotion dysregulation. The Repair subscale of the Trait Meta-Mood Scale (TMMS; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995) comprises six items which measure the ability to regulate negative affect. Items are arranged on 5-point scale ranging from (1) *strongly disagree* to (5) *strongly agree*. Higher scores reflect greater ability to regulate negative affect. Internal consistency is adequate, with Cronbach α ranging from .79 to .81 across samples (Salovey et al., 1995) and .66 in the current sample.

Thought suppression. The White Bear Suppression Inventory (WBSI; Wegner & Zanakos, 1994) is a 15-item scale that measures the tendency of individuals to suppress thoughts across a variety of situations and thought topics. Items are arranged on a 5-point scale ranging from (1) *strongly disagree* to (5) *strongly agree*, with high scores indicating chronic thought suppression. The WBSI is significantly correlated with other measures of psychopathology such as depression, anxiety, obsessive-compulsive symptoms, and pathological worry. The internal consistency of the WBSI is excellent, with a Cronbach α of .91 in previous studies (Schmidt et al., 2009; Wegner & Zanakos, 1994) and .89 in the current sample

Psychological distress. The Kessler 6 (K6; Kessler et al., 2002) is a validated quantifier of non-specific psychological distress, based on six questions about the level of nervousness, agitation, psychological fatigue and depression, which participants may have experienced over the previous four weeks. This tool was selected for its brevity and

reliability and the 5-point scale used is sensitive enough to discriminate for change over a relatively short period of time (i.e. from commencement of counselling to the time of case completion). It had excellent internal consistency in previous studies (Cronbach's α = .89) (Kessler et al., 2002) and the current study (Cronbach's α = .93).

Gambling urges. The Gambling Urges Scale (GUS; Raylu & Oei, 2004a) is a six item scale that assesses gambling-related urges. Items are arranged on a 7-point scale ranging from (0) *strongly disagree* to (6) *strongly agree*. The GUS can significantly discriminate problem from non-problem gamblers and predict responses to the South Oaks Gambling Screen (SOGS; Lesieur & Blume, 1987), providing good evidence for predictive and criterion-related validity, respectively. Concurrent validity is good, with significant and positive correlations with the Motivation Toward Gambling Scale (MTGS; Chantal, Vallerand, & Valliéres, 1994), SOGS, Gambling Related Cognitions Scale (GRCS; Raylu & Oei, 2004b) and the Depression Anxiety Stress Scale (DASS; Lovibond & Lovibond, 1995). Internal consistency is good in previous studies (Cronbach α = .81) and in the current study (Cronbach's α = .95) (Raylu & Oei, 2004a).

Problem gambling severity. Item 5 from the Problem Gambling Severity Index (PGSI) of the Canadian Problem Gambling Index (CPGI; Ferris & Wynne, 2001) was used to identify whether the respondent had thought that their gambling had been a problem over the previous four weeks. Responses are rated on a four-point scale ranging from (0) *never* to (3) *almost always*.

Gambling expenditure. A single item asked respondents to report on the amount of money gambled over the previous fortnight.

Gambling frequency. A single item asked respondents to report on the number of days gambled over the previous fortnight.

Procedure

Approval for this research (Ethics number CF09/1544 – 2009000828) was granted by the Monash University Standing Committee on Ethics in Research involving Humans and by the specialist problem gambling service (Gamblers Help Southern) in which the research was conducted. Gambler's Help Southern operates in multiple locations throughout metropolitan Melbourne (Australia) and provides support, advice, and information to gamblers and non-gamblers. The questionnaire used for this research was added to a periodic survey of current clients designed to gain an extended understanding of their experience of the service. Every existing client of Gambler's Help Southern was offered the opportunity to complete the survey which was conducted in the third quarters of 2008 and 2009. However, clients were not obliged to complete the questionnaires and were at liberty to withdraw consent at any time. Gamblers Help counsellors distributed copies of the survey questionnaires to consenting clients. The survey questions were then completed in a waiting room and returned to the counsellor. The questions for this study were located on a separate sheet that had no identifying details. The sheet was then removed by the counsellor and sealed in an envelope for later collection by the research team.

<div align="center">

Data Analysis

</div>

Data preparation. SPSS 16.0 was employed to examine the raw data to ensure that all data values were within range.

Missing value analysis. Data screening was conducted prior to commencement of analysis. Overall, 4.7% of the major study variables data was missing. Given the missing data was less than 5% and appeared to be at random, it was not considered as a serious threat to data integrity (Tabachnick & Fidell, 2001). Respondents completing less than 30% of any scale or subscale were excluded from analysis associated with that scale or subscale using pair-wise deletion. Mean person substitution (Tabachnick & Fidell, 2001)

was employed to impute missing data for cases with less than 30% missing data on individual scales or subscales.

Outliers. Histogram and z-score analyses were used to screen for potential outliers. It was found that z-scores of all variables, with the exception of gambling expenditure and gambling frequency, fell into the range ($z > \pm3.29$) recommended by Tabachnick and Fidell (2001). Inspection of item responses revealed that outliers for these variables represented a realistic depiction of problem gambling behaviour and were retained in the analysis.

Normality. A range of graphical and statistical approaches were employed to assess the normality of the distribution of scores for the continuous variables. These approaches included an examination of histograms, normal Q-Q plots, detrended normal Q-Q plots, the Kolmogorov-Smirnov statistic, the skewness statistic, and kurtosis statistic. This examination revealed that gambling expenditure and gambling frequency were significantly skewed and had non-normal distributions.

Table 5 provides the psychometric properties of each scale, data preparation, and results of assumption testing for Study 1.

Table 5

Psychometric properties of each scale, data preparation, and results of assumption testing – Study 1

	No. of items	n (post-imputation)	M	SD	α	Range	Minimum	Maximum	Skewness	Se	Kurtosis	Se	# of Outliers (z-scores ±3.29)	Missing Data (%) (pre-imputation)	No. of cases deleted (>30% missing data)
Mindfulness (MAAS)	15	75	3.82	0.87	0.90	4.33	1.67	6	0.22	0.28	0.14	0.55	0	3.45	3
Rumination (RRQ)	12	74	43.1	7.5	0.85	37	23	60	-0.15	0.28	0.21	0.55	0	6.00	4
Emotion dysregulation (TMMS)	6	74	18.3	3.8	0.66	19	7	26	-0.56	0.28	0.11	0.55	0	6.85	4
Thought suppression (WBSI)	15	75	49.0	10.2	0.89	50	18	68	-0.76	0.28	0.54	0.55	0	6.17	3
Psychological distress (K6)	6	78	14.2	0.6	0.93	21	6	27	0.39	0.27	-0.95	0.54	0	0.43	0
Gambling urges (GUS)	6	75	13.3	10.5	0.95	36	0	36	0.32	0.28	-1.12	0.55	0	5.17	3
Problem gambling severity	1	68	1.6	1.1	-	4	0	4	0.12	0.29	-1.07	0.57	0	12.82	0
Gambling expenditure	1	75	$242	$516	-	$3000	$0	$3,000	3.21	0.28	12.13	0.55	2	3.85	0
Gambling frequency	1	73	1.7	2.86	-	14	0	14.00	2.13	0.28	5.20	0.55	1	6.41	0

Note. The variation in sample size is due to the variation in the number of unanswered questions.

Statistical Analyses. A single sample *t*-test was conducted to evaluate the difference between the MAAS and the normed value reported by Brown (n.d) for community adults. A series of Pearson's correlations (for normally distributed variables) and Spearman's correlations (for non-normally distributed variables) were employed to explore the relationships between dispositional mindfulness and the indices of gambling behaviour. Due to the low sample size, mediational analyses using hierarchical regression analyses were not performed as the results could not be generalised to other samples (Pallant, 2005). A series of Pearson's correlations (for normally distributed variables) and Spearman's correlations (for non-normally distributed variables) was instead employed to highlight the role of psychological distress, rumination, emotion dysregulation, and thought suppression as potential mechanisms underlying the relationship between mindfulness and indices of gambling behaviour. An alpha level of .05 was used for all statistical tests.

<div align="center">Results</div>

Dispositional mindfulness norms for community adults ($M = 4.20$, $SD = 0.69$) were significantly higher than dispositional mindfulness scores for this sample of problem gamblers ($M = 3.82$, $SD = 0.87$), $t(74) = 3.81$, $p < 0.01$.

Table 6 displays results of Spearman's and Pearson's correlations between dispositional mindfulness, mechanisms of action (rumination, emotion dysregulation, and thought suppression), psychological distress, and indices of gambling behaviour (gambling urges, problem gambling severity, gambling expenditure, and gambling frequency).

Table 6

Correlations between mindfulness, mechanisms of action, psychological distress, and indices of gambling behaviour (N=78)

	Dispositional Mindfulness (MAAS)	Rumination (RRQ)	Emotion dysregulation (TMMS)	Thought suppression (WBSI)	Psychological distress (K6)	Gambling urges (GUS)	Problem gambling severity	Gambling expenditure
Rumination (RRQ)	-.30**	-						
Emotion dysregulation (TMMS)	.27*	-.29*	-					
Thought suppression (WBSI)	-.35**	.51**	-.21	-				
Psychological distress (K6)	-.58**	.45**	-.28*	.42**	-			
Gambling urges (GUS)	-.41**	.26*	-.09	.28*	.44**	-		
Problem gambling severity	-.37**	.28*	-.10	.44**	43**	.68**	-	
Gambling expenditure	-.23*	.10	-.03	.15	.28*	.56**	.28*	-
Gambling frequency	-.25*	.17	-.06	.21	35**	.55**	.35**	.91**

Note. * Correlation is significant at the 0.05 level (2-tailed), ** Correlation is significant at the 0.01 level (2-tailed).

From Table 6, it can be seen that there was a significant negative relationship between dispositional mindfulness and all indices of gambling behaviour (gambling urges, problem gambling severity, gambling expenditure, and gambling frequency). There was also a significant negative relationship between dispositional mindfulness and psychological distress, as well as psychological distress and each index of gambling behaviour. Furthermore, there was a significant relationship between dispositional mindfulness, all the proposed mechanisms of mindfulness (rumination, emotion dysregulation, and thought suppression), as well as all proposed mechanisms of mindfulness and psychological distress.

Figure 4 highlights the potential mechanisms of mindfulness that may underlie the relationship between mindfulness, psychological distress, and indices of gambling behaviour.
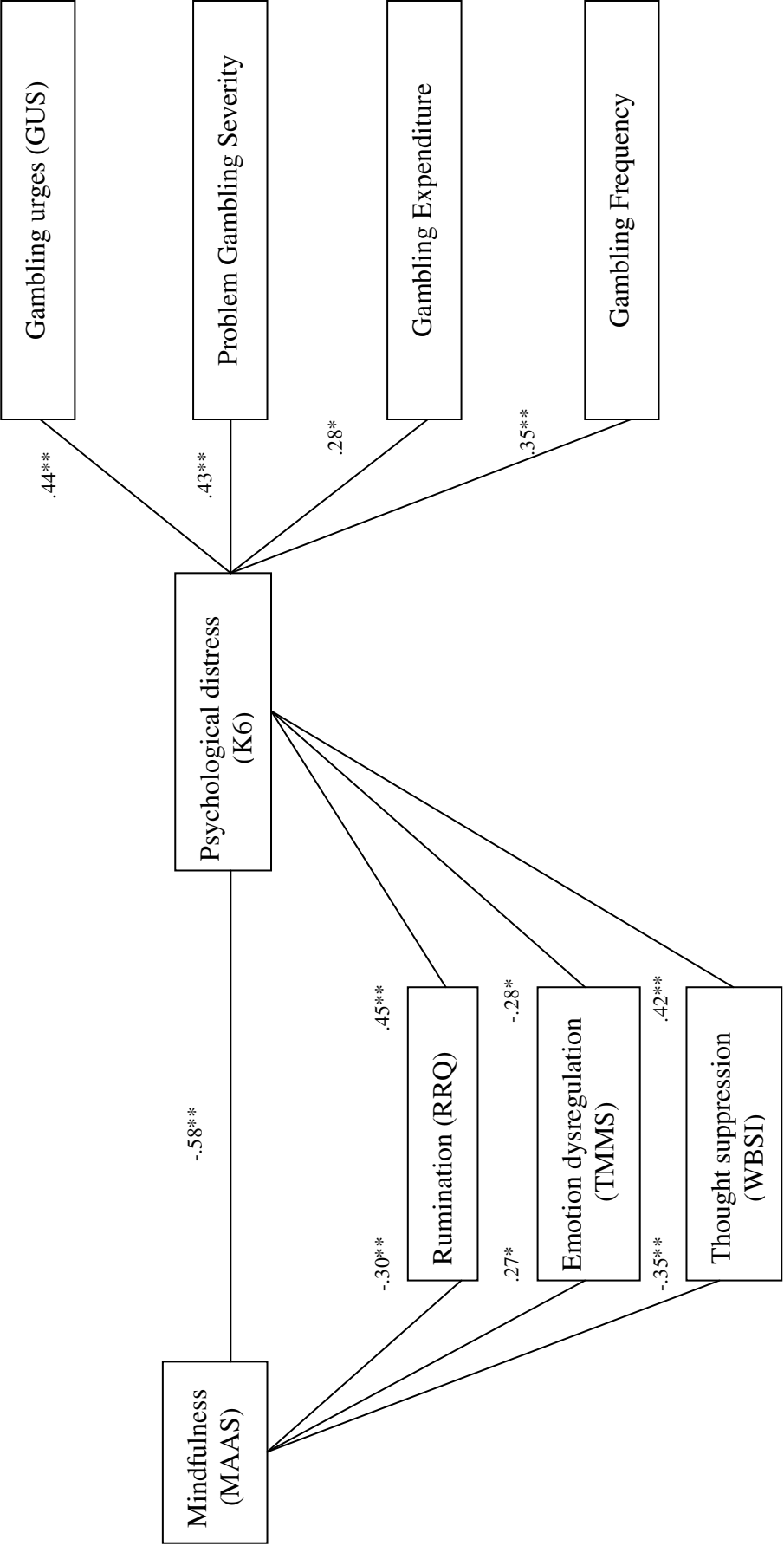
Figure 4. Model of bivariate correlations between mindfulness, proposed mechanisms of action, psychological distress, and indices of gambling behaviour. *Note.* *$p < .05$, **$p < .01$

STUDY 2

Method

Participants

Participants were 205 (148 male, 55 female, 2 unreported) self-identified problem gamblers who were new clients of a metropolitan Melbourne problem gambling service. Males ranged from 21 to 67 years of age (*Mdn* = 37, *M* = 38.4, *SD* = 11.3) and females ranged from 25 to 74 years of age (*Mdn* = 47, *M* = 46.2, *SD* = 10.5). In terms of relationship status, 52% of participants were single, 30% were in a cohabiting relationship, 14% were in a non-cohabiting relationship, and 4% were married but not living with their partner. Over half (53%) were working full time, 18% worked on a part-time or casual basis, 12% were unemployed, and 9% were on a disability pension. Most participants were born in Australia (69%), with smaller proportions from Asia (17%), Europe (9%), New Zealand (3%), Africa (2%), and North America (1%). Over half reported their primary gambling activity as EGMs (54%), with smaller proportions reporting primary problems with horse/dog race betting (29%), casino gambling (10%), and sports betting (5%). Fortnightly income ranged from zero to $10,000 (*Mdn* = 1300, *M* = 1545, *SD* = 1364). The average Problem Gambling Severity Index (Ferris & Wynne, 2001) scores was 17.2 (*SD* = 6.3, *Mdn* = 18) which is categorised within the problem gambling range.

Measures

The survey used for this research included measures that evaluated demographic characteristics, dispositional mindfulness, distress tolerance (tolerance, appraisal, and regulation), psychological distress, and indices of gambling behaviour (gambling pre-occupation, problem gambling severity, gambling expenditure, gambling frequency, and gambling duration).

   Dispositional Mindfulness. The Cognitive and Affective Mindfulness Scale-Revised (CAMS-R; Feldman, Hayes, Kumar, Greeson & Laurenceau, 2007) was employed to measure dispositional mindfulness. The CAMS-R is a 12-item, single factor measure of

mindfulness. Items are arranged on a four-point Likert scale from (1) *rarely/not at all* to (4) *almost always* with scores ranging from 12 to 48. Items are designed to assess four components of the mindfulness construct: regulation of attention, orientation to present experience, awareness of experience, and acceptance/non-judgment towards experience. However, factor analysis reveal that items load onto one factor (Feldman et al., 2007). Internal consistency is satisfactory, with alphas ranging from .74 to .77 across different previous samples (Feldman et al., 2007) and .78 for the current sample.

Distress-Tolerance. The Distress-Tolerance Scale (DTS; Simons & Gaher, 2005) is a 15-item self-report questionnaire which measures the degree to which individuals believe the experience of negative affect is unbearable. In this study, three subscales of the DTS were employed: Tolerance (the perceived ability to tolerate emotional distress), Absorption (attention being absorbed by negative emotions), and Regulation (regulation efforts to alleviate distress). Items are rated on a 5-point scale ranging from (1) *Strongly agree* to (5) *Strongly disagree*. High scores represent high distress tolerance (Simons & Gaher, 2005). The DTS displays good convergent, discriminant, and criterion validity. It is negatively associated with measures of affective distress such as dysregulation ($r = -.51$) and positively correlated with positive affectivity ($r = .26$) (Simons & Gaher, 2005). In addition, the DTS has been positively associated with mood regulation expectancies ($r = .54$) and mood acceptance ($r = .47$) (Simons & Gaher, 2005). The DTS has also been negatively associated with coping motives among repetitive alcohol ($r = -.23$) and marijuana ($r = -.20$) users (Simons & Gaher, 2005). The internal consistencies for these subscales in the current study were high: Tolerance (Cronbach's $\alpha = .85$), Absorption (Cronbach's $\alpha = .81$), and Regulation (Cronbach's $\alpha = .86$).

Psychological distress. The Kessler 6 (K6; Kessler et al., 2002) is a validated quantifier of non-specific psychological distress, based on six questions about the level of

nervousness, agitation, psychological fatigue and depression, which participants may have experienced over the previous four weeks. This tool was selected for its brevity and reliability and the 5-point scale used is sensitive enough to discriminate for change over a relatively short period of time (i.e. from commencement of counselling to the time of case completion). It has had excellent internal consistency in previous studies (Cronbach's α = .89) and in the current study (Cronbach's α = .86) (Kessler et al., 2002).

Gambling pre-occupation. A single item asked participants how much of the time they had thought about gambling over the previous fortnight. Participants responded using a 5-point scale ranging from (0) *none of the time* to (5) *all of the time*.

Problem gambling severity. The Problem Gambling Severity Index (PGSI) of the Canadian Problem Gambling Index (CPGI; Ferris & Wynne, 2001) was used to assess problem gambling severity. A score of 0 on the PGSI indicates non-problem gambling; a score between 1 and 2 indicates a low risk gambling; a score between 3 and 7 indicates moderate risk gambling; while a score between 8 and 27 indicates problem gambling on the PGSI. Participants in the problem gambling group usually experience adverse consequences from their gambling and may have lost control of their behaviour. The PGSI displays good internal consistency, test-retest reliability, criterion validity with measures of gambling involvement, unitary dimensional structure, item variability and concurrent validity with measures of problem gambling (Ferris & Wynne, 2001; Holtgraves, 2009; McMillen, Marshall, Ahmed, & Wenzel, 2004; Neal, Delfabbro, O'Neil, 2005). The PGSI has good sensitivity (the rate of positive test results among those with the disorder) and specificity (the rate of negative test results among those with the disorder) (Ferris & Wynne, 2001). The internal consistency of the PGSI in the current sample was good (Cronbach's α = .86).

Gambling expenditure. A single item asked participants to report on the amount of money gambled over the previous fortnight.

Gambling frequency. A single item asked participants to report on the number of sessions they had gambled over the previous fortnight.

Gambling duration. A single item asked participants to report on the amount of time they had gambled over the previous fortnight.

Procedure

Approval for this research (Ethics number CF09/1592 - 2009000829) was granted by the Monash University Standing Committee on Ethics in Research involving Humans and the specialist problem gambling service (Gamblers Help City) in which the research was conducted. Gamblers Help City operates in metropolitan Melbourne (Australia) and provides support, advice, and information to gamblers and non-gamblers. Every new client presenting to Gamblers Help City receives a survey evaluating demographic characteristics, gambling behaviour, and psychological functioning. Data was collected from August 2009 through to April 2011. The DTS was added to the survey in December 2009. Participants who could not speak and read English were excluded as there was no provision to translate the questionnaires and related materials. Ninety percent of new participants completed the survey. De-identified questionnaires were then collected by the research team. Service provision was not affected if the survey was not completed or informed consent not provided.

Data Analysis

Data preparation. SPSS 16.0 was employed to examine the raw data to ensure that all data values were within range.

Missing value analysis. Data screening was conducted prior to commencement of analysis. Overall, 4.9% of the major study variables data was missing. Given the missing data was less than 5% and appeared to be at random, it was not considered as a serious threat to data integrity (Tabachnick & Fidell, 2001). Respondents completing less than 30% of any scale or subscale were excluded from analysis associated with that scale or subscale using pair-wise deletion. Mean person substitution (Tabachnick & Fidell, 2001) was employed to impute missing data for cases with less than 30% missing data on individual scales or subscales.

Outliers. Histogram and z-score analyses were used to screen for potential outliers. It was found that z-scores of all variables, with the exception of gambling expenditure, gambling frequency, and gambling duration, fell into the range (z > ±3.29) recommended by Tabachnick and Fidell (2001). Univariate outliers were indicated when z-scores exceeded this range. Inspection of 5% trimmed mean and item responses revealed that some of these variables were not a realistic depiction of the overall distribution. Consequently, these scores were replaced with the next extreme value for that variable (Tabachnick & Fidell, 2001). No multivariate outliers were found through examination of Mahalanobis distances, with chi square values using the number of independent variables as the degrees of freedom (Pallant, 2005).

Normality. A range of graphical and statistical approaches were employed to assess the normality of the distribution of scores for the continuous variables. These approaches included an examination of histograms, normal Q-Q plots, detrended normal Q-Q plots, the Kolmogorov-Smirnov statistic, the skewness statistic, and kurtosis statistic. This

examination revealed that several variables (gambling expenditure, gambling frequency, and gambling duration) had significant positive skewness and had non-normal distributions.

Table 7 provides the psychometric properties of each scale, data preparation, and results of assumption testing for Study 2.

144

Table 7
Psychometric properties of each scale, data preparation, and results of assumption testing – Study 2

	No. of items	n (post-imputation)	M	SD	α	Range	Minimum	Maximum	Skewness	Se	Kurtosis	Se	# of Outliers (z-scores ±3.29)	Missing Data (%) (pre-imputation)	No. of cases deleted (>30% missing data)
Mindfulness (CAMS-R)	12	182	30.65	5.58	.78	31	17	48	0.58	0.18	0.62	0.36	0	12	24
Distress Tolerance (DTS Tolerance)	3	138	7.74	3.36	.85	12	3	15	0.46	0.21	-0.51	0.41	0	14	21
Distress Tolerance (DTS Absorption)	3	136	7.88	3.23	.81	12	3	15	0.40	0.21	-0.44	0.41	0	15	23
Distress Tolerance (DTS Regulation)	3	136	8.18	3.31	.86	12	3	15	0.19	0.21	-0.67	0.41	0	17	23
Psychological distress (K6)	6	190	17.26	6.13	.91	24	6	30	0.05	0.18	-0.66	0.35	0	3	4
Problem gambling severity (PGSI)	9	201	17.19	6.34	.86	27	0	27	-0.72	0.17	0.40	0.34	0	8	15
Gambling pre-occupation	1	198	1.99	0.96	-	4	0	4	-0.06	0.17	-0.19	0.34	0	3	-
Gambling expenditure	1	196	1285	2685	-	20000	0	20000	5.58	0.17	35.23	0.35	3	4	-
Gambling frequency	1	162	5.70	4.89	-	24	0	24	1.31	0.19	1.81	0.38	2	21	-
Gambling duration	1	194	15.50	16.46	-	80	0	80	1.86	0.18	3.59	0.35	3	5	-

Note. The variation in sample size is due to the variation in the number of unanswered questions.

Statistical Analyses. The relationship between dispositional mindfulness, distress tolerance, psychological distress, and indices of gambling behaviour were inspected using a series of Pearson's correlations (for normally distributed variables) and Spearman's correlations (for non-normally distributed variables). A series of hierarchical regression analyses were then employed to formally test whether psychological distress mediated the inverse relationship between dispositional mindfulness and indices of gambling behaviour and whether distress tolerance mediated the inverse relationship between dispositional mindfulness and psychological distress.

Mediation hypotheses are frequently tested using methods such as the Sobel test. However, the Sobel test has been criticised because it tends to become less conservative with smaller sample sizes and assumes that the sampling distribution is normally distributed (Preacher & Hayes, 2008). Bootstrapping is a nonparametric approach to effect-size estimation and hypothesis testing that makes no assumptions about the shape of the distributions of the variables or the sampling distribution of the statistic (Preacher & Hayes, 2008). The method provides a bootstrap estimate of the indirect effect, an estimated standard error, and a 95% confidence interval. If zero is not in the 95% confidence interval, it can be concluded that the indirect effect is significantly different from zero at $p < .05$ (two tailed) (Preacher & Hayes, 2008).

An alpha level of .05 was used for all statistical tests.

Results

Dispositional mindfulness scores reported by Feldman et al. (2007) for two samples of ethnically diverse university students ($M = 33.69$, $SD = 5.32$; $M = 34.11$, $SD = 5.50$, respectively) were significantly higher than dispositional mindfulness scores for this sample of problem gamblers ($M = 30.65$, $SD = 5.58$), $t(181) = 7.35$, $p < 0.01$), $t(181) = 8.34$, $p < 0.01$, respectively.

Table 8 displays results of correlations between dispositional mindfulness, distress tolerance (tolerance, absorption, and regulation), psychological distress, and indices of gambling behaviour (gambling pre-occupation, problem gambling severity, gambling expenditure, gambling frequency, and gambling duration).

Table 8

Correlations between mindfulness, distress tolerance, psychological distress, and indices of gambling behaviour (N=205)

	Dispositional Mindfulness (CAMS-R)	Distress Tolerance (DTS Tolerance)	Distress Tolerance (DTS Absorption)	Distress Tolerance (DTS Regulation)	Psychological distress (K6)	Gambling pre-occupation	Problem gambling severity (PGSI)	Gambling expenditure	Gambling frequency
Distress Tolerance (DTS Tolerance)	.45**	-							
Distress Tolerance (DTS Absorption)	.46**	.84**	-						
Distress Tolerance (DTS Regulation)	.32**	65**	.69**	-					
Psychological Distress (K6)	-.46**	-.26**	-.41**	-.18*	-				
Gambling pre-occupation	-.33**	-.27**	-.33**	-.13	.39**	-			
Problem gambling severity (PGSI)	-.34**	-.31**	-.29**	-.23**	.47**	.40**	-		
Gambling expenditure	-.05	-.03	.04	-.07	.18*	.16*	.27**	-	
Gambling frequency	-.10	-.07	-.06	-.12	.18*	.22**	.17*	.35**	-
Gambling duration	-.14	-.11	-.13	-.08	.22**	27**	.29**	.49**	70**

Note. * Correlation is significant at the 0.05 level (2-tailed), ** Correlation is significant at the 0.01 level (2-tailed).

From Table 8, it can be seen that there was a significant negative relationship between dispositional mindfulness and indices of gambling behaviour as measured by gambling pre-occupation and problem gambling severity, but not gambling expenditure, gambling frequency, or gambling duration. There was also a significant negative relationship between dispositional mindfulness and psychological distress, and between psychological distress and all gambling behaviour indices. Furthermore, there was a significant relationship between dispositional mindfulness and all indices of distress tolerance (tolerance, absorption, and regulation), and between all indices of distress tolerance and psychological distress. Figure 5 highlights the potential mechanisms of mindfulness that may underlie the relationship between dispositional mindfulness, psychological distress, and indices of gambling behaviour.
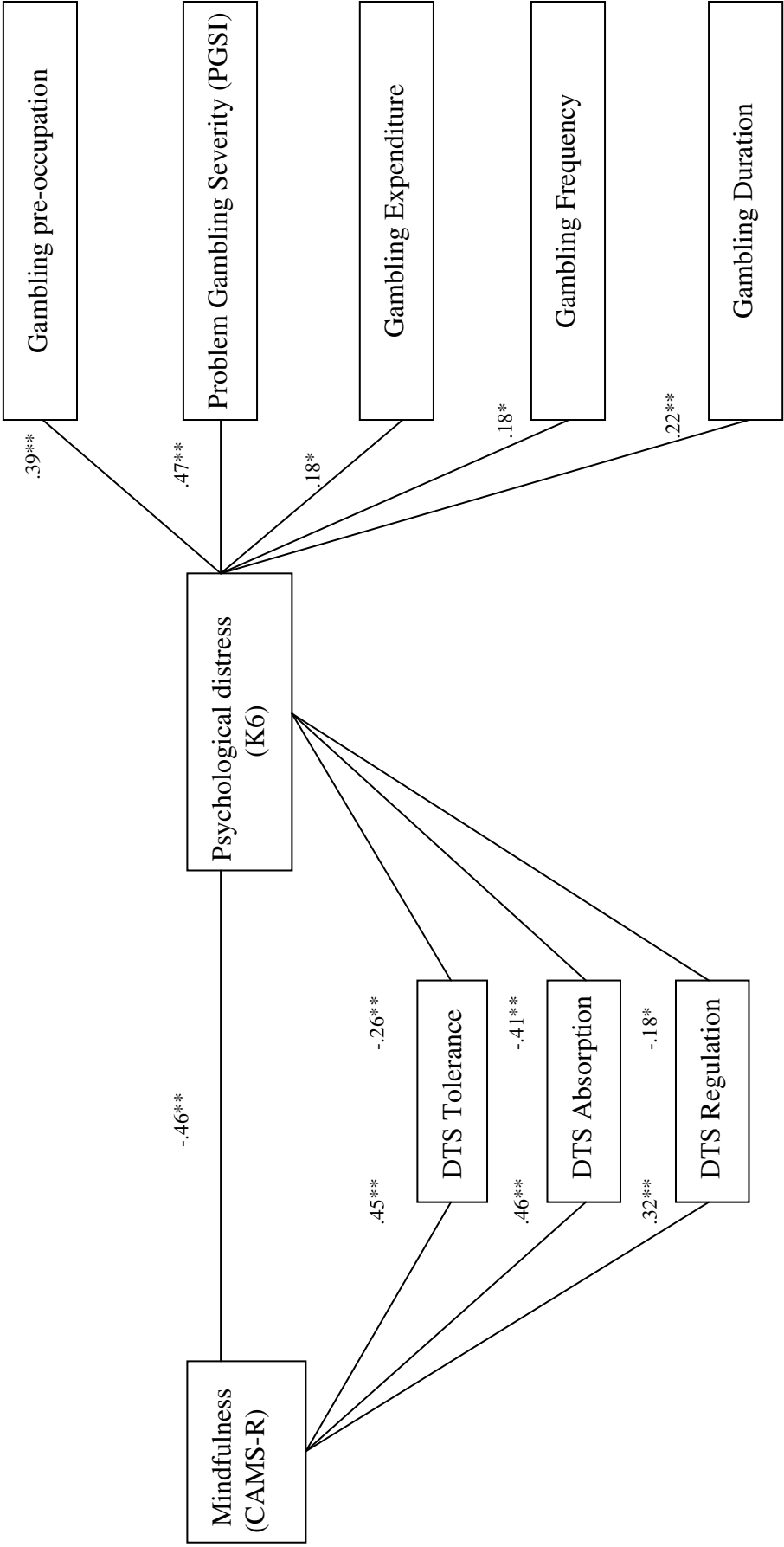
Figure 5. Model of bivariate correlations between dispositional mindfulness, distress tolerance, psychological distress, and indices of gambling behaviour. *Note.* *p< .05, **p < .01

Psychological distress as a mediator in the inverse relationship between dispositional mindfulness and indices of gambling behaviour

The correlations displayed in Table 8 reveal that psychological distress satisfied the requisite conditions to be formally tested as a mediator in the relationship between dispositional mindfulness and gambling pre-occupation and problem gambling severity, but not gambling expenditure, gambling frequency, or gambling duration.

Table 9
Psychological distress as a possible mediator in the inverse relationship between dispositional mindfulness and indices of gambling behaviour

	R^2	ΔR^2	df	B	SE B	95% CI	β	Partial Corr	Part corr
Gambling pre-occupation									
Step 1: Dispositional mindfulness (CAMS-R)	.11**		1,173						
(Constant)				3.76	0.39	3.00, 4.52			
Dispositional mindfulness (CAMS-R)				-0.06	0.01	-0.08, -0.03	-.33**	-.33	-.33
Step 2: Potential mediator	.18**	.17**	1,172						
(Constant)				2.21	0.55	1.13, 3.29			
Dispositional mindfulness (CAMS-R)				-0.03	0.01	-0.06, -0.01	-.19*	-.19	-.17
Psychological distress (K6)				0.05	0.01	0.02, 0.07	.30**	.28	.27
Problem gambling severity									
Step 1: Dispositional mindfulness (CAMS-R)	.11**		1,173						
(Constant)				28.98	2.53	23.99, 33.98			
Dispositional mindfulness (CAMS-R)				-0.38	0.08	-0.54, -0.22	-.34**	-.34	-.34
Step 2: Potential mediator	.24**	.23**	1,172						
(Constant)				15.73	3.47	8.89, 22.57			
Dispositional mindfulness (CAMS-R)				-.18	.08	-0.35, -0.01	-.16*	-.16	-.14
Psychological distress (K6)				0.40	0.08	0.25, 0.56	.39**	.37	.35

Note: * Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).

Gambling pre-occupation. Table 9 provides the results from a hierarchical regression analysis examining whether psychological distress mediated the relationship between dispositional mindfulness and gambling pre-occupation. The addition of psychological distress significantly increased the proportion of variance accounted for by dispositional mindfulness ($p < .001$) and decreased the strength of the association between dispositional mindfulness and gambling pre-occupation. The bootstrapped 95% CI for the indirect effect of dispositional mindfulness on gambling pre-occupation through psychological distress is -.03 to -.01. This interval does not include zero, suggesting that the indirect effect is statistically significant at the .05 level. Examination of indirect effects therefore indicated that psychological distress was a mediator of the inverse relationship between dispositional mindfulness and gambling pre-occupation.

Problem Gambling Severity. Table 9 provides the results from a hierarchical regression analysis examining whether psychological distress mediated the relationship between dispositional mindfulness and problem gambling severity. The addition of psychological distress significantly increased the proportion of variance accounted for by dispositional mindfulness ($p < .001$) and decreased the strength of the association between dispositional mindfulness and problem gambling severity. The bootstrapped 95% CI for the indirect effect of dispositional mindfulness on transformed problem gambling severity through psychological distress is -.30 to- .09. This interval does not include zero, suggesting that the indirect effect is statistically significant at the .05 level. Examination of indirect effects therefore indicated that psychological distress was a mediator of the inverse relationship between dispositional mindfulness and problem gambling severity.

Distress tolerance as a mediator in the inverse relationship between dispositional mindfulness and psychological distress

The correlations displayed in Table 8 reveal that all indices of distress tolerance (tolerance, absorption, and regulation) satisfied the requisite conditions to be formally tested as mediators in the relationship between dispositional mindfulness and psychological distress.

Tolerance. Table 10 provides the results from a hierarchical regression analysis examining whether Distress-Tolerance (Tolerance) mediated the relationship between dispositional mindfulness and psychological distress. The addition of Distress-Tolerance (Tolerance) did not significantly increase the proportion of variance accounted for by dispositional mindfulness ($p = .48$). Distress-Tolerance (Tolerance) therefore did not explain the inverse relationship between dispositional mindfulness and psychological distress.

Absorption. Table 10 also provides the results from a hierarchical regression analysis examining whether Distress-Tolerance (Absorption) mediated the relationship between dispositional mindfulness and psychological distress. The addition of Distress-Tolerance (Absorption) significantly increased the proportion of variance accounted for by dispositional mindfulness ($p < .001$) and decreased the strength of the association between dispositional mindfulness and psychological distress. The bootstrapped 95% CI for the indirect effect of dispositional mindfulness on psychological distress through Distress-Tolerance (Absorption) is -.27 to -.04. This interval does not include zero, suggesting that the indirect effect is statistically significant at the .05 level. Examination of indirect effects therefore indicated that Distress-Tolerance (Absorption) is a mediator of the inverse relationship between dispositional mindfulness and psychological distress.

Regulation. Table 10 provides the results from a hierarchical regression analysis examining whether Distress-Tolerance (Regulation) mediated the relationship between dispositional mindfulness and psychological distress. The addition of Distress-Tolerance (Regulation) did not significantly increase the proportion of variance accounted for by dispositional mindfulness ($p = .67$). Distress-Tolerance (Regulation) therefore did not explain the inverse relationship between dispositional mindfulness and psychological distress.

Table 10
Facets of distress tolerance as possible mediators in the inverse relationship between dispositional mindfulness and psychological distress.

	R²	ΔR²	df	B	SE B	95% CI	β	Partial Corr	Part corr
Psychological distress (K6)									
Step 1: Dispositional mindfulness (CAMS-R)	.21**		1,128						
(Constant)				32.75	2.69	27.44,38.06			
Dispositional mindfulness (CAMS-R)				-0.50	0.09	-0.68, -0.33	-.46**	-.46	-.46
Step 2: Potential mediator	.21	.20	1,127						
(Constant)				32.70	2.70	27.37, 38.02			
Dispositional mindfulness (CAMS-R)				-0.47	1.00	-0.67, -0.28	-.43**	-.40	-.39
Distress-Tolerance (DTS Tolerance)				-0.11	0.16	-0.43, 0.20	-.06	-.06	-.06
Psychological distress (K6)									
Step 1: Dispositional mindfulness (CAMS-R)	.21**		1,128						
(Constant)				32.75	2.68	27.49, 38.06			
Dispositional mindfulness (CAMS-R)				-0.50	0.09	-0.68, -0.19	-.46**	-.46	-.46
Step 2: Potential mediator	.26**	.25**	1,127						
(Constant)				32.65	2.61	27.49, 37.81			
Dispositional mindfulness (CAMS-R)				-0.38	0.09	-0.57, -0.19	-.35**	-.34	-.31
Distress-Tolerance (DTS Absorption)				-0.48	0.16	-0.80, -0.15	-.25*	-.25	-.22
Psychological distress (K6)									
Step 1: Dispositional mindfulness (CAMS-R)	.21**		1,128						
(Constant)				32.75	2.68	27.44. 38.06			
Dispositional mindfulness (CAMS-R)				-0.50	0.09	-0.68, -0.33	-.46**	-.46	-.46
Step 2: Potential mediator	.21	.20	1,127						
(Constant)				32.90	2.71	27.53, 38.28			
Dispositional mindfulness (CAMS-R)				-0.49	0.09	-0.67, -0.31	-.45**	-.43	-.42
Distress-Tolerance (DTS Regulation)				-0.06	0.15	-0.37, 0.24	-.03	-.04	-.03

Note: * Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).

Discussion

The overall aim of the two studies presented in this paper was to explore the role of dispositional mindfulness in problem gambling using treatment seeking problem gambling samples. As hypothesised, the sample of problem gamblers in Study 1 and Study 2 displayed significantly lower dispositional mindfulness scores than normative samples of adult community members and university students, respectively. This is an important finding because it highlights that gamblers with comparatively low levels of dispositional mindfulness are potentially vulnerable to developing gambling problems. In such situations, individuals may gamble without awareness and become habituated to gambling behaviour through repeated exposure.

The hypothesis that dispositional mindfulness would be significantly related to indices of gambling behaviour in a treatment seeking population of problem gamblers was partially supported. In Study 1, dispositional mindfulness was related to gambling urges, problem gambling severity, gambling expenditure, and gambling frequency. In Study 2, dispositional mindfulness was related to gambling pre-occupation and problem gambling severity but not gambling expenditure, gambling frequency, or gambling duration.

The absence of non-problem gamblers in this study precludes forming any definitive conclusions regarding the relationship between dispositional mindfulness and problem gambling. However, the evidence from these studies provide support for Lakey's et al. (2007) initial finding that a higher level of dispositional mindfulness was related to lower gambling-related pathology in student samples. Lakey et al. speculated that greater dispositional mindfulness broadened the range of behavioural choices that could be made. In turn, the selection of a more adaptive behavioural response lessened the severity of problem gambling outcomes. However, the cross-sectional nature of the current study

precludes the provision of causal statements concerning the direction of the relationship between dispositional mindfulness and problem gambling. Future prospective studies should therefore endeavour to establish the temporal sequence of this relationship in large samples of adults within the general population.

In understanding the specific mechanisms involved in the relationship between dispositional mindfulness and problem gambling, Lakey et al. suggested that psychological distress represented one possibility. Due to the low sample size in Study 1, mediational relationships could not be established using hierarchical regression analyses. However, significant relationships between dispositional mindfulness, psychological distress, and all indices of gambling behaviour (problem gambling urges, problem gambling severity, gambling expenditure, gambling frequency, and gambling duration) suggests that psychological distress is a likely mediator of the relationship between dispositional mindfulness and problem gambling behaviour. Indeed, Study 2 confirmed the mediational role of psychological distress in the inverse relationship between dispositional mindfulness and gambling pre-occupation and problem gambling severity.

While this result requires replication, this finding provides support for current theoretical models of problem gambling which implicates psychological distress as a significant mechanism in ongoing problem gambling behaviour. For example, Blaszczynski and Nower's (2002) pathways model highlights psychological distress as a consequence of problem gambling in gamblers who have become habituated to gambling through neo-Pavlovian behavioural mechanisms. The pathways model also recognises problem gambling behaviour as a maladaptive behavioural response in those gamblers with pre-morbid psychiatric disorders (Blaszczynski & Nower, 2002). Mindfulness may enable an individual to step out of current experience and dispassionately observe, rather than become caught up, by thoughts and feelings. The ability to 'decenter' in this way seems

important in reducing the level of overall psychological distress experienced (McIntosh & Martin, 1992; Teasdale et al., 1995) and suggests a possible pathway by which mindfulness training may be helpful in the treatment of problem gambling.

A final aim was to explore the degree to which mechanisms of mindfulness mediated the relationship between dispositional mindfulness and psychological distress. Study 1 examined the role of rumination, emotion dysregulation, and thought suppression as mediators of the inverse relationship between dispositional mindfulness and psychological distress. Despite an inability to conduct hierarchical regressions due to a small sample size, each these mechanisms were implicated in the inverse relationship between dispositional mindfulness and psychological distress. Study 2 examined the role of distress tolerance (tolerance, absorption, and regulation) and established that a facet of distress tolerance, 'attention being absorbed by negative emotions', is a partial mediator in the inverse relationship between dispositional mindfulness and psychological distress. These findings provide support for current theoretical models that seek to explain how mindfulness training may impart therapeutic benefit (Bowen et al., 2007; Coffey & Hartman, 2008).

The first potential mediator in the inverse relationship between dispositional mindfulness and psychological distress was rumination. While Study 1 could not establish a mediational role for rumination due to low sample size, the significant relationships between mindfulness, rumination, and psychological distress are indicative that this may be the case. Mindfulness has long been known to disrupt ruminative thought patterns associated with relapse into depression (Segal, Williams, & Teasdale, 2002). Results from this study suggest that this process may also influence psychological distress in a treatment seeking population of problem gamblers. One explanation for this relationship is that a higher level of dispositional mindfulness affords the opportunity for problem gamblers to

become aware of present moment ruminative thought patterns with a sense of openness and curiosity. So, rather than judging and evaluating these patterns of thought in a negative and self-defeating manner, mindful gamblers may instead respond to them in a more adaptive and self-protective manner, thereby reducing the level of psychological distress they may otherwise experience. Future studies may wish to explore this possibility with a larger sample size in both community and treatment-seeking samples.

Another potential mediator in the inverse relationship between dispositional mindfulness and psychological distress was emotion dysregulation. Study 1 suggested that emotional dysregulation was a likely mediator in the inverse relationship between dispositional mindfulness and psychological distress. However, while the measure used in Study 1 to measure emotion dysregulation is reliable overall, it should be noted that the measure demonstrated less than optimal internal consistency in this study. Therefore, the results of this analysis must be interpreted with some caution.

The measure used in Study 2 measured three facets of distress tolerance (i.e. perceived ability to tolerate emotional distress, attention being absorbed by negative emotions, and regulation efforts to alleviate distress) (Simons & Gaher, 2005). A fourth facet, subjective appraisal of distress, was not included in the survey. Regulation efforts to alleviate distress (as measured by the Regulation subscale of the Distress Tolerance Scale in Study 2) share many of the essential features of emotional dysregulation (as measured by the TMMS in Study 1) (Chambers, Gullone, & Allen, 2009, Salovey et al, 1995). However, Study 2 found that the ability to tolerate emotional distress and regulation efforts to alleviate distress did not mediate the relationship between dispositional mindfulness and psychological distress. Instead, Study 2 supported the role of attentional deficits in the experience of negative affect only. This implies that less mindful gamblers are relatively inattentive to negative affect than their more mindful counterparts and that the experience

of psychological distress operates via this mechanism rather than by an inability to tolerate emotional distress or an inability to regulate efforts to alleviate this distress. These findings, in part, supports previous findings of heightened emotion dysregulation among problem gamblers (Lee et al., 2008) and that problem gamblers are motivated to gamble in order to reduce negative mood states or to improve positive emotions (Blaszczynski & Nower, 2002; Stewart & Zack, 2008).

Coffey and Hartman (2008) suggested that one explanation for the relationship between mindfulness and cognitively oriented emotional regulation strategies is that greater mindfulness allows one to become more aware of distressing thoughts and feelings. This ability alerts an individual to the need for an emotional regulation strategy which, when applied, may result in the application of a more adaptive behavioural choice. However, this explanation is not supported given that Study 2 found that the ability to regulate efforts to alleviate distress was not a significant mediator. Given that attentional deficits in the experience of negative affect is a significant mediator, it seems more likely that mindfully attending to negative emotions without a behavioural response may lead to a gradual extinction of the behaviours previously elicited by strong emotional states (Coffey & Hartman, 2008). Another possible explanation is that mindfulness allows a person to experience strong emotions with greater objectivity and less reactivity (Shapiro et al., 2006). The ability to 'decenter' in this way offers the opportunity for gamblers to step back from what is noticed, and simply watch strong emotions come and go.

The final potential mediator in the inverse relationship between dispositional mindfulness and psychological distress was thought suppression. Again, the absence of mediational analyses in Study 1 precluded the testing of thought suppression as a mediator. However, the significant relationships between dispositional mindfulness, thought suppression and psychological distress indicate that this may be the case. If so, this has

important implications for those problem gamblers seeking treatment for their gambling problems because many gamblers attempt to avoid distressing thoughts that may ordinarily lead to further gambling (Ciarrocchi, 2002). Yet avoidance of thoughts is known to paradoxically increase the intensity and frequency of such thoughts (Wegner, 1989; Wegner & Erber, 1992), making for the increased likelihood of a return to gambling. This mechanism may represent one explanation for the high rates of attrition and relapse observed in current efficacy studies of CBT for problem gambling. Indeed, Toneatto et al. (2007) suggested that mindfulness training may represent a useful relapse prevention strategy following standard CBT. Future studies may wish to explore this possibility.

The comparatively low levels of dispositional mindfulness displayed by the treatment-seeking samples in both studies highlight that mindfulness training may represent a new and innovative treatment for problem gambling. There are four mindfulness-based approaches that could be considered applicable to problem gambling. These are Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 2005), Mindfulness-Based Cognitive Therapy (MBCT; Segal et al., 2002), Dialectical Behaviour Therapy (DBT; Linehan, 1993a, 1993b), Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999). While DBT and ACT are associated with behavioural change, neither of these therapies relies upon the intensive meditative practices advocated in MBSR and MBCT. However, meditative practices are considered crucial for promoting levels of dispositional mindfulness (Kabat-Zinn, 2005; Segal et al, 2002).

In a meta-analysis of 64 health-related studies utilising MBSR, Grossman, Niemann, Schmidt, and Walach (2004) concluded that MBSR may help a broad range of people cope with clinical and non-clinical problems. However, MBCT incorporates cognitive-behavioural elements already shown to have positive benefit for problem gamblers, such as psycho-education, pleasure and mastery activities, dealing with

difficulty, coping with triggers, and relapse prevention (e.g., Dowling, Smith, & Thomas,
2006, 2007; Dowling, 2009; Petry et al., 2006). While MBCT was developed for
prevention of relapse from depression, it is now considered of value for heterogeneous
groups (Ree & Craigie, 2007). A modified version of MBCT has also been successfully
utilised in the treatment of problem gambling (de Lisle et al, 2011).

Based on the results of this study, a mindfulness-based intervention may improve
treatment effectiveness for problem gambling by reducing the overall level of
psychological distress experienced. This appears to be achieved by reducing ruminative
thought patterns, improving emotion dysregulation, promoting awareness of the experience
of negative affect, and decreasing the tendency to avoid unwanted thoughts. If so,
mindfulness-based interventions may be particularly appropriate for problem gamblers
with pre-morbid disorders such as depression and anxiety, those who experience
psychological distress following a gambling episode, or those who gamble in order to
reduce negative mood states or to improve positive emotions (Blaszczynski & Nower,
2002; Sharpe, 2002; Shead et al., 2008; Stewart & Zack, 2008).

The model tested in the current study posited that rumination, emotional regulation,
and thought suppression mediates the relationship between dispositional mindfulness and
psychological distress, which in turn leads to problem gambling. However, it is equally
plausible that these mechanisms also mediate the direct relationship between dispositional
mindfulness and problem gambling, whereby increased mindfulness may help gamblers
watch gambling-related thoughts come and go without feeling the need to act on them
(Toneatto et al., 2007). Although the correlations examined in both studies suggest that this
is a less likely explanation, the measures utilised assessed general, rather than gambling-
related, thoughts and feelings. Moreover, complex constructs such as mindfulness should
be analysed at a facet level to clarify the relationship between the facets and other variables

of interest (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006). The interaction between dispositional mindfulness and problem gambling behaviour is therefore potentially very complex. Caution should also be employed when utilising self-report questionnaires that measure trait or state mindfulness as debate continues as to the construct validity of such questionnaires (Van Dam, Earleywine, & Borders, 2010). Future studies may wish to explore these more complex models using appropriate measures and statistical procedures with large community and treatment-seeking samples.

In summary, the studies presented in this paper found that problem gamblers have comparatively low levels of dispositional mindfulness that may make them vulnerable to continued problem gambling behaviour. The findings support Lakey et al.'s (2007) suggestion that psychological distress is an important mechanism in this relationship and provides theoretical support for existing models of mindfulness which suggest that mindfulness operates by reducing psychological distress. They have also provided support for the hypothesis that rumination, thought suppression and emotion dysregulation act as mediational mechanisms in the inverse relationship between dispositional mindfulness and psychological distress in problem gamblers. However, other mechanisms such as nonattachment and values clarification may provide additional explanatory power to this model (Baer et al., 2006). Taken together, these finding imply that mindfulness-based approaches are worthy of further exploration in the treatment of problem gambling.

References

American Psychiatric Association. (2000). *Diagnostic and Statistical Manual of Mental Disorders, Text Revision* (4th ed.). Arlington, VA: Author.

Arch, J. J., & Craske, M. G. (2006). Mechanisms of mindfulness: Emotion regulation following a focussed breathing induction. *Behaviour Research and Therapy, 44*, 1849-1858.

Atlas, G. D., & Peterson, C. (1990). Explanatory style and gambling: How pessimists respond to losing wagers. *Behaviour Research and Therapy, 28*(6), 523-529.

Australian Institute of Gambling Research. (1995). A critical analysis of two national prevalence studies: The case for alternative strategies. Sydney: Macarthur University of Western Sydney.

Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report methods to explore facets of mindfulness. *Assessment, 13*(1), 27-45.

Blaszczynski, A. (1999). Pathological gambling: An impulse control, addictive or obsessive-compulsive disorder? *Anuario de Psicología, 30,* 93-109.

Blaszczynski, A., & Nower, L. (2002). A pathways model for problem and pathological gambling. *Addiction, 97*(5), 487-499.

Blaszczynski, A., Walker, M., Sagris, A., & Dickerson, M. (1999). Psychological aspects of gambling behaviour: An Australian Psychological Society position paper. *Australian Psychologist, 34*(1), 4-16.

Borders, A., Earleywine, M., & Jajodia, A. (2010). Could mindfulness decrease anger, hostility, and aggression by decreasing rumination? *Aggressive Behavior, 36*, 28-44.

Bowen, S., Witkiewitz, K., Dillworth, T. M., & Marlatt, G. A. (2007). The role of thought suppression in the relationship between mindfulness meditation and alcohol use. *Addictive Behaviors, 32*, 2324-2328.

Brown (n.d). Mindful Attention Awareness Scale (MAAS), trait version. Retrieved March 1, 2011, from: http://www.kirkwarrenbrown.vcu.edu/wp-content/scales/MAAS%20trait%20research-ready%20+%20intro.pdf/

Brown, K. W, & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*(4), 822-848.

Carmody, J., Baer, R. A., Lykins, E. L. B., & Olendzki, N. (2009). An empirical study of the mechanisms of mindfulness in a mindfulness-based stress reduction program. *Journal of Clinical Psychology, 65*, 613-626.

Chambers, R., Gullone, E., & Allen, N. B. (2009). Mindful emotion regulation: An integrative review. *Clinical Psychology Review, 29*, 560-572.

Chantal, Y., Vallerand, R. J., & Valliéres, E. F. (1994). On the construction and validation of the Gambling Motivation Scale (GMS). *Society & Leisure, 17,* 189–212.

Ciarrocchi, J. W. (2002). *Counseling problem gamblers: A self regulation manual for individual and family therapy*. San Diego: Academic Press.

Coffey, K. A., & Hartman, M. (2008). Mechanisms of action in the inverse relationship between mindfulness and psychological distress. *Complementary Health Practice Review, 13*(2), 79-91.

de Lisle, S., Dowling, N., & Allen, J. (2011). Mindfulness-based cognitive therapy for problem gambling. *Journal of Clinical Case Studies.*

Dickerson, M., Baron, E., Hong, S-M., & Cottrell, D. (1996). Estimating the extent and degree of gambling related problems in the Australian population: A national survey. *Journal of Gambling Studies, 12*(2), 161-178.

Dowling, N. (2009). Client characteristics associated with treatment attrition and outcome in female pathological gambling. *Addiction Research and Theory, 17*(2), 205–219

Dowling, N., Smith, D., & Thomas, T. (2006). Treatment of female pathological gambling: Efficacy of a cognitive-behavioural approach. *Journal of Gambling Studies, 22,* 355-372.

Dowling, N., Smith, D., & Thomas, T. (2007). A comparison of individual and group cognitive behavioral treatment for female pathological gambling. *Behaviour Research and Therapy, 45*, 2192-2202.

Echeburúa, E., Báez, C., & Fernández-Montalvo, J. (1996). Comparative effectiveness of three therapeutic modalities in the psychological treatment of pathological gambling: Long-term outcome. *Behavioural and Cognitive Psychotherapy, 24*(1), 51-72.

Feldman, G., Hayes, A., Kumar S., Greeson, J., & Laurenceau, J-P. (2007). Mindfulness and emotion regulation: The development and initial validation of the cognitive and effective mindfulness scale-revised (CAMS-R), *Journal of Psychopathology and Behavioral Assessment, 29*(3), 177–190.

Fernández-Alba, A., & Labrador, F. J. (2005). Sociodemographic, psychopathological and clinical characteristics of pathological slot-machine gamblers in treatment: A descriptive study of Spanish male gamblers. *International Gambling Studies, 5*(1), 113-122.

Ferris, J., & Wynne, H. (2001). *The Canadian Problem Gambling Index: User Manual.* Ottawa: Canadian Centre on Substance Abuse.

González-Ibáñez, Á., Jimenez, S., & Aymami, M. N. (1999). Evaluation and cognitive-behavioral treatment of pathological slot machine gamblers. *Anuario de Psicologia, 30*(4), 111-125.

Gross, J. J. (2002). Emotion regulation: Affective, cognitive, and social consequences. *Psychophysiology, 39*(3), 281-291.

Grossman, P., Niemann, L., Schmidt, S., & Walach, H. (2004). Mindfulness-based stress reduction and health benefits: A meta-analysis. *Journal of Psychosomatic Research 57*, 35-43.

Hayes, S. C., & Feldman, G. (2004). Clarifying the construct of mindfulness in the context of emotion regulation and the process of change in therapy. *Clinical Psychology: Science and Practice, 11*(3), 255-262.

Hayes, S. C., Strosahl, K., & Wilson, K. G. (1999). *Acceptance and Commitment Therapy*. New York: Guilford Press.

Holtgraves, T. (2009). Evaluating the Problem Gambling Severity Index. *Journal of Gambling Studies, 25*, 105-120

Huangh, B. (2000). Exploring oriental wisdom: Self-transcendence and psychological well-being of adulthood in Taiwan. *Dissertation Abstracts International: Section B: The Sciences and Engineering. 61*(2-B), 1111.

Jain, S., Shapiro, S. L., Swanick, S., Roesch, S. C., Mills, P. J., Bell, I., et al. (2007). A randomized controlled trial of mindfulness meditation versus relaxation training: Effects on distress, positive states of mind, rumination, and distraction. *Annals of Behavioral Medicine, 33*, 11-21.

Kabat-Zinn, J. (2005). *Full Catastrophe Living – Using the Wisdom of your Body and Mind to face Stress, Pain, and Illness* (3rd ed.). New York: Bantam Dell.

Kessler, R. C, Andrews, G., Colpe, L. J., Hiripi, E., Mroczek, D. K, Normand, S. L., et al. (2002). Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological Medicine, 32*(6), 959-976.

Kumar, S., Feldman, G., & Hayes, S. C. (2008). Changes in mindfulness and emotion regulation in an exposure-based cognitive therapy for depression. *Cognitive Therapy and Research, 32*, 734-744.

Ladouceur, R., Sylvain, C., Boutin, C., & Doucet, C. (1998). *Understanding and Treating the Pathological Gambler*. Chichester: John Wiley & Sons, Ltd.

Lakey, C. E., Campbell, W. K., Brown, K. W., & Goodie, A. S. (2007). Dispositional mindfulness as a predictor of the severity of gambling outcomes. *Personality and Individual Differences, 43*, 1698-1710.

Lee, T. K., LaBrie, R. A., Grant, J. E., Kim, S. W., & Shaffer, H. J. (2008). The structure of pathological gambling among Korean gamblers: A cluster and factor analysis of clinical and demographic characteristics. *International Journal of Mental Health and Addiction, 6*, 551-563.

Lesieur, H. R., & Blume, S. B. (1987). The south oaks gambling screen (The SOGS): A new instrument for the identification of pathological gamblers. *American Journal of Psychiatry, 144*, 1184-1888.

Linehan, M. M. (1993a). *Cognitive-Behavioural Treatment of Borderline Personality Disorder*. New York: Guilford Press.

Linehan, M. M. (1993b). *Skill Training Manual for Treating Borderline Personality Disorder*. New York: Guilford Press.

López Viets, V. C., & Miller, W. R. (1997). Treatment approaches for pathological gamblers. *Clinical Psychology Review, 17*, 689-702.

Lorains, F. K., Cowlishaw, S., Thomas, S. (2011). Prevalence of comorbid disorders in problem and pathological gambling: Systematic review and meta-analysis of population surveys. Manuscript submitted for publication.

Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: comparison of the Depression Anxiety Stress Scales (DASS) with the Beck depression and anxiety inventories. *Behaviour Research & Therapy, 33*, 335-343.

McBain, N., & Ohtsuka, K. (2001). Predicting problem gambling among poker machine players from coping styles and motivational factors. In A. Blaszczynski (Ed.), *Culture and gambling phenomenon: The proceedings of the11th National Conference of the National Association for Gambling Studies, Sydney* (pp.225 – 240). Alphington, Australia: The National Association for Gambling Studies.

McIntosh, W. D., & Martin, L. L. (1992). The cybernetics of happiness: The relation between goal attainment, rumination, and affect. In M. S. Clark (Ed.). *Review of personality and social psychology Vol. 14*. (pp. 222-246). Newbury Park: Sage Publications.

McMillen, J., Marshall, D., Ahmed, E., & Wenzel, M. (2004). 2003 Victorian Longitudinal Community Attitudes Survey. Canberra: The Centre for Gambling Research, Australian National University.

McMillan, T., Robertson, I. H., Brock, D., & Chorlton, L. (2002). Brief mindfulness training for attentional problems after traumatic brain injury: A randomised control treatment trial. *Neuropsychological Rehabilitation: An International Journal, 12*(2), 117-125.

Moreyra, P., Ibáñez, A., Liebowitz, M. R., Saiz Ruiz, J., & Blanco, C. (2002). Pathological gambling: Addiction or obsession? *Psychiatric Annals, 32*(3), 161-166.

Najavits, L. M. (2003). How to design an effective treatment outcome study. *Journal of Gambling Studies, 19*, 317-337.

Najmi, S., & Wegner, D. M. (2008). Thought suppression and psychopathology. In A. J. Elliot (Ed.), *Handbook of approach and avoidance motivation* (pp.447-459). New York: Psychology Press.

National Research Council. (1999). *Pathological Gambling: A Critical Review*. Washington, D.C: National Academy Press.

Neal, P., Delfabbro, P., & O'Neil, M. (2005). Problem gambling and harm: Towards a national definition. Melbourne: Gambling Research Australia

Orford, J., Morison, V. & Somers, M. (1996). Drinking and gambling: A comparison with implications for theories of addiction. *Drug and Alcohol Review*, *15*, 47-56.

Pallant, J. (2005). *SPSS Survival Manual*. Crows Nest: Allen & Unwin.

Petry, N. M. (2005). *Pathological gambling: Etiology, comorbidity, and treatment*. Washington, D.C: American Psychological Association.

Petry, N. M., Ammerman, Y., Bohl, J., Doersch, A., Gay, H., Kadden, R., et al. (2006). Cognitive-behavioral therapy for pathological gamblers. *Journal of Consulting and Clinical Psychology, 74*(3), 555-567.

Preacher, K. J., & Hayes, A. F. (2008). Asympotic and resampling 'procedures for assessing and comparing indirect effects in 'multiple mediator models. *Behavior Research Methods, 40*, 879-891.

Productivity Commission (1999). *Australia's gambling industries*. Canberra: Productivity Commission.

Productivity Commission (2010). *Gambling. Productivity Commission Inquiry Report*. Volume 1. Report no. 50. Canberra: Productivity Commission.

Ramel, W., Goldin, P. R., Carmona, P. E., & McQuaid, J. R. (2004). The effects of mindfulness meditation on cognitive processes and affect in patients with past depression. *Cognitive Therapy and Research, 28*(4), 433-455.

Rassin, E. (2005). *Thought suppression*. Oxford: Elsevier.

Ratelle, C. F., Vallerand, R. J., Mageau, G. A., Rousseau, F. L. & Provencher, P. (2004). When passion leads to problematic outcomes: A look at gambling. *Journal of Gambling Studies, 20*(2), 105-119.

Raylu, N., & Oei, T. P. S. (2004a). The Gambling Urge Scale (GUS): Development, confirmatory factor validation and psychometric properties. *Psychology of Addictive Behaviors, 18*, 100-105.

Raylu, N., & Oei, T. P. S. (2004b). The Gambling Related Cognitions Scale (GRCS): Development, confirmatory factor validation and psychometric properties. *Addiction, 99*, 757-769.

Ree, M. J., & Craigie, M. A. (2007). Outcomes following mindfulness-based cognitive therapy in a heterogeneous sample of adult outpatients. *Behaviour Change, 24*(2), 70-86.

Reynolds, B., & Karraker, K. (2003). A Big Five model of disposition and situation interaction: why a ''helpful'' person may not always behave helpfully. *New Ideas in Psychology, 21*, 1–13.

Rickwood, D., Blaszczynski, A., Delfabbro, P., Dowling, N., & Heading, K. (2010). The psychology of gambling. *InPsych, 32*(6), 11-21.

Salovey, P., Mayer, J. D., Goldman, S., Turvey, C., & Palfai, T. (1995). Emotional attention, clarity, and repair: Exploring emotional intelligence using the trait meta-mood scale. In J. D. Pennebaker (Ed.). *Emotional, Disclosure, and Health* (pp. 125-154). Washington, DC: American Psychological Association.

Schmidt, R. E., Gay, P., Courvoisier, D., Oise Jermann, F., Ceschi, G., David, M., et al.
(2009). Anatomy of the White Bear Suppression Inventory (WBSI): A review of
previous findings and a new approach. *Journal of Personality Assessment, 91*(4),
323–330.

Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-Based Cognitive
Therapy for Depression: A New Approach to Preventing Relapse.* New York:
Guilford Press.

Shaffer, H. J., & Hall, M. N. (2001). Updating and refining prevalence estimates of
disordered gambling behaviour in the United States and Canada, *Canadian Journal
of Public Health, 92*(3), 168-172

Shapiro, S. L., Carlson, L. E., Astin, J. A., & Freedman, B. (2006). Mechanisms of
mindfulness. *Journal of Clinical Psychology, 62*(3), 373-386.

Shapiro, S., Brown, K., & Biegel, G. (2007). Teaching self-care to caregivers: Effects of
Mindfulness-Based Stress Reduction on the mental health of therapists in
training. *Training and Education in Professional Psychology, 1*(2), 105-115.

Sharpe, L. (2002). A reformulated cognitive-behavioral model of problem gambling: A
biopsychosocial perspective. *Clinical Psychology Review, 22*(1), 1-25.

Shead, N. W., Callan, M. J., & Hodgins, D. C. (2008). Probability discounting among
gamblers: Differences across problem severity and affect-regulation expectancies.
Personality and Individual Differences, 45, 536-541.

Simons, J., & Gaher, R. (2005). The distress tolerance scale: Development and validation
of a self-report measure. *Motivation and Emotion, 29*, 83-102.

Stewart, S. H. & Zack, M. (2008). Development and psychometric evaluation of a three-
dimensional Gambling Motives Questionnaire. *Addiction, 103*, 1110-1117.

Tabachnick, B., & Fidell, L. S. (2001). *Using Multivariate Statistics* (4th Edition). Needham Heights, MA: Allyn & Bacon.

Teasdale J. D., Segal Z. V., & Williams J. M. G. (1995), How does cognitive therapy prevent depressive relapse and why should attentional control (mindfulness) training help?, *Behavioral Research and Therapy, 33*, 25-39.

Toneatto, T., Vettese, L., & Nguyen, L. (2007). The role of mindfulness in the cognitive-behavioural treatment of problem gambling. *Journal of Gambling Issues, 19*, 91-100.

Trapnell, P. D., & Campbell, J. D. (1999). Private self-consciousness and the five-factor model of personality: Distinguishing rumination from reflection. *Journal of Personality and Social Psychology, 76*(2), 284-304.

Van Dam, N.T., Earleywine, M., & Borders, A. 2010. Measuring mindfulness? An item response theory analysis of the Mindful Attention Awareness Scale. *Personality and Individual Differences, 49(7),* 805-810.

Volberg, R. A. (2002). The epidemiology of pathological gambling. *Psychiatric Annals, 32*(3), 171-178.

Wedgeworth, R. L. (1998). The reification of the "pathological" gambler: An analysis of gambling treatment and the application of the medical model to problem gambling. *Perspectives in Psychiatric Care, 34*, 5-13.

Wegner, D. M. (1989). *White bears and other unwanted thoughts: Suppression, obsession, and the psychology of mental control.* London: The Guilford Press.

Wegner, D. M., & Erber, R. (1992). The hyperaccessibility of suppressed thoughts. *Journal of Personality and Social Psychology, 63*, 903–912.

Wegner, D. M., & Zanakos, S. (1994). Chronic thought suppression. *Journal of Personality, 62*, 615-640.

Winters, K. C., & Kushner, M. G. (2003). Treatment issues pertaining to pathological gamblers with a comorbid disorder. *Journal of Gambling Studies, 19*(3), 261-277.

5. INITIAL PILOT STUDY OF MBCT-PG

This chapter outlines the initial pilot study of mindfulness-based cognitive therapy for problem gambling (MBCT-PG). MBCT-PG was adapted for problem gambling from mindfulness-based cognitive therapy (MBCT; Segal, Williams & Teasdale, 2002). While MBCT was originally developed for prevention of relapse from depression, MBCT may represent an efficacious treatment for problem gambling because of its emphasis on dissipating negative cognitions and depressive mood states, thereby averting uptake of dysfunctional coping behaviours such as problem gambling. MBCT is an eight-week intervention whereby mindfulness skills are taught and practiced in the first half of the intervention. Instruction is then provided in responding and dealing with negative thought or feeling in the second half of the intervention (Segal et al., 2002). MBCT is one of the most prominent and empirically validated third-wave CBT interventions (Kuyken et al., 2008; Ma & Teasdale, 2004; Teasdale et al., 2000).

There is empirical evidence supporting MBCT's value for heterogeneous groups (Ree & Craigie, 2007) and its potential as a valuable augment to CBT for addictive disorders such as substance use (Hoppes, 2006). Furthermore, there is preliminary support for adaptations of MBCT to other populations and psychiatric disorders, such as binge eating disorder (Baer, Fischer, & Huss, 2005), children with symptoms of anxiety and depression (Semple, Lee, Rosa, & Miller, 2010), and older adults (Smith, 2006; Smith, Graham, & Senthinathan, 2007). MBCT may also improve on current treatment outcomes for problem gambling by operating more generally on psychological distress and addressing the diagnostic comorbidity and heterogeneity associated with problem gambling status. As MBCT encourages a sense of curiosity, openness, and acceptance

towards present moment thoughts, feelings and body sensations, regardless of their content, it becomes irrelevant if such states are symptomatic of any disorder (Bishop et al., 2004). Moreover, MBCT incorporates cognitive-behavioural elements previously demonstrated as having positive benefit for problem gamblers, such as psycho-education, pleasure and mastery activities, dealing with difficulty, coping with triggers, and relapse prevention (e.g., Dowling et al., 2006, 2007, 2009; Petry et al., 2006). Mindfulness-based cognitive therapy for problem gambling (MBCT-PG; de Lisle, Dowling, & Allen, 2011) represents an adaption of MBCT for use in a treatment seeking problem gambling population (Refer to Appendix A for the full MBCT-PG treatment manual.)

While there is an ongoing conceptual debate as to the mindfulness construct (Bishop et al., 2004), a recent confirmatory factor analysis of recently developed mindfulness questionnaires yielded five readily discernable facets of the overall mindfulness construct (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006). The Observing facet is related to openness to experience and attending to internal and external stimuli; the Non-Judging facet represents the ability to accept current experience; the Acting with Awareness facet measures attention to current activity and avoiding automatic pilot; the Describe facet reflects the ability to recognise and label emotional states; and the Non-Reacting facet reflects the ability to experience unpleasant inner phenomena without engaging in maladaptive behaviour (Baer et al., 2006). The five factor model of mindfulness represents the latest operationalised conception of mindfulness. Since no study has, up to this pilot study, investigated the efficacy of MBCT-PG, it would be useful to explore how the intervention influences each of these mindfulness facets. The knowledge gained may then provide important information as to the mechanisms by which a mindfulness-intervention may improve problem gambling outcomes. Since the problem gambling literature has identified psychological distress as an influential pathway into

problem gambling (Blaszczynski & Nower, 2002; Sharpe, 2002), it would also be important to investigate the relationship between mindfulness and psychological distress (Lakey et al., 2007).

The aim of the pilot study was to provide initial data regarding the efficacy of MBCT-PG and provide an opportunity to streamline the treatment protocol. It was hypothesised that the MBCT-PG group would report improved gambling behaviour as measured by fewer episodes of gambling, reduced psychological distress, and higher scores in each of the mindfulness facet scores of Observing, Non-Judging, Acting with Awareness, Describe, and Non-Reacting. Given that MBCT-PG has not previously been employed in the treatment of problem gambling and requires a commitment to mindfulness practice, mindfulness practice details were recorded throughout the study period and the acceptability of the approach was assessed using client satisfaction data compiled at the completion of the MBCT-PG intervention.

Method

Participants

Participants who attended the pilot study were 'Graham', 'Amanda' and 'Margaret'. At the time of the study, Graham was a 61 year-old Caucasian man who had gambled on horse racing since childhood. He was divorced and lived alone. He considered work his life and had an income in excess of $AUS150,000 per annum. Graham did not meet DSM-IV-TR diagnostic criteria for pathological gambling and did not consider that he had a gambling problem. However, he was concerned that bankruptcy may be likely in the near future. Graham was concerned that, if this occurred, he would not be able to curtail his current gambling behaviour. His aim was to control his gambling rather than become abstinent. The assessment process did not reveal any past or present psychiatric

disorders. However, Graham's treatment progress could not be assessed in this study as he discontinued the intervention after session 4.

'Amanda' was a 56 year-old married Caucasian woman. She had no financial difficulties at the time of the study and her husband tolerated her gambling behaviour. Amanda first gambled at age 37 on electronic gaming machines after the death of her teenage daughter. She displayed evidence during interview of past depressive episodes, panic attacks, and met the DSM-IV-TR criteria for current alcohol abuse. Excessive alcohol use often precipitated her gambling behaviour. However, she did not meet DSM-IV-TR diagnostic criteria for pathological gambling. Her aim was to control her gambling.

Margaret was a 64 year-old married pensioner who lived alone. She first gambled at age 58 on poker machines after her husband went to a nursing home. Themes of loneliness and escape from personal problems appeared to be a significant motivational factor in her decision to gamble. The psychiatric interview provided evidence of past alcohol abuse. However, she reported that she was now abstinent from alcohol consumption. There was also evidence of past depressive episodes and she had a prescription for anti-depressant medication. Margaret met DSM-IV-TR criteria for pathological gambling. Her goal was to control her gambling. Margaret did not attend Session 4 and Session 6 of the intervention due to illness.

Materials

Each participant completed a range of self-report measures that assessed diagnostic status (structured clinical interview for pathological gambling and clinical interview), evaluated treatment outcomes (gambling frequency, anxiety and depression), measured mindfulness as a process of change variable, and investigated treatment compliance and acceptability (mindfulness practice and client satisfaction). Diagnostic measures were employed at assessment interview and self-report measures were completed at pre-

intervention, post-intervention, and 4-week follow-up phases. A commitment to undertake a daily 40 minute mindfulness practice was verbally agreed to and informed consent obtained at the assessment interview.

Diagnostic status measures

The Structured Clinical Interview for DSM-IV Axis I Disorders (Non Patient Edition) (SCID-I/NP: First, Spitzer, Gibbon, & Williams, 2002). The SCID-I/NP is a clinician administered semi-structured interview for making the major DSM-IV Axis I diagnoses. Consistent with the major diagnostic co-morbidities that have been associated with problem gambling, this study utilised the following schedules of the SCID-I/NP: Mood Episodes (A), Mood Disorders (D), Substance Use Disorders (E), Anxiety Disorders (F), and Adjustment Disorders (I). The SCID-I/NP is considered appropriate for accurately determining clinical diagnoses in a research setting.

The Structured Clinical Interview for Pathological Gambling (SCIP: Walker, Anjoul, Milton, & Shannon, 2006). The SCIP assesses gambling-related symptomatology according to diagnostic (DSM-IV-TR) criteria. The consensus of expert opinion is that DSM criteria should be used to define treatment populations (Walker, Toneatto, et al., 2006).

Treatment outcome measures

Gambling behaviour. Gambling frequency (number of gambling episodes each week) was assessed using daily diary entries completed by each participant. Only EGM gambling was recorded, given that each participant did not engage in other forms of gambling.

Beck Anxiety Inventory (BAI: Beck & Steer, 1990). The 21-item BAI has been designed to differentiate between behavioural, emotional and physiological symptoms and is a reliable, valid and widely used measure of anxiety during the past week. Each

symptom is rated on a four-point scale, ranging from (0) *not at all* to (3) *severely*. The

instrument has excellent internal consistency ($\alpha = .92$), high test–retest reliability ($r = .75$),

a clear four-factor structure corresponding to neurophysiology, subjective, autonomic, and

panic components of anxiety, and good discriminant validity (Beck & Steer, 1990, 1991;

Leyfer, Ruberg, & Woodruff-Borden, 2006).

Beck Depression Inventory-II (BDI-II: Beck, Steer, & Brown, 1996). The BDI-II

(Beck et al. 1996) is a 21-item inventory for the assessment of the severity of state

depression. Each item is rated on a four-point scale ranging from 0 to 3 and the BDI-II

total score is derived by summing the item scores. with higher scores indicating greater

symptomatology. The psychometric properties of the BDI-II have been well established,

with evidence of sound internal consistency ($\alpha = .92$), test–retest reliability ($r = .93$), and

content, construct, factorial, and discriminant validity (Beck et al. 1996).

Process of change measures

Five Facet Mindfulness Questionnaire (FFMQ; Baer, Smith, Hopkins,

Krietemeyer, & Toney, 2006). The 39-item FFMQ is based on a factor analytic study of

five independently developed mindfulness questionnaires. This analysis yielded five

factors that appear to represent elements of mindfulness as it is currently conceptualized.

The five empirically derived subscales (Observing/noticing/attending, Describing/labelling

with words, Acting with awareness, Non-Judging of inner experience and Non-Reactivity

to inner experience) are viewed as facets reflecting key mindfulness skills. Items are

arranged on five-point scale ranging from (1) *never or very rarely* to (5) *very often or*

always true. The subscales were found to be internally consistent ($\alpha = .83$, $\alpha = .91$, $\alpha = .87$,

$\alpha = .87$, and $\alpha = .75$ respectively) and correlated in expected directions with other measures

evaluating the same facets of the mindfulness construct. Higher scores reflect greater level

of mindfulness. Table 11 provides means and standard deviations for normative samples

(Baer et al., 2008).

Table 11

Means and Standard Deviations of normative samples for the FFMQ

Facet	Non-meditating Students (N=259)		Non-meditating Community Adults (N=293)		Non-meditating Highly Educated (N=252)		Meditators (N=213)	
	M	SD	M	SD	M	SD	M	SD
Observe	24.32	4.84	24.32	5.48	27.04	5.63	31.96	4.16
Describe	26.46	6.01	24.63	7.06	30.01	5.63	31.84	5.30
Act aware	25.31	5.77	24.57	6.57	28.32	5.21	28.08	5.10
Nonjudge	27.75	5.90	23.85	7.33	29.13	5.79	32.44	5.63
Nonreact	20.50	3.82	19.53	4.88	22.82	4.19	25.70	4.01

Treatment compliance and acceptability

Mindfulness practice. Mindfulness frequency and duration were assessed using a

daily diary developed by Segal et al. (2002). Diary entries include date, mindfulness

practice, practice duration, and comments.

The Client Satisfaction Questionnaire (CSQ: Larsen, Attkisson, Hargrave, &

Nguyen, 1979) comprises eight items scored on a four-point anchored answer scale. The

CSQ is a general scale to assess client satisfaction that can be used in a wide variety of

settings. The score range is 8 to 32, with a higher score reflecting a greater level of client

satisfaction. This scale displays a high degree of internal consistency ($\alpha = .93$) and

correlates with therapist's estimates of client satisfaction.

Procedure

Participants were recruited through advertisements placed in a local newspaper

detailing dates, time, location, and a summary of the intervention. Posters and flyers were

also positioned at Monash University – Clayton Campus, Monash Clinical Psychology

Centre, local community centres, and in the private practices of consenting general practitioners and psychologists.

Seven individuals who contacted the research team were informed of the study details and completed a telephone screening questionnaire. All individuals who considered that they had a gambling problem, displayed no evidence of active psychosis, who were over 18 years of age, and who used English as their first language were invited to participate in the study. Six individuals who satisfied these inclusion criteria and whom were prepared to engage in a daily mindfulness practice of approximately 40 minutes duration were invited to attend an in-depth evaluation at the Monash Clinical Psychology Centre where an explanatory statement was provided and informed consent was obtained. Five individuals attended the evaluation interview.

Evaluations were conducted over a period of several weeks prior to the commencement of the intervention in order to establish baseline data and assess participants for gambling-related pathology and co-morbid psychopathology. Evaluations were conducted utilising a demographic questionnaire, followed by administration of the Structured Clinical Interview for Pathological Gambling (Walker, Anjoul, Milton, et al., 2006) and the Structured Clinical Interview for DSM-IV-TR Axis I Disorders, Research version, Non-patient edition (SCID-I/NP; First, Spitzer, Gibbons, et al., 2002). Pre-intervention questionnaires and a gambling diary were provided to consenting participants in an unsealed reply-paid envelope at conclusion of the assessment. The gambling diary established baseline gambling frequency (sessions per day) and mindfulness practice. The diary was used throughout the study period to track gambling behaviour and mindfulness practice. Completed pre-intervention questionnaires were returned in the reply-paid envelope prior to commencement of the intervention.

The pilot study was evaluated utilising measures provided at pre-intervention, post-intervention, and four-week follow up. The study design was an A-B-C model, whereby a baseline phase was established immediately after conclusion of the evaluation interview, followed by an eight week intervention phase, and a 4-week follow-up phase. Three individuals attended the intervention. For a detailed description of the flow of participants through the study protocol, please refer to Figure 2 in Chapter 3.

The intervention phase comprised eight weekly sessions of MBCT adapted for problem gambling from the program developed by Segal, Williams, and Teasdale (2002). Each participant attending the group intervention was provided a guided meditation audio CD at the end of each session that was relevant to the content of that week's session. The purpose of these CDs was to facilitate a daily mindfulness practice outside of the therapy. Each MBCT session was of two hours duration. The first four sessions of MBCT-PG taught a variety of mindfulness techniques to participants, such as meditation, body scanning, mindful yoga, and everyday mindfulness. Session one introduced the concept of automaticity, whereby habitual activities are performed without conscious attention (Logan, 2004) and mindfulness, where present moment thoughts, feelings and sensations are attended to without trying to change anything (Kabat-Zinn, 2005). Since participants encounter many obstacles in relation to beginning a daily 40 minute mindfulness practice (Segal, Williams, & Teasdale, 2002), session two explained what the barriers to practice were and provided useful strategies to help overcome them. Session three then introduced a wide range of mindfulness techniques, including sitting meditation, the three-minute breathing space, yoga and walking meditation to help participants find a practice that was most congruent with their needs. Session four then explored the present moment by encouraging participants to be mindful of current experience. This created a space to observe thoughts, feelings, and body sensations invoked by events and become free of

habitual automatic reactions by responding mindfully each time they occured. The Gambling Self-Efficacy Questionnaire (Whelan, Steenbergh & Meyers, 2007) was administered during this session to highlight high-risk situations that were relevant for each participant. This insight provided an opportunity to respond mindfully whenever this situation occured in the future.

Sessions five to eight of MBCT-PG provided instruction in mindfully responding and dealing with gambling-related thoughts or feelings. Session five focused on developing an accepting relationship to gambling-related triggers and urges by bringing memory of a recent gambling experience to mind when engaged in mindfulness meditation. This practice allowed participants to explore the experience and stay with it without actually doing anything. Session six consolidated this skill by helping participants to develop a gentle interest and curiosity toward the content of gambling related-thoughts. This session provided instruction in acceptance of distressing thoughts and feelings by using the breath as a means of re-directing attention whenever such events were noticed in the present moment. Session seven included several cognitive-behavioural techniques commonly used in traditional CBT. These included listing pleasure and mastery activities, noting activities that could trigger a gambling episode, and helping participants identify their unique relapse signatures. The final session then linked the learning gained with the future. The program was summarised, relapse action plans discussed and reviewed, and participants were advised to devote approximately 40 minutes each day to a mindfulness practice until the group was invited to meet again in four weeks time for review.

Post-intervention questionnaires were distributed to participants in Week 7 of the intervention by the researcher in unsealed reply paid envelopes. Completed questionnaires were then returned to the researcher over the course of the following week. This procedure was repeated at the 4-week follow-up phase when participants gathered for a refresher

session which reviewed the course content and allowed participants to discuss their experiences.

Therapist

The candidate facilitated the pilot study group. Formal MBCT accreditation was obtained by undertaking an eight-week training program facilitated by an accredited MBCT instructor. This was followed by a three day MBCT retreat and several one day refresher classes held on a six monthly basis. The candidate has an ongoing mindfulness practice which is essential for provision of the therapy.

Data Analysis

Assessments of gambling behaviour, the BAI, BDI-II, and each of the five subscales of the FFMQ were taken at baseline, post-intervention and 4-week follow-up, and scores compared for each stage. A set of graphs of these outcome and mechanism of change measures was created for use with visual inspection. Scores for each participant at pre-intervention, post-intervention, and 4-week follow-up were plotted alongside other participant scores for each outcome and mechanism of change variable. Standard error of measurement bars (SeM) were included in these graphs so that change could be assessed using inference by eye (Cumming & Finch, 2005). The SeM provided the basis for determining a 95% confidence interval within which the participants true score could be found. Visual inspection was used to assess changes in individual participant's data across the three phases of the intervention on each of the mechanism of change measures according to the following criteria:

1. Substantial change – data demonstrated that the intervention resulted in significant increase or decrease in the outcome variable (i.e. an increase towards the maximum possible score; decrease towards the minimum possible score). The gap between the SeM bars was clear and evident.
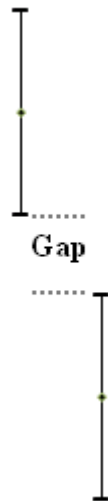
2. Moderate change – data demonstrated that the intervention resulted in a clear

increase or decrease in the outcome variable but the change was not sufficient to be

considered significant. There was only a minimal gap between the SeM bars.

3. No change – data demonstrated that the intervention resulted in no change in the

variable across time. There was no gap between the SeM bars.

Results

Treatment Outcomes

Participants were requested to record frequency of gambling behaviour over the baseline,

treatment and follow-up phases.

Assessment of weekly gambling frequency for Margaret can be observed with

reference to weekly gambling frequency in Figure 6.
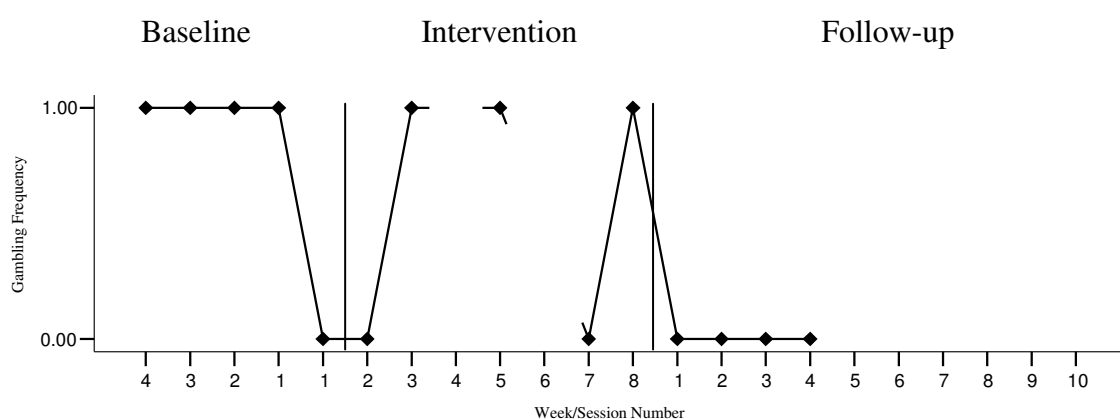
Figure 6. Weekly gambling frequency for Margaret recorded over baseline, intervention

and follow-up phase.

As can be seen from Figure 6, Margaret continued gambling over the intervention

at a similar frequency to her baseline rate. However, she did not engage in any gambling

behaviour over the 4-week follow-up period.

Assessment of weekly gambling frequency progress for Amanda can be observed

with reference to Figure 7.
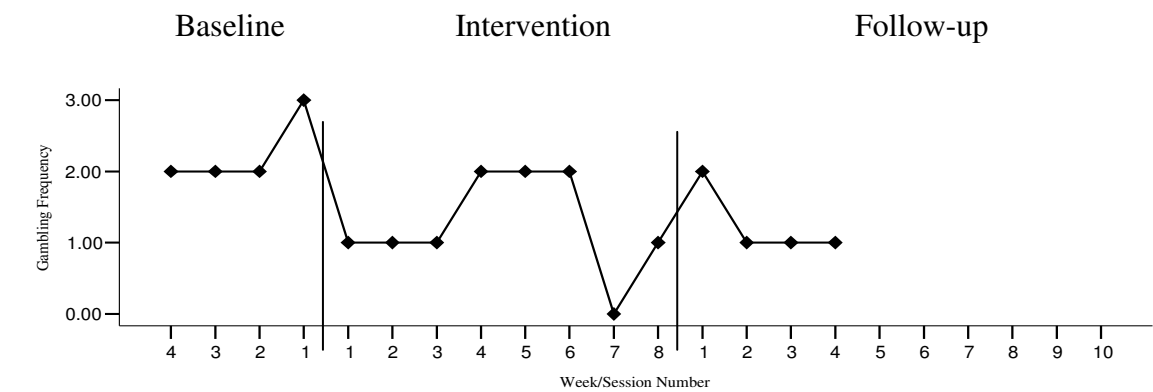
Figure 7. Weekly gambling frequency for Amanda recorded over baseline, intervention and follow-up phase.

As can be seen from Figure 7, Amanda reduced her gambling frequency over the intervention in comparison to her baseline rate and refrained from gambling in week 7. She then returned to a comparatively lower frequency of gambling over the 4-week follow-up period.

While Graham discontinued the intervention after session 4, Figure 8 summarises his weekly gambling frequency.
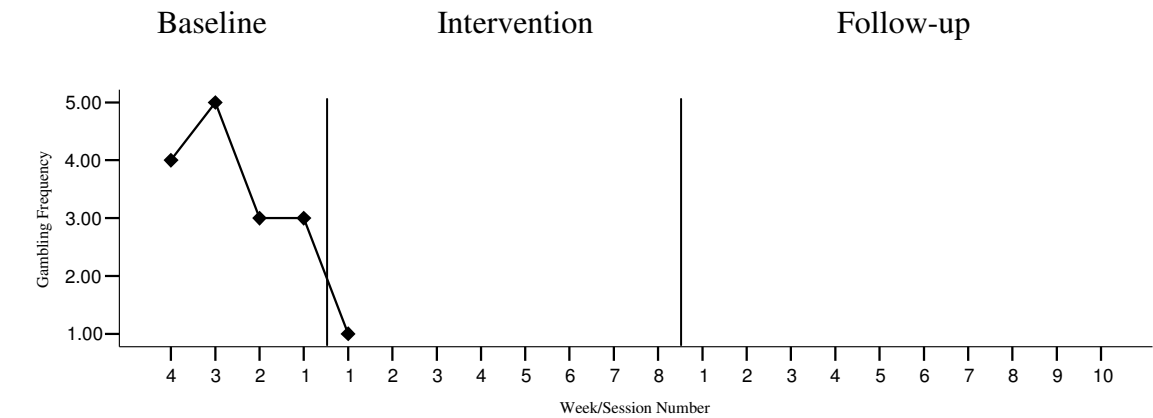
Figure 8. Weekly gambling frequency for Graham recorded over baseline, intervention and follow-up phase.

From Figure 8, it can be seen that Graham refrained from gambling at the beginning of the intervention.

Figure 9 and Figure 10 represent individual participant scores on the BAI and BDI-II at pre-intervention, post-intervention and 4-week follow-up. The y-axis scale on each graph represents the lowest score to the highest score reported by each participant for each of the measures. Each figure will now be discussed in turn.

Figure 9 shows the pre-intervention, post-intervention and follow-up scores for each of the participants on the Beck Anxiety Inventory.

Figure 9. Pre-Intervention, Post-Intervention, and 4-Week Follow-Up Scores on the Beck Anxiety Inventory for each Participant.

Figure 9 shows that the standard error of measurement for the BAI was significant for Margaret. Margaret reported sub-clinical BAI scores at the conclusion of the intervention and this was maintained at the 4-week follow up. There was non-significant overlap for other participants with the exception of Amanda, where BAI scores significantly increased at the 4-week follow up. Graham reported non-clinical BAI scores at pre-intervention assessment.

Figure 10 shows the pre-intervention, post-intervention and follow-up scores for each of the participants on the Beck Depression Inventory-II.

Figure 10. Pre-Intervention, Post-Intervention, and 4-Week Follow-Up Scores on the Beck Depression Inventory-II for each Participant.

Figure 10 shows that the standard error of measurement for the BDI-II was significant for Margaret. Margaret reported sub-clinical BDI-II scores at the conclusion of the intervention and this was maintained at the 4-week follow-up. Despite a downward trend in BDI-II scores at the conclusion of the 8-week intervention for Amanda, there was no significant overlap. There was a moderate increase in BDI-II scores at the 4-week follow-up. Graham did not complete the BDI-II pre-intervention assessment.

Mechanisms of change

Participants were requested to complete the Five Factor Mindfulness Questionnaire at pre-intervention, treatment, and follow-up phases.

Figure 11 shows the pre-intervention, post-intervention and follow-up scores for each of the participants on the Observing subscale of the Five Factor Mindfulness Questionnaire.

Figure 11. Pre-Intervention, Post-Intervention, and 4-Week Follow-Up Scores on the Five Factor Mindfulness Questionnaire – Observing for each Participant.

Figure 11 shows a moderate increase in the standard error of measurement for the FFMQ-Observing facet for Margaret at the post-intervention assessment which was maintained at the 4-week follow-up. The change in the standard error of measurement for the Observing facet at the 4-week follow-up was significant in comparison to her pre-intervention score. There was no change for Amanda in the standard error of measurement for the Observing facet at the post-intervention assessment. However, there was a moderate increase for this participant at the 4-week follow up. Scores for the Observing facet subscale for Graham were similar to that of the other participants as at the pre-intervention assessment.

Figure 12 shows the pre-intervention, post-intervention and follow-up scores for each of the participants on the Non-Judging subscale of the Five Factor Mindfulness Questionnaire.
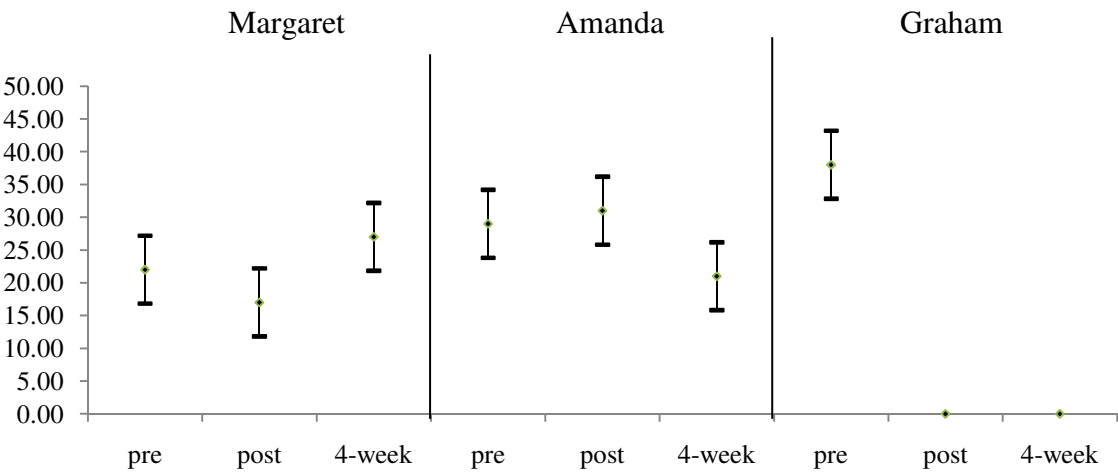
Figure 12. Pre-Intervention, Post-Intervention, and 4-Week Follow-Up Scores on the Five Factor Mindfulness Questionnaire – Non-Judging for each Participant.

Figure 12 shows a moderate decrease in the standard error of measurement for the FFMQ-Non-Judging facet for Margaret at the post-intervention assessment. However, there was a moderate increase in the standard error of measurement at the 4-week follow-up. There was no change for Amanda in the standard error of measurement for the Non-Judging facet at the post-intervention assessment. However, there was a moderate decrease for this participant at the 4-week follow up. Graham reported moderately higher Non-Judging facet scores than the other participants at the pre-intervention assessment.

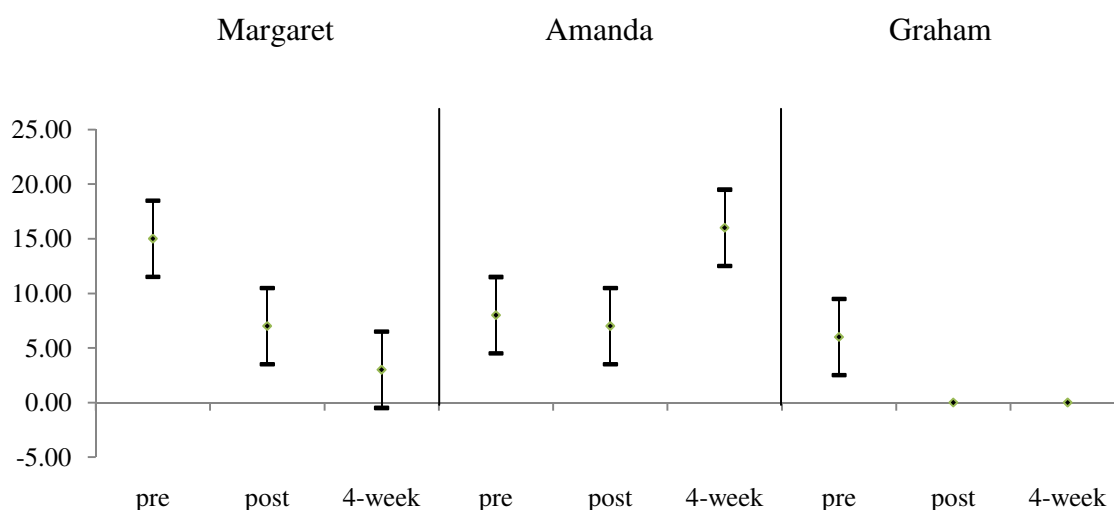Figure 13 shows the pre-intervention, post-intervention and follow-up scores for each of the participants on the Acting with Awareness subscale of the Five Factor Mindfulness Questionnaire.
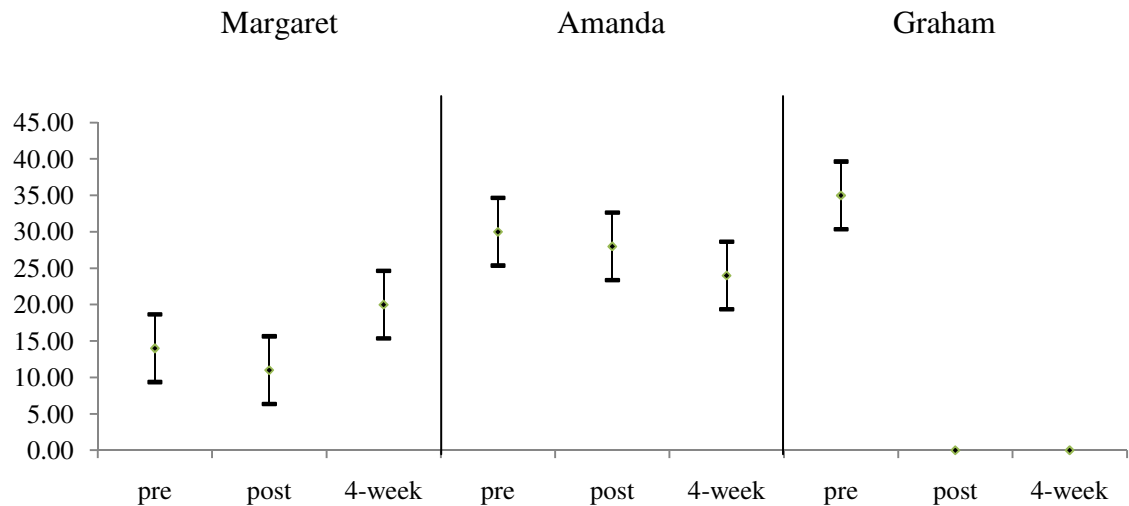
Figure 13. Pre-Intervention, Post-Intervention, and 4-Week Follow-Up Scores on the Five Factor Mindfulness Questionnaire – Acting with Awareness for each Participant.

Figure 13 shows a non-significant decrease in the standard error of measurement for the FFMQ-Acting with Awareness facet for Margaret at the post-intervention assessment and a moderate increase in the standard error of measurement at the 4-week follow-up. There was no change for Amanda in the standard error of measurement for Acting with Awareness facet at the post-intervention assessment. However, there was a moderate decrease for this participant at the 4-week follow-up compared with the pre-intervention measure. Graham reported moderately higher Acting with Awareness scores than the other participants at the pre-intervention assessment.

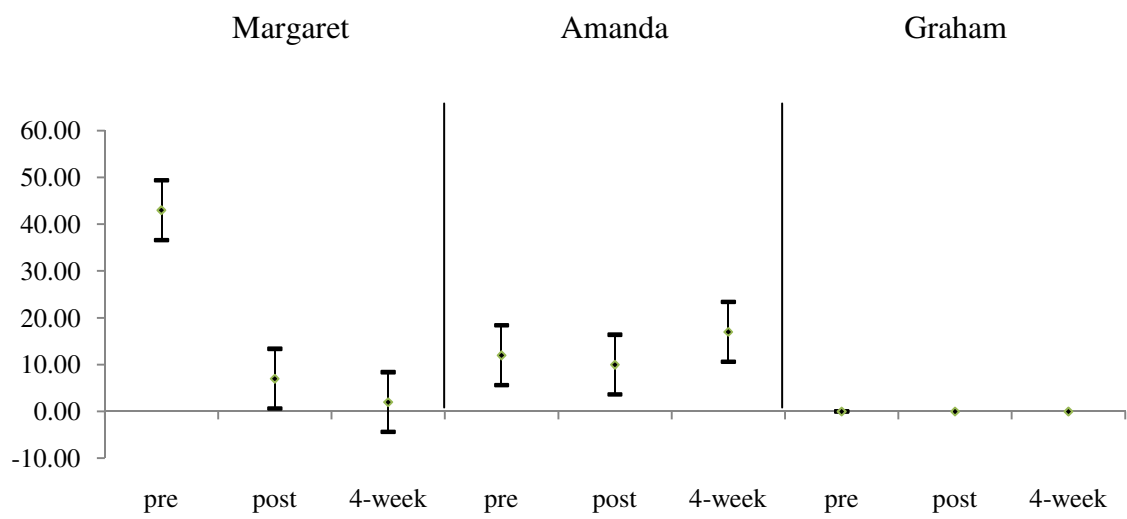Figure 14 shows the pre-intervention, post-intervention and follow-up scores for each of the participants on the Describing subscale of the Five Factor Mindfulness Questionnaire.
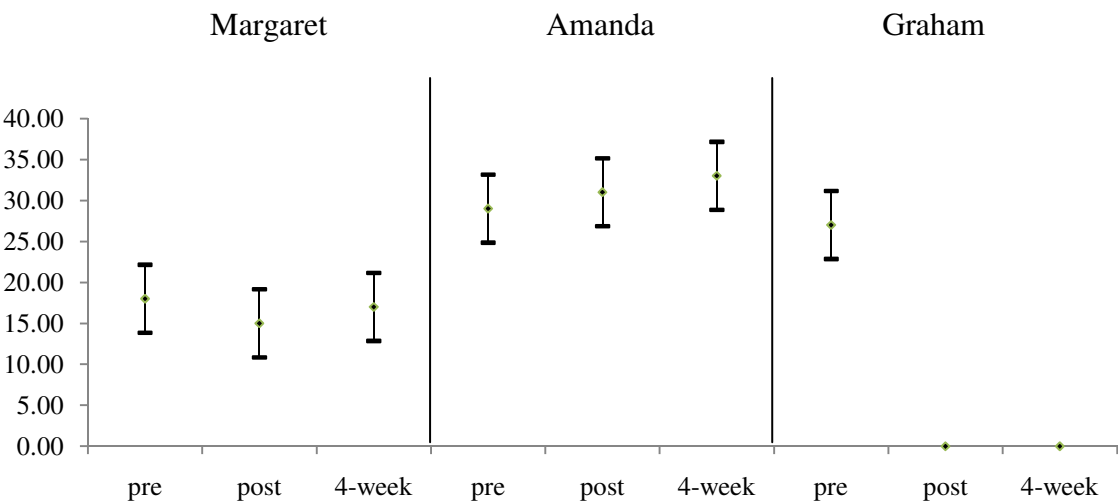
Figure 14. Pre-Intervention, Post-Intervention, and 4-Week Follow-Up Scores on the Five

Factor Mindfulness Questionnaire – Describing for each Participant.

Figure 14 shows no change for any participant in the standard error of measurement

for the FFMQ-Describing facet across the assessment period. Graham reported moderately

higher Describing facet scores than the other participants at the pre-intervention

assessment.

Figure 15 shows the pre-intervention, post-intervention and follow-up scores for

each of the participants on the Non-Reacting subscale of the Five Factor Mindfulness
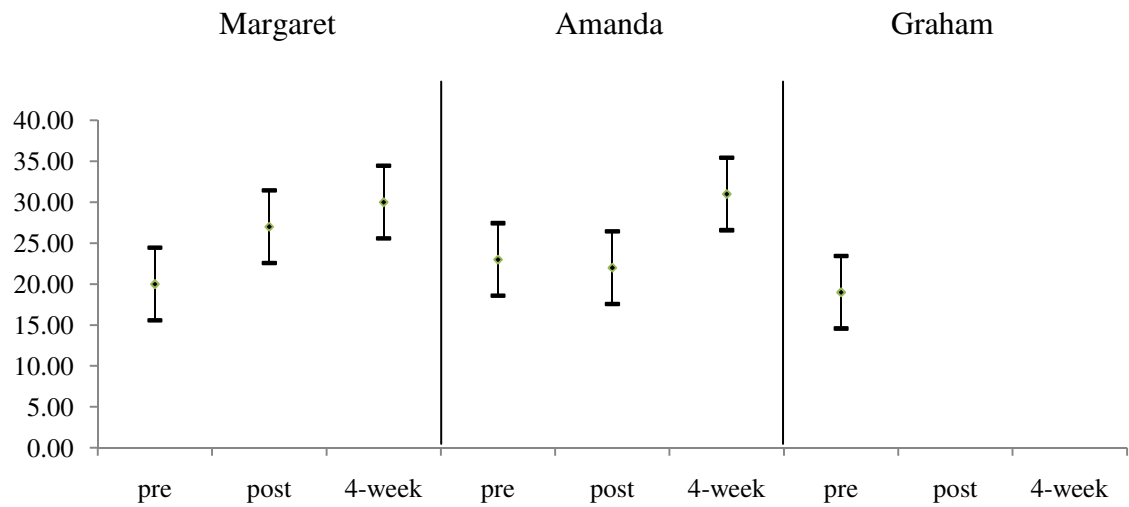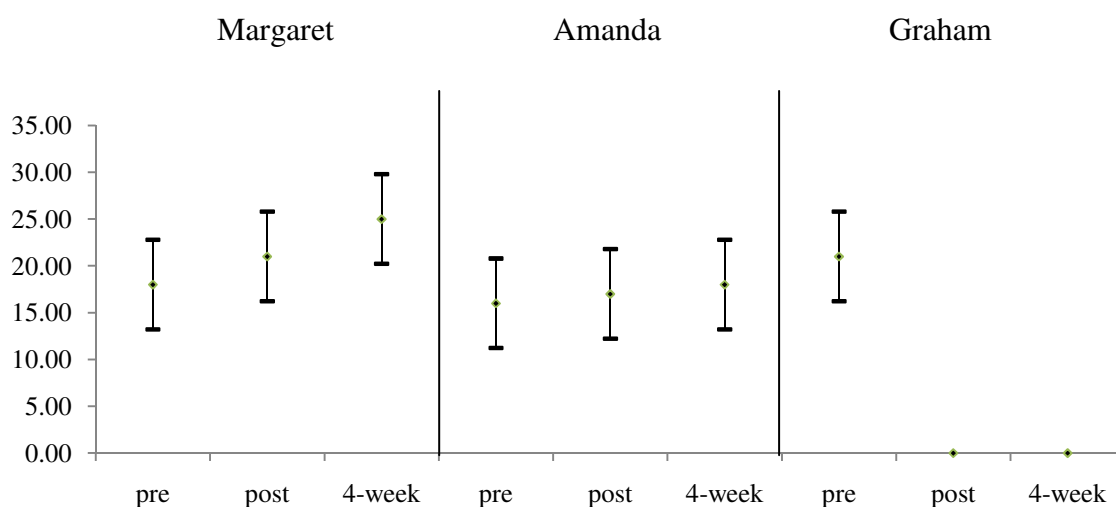
Questionnaire.

Figure 15. Pre-Intervention, Post-Intervention, and 4-Week Follow-Up Scores on the Five Factor Mindfulness Questionnaire – Non-Reacting for each Participant.

Figure 15 shows an upward trend in the standard error of measurement for the FFMQ-Non-Reacting facet for Margaret at the post-intervention assessment and the 4-week follow-up. The increase in the standard error of measurement for the Non-Reacting facet was moderate at the 4-week follow-up compared with the pre-intervention measure. There was no change for Amanda across the assessment period. Scores for the Non-Reacting facet subscale for Graham were similar to that of the other participants as at the pre-intervention assessment.

Treatment compliance of MBCT-PG

Participants were requested to record details of their mindfulness practice over the baseline, treatment and follow-up phases.

Figure 16 represents weekly mindfulness frequency (i.e. the number of days in which a 40 minute mindfulness practice and a three-minute breathing space was practiced) over the assessment period for Margaret.

Baseline   Intervention   Follow-up
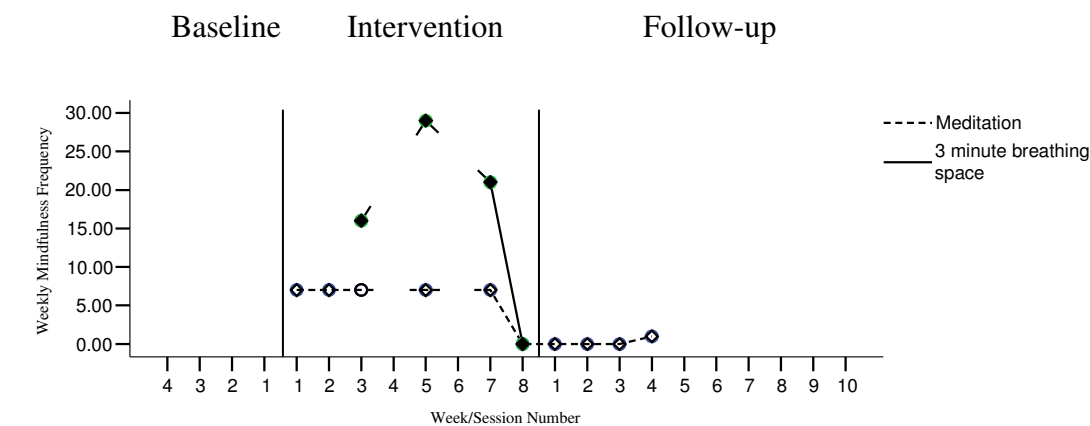
Figure 16. Weekly mindfulness practice frequency for Margaret recorded over baseline,

intervention and follow-up phase.

While Margaret began a personal mindfulness practice over the initial stages of the

intervention, Figure 16 shows that this was discontinued after Week 7 of the intervention.

Margaret did not resume any mindfulness practice until the last week of the 4-week follow-

up period.

Figure 17 represents weekly mindfulness frequency (i.e. the number of days in

which a 40 minute mindfulness practice and a three-minute breathing space was practiced)

over the assessment period for Amanda.

Baseline   Intervention   Follow-up
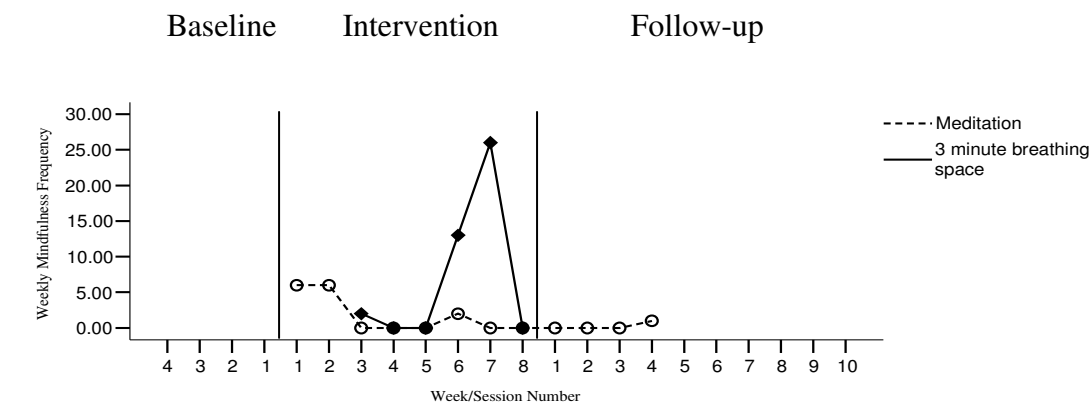
Figure 17. Weekly mindfulness practice frequency for Amanda recorded over baseline,

intervention and follow-up phase.

From Figure 17, it can be seen that Amanda did not practice her mindfulness skills except on a haphazard basis. The week that Amanda practiced the three-minute breathing space was the same week in which she refrained from gambling.

Figure 18 displays weekly mindfulness frequency (i.e. the number of days in which a 40 minute mindfulness practice and a three-minute breathing space was practiced) for Graham over the assessment period..
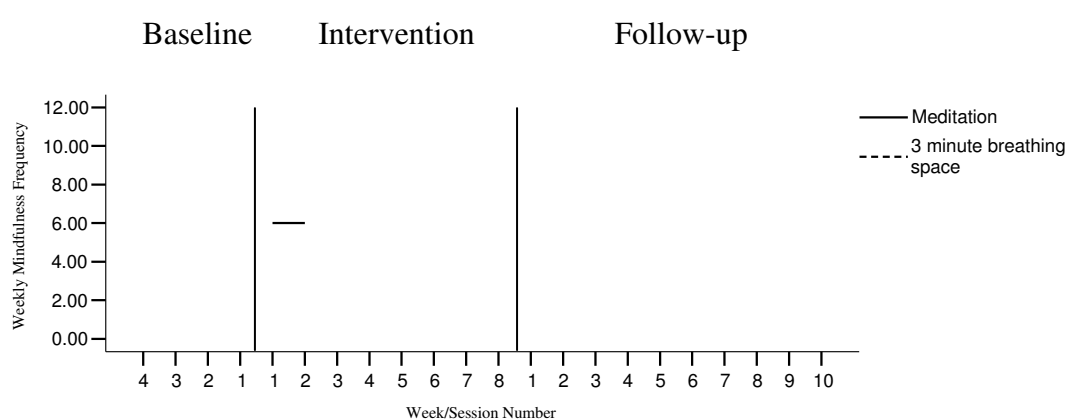
Figure 18. Weekly mindfulness practice frequency for Graham recorded over baseline, intervention and follow-up phase.

Figure 18 indicates that Graham had begun to practice his mindfulness skills. However, Graham discontinued the intervention after week four of the intervention and did not provide any additional data.

The acceptability of the MBCT-PG intervention was assessed using the CSQ at the conclusion of the intervention. Table 12 represents a summary of responses from Margaret and Amanda on the four-point rating scale.

Table 12

CSQ Responses Post-intervention for each Participant

Item	Margaret	Amanda
Quality of service	4	4
Kind of service expected	4	3
Meeting of needs	4	2
Recommending program to others	3	4
Level of satisfaction with help received	4	4
Level of effectiveness in dealing with problems	4	3
Overall satisfaction	4	4
Return to program if required	3	4

From Table 12 it can be seen that each participant considered MBCT-PG an acceptable approach for problem gambling. However, Amanda considered that the intervention addressed only a few of her needs. This participant considered the meditation exercises difficult to practice.

Discussion

The aim of this pilot study was to provide preliminary data as to the efficacy of MBCT-PG and provide an opportunity to streamline the treatment protocol as outlined in

Chapter 4. Based on the results of this study, MBCT-PG successfully reduced gambling frequency at follow-up when compared with baseline rates for both Amanda and Margaret. Based on the data collected, indications were that MBCT-PG may be of benefit for problem gambling in terms of improving psychological distress. However, the hypothesis that MBCT-PG would improve five facets of mindfulness was only partially supported. No change was observed in the Describe facet for any participant. Margaret displayed moderate improvements in the Observing, Non-Judging, Acting with Awareness, and Non-Reactivity mindfulness facets at the four-week follow-up period. In contrast, Amanda displayed a moderate improvement in the Observing facet only and a moderate decline in Non-Judging and Acting with Awareness at the four-week follow-up. Furthermore, this study aimed to investigate whether problem gamblers considered MBCT-PG an acceptable treatment approach. Although Margaret and Amanda did not adhere to the prescribed mindfulness meditation practices and were absent from some sessions, they both considered MBCT-PG an acceptable approach for their gambling problems. However, these participants may have been responding favourably due to the high level of rapport established with the researcher.

As hypothesised, gambling frequency reduced for Margaret and Amanda at the 4-week follow-up when compared with their baseline data. For Margaret, she managed to abstain from gambling completely over the follow-up phase. This is in contrast to her stated goal to control her gambling. It may be that the increased insight she developed over the course of the intervention helped her to re-appraise her use of gambling. While Amanda experienced several distressing events during the intervention, gambling frequency reduced to levels lower than her baseline data. However, the reduction was minimal, making any observations speculative.

As hypothesised, Margaret recorded a significant reduction in anxiety and depression scores to sub-clinical levels over the assessment period. Consistent with findings reported in other studies investigating the relationship between mindfulness and positive change (Carmody & Baer, 2008; Coffey & Hartman, 2008), these observations provide preliminary clinical evidence that an MBCT-PG intervention may be beneficial in terms of reducing psychological distress. However, Amanda recorded a significant increase in anxiety and depression scores at the four-week assessment period. Close inspection of likely reasons for this increase revealed that Amanda had lost her job after the post-intervention assessment and was also worried about her daughter who was experiencing customs difficulties in the United States. Pre-intervention screening interview revealed that Amanda often used gambling and alcohol use as a maladaptive coping strategy for distressing emotional states invoked by such events. Since Amanda found the mindfulness practices difficult to implement, it appears that Amanda had simply resumed these habitual responses to life stress and psychological distress. This observation highlights the importance of active engagement with the intervention in order for beneficial outcomes to occur.

Preliminary data as to the mechanisms by which MBCT-PG exerts its effect on gambling behaviour and psychological functioning outcomes suggested partial support for the hypothesis that MBCT-PG would improve five facets of mindfulness. Margaret and Amanda recorded a significant improvement in the Observing facet after the four-week follow-up. According to Baer et al. (2006), the Observing facet is related to other related constructs such as openness to experience and attending to internal and external stimuli. From this perspective, the intervention appears to have helped both participants more effectively notice thoughts, feelings and body sensations. However, the other mindfulness facets fluctuated differentially for each participant.

The Non-Judging facet represents the ability to accept current experience (Baer et al., 2006). While Margaret displayed a moderate improvement in this facet at the four-week follow-up, the significant decrease in Amanda's Non-Judging scores may reflect the psychological distress Amanda experienced as a result of her job loss and concern about her daughter. The intervention therefore did not provide her with the skills to non-judgmentally accept the likely negative feelings and beliefs associated with these events.

Similarly, Margaret displayed a moderate improvement in the Acting with Awareness facet at the four-week follow-up. This facet reflects the ability to attend to current activity and avoid automatic pilot (Baer et al., 2006). Yet Amanda again recorded a moderate decline in this facet, suggesting that Amanda was unable to increase awareness of her habitual reactions to distressing events.

In relation to the Describe facet, no change was noted in the ability of each participant to recognise and label their emotional states. This may be because interventions such as MBCT and MBSR do not emphasise verbal labelling of components of experience to the extent seen in other mindfulness interventions such as Dialectic Behavior Therapy and Acceptance and Commitment Therapy (Carmody & Baer, 2008).

Finally, the Non-Reacting facet reflects the ability to experience unpleasant inner phenomena without engaging in maladaptive behaviour (Baer et al., 2006). Margaret's scores for this facet moderately improved at the four-week follow-up assessment when compared to her pre-assessment score. In contrast, Amanda displayed no improvement at all, suggesting that the intervention was ineffective in helping Amanda more adaptively respond to her inner experiences. As she had not practiced her mindfulness skills, Amanda appears to have reacted to such events by using gambling as a maladaptive coping mechanism.

The differential mindfulness facet scores noted for Margaret and Amanda over the intervention are indicative of the importance of a daily mindfulness practice in improving psychological well-being and gambling outcomes. Carmody and Baer (2008) found that home practice of the formal meditation exercises was significantly correlated with the degree of change in facets of mindfulness. Baer et al. (2008) also found that meditation experience was significantly and positively correlated with all of the mindfulness facets with the exception of Acting with Awareness. Furthermore, changes in mindfulness scale scores have been found to mediate the relationship between meditation practice and well-being (Carmody, Baer, Lykins, & Olendzki, 2009).

When examining the homework diaries of both participants, only Margaret persisted with a daily mindfulness practice despite having missed some MBCT-PG sessions. She reported that she "*concentrated on what she was doing*", that the breathing space helped her become "*more aware*", and that she needed "*to accept her thoughts and actions*". In contrast, Amanda did not engage in a prolonged daily mindfulness practice. Even in therapy, Amanda found the experience of sitting still, even for a few minutes, highly agitating. She commented in her meditation diary that "*she could not focus*", that her practice "*didn't make an impression*", that she "*panicked*", and was "*too busy*". In a personal communication, Amanda wrote: "*I haven't been able to bring myself to do the homework apart from the 'bad feeling' day. I just don't seem to be the meditating type of person. I just wanted to warn you that I am struggling but I will be there tomorrow night and try to move forward*". Despite support and coaching, the presence of unpleasant external events and distressing inner experiences culminated in Amanda discontinuing her practice all together. These factors appear to have overwhelmed any of the discussion in session two which focussed on dealing with the barriers to practice.

Taken together, it is obvious that undertaking a daily 40 minute mindfulness practice would not appeal to all problem gamblers. Given these difficulties, it may be that MBCT-PG may only be applicable for problem gamblers where other treatment options have been exhausted and the motivation to improve gambling outcome remains intact. This provides some support to Toneatto et al. (2007) who suggested that mindfulness may be useful either as an adjunct to existing CBT interventions or as a relapse prevention strategy following standard CBT. Investigations as to whom a mindfulness-based intervention for problem gambling would be most effective remains an important area for future research.

Both Margaret and Amanda considered MBCT-PG an acceptable approach for their gambling problems. Amanda reported that she would "*recommend the course to other problem gamblers because it raises awareness of one self*". Given the endorsement received by Margaret and Amanda, no modification of the treatment protocol was considered necessary. However, the requirement for a sustained meditation practice may reduce the appeal of the intervention for many problem gamblers. This is a significant limitation as a regular mindfulness practice is essential for sustained therapeutic benefit (Carmody & Baer, 2008). As for Graham, the program did not appear to offer any benefit for him. He identified during the screening interview that he was sceptical of the approach but was prepared to experience the first few sessions. This level of scepticism remained, resulting in him discontinuing the program after session four.

MBCT-PG requires significantly more research in order to establish the approach as an alternative intervention to traditional CBT or as an adjunct approach following treatment. Based on this study, there is evidence that problem gamblers may benefit from MBCT-PG. However, benefits may only be maintained if commitment to a daily mindfulness meditation practice is sustained.

6. MINDFULNESS-BASED COGNITIVE THERAPY FOR PROBLEM GAMBLING

6.1 INTRODUCTION TO THE THIRD PAPER

This chapter constitutes an article accepted for publication in *Clinical Case Studies*. The purpose of the article was to present findings in relation to the use of mindfulness-based cognitive therapy for problem gambling. As stated in Chapter 5, mindfulness-based cognitive therapy may represent an efficacious treatment for problem gambling because of its emphasis on dissipating negative cognitions and depressive mood states, thereby averting uptake of dysfunctional coping behaviours such as problem gambling. This article describes a case study of mindfulness-based cognitive therapy for problem gambling.

The format of this chapter is consistent with the *Clinical Case Studies* publication requirements. However, for ease of reading, the tables and figures are inserted in the order they should appear in the thesis and the manuscript pagination has been replaced with thesis pagination.

6.2 DECLARATION FOR THESIS CHAPTER 6

Monash University

Declaration by candidate

In the case of Chapter 6 the nature and extent of my contribution to the work was the following:

Nature of contribution	Extent of contribution (%)
Development and application of the treatment manual upon which the treatment described in this manuscript is based. Delivery of treatment described herein. Collection of data and its analyses and preparation of the manuscript.	80%

The following co-authors contributed to the work. Co-authors who are students at Monash University must also indicate the extent of their contribution in percentage terms:

Name	Nature of contribution	Extent of contribution (%) for student co-authors only
Nicki Dowling	Assistance in the development of the treatment manual and its application. Further, provided guidance on the framing of the manuscript and review and feedback on draft manuscripts.	NA
Sabura Allen	Assistance in the development of the treatment manual, its application, and assessed therapist performance. Provided guidance on the framing of the manuscript and review and feedback on draft manuscripts.	NA

Candidate's Signature		Date

Declaration by co-authors

The undersigned hereby certify that:

(13) the above declaration correctly reflects the nature and extent of the candidate's contribution to this work, and the nature of the contribution of each of the co-authors.

(14) they meet the criteria for authorship in that they have participated in the conception, execution, or interpretation, of at least that part of the publication in their field of expertise;

(15)   they take public responsibility for their part of the publication, except for the responsible author who accepts overall responsibility for the publication;

(16)   there are no other authors of the publication according to these criteria;

(17)   potential conflicts of interest have been disclosed to (a) granting bodies, (b) the editor or publisher of journals or other publications, and (c) the head of the responsible academic unit; and

(18)   the original data are stored at the following location(s) and will be held for at least five years from the date indicated below:

Location(s)	**Problem Gambling Research and Treatment Centre, Melbourne University, Parkdale**

[Please note that the location(s) must be institutional in nature, and should be indicated here as a department, centre or institute, with specific campus identification where relevant.]

Signature 1		**Date**
	██████████	19/4/2011
Signature 2		

■■

6.3 MANUSCRIPT OF PAPER 3

Running head: MINDFULNESS-BASED COGNITIVE THERAPY FOR PROBLEM

GAMBLING

Mindfulness-based cognitive therapy for problem gambling

Steven M. de Lisle[1], Nicki A. Dowling[2]

& J. Sabura Allen[1]

[1] School of Psychology and Psychiatry, Monash University, Melbourne, Victoria, Australia
[2] Problem Gambling Research and Treatment Centre, University of Melbourne, Victoria, Australia

Abstract

This article describes treatment of a female problem gambler using mindfulness-based cognitive therapy (MBCT). The treatment protocol was adapted for problem gamblers from the manualised MBCT intervention developed by Segal, Williams, and Teasdale (2002). Gambling behaviour and mindfulness practice were monitored using daily diary entries maintained by the participant. The Beck Anxiety Inventory, Beck Depression Inventory-II and the Five Facet Mindfulness Questionnaire were administered at pre-treatment, post-treatment, 4-week follow-up and 10-week follow-up phases. The Client Satisfaction Questionnaire was also used to assess the acceptability of the intervention. The participant abstained from gambling and anxiety and depression scores significantly reduced to sub-clinical levels over the assessment period. Exploration of mindfulness facets revealed MBCT-PG may be useful in promoting acceptance of distressing thoughts and emotions. However, the participant did not maintain an intensive mindfulness meditation practice over the follow-up phase of the intervention. The clinical implications of this case study are discussed.

Keywords

Problem gambling, gambling, MBCT, mindfulness, treatment, intervention

1. THEORETICAL AND RESEARCH BASIS

The evaluation of interventions for problem gambling is still in its infancy. However, a meta-analysis of the problem gambling treatment literature demonstrated that problem gambling is amenable to intervention, with psychological treatments more effective than no treatment at post-treatment and at follow-up evaluations (Pallesen, Mitsem, Kvale, Johnsen, & Molde, 2005). Approximate overall success rates for psychological treatments are estimated at 70% at one year follow-up and 50% at two-year follow-up (Pallesen et al., 2005). Although the literature does not provide a strong basis for differentiation of the available treatment options, cognitive-behavioural therapies (CBT) have been cautiously recommended as "best practice" for the psychological treatment of problem gambling (López Viets & Miller, 1997; Westphal, 2008). Research has successfully applied CBT in individual settings (Dowling, Smith, & Thomas, 2006), group settings (Dowling, Smith, & Thomas, 2007), in combination with other interventions such as motivational enhancement therapy (Carlbring & Smit, 2008; Petry et al., 2008), with a goal of abstinence or controlled gambling (Dowling, Smith, & Thomas, 2009; Ladouceur, Lachance, & Fournier, 2009), over the internet (Carlbring & Smit, 2008), and in self-help workbooks (Hodgins, Currie, el-Guebaly, & Peden, 2004).

Behaviour therapy and cognitive therapy are frequently described as representing the first and second wave, respectively, in the CBT tradition. Mindfulness-based interventions are suggested to represent a 'third wave' that expands upon the CBT tradition (Hayes, Follette, & Linehan, 2004) by incorporating eastern approaches to the mind and body within a cognitive-behavioural framework (Williams & Swales, 2004). Mindfulness in this context is described as "the process of observing body and mind intentionally, of letting … experiences unfold from moment to moment and accepting them as they are" (Kabat-Zinn, 2005, p.23). While debate continues as to an operational definition of the

mindfulness construct (Bishop et al., 2004), a recent confirmatory analysis of existing

mindfulness measures revealed five facets of mindfulness (Baer, Smith, Hopkins,

Krietemeyer, & Toney, 2006). These are: Non-Reactivity to inner experience,

Observing/noticing/attending to sensations/perceptions/thoughts/feelings, Acting with

awareness/automatic pilot/concentration/no distraction, Describing/labelling with words,

and Non-Judging of experience. While traditional CBT and mindfulness-based

psychotherapy both emphasise decentring from thought (i.e., thought does not equal

reality), mindfulness-based psychotherapy has shifted from challenging the *content* of

thoughts to changing one's *relationship to* one's thoughts and feelings (Sauer & Baer,

2009).

Arguments for pursuing mindfulness-based treatments for problem gambling

include the failure of traditional CBT for problem gambling to work for all gamblers and

the increase in rates of relapse across follow-up evaluations (López Viets & Miller, 1997).

Most notably, actively challenging the content of thoughts may fail to address more

habitual cognitions that largely lie outside of conscious awareness. Teasdale (1997) argued

that there is an apparent disparity between the semantic and declarative meanings of the

knowledge gained in treatments such as CBT and the more implicit felt sense of being that

is often felt outside of conscious awareness. If so, then the role of challenging thoughts

may operate more on semantic, declarative meanings without consistently impacting the

underlying emotional aspects of gambling that seem to overwhelm any rational

understanding of distorted thinking processes. Mindfulness-based psychotherapy

overcomes this problem by intentionally bringing awareness to manifestations of

unconscious cognitive processes that are commonly experienced in the form of body

sensations, thoughts and feelings (Mace, 2007; Shapiro, Carlson, Astin, & Freedman,

2006; Wells, 2002). In this way, problem gamblers may acquire the skills to watch

gambling-related cognitions come and go, irrespective of whether such cognitions arise in terms of thoughts, feelings or body sensations, and respond when noticed with reduced conviction as to their validity (Toneatto, Vettese, & Nguyen, 2007). The ability to experience cognitions in this manner has important implications given the apparent degree of automaticity in gambling-related cognitive biases that arise when gamblers are confronted by aversive or high-risk situations (Boyer & Dickerson, 2003; McCusker & Gettings, 1997). Toneatto et al. (2007) argue that mindfulness practice may facilitate behavioural change by modifying the relationship problem gamblers have with their gambling-related cognitions. This is achieved by reducing the degree of attachment to 'the seeming truth of their erroneous gambling-related perceptions' (Toneatto et al., 2007, p.95), thereby assisting them to react less impulsively to their habitual patterns of thinking.

Mindfulness-based psychotherapy has accumulated substantial empirical support for a wide range of presenting issues (Baer & Krietemeyer, 2006; Bishop, 2002) and interest is now growing in the specific role of mindfulness in gambling-related pathology. In a study of 185 undergraduate students, Lakey, Campbell, Brown, and Goodie (2007) found that dispositional mindfulness was related to lower gambling-related pathology, after controlling for gambling frequency and trait self-control. It was speculated that mindfulness facilitated the development of present-centred awareness followed by more adaptive behavioural choices. This study also found that the relationship between mindfulness and problem gambling was mediated by cognitive processes, whereby mindful gamblers were more accurate in assessing risk and learning mixed reinforcement and punishment contingencies than less mindful gamblers. A study conducted by Toneatto et al. (2007) reported on the efficacy of mindfulness practice for a male roulette gambler "in his sixties", who had not benefited from traditional CBT. The researchers noted that any intellectual understanding of his gambling behaviour was overwhelmed by underlying

beliefs that he would win next time or that 'one more time would not hurt'. However, through practicing mindfulness meditation, he was able to become aware of the beliefs associated with his urge to gamble and to simply accept such cognitions in the present moment with the knowledge that they were impermanent. While gambling-related thoughts continued to occur, the duration, intensity, and salience of urge related thoughts diminished so that he no longer reacted with a behavioural response.

There are currently several widely recognised mindfulness-based interventions that could be considered appropriate in the treatment of gambling problems. These include Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 2005), Mindfulness-Based Cognitive Therapy (MBCT; Segal, Williams, & Teasdale, 2002), Dialectical Behaviour Therapy (DBT; Linehan, 1993a, 1993b), and Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999). Although different, each approach attempts to operationalise and teach a way of paying attention to present-moment experience that has the potential to reduce gambling-related pathology and improve well-being. MBCT is one of the most prominent and empirically validated third-wave CBT interventions (Kuyken et al., 2008; Ma & Teasdale, 2004; Teasdale et al., 2000).

MBCT is an eight-week intervention where mindfulness skills are taught and practiced in the first half of the intervention, followed by instruction in responding and dealing with negative thought or feeling in the second half (Segal et al., 2002). In contrast to other third-wave CBT approaches such as ACT and DBT, MBCT emphasises intensive mindfulness meditation practices that promote awareness of present moment experience (Bishop et al., 2004). For example, patients are instructed in the mindfulness of the breath meditation to foster the ability of a person to disengage from distracting thoughts, feelings or body sensations. These experiences are viewed merely as passing events in the mind, rather than as accurate representations of reality that must be acted upon. MBCT therefore

teaches skills that may allow individuals to disengage from habitual cognitive routines associated with gambling behaviour.

While no randomised controlled study has yet investigated the impact of MBCT on problem gambling, MBCT may be an effective treatment for problem gambling given the empirical evidence supporting its value for heterogeneous groups (Ree & Craigie, 2007) and its potential as a valuable augment to CBT for addictive disorders such as substance use (Hoppes, 2006). Furthermore, there is preliminary support for adaptations of MBCT to other populations and psychiatric disorders, such as binge eating disorder (Baer, Fischer & Huss, 2005), children with symptoms of anxiety and depression (Semple, Lee, Rosa, & Miller, 2010), and older adults (Smith, 2006; Smith, Graham, & Senthinathan, 2007).

MBCT may also improve on current treatment outcomes for problem gambling by operating more generally on psychological distress and addressing the diagnostic comorbidity and heterogeneity associated with problem gambling status. There is now evidence from several major population studies with high quality standardised measurement tools and sound methodologies that problem gambling is associated with depression and mood disorders, anxiety disorders, alcohol use problems, substance use problems, and personality disorders (e.g., Kessler et al., 2008; Petry, Stinson, & Grant, 2005; Wardle et al., 2007). As MBCT encourages a sense of curiosity, openness, and acceptance towards present moment thoughts, feelings and body sensations, regardless of their content, it becomes irrelevant if such states are symptomatic of any disorder (Bishop et al., 2004). Moreover, MBCT incorporates cognitive-behavioural elements previously demonstrated as having positive benefit for problem gamblers, such as psycho-education, pleasure and mastery activities, dealing with difficulty, coping with triggers, and relapse prevention (e.g., Dowling et al., 2006, 2007, 2009; Petry et al., 2006).

MBCT was developed for prevention of relapse from depression (Segal et al., 2002). Individuals are vulnerable to relapse of depression when their attempts to shift from a current state of dissatisfaction to a more ideal state of affairs fail. Negative feelings are prolonged and dysfunctional coping behaviours may be initiated to reduce the discrepancy. Since MBCT techniques promote awareness and acceptance of present moment experiences, these techniques are useful in dissipating negative cognitions and depressive mood states, thereby averting uptake of dysfunctional coping behaviours. This is relevant to problem gambling given high rates of relapse reported in follow-up evaluations (López Viets & Miller, 1997). For example, if a problem gambler seeking to abstain from gambling encounters a high risk situation such as a familial dispute, automatically triggered negative feelings and habitual patterns of thinking may be invoked which may reinstate gambling activity in a vain attempt to reduce the negative experience.

The current study aims to investigate the utility of MBCT for problem gambling (MBCT-PG) for a client experiencing gambling problems. It is hypothesised that MBCT-PG will reduce gambling frequency, duration and expenditure, and improve psychological functioning (anxiety and depression). In order to provide preliminary data regarding the mechanisms by which MBCT-PG exerts its effect on gambling behaviour and psychological functioning outcomes, this study will also evaluate the impact of MBCT-PG on each of the five mindfulness facets. Specifically, it is hypothesised that MBCT-PG will improve the mindfulness facets of Non-Reactivity to inner experience, Observing/noticing attending to sensations/perceptions/thoughts/feelings, Acting with awareness/automatic pilot/concentration/no distraction, Describing/labelling with words, and Non-Judging of experience. Finally, given that MBCT-PG has not previously been employed in the treatment of problem gambling and requires a commitment to mindfulness practice, the

acceptability of the approach will be assessed using client satisfaction data compiled at the completion of the MBCT-PG intervention.

2. CASE INTRODUCTION

 'Lauren' (a pseudonym) independently contacted the researcher after learning of the research program. At time of interview, Lauren was 61 years of age with four adult children and four grandchildren. She reported that she had previously lived in an abusive relationship for 30 years with her husband with whom she was now separated. After separation, Lauren continued having intermittent contact with her estranged husband who was a source of stress for her. While she continued to occupy the family home, her only source of income was a pension. Lauren reported that she had a mortgage and no other debts.

Lauren's 39 year-old daughter was her primary support. However, she reported that her three adult sons, who resided with her, were experiencing personal and emotional difficulties. Her relationship with most members of her family was characterised by tension and frequent disputes. While she refrained from substance use, she reported that one of her sons had a substance use problem. Despite such difficulties, Lauren reported that she felt safe at home.

3. PRESENTING COMPLAINTS

Lauren reported difficulties relating to electronic gaming machines (EGMs) and no difficulty with any other form of gambling. In the five weeks prior to the intervention, Lauren lost an average of AUD$144 per week on EGM gambling. She attended local gaming venues an average of 0.8 times per week where she remained for an average of 1.4 hours per week. Lauren reported that her gambling prior to the five week baseline period was well in excess of the times reported and that she still considered herself a problem gambler.

The initial assessment interview revealed that Lauren was pre-occupied with gambling; had made repeated attempts to discontinue; had returned another day to recoup previous monetary losses; and had used gambling as a means of escaping from problems and dysphoric affect. According to the Diagnostic and Statistical Manual-IV-TR (DSM-IV-TR; American Psychiatric Association, 2000), pathological gambling is characterised "by recurrent and persistent maladaptive gambling behaviour" (p.663). To meet the criteria for pathological gambling, a person must meet five out of the ten criteria to be so diagnosed. As such, Lauren did not satisfy full DSM-IV-TR criteria for pathological gambling. The term 'problem gambler' is often applied to persons who exhibit some of these criteria (Volberg, 2002).

The interview also revealed evidence of generalised anxiety and past depressive episodes. Pre-intervention assessment using the Beck Anxiety Inventory and Beck Depression Inventory-II indicated 'severe anxiety' and 'moderate depression' respectively. She reported current mood as low due to a recent dispute with an adult son. Her treatment goal was to abstain from all gambling activity.

4. GAMBLING HISTORY

Lauren began gambling at the age of 46 years on EGMs. She reported that she gambled to recoup previous gambling losses and that gambling frequency intensified following the death of her mother several months later. Since this time, Lauren reported ongoing issues with generalised anxiety and depression, and had experienced a heart attack. She had ongoing disputes with her adult sons who continued to reside in her home. Lauren reported that she had limited social support and engaged in few leisure activities. She also had limited disposable income. Lauren considered that such factors contributed to her desire to gamble. She identified that her gambling had become a problem at age 56. Following this,

Lauren engaged in CBT for problem gambling for several years and participated in a mindfulness/yoga course for problem gambling.

5. ASSESSMENT

Approval for this research (Ethics number CF08/1123-2008000551) was granted by the Monash University Standing Committee on Ethics in Research involving Humans. Lauren completed a range of self-report measures that assess diagnostic status (structured clinical interview for pathological gambling and clinical interview), evaluate treatment outcomes (gambling frequency, gambling duration, gambling expenditure, anxiety and depression), measure mindfulness as a process of change variable, and investigate treatment compliance and acceptability (mindfulness practice and client satisfaction). Diagnostic measures were employed at assessment interview and self-report measures were completed at pre-intervention, post-intervention, 4-week follow-up, and 10-week follow-up phases. A commitment to undertake a daily 40 minute mindfulness practice was verbally agreed to and informed consent obtained at the assessment interview.

Diagnostic status measure

The Structured Clinical Interview for Pathological Gambling (SCIP; Walker, Anjoul, Milton, & Shannon, 2006). The SCIP assesses gambling-related symptoms according to diagnostic (DSM-IV-TR) criteria. The consensus of expert opinion is that DSM criteria should be used to define treatment populations (Walker, Toneatto, et al., 2006).

The Gambling Self-Efficacy Questionnaire (GSEQ; May, Whelan, Steenbergh, & Meyers, 2003) is a 16-item measure that was administered during therapy. This instrument highlighted Lauren's unique automatic responses to high-risk situations that could lead her to further gambling. The GSEQ has high internal consistency (Chronbach α = .96) and

good test-retest reliability (*r* = .86). The relationship between GSEQ scores and other measures provide good evidence of convergent validity.

Treatment outcome measures

Gambling behaviour. Gambling frequency, duration and expenditure were assessed using daily diary entries completed by the participant. Only EGM gambling was recorded, given that Lauren reported no participation in any other form of gambling.

Beck Anxiety Inventory (BAI; Beck & Steer, 1990). The 21-item BAI was designed to evaluate behavioural, emotional and physiological symptoms of anxiety and is a reliable, valid and widely used measure of anxiety during the past week. Each symptom is rated on a four-point scale, ranging from (0) *not at all* to (3) *severely*. The instrument has excellent internal consistency (*α* = .92), high test–retest reliability (*r* = .75), a clear four-factor structure corresponding to neurophysiology, subjective, autonomic, and panic components of anxiety, and good discriminant validity (Beck & Steer, 1990, 1991; Leyfer, Ruberg, & Woodruff-Borden, 2006).

Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996). The BDI-II is a 21-item inventory for the assessment of the severity of state depression. Each item is rated on a four-point scale ranging from 0 to 3 and the BDI-II total score is derived by summing the item scores. The psychometric properties of the BDI-II have been well established, with evidence of sound internal consistency (α = .92), test–retest reliability (r = .93), and content, construct, factorial, and discriminant validity (Beck, Steer, & Brown, 1996).

Process of change measures

Five Facet Mindfulness Questionnaire (FFMQ; Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006). The 39-item FFMQ is based on a factor analytic study of five independently developed mindfulness questionnaires. This analysis yielded five

factors that appear to represent elements of mindfulness as it is currently conceptualized. The five empirically derived subscales (Observing/noticing/attending, Describing/labelling with words, Acting with awareness, Non-Judging of inner experience and Non-Reactivity to inner experience) are viewed as facets reflecting key mindfulness skills. The subscales were found to be internally consistent (α = .83, α = .91, α = .87, α = .87, and α = .75 respectively) and correlated in expected directions with other measures evaluating the same facets of the mindfulness construct. Higher scores reflect greater level of mindfulness.

Treatment compliance and acceptability

Mindfulness practice. Mindfulness frequency and duration were assessed using a daily diary developed by Segal et al. (2002). Diary entries include date, mindfulness practice, practice duration, and comments.

The Client Satisfaction Questionnaire (CSQ; Larsen, Attkisson, Hargreaves, & Nguyen, 1979) comprises eight items scored on a four-point anchored answer scale. The CSQ is a general scale to assess client satisfaction that can be used in a wide variety of settings. Scores range from 8 to 32, with higher scores reflecting greater levels of client satisfaction. This scale displays a high degree of internal consistency (α = .93) and correlates with therapist's estimates of client satisfaction (Larsen et al., 1979).

6. CASE CONCEPTUALISATION

Lauren described her gambling behaviour as a coping strategy that had a negative impact on her functioning. With repeated associations between gambling and on-going stressors, Lauren appeared poised to develop a more serious gambling problem. During therapy, Lauren completed the GSEQ which revealed that she did not feel confident that she could control her gambling if there were fights at home. Therefore, her gambling may be conceptualised as a maladaptive coping strategy that was adopted soon after the death of

her mother which has been perpetuated by an inability to effectively deal with ongoing stress, relating primarily to financial difficulty and familial disputes. Gaming venues appear to have provided a refuge from these difficulties by facilitating suppression of associated worries and negative affect so long as her funds remained. Once her limited funds were exhausted, Lauren would again become confronted by her personal difficulties and the consequences of her gambling-related actions, resulting in a determination to refrain from gambling in the future. Yet her resolve was continually undermined by the ongoing nature of her personal difficulties, resulting in a return to gambling. This cyclical pattern had been evident to Lauren since 2004 and was growing in intensity.

Despite frequent attempts to discontinue gambling since 2004, the positive experience of abstinence was rapidly overwhelmed by ongoing stressors that related primarily to financial worries, concerns about her physical health, and disputes within her immediate family. Lauren reported that gambling offered a place of "peace, quiet and comfort" and would not leave the venue until all her money had been spent. On departing, she experienced dejection on realising that all her money had been lost. While she had previously received traditional CBT for her gambling problem, she was prone to lapses that involved thoughts such as "I haven't been for a while", "I deserve to go", and "I miss gambling". Despite voluntarily excluding herself from local gaming venues, she reported several successful attempts at eluding detection. However, Lauren has maintained the resolve to overcome her gambling problem and has adopted a healthier lifestyle following her recent heart attack. This combination of factors suggested that a formal mindfulness intervention was a likely appropriate and effective treatment for Lauren.

7. COURSE OF TREATMENT AND ASSESSMENT OF PROGRESS

The treatment protocol was adapted for problem gamblers from the manualised MBCT intervention developed by Segal et al. (2002). While MBCT is normally practiced in a

group format, delivery of mindfulness-based treatments in individualized formats is also considered appropriate (Lau & Yu, 2009). Many mindfulness interventions such as ACT and DBT routinely teach mindfulness skills to individuals (Baer, 2003). The therapist was an accredited MBCT facilitator with an on-going mindfulness practice. Lauren was provided with a gambling diary five weeks prior to the intervention to establish a baseline of daily gambling frequency, expenditure and duration, and assess progress over the intervention and follow-up phases. A daily mindfulness diary was also provided to record mindfulness frequency and duration over the intervention and follow-up phases. Consistent with the general structure of MBCT, Lauren participated in eight weekly MBCT-PG sessions, each of two hours duration. A four week and ten week follow-up session was conducted to consolidate learning and discuss practical issues relating to her mindfulness practice. Assessment of progress can be observed with reference to weekly EGM gambling frequency (Figure 19), weekly EGM gambling expenditure (Figure 20), and weekly EGM gambling duration (Figure 21) over the assessment period. Figure 22 represents weekly mindfulness frequency (i.e. the number of days in which a 40 minute mindfulness practice and a three-minute breathing space was practiced) over the assessment period.
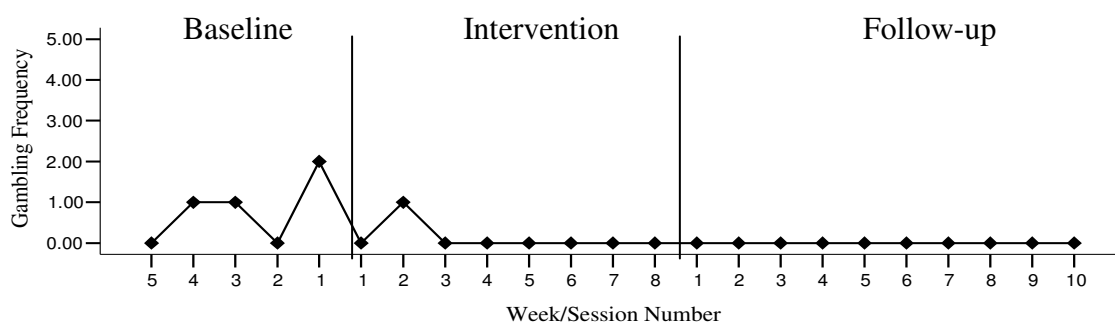
Figure 19. Weekly EGM gambling frequency recorded over baseline, intervention and follow-up phases.
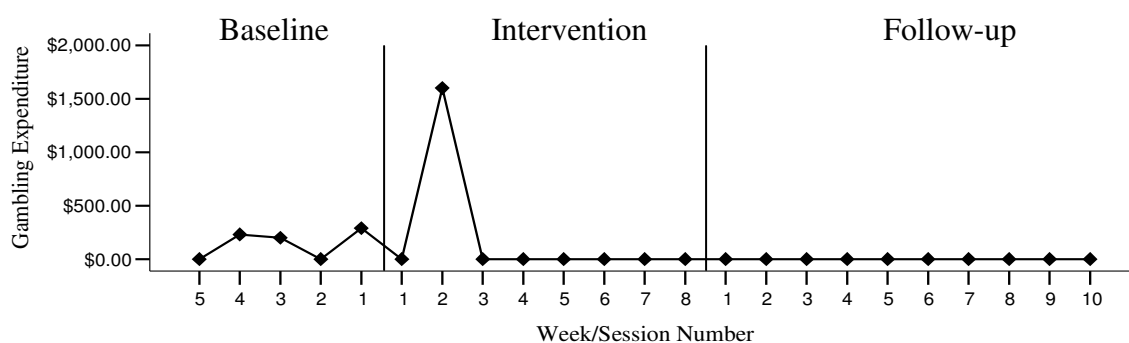
Figure 20. Weekly EGM gambling expenditure ($AUS) recorded over baseline, intervention and follow-up phases.
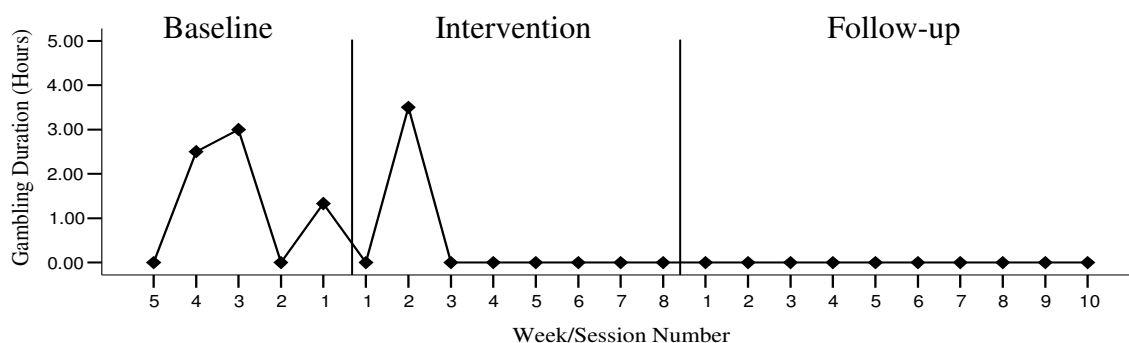
Figure 21. Weekly EGM gambling duration (hours at venue) recorded over baseline, intervention and follow-up phases.
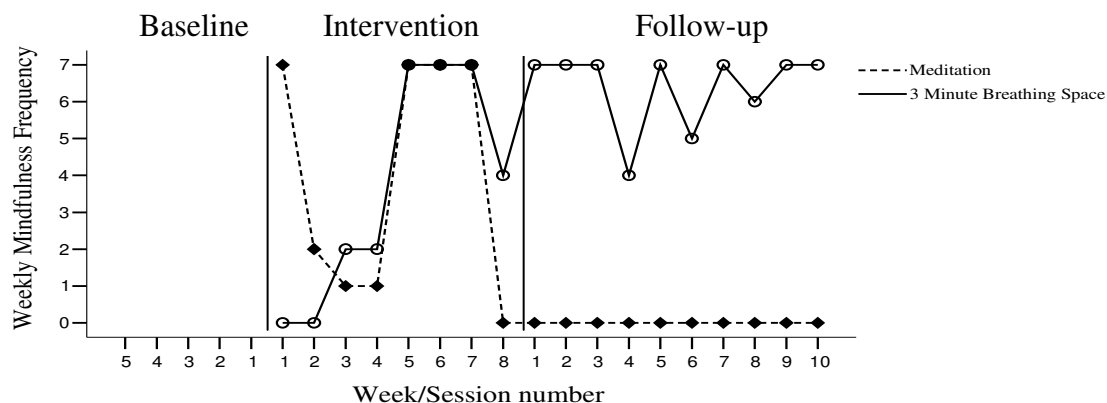
Figure 22. Weekly mindfulness practice frequency recorded over baseline, intervention and follow-up phases.

From Figures 19, 20 and 21, it can be seen that gambling behaviour declined when compared to baseline. By Week 3, Lauren completely abstained from gambling which was maintained throughout the treatment and follow-up periods. From Figure 22, it can be seen that Lauren engaged in a regular 40 minute meditation practice from Week 1 of the intervention. Frequency of this meditation practice declined in Week 2 then increased over the course of the intervention in accordance with homework requirements. However, Lauren discontinued her daily meditation practice over the follow-up period. Figure 22 also displays the frequency of use of the three-minute breathing space which was introduced in Week 3 of the intervention. Lauren used this technique regularly over the intervention period and was the only mindfulness practice utilised over the follow-up period.

<div align="center">Treatment Protocol</div>

The treatment protocol was adapted for problem gamblers from the manualised MBCT intervention developed by Segal et al. (2002). Guided audio presentations for each of the meditations were provided to Lauren at the end of each session.

Sessions 1 – 4: Mindfulness

The first four sessions of MBCT-PG focused on teaching mindfulness techniques to Lauren. Psycho-education in Session one introduced the concepts of automaticity, whereby habitual activities are performed without conscious attention (Logan, 2004) and mindfulness, whereby present moment thoughts, feelings and sensations are attended to without trying to change anything (Kabat-Zinn, 2005). Mindfulness practice then began with the body scan technique which was used to help Lauren gain greater awareness of physical sensations in the body, usually the most noticeable manifestation of thought processes and feelings that operate outside awareness. Session two then focused on dealing

with barriers to her mindfulness practice. Generally, MBCT participants encounter many obstacles when adopting a regular mindfulness practice (Segal et al., 2002). However, Lauren reported that she practiced the prescribed 40 minute mindfulness homework each day and did not report any difficulty.

However, in Session three, Lauren reported a decline in the frequency of her 40 minute mindfulness practice. She indicated that her "mind kept wandering" and that she had "difficulty concentrating" when practicing her homework. These experiences appeared to relate to a resumption of gambling during the week which resulted in a loss of AUD$1600. While distressing, this financial loss afforded some insight into the nature of her distress that she came to perceive in terms of thoughts, feelings and body sensations. The introduction of a wide range of mindfulness techniques in this session, including sitting meditation, three-minute breathing space, yoga and walking meditation offered a variety of means by which Lauren could practice her mindfulness skills and interrupt automatic responses she commonly experienced prior to or following a gambling episode.

Session four explored the present moment by encouraging Lauren to be mindful of her current experience. This created a space for her to observe thoughts, feelings, and body sensations invoked by events and become free of habitual automatic reactions by responding mindfully each time they occurred. She reported that she began to "do things with intention" and to "take notice of what she was doing". The Gambling Self-Efficacy Questionnaire (Whelan, Steenbergh & Meyers, 2007) was administered during this session to highlight high-risk situations that were relevant for her. In particular, Lauren did not feel confident that she could control her gambling if there were fights at home. This insight provided an opportunity for her to respond mindfully when this situation occurred in the future.

Sessions 5 - 8: Responding to Gambling-related Cognitions

Sessions five to eight of MBCT-PG provided instruction in mindfully responding and dealing with gambling-related thoughts or feelings. During this phase of MBCT-PG, Lauren continued to refrain from gambling and reported taking more notice of her current experience. Session five focused on developing an accepting relationship with her gambling-related triggers and urges by bringing memory of her recent gambling experience to mind when engaged in mindfulness meditation. This practice allowed Lauren to explore her experience and stay with it without actually doing anything. Session six consolidated this skill by helping her to develop a gentle interest and curiosity toward the content of her gambling related-thoughts. She reported occasions during the week where she "needed to escape" and experienced "uncomfortable feelings and thoughts" when walking down the street. However, she was able to watch these experiences unfold in the present moment without doing anything. This session provided instruction in acceptance of distressing thoughts and feelings by using the breath as a means of re-directing her attention each time these events were noticed.

Lauren continued to abstain from gambling and practiced mindfulness exercises regularly. She noted that she used her breath as a point of reference to which she returned every time she noticed a gambling-related cognition. Session seven included several cognitive-behavioural techniques commonly used in traditional CBT. Lauren listed pleasure and mastery activities that could be used instead of gambling, noted activities that could trigger a gambling episode, and identified her own individual relapse signature. Of relevance to the potential for relapse was her thinking about gambling to avoid personal problems. The final session then linked the learning gained with the future. The program was summarised, relapse action plans were discussed and reviewed, and Lauren was

advised to devote approximately 40 minutes each day to a mindfulness practice. Post-intervention measures were distributed and returned to the researcher by post.

Assessments of the BAI (Figure 23), BDI-II (Figure 24) and the FFMQ (Figure 25) were taken at pre-intervention, post-intervention, four week and ten week follow-up phases. The y-axis scale on each figure represents the lowest score to the highest score for each measure. Standard error of measurement bars (SeM) were included in these graphs so that change could be assessed using inference by eye (Cumming & Finch, 2005). The SeM provided the basis for determining a 95% confidence interval within which Lauren's true score was located. Significant change is indicated by a clear and evident gap between the SeM bars at each phase. Moderate change is indicated by in a clear increase or decrease in the outcome variable but no gap between the SeM bars at each phase. No change is indicated by minimal change in the outcome variable and no gap between the SeM bars at each phase.
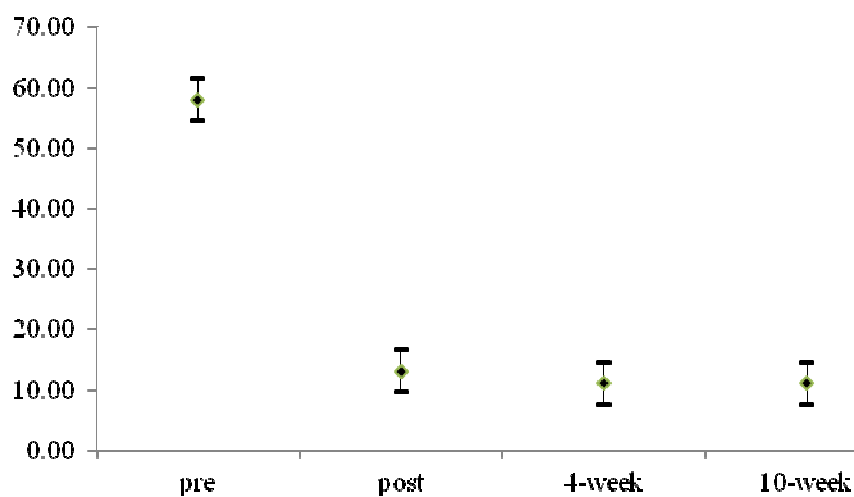
Figure 23. Beck Anxiety Inventory scores at each assessment period.
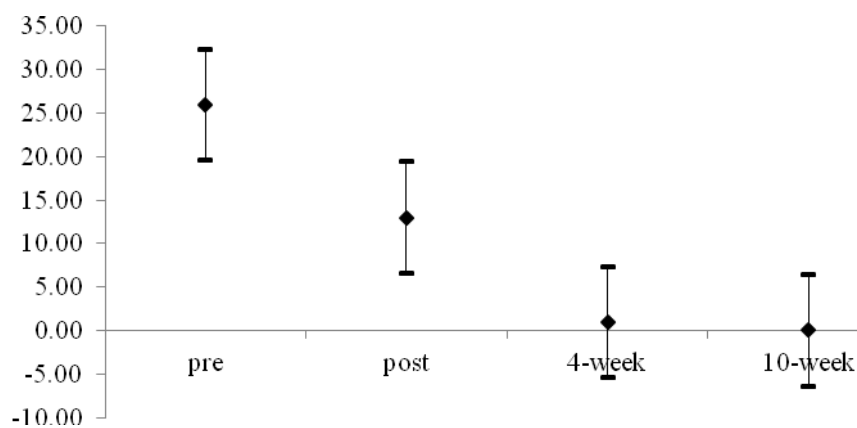
Figure 24. Beck Depression Inventory-II scores at each assessment period.
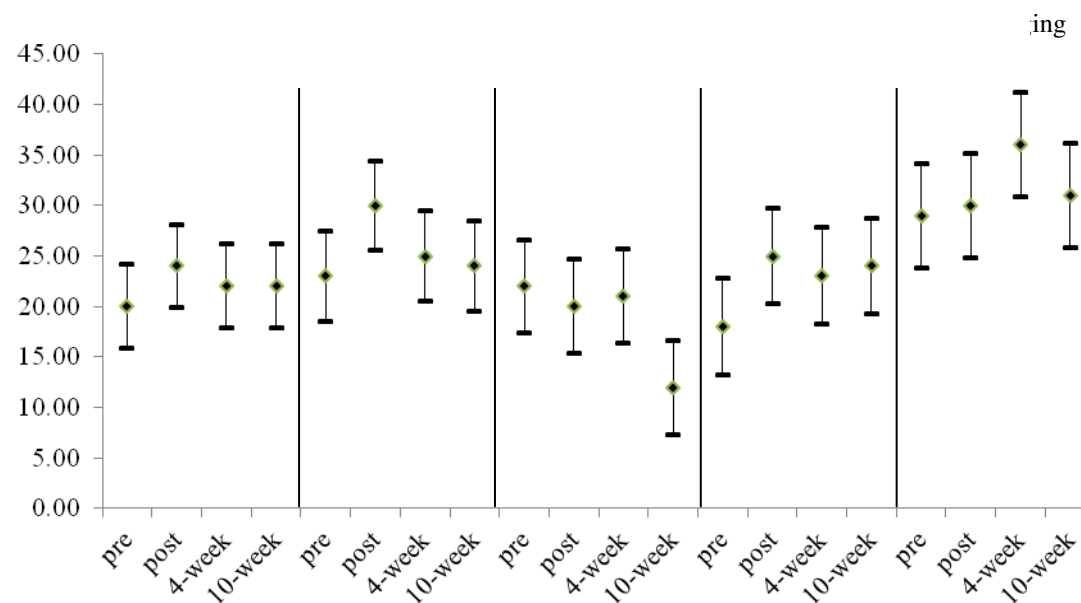
Figure 25. Five Facet Mindfulness Questionnaire scores at each assessment period.

Figure 23 reveals that BAI scores for Lauren indicated 'severe anxiety' at pre-intervention assessment. These scores significantly reduced to 'mild anxiety' at post-intervention assessment. BAI scores remained at this level at four week and ten week follow-up. Figure 24 displays Lauren's BDI-II scores which indicated 'moderate depression' at pre-intervention assessment. BDI-II scores significantly reduced to 'minimal depression' at post-intervention assessment. There was a moderate decrease in depression scores from this level at four week follow-up which was maintained at ten week follow-up assessment. Overall, the assessment measures revealed that MBCT-PG was effective in significantly reducing symptoms of anxiety and depression.

Figure 25 displays each of Lauren's mindfulness facet scores. There was no change in the SeM for the Describing facet across the assessment period. There was moderate improvement in the SeM for the Observing subscale of the FFMQ at post-intervention assessment. However, there was a moderate decrease in Observing at four week follow-up and no change at ten week follow-up. While the Acting with Awareness facet displayed no change over the intervention and at four week follow-up, there was a moderate reduction in this facet at ten week follow-up which was significant when compared to the pre-intervention score. A moderate improvement was observed in the Non-Reactivity mindfulness facet at post-intervention assessment which was maintained across the follow-up period. Similarly, there was a moderate increase in the Non-Judging facet scores at four week follow-up. The reduction in this score at ten week follow-up was non-significant.

Client satisfaction data was compiled using the CSQ at the conclusion of the therapy. Table 13 reflects Lauren's responses to this questionnaire. From Table 13, it can be seen that Lauren was most satisfied overall with MBCT-PG as a treatment for her gambling problem. She was satisfied in terms of the intervention meeting her needs and recommending the service to others, and most satisfied in all other domains.

Table 13

Lauren's CSQ Responses at Post-intervention Assessment

Item	Response
	(1 = least satisfied, 4 = most satisfied)
Quality of service	4
Kind of service expected	4
Meeting of needs	3
Recommending program to others	3
Level of satisfaction with help received	4
Level of effectiveness in dealing with problems	4
Overall satisfaction	4
Return to program if required	4

8. COMPLICATING FACTORS

Lauren was required to complete a daily diary entry to record frequency and duration of her mindfulness practice using the forms devised by Segal et al. (2002). Lauren reliably reported frequency of her mindfulness practice, but practice duration entries were inconsistent and insufficient despite the therapist's attempts to encourage more precise recording. This information was therefore supplemented by interview information. Taken together, this data revealed Lauren's unwillingness to sustain a regular 40 minute meditation practice over the follow-up period as recommended by Segal et al. (2002).

9. MANAGED CARE CONSIDERATIONS

Lauren was provided with information at interview pertaining to other forms of counselling and problem gambling services that could be used if any distress was experienced during the course of the program.

10. FOLLOW-UP

Lauren completed a treatment protocol that involved a session with the therapist four weeks and again at ten weeks following the conclusion of the intervention. Self-report measures were administered on both occasions, course content was reviewed, and progress was discussed. Lauren remained gambling abstinent and both her anxiety and depression scores remained at sub-clinical levels over the follow-up period. However, the prescribed 40-minute daily mindfulness meditation practice was not maintained. Instead, Lauren preferred to employ the three-minute breathing space regularly as a way of diffusing present moment gambling-related cognitions. The lack of significant improvement in Describing, Observing and Acting with Awareness facets over the follow-up period may reflect this lapse.

11. TREATMENT IMPLICATIONS OF THE CASE

The aim of this study was to investigate the utility of MBCT-PG for a problem gambler. As hypothesised, MBCT-PG significantly reduced gambling frequency, duration and

expenditure, and significantly improved Lauren's psychological functioning. However, the hypothesis that MBCT-PG would improve five facets of mindfulness was partially supported, as only Observing, Non-Judging and Non-Reactivity mindfulness facets displayed evidence of moderate improvement. In addition, although Lauren failed to maintain the prescribed mindfulness meditation practice, she considered MBCT-PG an acceptable approach for her gambling problem.

This case study has a number of implications for utilising third wave CBT for problem gambling. Most notably, Lauren completely abstained from gambling at the conclusion of the intervention and this improvement was maintained over the ten week follow-up period. Previous interventions such as traditional CBT had not been completely successful for Lauren as she had experienced multiple gambling lapses. While she continued to experience urges to gamble during MBCT-PG, she successfully refrained from gambling by mindfully responding each time such urges occurred. This response is in sharp contrast to her use of gambling as a means of escaping present moment personal difficulties which she habitually engaged in prior to the development of her mindfulness skills. Since MBCT-PG targets habitual cognitions that lie largely outside conscious awareness, it is possible that the intervention is more effective than traditional CBT for this client because it more consistently impacted the underlying feelings and urges responsible for her gambling activity. While a single case study can not demonstrate the efficacy of the intervention, this result nonetheless demonstrates that a third wave CBT approach such as MBCT-PG has potential in improving problem gambling outcomes over that of traditional CBT for some problem gamblers. Randomised controlled studies with larger samples are required in order to establish the efficacy of MBCT in the treatment of problem gambling.

As hypothesised, Lauren recorded a significant reduction in anxiety and depression scores to sub-clinical levels over the assessment period. Because co-morbid disorders such

as anxiety and depression are important and influential pathways both into and out of pathological gambling (National Research Council, 1999), there is consensus that evaluations of interventions for problem gambling measure these conditions as treatment outcomes (Walker, Toneatto, et al., 2006). The findings from this study suggest that MBCT-PG may address some aspects of co-morbidity. Randomised controlled studies evaluating these comorbid conditions are required to confirm the efficacy of MBCT-PG in improving anxiety and depression.

Preliminary data regarding the mechanisms by which MBCT-PG exerts its effect on gambling behaviour and psychological functioning outcomes suggested partial support for the hypothesis that MBCT-PG would improve five facets of mindfulness. Baer et al. (2006) stated that complex constructs such as mindfulness should be analysed at a facet level to clarify the relationship between the facets and other variables of interest. The Observing facet is related to openness to experience and attending to internal and external stimuli, the Describe facet reflects the ability to recognise and label emotional states, and the Acting with Awareness facet measures attention to current activity and avoiding automatic pilot (Baer et al., 2006). While scores for Observing displayed moderate improvement over the intervention phase when Lauren was practising her 40 minute mindfulness meditations, a decline was observed over the follow-up phase when these more intensive practices were not employed. The Describe facet displayed no change across the assessment period, suggesting that Lauren's mindfulness practice had little influence on her ability to recognise and label her current emotional status. Similarly, there was no change in the Acting with Awareness facet over the intervention and at four week follow-up. This facet then declined significantly by the ten week follow-up when compared to the pre-intervention assessment. These results suggest that these facets

respond to a prolonged mindfulness meditation practice and degrade if an effective practice is not incorporated within everyday life.

Segal et al. (2002) recommend a regular daily mindfulness meditation of 40 minutes, with a regular, daily, brief practice preferable to a longer infrequent practice. Lauren did not comply with this recommendation and engaged in the 40 minute meditation practice inconsistently over the intervention phase and abstained from this practice over the follow-up phase. Instead, Lauren preferred to use the three-minute breathing space only when she became confronted by a gambling-related urge or desire. While use of the three-minute breathing space appears to account for Lauren's abstinence from gambling over the follow-up period, a prolonged daily mindfulness meditation practice is critical for sustained therapeutic benefit (Baer, 2003; Melbourne Academic Mindfulness Interest Group, 2006; Segal et al., 2002). Carmody and Baer (2008) found that home practice of the formal meditation exercises was significantly correlated with the degree of change in facets of mindfulness. Baer et al. (2008) also found that meditation experience was significantly and positively correlated with all of the mindfulness facets with the exception of acting with awareness. Furthermore, changes in mindfulness scale scores mediate the relationship between meditation practice and well-being (Carmody, Baer, Lykins, & Olendzki, 2009). The lack of improvement in Lauren's ability to attend to stimuli, label emotional states, and avoid the tendency to operate on automatic pilot therefore suggests strong possibility of future relapse if an intensive mindfulness meditation practice is not regularly maintained.

Lauren's scores for the Non-Reactivity and Non-Judging facets revealed moderate improvement despite an apparent lack of prolonged mindfulness practice over the follow-up period. Baer et al. (2006) considered these facets to be negatively related to thought suppression and experiential avoidance as both these variables involve judgmental attitudes

towards thoughts and feelings. While little research on mediational mechanisms has been conducted, thought suppression has been found to partially mediate the relationship between mindfulness and other addictive disorders such as alcohol use (Bowen, Witkiewitz, Dillworth, & Marlatt, 2007). Taken together, these findings suggest that MBCT-PG assisted Lauren to accept her gambling-related urges and desires which would ordinarily have overwhelmed any rational understanding of her gambling behaviour and resulted in a gambling episode. This observation also provides support for the proposal that MBCT may alter avoidant styles of cognitive processing and emotion dysregulation implicated in problem gambling (Di Dio & Ong, 1997; Williams, Teasdale, Segal, & Soulsby, 2000).

However, given Lauren's lack of sustained mindfulness practice and her tendency to lapse within abstinence, the ten week follow-up period employed in this study may be insufficient to assess the long term success rate of this intervention. Other psychological treatments for problem gambling report a 70% success rate at one year and 50% at two years (Pallesen et al, 2005). As such, future studies should include a longer follow-up period interspaced with regular follow-up sessions in order to establish a more definitive success rate for the intervention.

Despite this difficulty, Lauren considered MBCT-PG an acceptable approach for her gambling problem. Given that gamblers resist seeking treatment and attempt to handle problems by themselves (Tavares, Martins, Zilberman, & el-Guebaly, 2002), such an endorsement may be valuable in enticing problem gamblers to seek treatment earlier. However, the requirement for a sustained meditation practice may reduce the appeal of the intervention for many problem gamblers. Toneatto et al. (2007) reported that a mindfulness intervention for problem gambling may only be effective where other interventions have failed. This is consistent with findings reported in mindfulness studies of other populations.

For example, MBSR is commonly used for pain management after other medical avenues have been exhausted (Grossman, Niemann, Schmidt, & Walach, 2004; Kabat-Zinn, 2005). Similarly, MBCT for prevention of relapse from depression is more likely to be effective for an individual if they had experienced three or more prior depressive episodes (Coelho, Canter & Ernst, 2007). As such, MBCT-PG may only be useful when a problem gambler has exhausted other treatment options and retains the motivation to practice mindfulness skills on an everyday basis. This issue is an important area for future research.

While reasons for Lauren's gambling abstinence remains speculative, MBCT-PG was effective in eliminating Lauren's gambling behaviour in the context of the familial and financial difficulties she continued to experience. This case study reflects one way in which people such as Lauren can learn to cope with such difficulties more adaptively.

12. RECOMMENDATIONS TO CLINICIANS AND STUDENTS

MBCT-PG requires significantly more research in order to establish the approach as an alternative intervention to traditional CBT or as an adjunct approach following treatment. Based on this study, there is evidence that problem gamblers may benefit from MBCT-PG, particularly for those with co-morbid disorders or where other treatments have failed. However, benefits may only be maintained if commitment to a daily mindfulness meditation practice is sustained.

References

American Psychiatric Association. (2000). *Diagnostic and Statistical Manual of Mental Disorders, Text Revision* (4th ed.). Arlington, VA: Author.

Baer, R. A. (2003). Mindfulness training as a clinical intervention - a conceptual and empirical review. *Clinical Psychology Science and Practice, 10*, 125-143.

Baer, R. A., Fischer, S., & Huss, D. B. (2005). Mindfulness and acceptance in the treatment of disordered eating. *Journal of Rational-Emotive & Cognitive Behavior Therapy, 23*(4), 281-300.

Baer, R. A., & Krietemeyer, J. (2006). Overview of mindfulness and acceptance-based treatment approaches. In R. Baer (Ed.), *Mindfulness-Based Treatment Approaches: A Clinicians Guide to Evidence Base and Applications* (pp. 3-27). London: Academic Press.

Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report methods to explore facets of mindfulness. *Assessment, 13*(1), 27-45.

Baer, R.A., Smith, G.T., Lykins, E., Button, D., Krietemeyer, J., Sauer, S., et al. (2008). Construct validity of the Five Facet Mindfulness Questionnaire in meditating and nonmeditating samples. *Assessment, 15*, 329–342.

Beck, A. T., & Steer, R. A. (1990). *Beck Anxiety Inventory - Manual.* San Antonio: Psychological Corporation.

Beck, A. T., & Steer, R. A. (1991). Relationship between the Beck Anxiety Inventory and the Hamilton Anxiety Rating Scale with anxious outpatients. *Journal of Anxiety Disorders, 5*, 213-223.

Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *Manual for the Beck Depression Inventory-II.* San Antonio: Psychological Corporation.

Bishop, S. R. (2002). What do we really know about mindfulness-based stress reduction? *Psychosomatic Medicine, 64*, 71-84.

Bishop, S. R., Lau, M., Shapiro, S., Carlson, L., Anderson, N. D., Carmody, J., et al. (2004). Mindfulness: A proposed operational definition. *Clinical Psychology: Science and Practice, 11*(3), 230-241.

Bowen, S., Witkiewitz, K., Dillworth, T. M., & Marlatt, G. A. (2007). The role of thought suppression in the relationship between mindfulness meditation and alcohol use. *Addictive Behaviors, 32*, 2324-2328.

Boyer, M., & Dickerson, M. (2003). Attentional bias and addictive behaviour: automaticity in a gambling-specific modified Stroop task. *Addiction, 98*(1), 61-70.

Carlbring, P., & Smit, F. (2008). Randomized trial of internet-delivered self-help with telephone support for pathological gamblers. *Journal of Consulting and Clinical Psychology, 76*(6), 1090-1094.

Carmody, J., & Baer, R. A. (2008). Relationships between mindfulness practice and levels of mindfulness, medical and psychological symptoms and well-being in a mindfulness-based stress reduction program. *Journal of Behavioral Medicine, 31*, 23–33.

Carmody, J., Baer, R. A., Lykins, E. L. B., & Olendzki, N. (2009). An empirical study of the mechanisms of mindfulness in a mindfulness-based stress reduction program. *Journal of Clinical Psychology, 65*, 613-626.

Coelho, H. F., Canter, P. H., & Ernst, E. (2007). Mindfulness-based cognitive therapy: Evaluating current evidence and informing future research**.** *Journal of Consulting Clinical Psychology, 75*(6), 1000-1005.

Cumming, G., & Finch, S. (2005). Inference by eye: Confidence intervals, and how to read pictures of data. *American Psychologist, 60,* 170–180.

Di Dio, K., & Ong, B. (1997). The conceptual link between avoidant coping style, stress

and problem gambling. In G. Coman, B. Evans & R. Wooton (Eds.), *Proceedings*

of the 8th National Association for Gambling Studies Conference: Responsible

Gambling: A future winner (pp. 91-100). Adelaide, South Australia: National

Association for Gambling Studies.

Dowling, N., Smith, D., & Thomas, T. (2006). Treatment of female pathological gambling:

Efficacy of a cognitive-behavioural approach. *Journal of Gambling Studies, 22,* 355-

372.

Dowling, N., Smith, D., & Thomas, T. (2007). A comparison of individual and group

cognitive behavioral treatment for female pathological gambling. *Behaviour*

Research and Therapy, 45, 2192-2202.

Dowling, N., Smith, D., & Thomas, T. (2009). A preliminary investigation of abstinence

and controlled gambling as self-selected goals of treatment for female pathological

gambling. *Journal of Gambling Studies, 25*(2), 201-214.

Grossman, P., Niemann, L., Schmidt, S., & Walach, H. (2004). Mindfulness-based stress

reduction and health benefits: A meta-analysis. *Journal of Psychosomatic Research*

57, 35-43.

Hayes, S. C., Follette, V. M., & Linehan, M. M. (Eds.). (2004). *Mindfulness and*

acceptance: Expanding the cognitive tradition. New York: Guilford Press.

Hayes, S. C., Strosahl, K., & Wilson, K. G. (1999). *Acceptance and Commitment Therapy*.

New York: Guilford Press.

Hodgins, D. C., Currie, S., el-Guebaly, N., & Peden, N. (2004). Brief motivational

treatment for problem gambling: A 24-month follow-up. *Psychology of Addictive*

Behaviors, 18(3), 293-296.

Hoppes, K. (2006). The application of mindfulness-based cognitive interventions in the treatment of co-occurring addictive and mood disorders. *CNS Spectrums, 11*(11), 829-851.

Huxter, M. (2009). The Buddha's psychology of awakening: A personal spiritual practice and framework for therapy, *In Psych, 31*(4), 12-13.

Kabat-Zinn, J. (2005). *Full Catastrophe Living – Using the Wisdom of your Body and Mind to face Stress, Pain, and Illness* (3rd ed.). New York: Bantam Dell.

Kessler, R. C., Hwang, I., LaBrie, R., Petukhova, M., Sampson, N. A., Winters, K. C., et al. (2008). DSM-IV pathological gambling in the National Comorbidity Survey Replication. *Psychological Medicine: A Journal of Research in Psychiatry and the Allied Sciences, 38*(9), 1351-1360.

Kuyken, W., Byford, S., Taylor, R. S., Watkins, E., Holden, E., White, K., et al. (2008). Mindfulness-based cognitive therapy to prevent relapse in recurrent depression. *Journal of Consulting and Clinical Psychology, 76*(6), 966-978.

Ladouceur, R., Lachance, S., & Fournier, P. M. (2009). Is control a viable goal in the treatment of pathological gambling? *Behaviour Research and Therapy, 47(3),* 189-197.

Lakey, C. E., Campbell, W. K., Brown, K. W., & Goodie, A. S. (2007). Dispositional mindfulness as a predictor of the severity of gambling outcomes. *Personality and Individual Differences, 43*, 1698-1710.

Larsen, D., Attkisson, C., Hargreaves, W., & Nguyen, J. (1979). Assessment of client/patient satisfaction: Development of a general scale. *Evaluation and Program Planning, 2*, 197-207.

Lau, M, A., & Yu, A. R. (2009). New developments in research on mindfulness-based treatments: Introduction to the special issue, *Journal of Cognitive Psychotherapy, 23*(3), 179- 184.

Leyfer, O., Ruberg, J., & Woodruff-Borden, J. (2006). Examination of the utility of the Beck Anxiety Inventory and its factors as a screener for anxiety disorders. *The Journal of Anxiety Disorders, 20*, 444-458.

Linehan, M. M. (1993a). *Cognitive-Behavioural Treatment of Borderline Personality Disorder*. New York: Guilford Press.

Linehan, M. M. (1993b). *Skill Training Manual for Treating Borderline Personality Disorder*. New York: Guilford Press.

Logan, G. D. (2004). Attention, automaticity, and executive control. In A. F. Healy (Ed.), *Experimental cognitive psychology and its applications: Festschrift in honor of Lyle Bourne, Walter Kintsch, and Thomas Landauer* (pp. 129-139). Washington, DC: American Psychological Association Press.

López Viets, V. C., & Miller, W. R. (1997). Treatment approaches for pathological gamblers. *Clinical Psychology Review, 17*, 689-702.

Ma, S. H., & Teasdale, J. D. (2004). Mindfulness-based cognitive therapy for depression: Replication and exploration of differential relapse prevention effects. *Journal of Consulting and Clinical Psychology, 72*(1), 31-40.

Mace, C. (2007). Mindfulness in psychotherapy: An introduction. *Advances in Psychiatric Treatment, 13*, 147-154.

May, R. K., Whelan, J. P., Steenbergh, T. A., & Meyers, A. W. (2003). The gambling self-efficacy questionnaire: An initial psychometric evaluation. *Journal of Gambling Studies, 19*, 339–357.

McCusker, C. G., & Gettings, B. (1997). Automaticity of cognitive biases in addictive behaviours: further evidence with gamblers. *British Journal of Clinical Psychology, 36*(4), 543-554.

Melbourne Academic Mindfulness Interest Group. (2006). Mindfulness-based psychotherapies: A review of conceptual foundations, empirical evidence and practical considerations. *Australian and New Zealand Journal of Psychiatry, 40*, 285-294.

National Research Council. (1999). *Pathological Gambling: A Critical Review*. Washington, D.C: National Academy Press.

Pallesen, S., Mitsem, M., Kvale, G., Johnsen, B., & Molde, H. (2005). Outcome of psychological treatments of pathological gambling: A review and meta-analysis. *Addiction, 100*, 1412-1422.

Petry, N. M., Ammerman, Y., Bohl, J., Doersch, A., Gay, H., Kadden, R., et al. (2006). Cognitive-behavioral therapy for pathological gamblers. *Journal of Consulting and Clinical Psychology, 74*(3), 555-567.

Petry, N. M., Stinson, F. S., & Grant, B. F. (2005). Comorbidity of DSM-IV pathological gambling and other psychiatric disorders: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Journal of Clinical Psychiatry, 66*(5), 564-574.

Petry, N. M., Weinstock, J., Ledgerwood, D. M., & Morasco, B. (2008). A randomized trial of brief interventions for problem and pathological gamblers. *Journal of Consulting and Clinical Psychology, 76*(2), 318-328.

Ree, M. J., & Craigie, M. A. (2007). Outcomes following mindfulness-based cognitive therapy in a heterogeneous sample of adult outpatients. *Behaviour Change, 24*(2), 70-86.

Sauer, S. E., & Baer, R. (2009). Responding to negative internal experience: Relationships

between acceptance and change-based approaches and psychological adjustment.

Journal of Psychopathology and Behavioral Assessment, 31(4), 378-386.

Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-Based Cognitive*

Therapy for Depression: A New Approach to Preventing Relapse. New York:

Guilford Press.

Semple, R. J., Lee, J., Rosa, D., & Miller, L. F. (2010). A randomized trial of mindfulness-

based cognitive therapy for children: Promoting mindful attention to enhance

social-emotional resiliency in children. *Journal of Child and Family Studies, 19*(2),

218-229.

Shapiro, S. L., Carlson, L. E., Astin, J. A., & Freedman, B. (2006). Mechanisms of

mindfulness. *Journal of Clinical Psychology, 62*(3), 373-386.

Smith, A. (2006). "Like waking up from a dream": Mindfulness training for older people

with anxiety and depression. In R. Baer (Ed.), *Mindfulness-Based Treatment*

Approaches: A Clinicians Guide to Evidence Base and Applications (pp. 191-215).

London: Academic Press.

Smith, A., Graham, L., & Senthinathan, S. (2007). Mindfulness-based cognitive therapy

for recurring depression in older people: A qualitative study. *Aging & Mental*

Health, 11(3), 346-357.

Tavares, H., Martins, S. S., Zilberman, M. L., & el-Guebaly, N. (2002). Gamblers seeking

treatment: Why haven't they come earlier? *Addictive Disorders & Their Treatment,*

1(2), 65-69.

Teasdale, J. D. (1997). The transformation of meaning: The interacting cognitive

subsystems approach. In M. Power & C. R. Brewin (Eds.), *The transformation of*

meaning in psychological therapies (pp. 141-156). Chichester: Wiley.

Teasdale, J. D., Segal, Z. V., Williams, J. M. G., Ridgeway, V. A., Soulsby, J. M., & Lau, M. (2000). Prevention of relapse/recurrence in major depression by mindfulness-based cognitive therapy. *Journal of Consulting and Clinical Psychology, 68*, 615-623.

Toneatto, T., Vettese, L., & Nguyen, L. (2007). The role of mindfulness in the cognitive-behavioural treatment of problem gambling. *Journal of Gambling Issues, 19*, 91-100.

Volberg, R. A. (2002). The epidemiology of pathological gambling. *Psychiatric Annals, 32*(3), 171-178.

Walker, M., Anjoul, F., Milton, S., & Shannon, K. (2006). A structured clinical interview for pathological gambling. *Gambling Research, 18*, 39-56.

Walker, M., Toneatto, T., Potenza, M. N., Petry, N., Ladouceur, R., Hodgins, D. C., et al. (2006). A framework for reporting outcomes in problem gambling treatment research: The Banff, Alberta Consensus. *Addiction, 101*(4), 504-511.

Wardle, H., Sproston, K., Orford, J., Erens, B., Griffiths, M., Constantine, R., et al. (2007). *The British Gambling Prevalence Survey 2007*. London: The Stationery Office.

Wells, A. (2002). GAD, metacognition, and mindfulness: An information processing analysis. *Clinical Psychology: Science and Practice, 9*(1), 95-100.

Westphal, J. R. (2008). How well are we helping problem gamblers? An update to the evidence base supporting problem gambling treatment. *International Journal of Mental Health and Addiction. 6*(2), 249-264.

Whelan, J. P., Steenbergh, T. A., & Meyers, A. W. (2007). *Problem and Pathological Gambling*. Cambridge: Hogrefe.

Williams, J. M. G., Teasdale, J. D., Segal, Z. V., & Soulsby, J. (2000). Mindfulness-based
cognitive therapy reduces overgeneral autobiographical memory in formerly
depressed patients. *Journal of Abnormal Psychology, 109*, 150-155.

Williams, J. M. G., & Swales, M. (2004). The use of mindfulness-based approaches for
suicidal patients. *Archives of Suicide Research, 8*, 315-329.

7. INTEGRATED DISCUSSION

An aim of research into problem gambling is to understand how problem gambling behaviour may develop and how it can be treated using empirically supported interventions. In so doing, effective measures can be implemented to prevent what should be an enjoyable leisure pursuit from turning into something that may have devastating individual, familial and societal consequences. Rather than repeating the points already made in the literature review and each of the research studies, this section summarises the major findings that have been presented in this thesis, and considers the implications of these results from a clinical perspective. The limitations of the findings and directions for future research are also discussed.

7.1 SUMMARY OF KEY RESEARCH FINDINGS

While there are numerous aims associated with the current research, the primary focus was to investigate the inverse relationship between dispositional mindfulness and problem gambling behaviour with the goal of understanding whether a mindfulness-based intervention is appropriate for the treatment of problem gambling. The results clearly suggest that an inverse relationship does exist between dispositional mindfulness and the severity of problem gambling behaviour, as measured by gambling pre-occupation, gambling urges, problem gambling severity, gambling frequency, gambling expenditure, and gambling duration, in treatment-seeking samples of problem gamblers. The following section discusses this relationship in more detail.

7.1.1 Mechanisms of action in the inverse relationship between dispositional mindfulness and problem gambling

A review of the literature established that there is an inverse relationship between dispositional mindfulness and the severity of problem gambling behaviour in student samples of gamblers (Lakey, Campbell, Brown, & Goodie, 2007). Lakey et al. speculated that psychological distress may act as a mediator in this relationship. While Lakey et al. provided no theoretical rationale for this speculation, Blaszczynski and Nower (2002) pathways model and Sharpe's (2002) biopsychosocial model provide theoretical support for the proposition that psychological distress may play a key role in precipitating and perpetuating problem gambling behaviour. Although a substantial literature supports the connection between psychological distress and problem gambling, no study has investigated the relationship between dispositional mindfulness and problem gambling behaviour in a treatment seeking population of problem gamblers.

Previous research has provided empirical support for the role of emotional dysregulation, thought suppression, and rumination as mediational mechanisms in the inverse relationship between mindfulness and psychological distress (Bowen, Witkiewitz, Dillworth, & Marlatt, 2007; Coffey & Hartman, 2008). This thesis therefore took advantage of two surveys conducted by Gamblers Help in the state of Victoria to investigate this relationship further. Measures of these mechanisms were included in each of the Gamblers Help surveys. Analysis of the total dataset collected from 2009 to 2011 supported a model of problem gambling which highlighted psychological distress as a mediator in the inverse relationship between dispositional mindfulness and indices of gambling behaviour. These indices were assessed in terms of gambling pre-occupation, gambling urges, problem gambling severity, gambling expenditure, gambling frequency, and gambling duration. Moreover, the model provided an explanation of the mechanisms involved in this

relationship by highlighting that the inverse relationship between dispositional mindfulness and psychological distress in a population of treatment seeking problem gamblers was likely mediated by rumination, emotional dysregulation, and thought suppression. The following discussion briefly outlines these mechanisms of action in context of the inverse relationship between dispositional mindfulness and psychological distress.

7.1.1.1 Rumination

The thesis established that problem gamblers with lower levels of dispositional mindfulness tend to be unaware of habitual ruminative thought patterns pertaining to their gambling and that rumination may act as a mediator in the inverse relationship between dispositional mindfulness and psychological distress. The content of ruminations may relate specifically to gambling behaviour or to the experience of psychological distress. For example, gamblers may ruminate about the next gambling opportunity or may ruminate about the consequences of a large loss on their family. Either way, problem gamblers with lower levels of dispositional mindfulness tend to be less aware of the link between ruminative thought patterns and the level of psychological distress experienced. However, being more mindful of such cognitions offers problem gamblers a wider scope from which to view the content of their thoughts and feelings. Part of this scope represents the ability to step outside of current experience and simply observe such cognitions come and go with a sense of openness and curiosity. Thus, the ability to recognise thoughts and feelings as transient states that will come and go appears to be related to lower levels of psychological distress experienced.

7.1.1.2 Emotional dysregulation

The thesis utilised two measures of emotion dysregulation. The Repair subscale of the Trait Meta-Mood Scale (TMMS; Salovey, Mayer, Goldman, Turvey & Palfai, 1995) measures the ability to regulate negative affect. The Distress-Tolerance Scale (DTS)

assesses four types of emotional distress (Simons & Gaher, 2005). These are: perceived ability to tolerate emotional distress (Tolerance), subjective appraisal of distress (Appraisal), attention being absorbed by negative emotions (Absorption), and regulation efforts to alleviate distress (Regulation) (Simons & Gaher, 2005). While Gamblers Help elected not administer the appraisal subscale of the DTS, the only mechanism shown to have a significant mediational role in the inverse relationship between dispositional mindfulness and psychological distress was the tendency to become absorbed by negative emotions. Interestingly, the Repair subscale of the TMMS and the Absorption subscale of the DTS appear to measure the same construct. This implies that less mindful problem gamblers are relatively inattentive to negative affect than their more mindful counterparts and that the experience of psychological distress operates via this mechanism rather than by an inability to tolerate emotional distress or an inability to regulate efforts to alleviate this distress. Thus, problem gamblers with a high degree of dispositional mindfulness may have the capacity to observe negative affect more effectively. This ability is related to lower levels of psychological distress.

7.1.1.3 Thought suppression

The literature indicates that problem gamblers suppress gambling-related thoughts as they attempt to discontinue gambling. However, this strategy is also known to paradoxically increase the frequency and intensity of such thoughts (Wegner, 1989; Wegner & Erber, 1992). This thesis found that the tendency to suppress gambling-related thoughts may also represent a mediator in the inverse relationship between dispositional mindfulness and psychological distress. For less mindful problem gamblers, the tendency to suppress gambling related thoughts is a largely unconscious process which is associated with a heightened degree of psychological distress. In contrast, problem gamblers with a higher degree of dispositional mindfulness appear to be able to watch present moment

thoughts come and go without judging these thoughts as either good or bad. While unwanted thoughts continue to arise, such problem gamblers are less likely to suppress the thoughts which would otherwise be associated with a heightened state of psychological distress.

7.1.1.4 Implications for treatment

The current research revealed that psychological distress was a significant mediator in the inverse relationship between dispositional mindfulness and indices of gambling behaviour in treatment seeking samples of problem gamblers. However, some current treatment approaches for problem gambling, such as cognitive therapy, focus on correcting the cognitive distortions associated with gambling, and ignore factors such as psychological distress which may leave problem gamblers vulnerable to a resumption of gambling behaviour once therapy concludes (Toneatto et al., 2007). A mindfulness intervention may address this shortcoming by raising the awareness of present moment thoughts, feelings and body sensations (Bishop et al., 2004). According to Kabat-Zinn (2005), being aware of such states may reduce distress or it may not. However, awareness brings comfort even in the midst of suffering by fostering the development of wisdom and inner trust. Thus, the ability to 'decenter' or 'reperceive' affords problem gamblers with greater ability to step out of current experience and simply watch such events come and go with a sense of sense of curiosity, openness and acceptance.

The ability to be more mindful of states associated with the experience of psychological distress would be of considerable advantage to problem gamblers considering the comparatively low levels of dispositional mindfulness demonstrated by participants in this research. Despite the heterogeneous nature of a treatment seeking population of problem gamblers, the significant difference between this group and normative samples of community adults suggests that problem gamblers are unaware of

internal states that may drive dysfunctional behaviours. No more is this epitomised than by a dissociative state known as 'the zone' whereby many problem gamblers, particularly those using electronic gaming machines, tend to lose track of time and money and not notice what is occurring around them (Office of the Public Advocate, 2009). Therefore, given continued exposure to contextually relevant gambling-related stimuli, individuals who function with comparatively low levels of dispositional mindfulness may be at high risk of developing gambling problems. However, having this knowledge, while of interest to researchers, is of little benefit to those who have already become habituated to gambling. Accordingly, it is important to understand whether it is possible to raise dispositional mindfulness to a level whereby problem gamblers can choose what action to perform when confronted by gambling-related thoughts, feelings or body sensations.

7.1.2 Mindfulness-based cognitive therapy for problem gambling

Interest in the role of mindfulness as a treatment for problem gambling has gained the attention of researchers across Australia, the United States, and Canada (e.g. de Lisle, Dowling, & Allen, 2011a; Lakey et al., 2007; Toneatto et al., 2007). In understanding whether a mindfulness intervention could be considered an efficacious treatment for problem gambling, this thesis found that a modified version of mindfulness-based cognitive therapy (MBCT) offered a useful basis from which the specific role of mindfulness could be appraised. Reasons for this include the emphasis of MBCT on bringing awareness to ruminative thought patterns through mindfulness practice (Segal, Williams & Teasdale, 2002), its applicability to heterogeneous groups (Ree & Craigie, 2007), and its use of cognitive elements already found to be useful for problem gambling.

Several case studies were presented in this thesis. The first was a pilot study which had the aim of providing initial data as to the efficacy of mindfulness-based cognitive

therapy for problem gambling (MBCT-PG), streamlining the treatment protocol, and ascertaining the acceptability of the approach. The pilot study established that the intervention had a role to play in lessening the severity of symptoms of anxiety and depression in two participants, Margaret and Amanda. Moreover, gambling behaviour began to decline for both participants as therapy proceeded, which was consistent with their aim of controlling their gambling rather than abstaining from it. However, while Margaret managed to reduce her gambling after the intervention, Amanda continued to gamble after she experienced highly distressing events during the intervention, as exemplified by her job loss and concern about her daughter.

In consideration of the differential responses to the treatment between the two participants, it should be noted that the Margaret maintained a daily mindfulness practice over the course of the intervention. However, Amanda found a daily mindfulness practice difficult to perform. Thus, a daily mindfulness practice appears crucial for therapeutic benefit to be maintained. Without a daily mindfulness practice, Amanda did not have the opportunity to develop the mindfulness skills necessary to respond to the distressing events she encountered. This lack of awareness may very well have contributed to increases observed in her depression and anxiety scores at post-intervention assessment. Furthermore, this lack of awareness may very well have contributed to Amanda resuming her gambling at levels consistent with her baseline data.

Baer, Smith, Hopkins, Krietemeyer, and Toney (2006) considered that mindfulness should be analysed at a facet level to clarify the relationship between the facets and other variables of interest and proposed five discernable facets of the overall mindfulness construct. These are: Observing/noticing/attending to sensations/perceptions/thoughts/feelings, Acting with awareness/automatic pilot/concentration/no distraction, Describing/labelling with words, Non-Reactivity to

inner experience, and Non-Judging of experience. The Observing facet is related to openness to experience and attending to internal and external stimuli, the Acting with Awareness facet measures attention to current activity and avoiding automatic pilot, and the Describe facet reflects the ability to recognise and label emotional states (Baer et al., 2006). The Non-Reactivity and Non-Judging facets are negatively related to thought suppression and experiential avoidance as both these variables involve judgmental attitudes towards thoughts and feelings (Baer et al., 2006).

Inspection of changes in the facets over the assessment period of the pilot study revealed that each of the facets, with the exception of the Describing facet, varied according to the extent to which the mindfulness techniques were practiced. The lack of change observed in the Describe facet for both participants may be because interventions such as MBCT and MBSR do not emphasise verbal labelling of components of experience to the extent seen in other mindfulness interventions such as DBT and ACT (Carmody & Baer, 2008). In relation to the other facets, Margaret's facet scores generally improved. However, Amanda displayed notable declines in facet scores which can be attributed to the high levels of psychological distress she experienced during the intervention. As she had not practiced the recommended mindfulness techniques, the mediational role of psychological distress in the inverse relationship between dispositional mindfulness and problem gambling behaviour becomes readily apparent. This is a serious issue as a daily mindfulness practice is crucial for therapeutic change to occur (Segal, Williams, & Teasdale, 2002).

While the pilot study established that a mindfulness intervention may reduce problem gambling behaviour and the level of anxiety and depression experienced, the issue remains that neither participant completed the 10-week follow-up questionnaire. Moreover, another participant, Graham, was dubious that the intervention could offer any benefit at

the outset and discontinued the intervention after week 4 of the intervention. Reasons for the high attrition rates remain unclear as all participants who completed the intervention considered it an acceptable approach for their gambling problems. It may be that those who completed the intervention were prepared to try it but decided in the end that the heavy commitment to a daily mindfulness practice was unsustainable. Future researchers may wish to include a dropout survey to investigate this further. The literature indicates that MBCT is most efficacious after two or more prior episodes of depression (Coelho, Canter & Ernst, 2007; Ma & Teasdale, 2004). Furthermore, Toneatto et al. (2007) considered that a mindfulness intervention may be useful when delivered concurrently with other therapies or as an adjunct to help deal with relapse. Neither of the participants involved in the pilot study had previously attended any intervention for their gambling problems. Therefore, a mindfulness intervention may be most efficacious where other treatment approaches have failed. This represents an important area for future research to explore.

In relation to the case study presented in Chapter 6, the participant displayed improvement in psychological functioning and managed to abstain from gambling over both follow-up phases of the intervention. In contrast to the participants of the pilot study, Lauren had a long history of unsuccessful attempts to discontinue gambling despite the traditional cognitive behavioural interventions she had received. From this perspective, the participant exhibited considerable resolve to overcome her problem gambling status and remained committed to the mindfulness practices over the intervention phase. This provides support to Toneatto et al. (2007) who considered that a mindfulness intervention would be more suited for use as an adjunct to other therapies.

However, while the participant remained abstinent from gambling over the follow-up phases of the study, she did not maintain a daily 40 minute meditation as recommended. Instead, she preferred use the three-minute mindfulness practice every time she noticed a

gambling-related trigger or urge. The relatively short duration period of this technique appears an attractive alternative to the more lengthy (40 minute) period of the formal mindfulness practices advocated. However, use of the technique in isolation is unlikely to result in an increase of an individual's level of dispositional mindfulness in the long term.

Inspection of the five facets of mindfulness over this time revealed that her lack of a sustained practice impacted scores on each of the mindfulness facets to a varying degree. Of note was the Acting with Awareness and Observing facet, which declined over the follow-up phases when Lauren did not sustain a daily mindfulness practice. However, the Non-reactivity and Non-judging facets displayed some improvement. Baer et al. (2006) considered that Non-reactivity and Non-judging facet to be negatively related to thought suppression and experiential avoidance as both these variables involve judgmental attitudes towards thoughts and feelings. Theses facets therefore overlap with the thought suppression and emotional dysregulation variables that were found to act as mediators in the inverse relationship between dispositional mindfulness and psychological distress in Chapter 4. Therefore, it is possible that the improvement noted in Lauren's scores for depression and anxiety may have operated through these mechanisms despite her lack of practice over the follow-up phases of the intervention.

7.2 CLINICAL IMPLICATIONS

This research has clinical implications for the treatment of problem gambling. In particular, the current research demonstrates that problem gambling outcomes may be improved by raising the level of dispositional mindfulness through a mindfulness intervention.

However, the requirement for a daily mindfulness practice represents are major impediment to treatment effectiveness. Furthermore, the case study nature of this

dissertation cannot establish whether a mindfulness intervention can further improve on current treatment effectiveness. The following discussion therefore considers the limitations of this research in more detail and provides suggestions for future research.

7.3 LIMITATIONS AND FUTURE DIRECTIONS

7.3.1. Methodological limitations

In order to understand treatment efficacy, a study should be a randomised controlled trail using criteria for empirically supported treatments (Chambless et al., 1998). This thesis could therefore not establish any efficacy to the intervention due to the methodological restrictions imposed by the case study nature of the research. This thesis attempted to recruit participants using advertisements, flyers and posters. However, this approach was insufficient for a randomised controlled trial of the intervention as originally intended (see Chapter 3). A possible reason for this is that problem gamblers often attempt to handle problems caused by their gambling by themselves and seek support only as a last resort (Tavares, Martins, Zilberman, & el-Guebaly, 2002). To overcome this issue, future research may benefit by employing recruitment strategies based on the internet as such a medium may be more sensitive to the personal nature of the disorder. Furthermore, as internet gambling is an emerging area of concern, it may be that opportunities afforded by social networking sites may improve recruitment numbers over that of the more traditional recruitment procedure utilised in this thesis.

Investigations of mindfulness-based interventions for problem gambling using a sound scientific methodology would also benefit with the co-operation of organisations specifically devoted to treating problem gamblers. As this thesis has provided preliminary data supporting the role of a mindfulness intervention in improving problem gambling outcomes, it is hoped that the ethical restrictions imposed in terms of using untried

interventions on existing clients of such organisations would no longer apply. Since problem gamblers may be highly dubious of advertisements placed in the media, it may be that the support of a Government funded organisation may enhance recruitment numbers by lending more credibility to the research questions. In this way, research into the use of mindfulness for problem gamblers may proceed with consenting participants who are already attending such organisations.

7.3.2. Improving on problem gambling outcomes

This study identified several limitations of current CBT approaches for problem gambling which may be addressed by a mindfulness-based intervention. These were the high rates of attrition, high rates of relapse, issues pertaining to the heterogeneity of the problem gambling population, issues of co-morbidity with other disorders, and inconsistency of structure. From a theoretical stance, mindfulness interventions have the potential to improve on each these areas, given its focus on awareness, acceptance and staying in the present moment. Given this emphasis, improvements of a mindfulness-based intervention over existing approaches for problem gambling can be derived in several ways. First, greater mindfulness may improve attrition and relapse by fostering awareness of gambling triggers and urges through the adoption of an active and on-going mindfulness practice in daily life. In this way, problem gamblers may also come to accept themselves as a whole rather than as being deficient in some way. Second, the manualised and structured nature of mindfulness-based approaches may be beneficial by providing more streamlined treatment delivery options for problem gambling. This may overcome issues relating to the high degree of variability observed in the structure of current treatment approaches. Third, mindfulness-based approaches may offer advantages over current treatment approaches by more effectively dealing with psychological distress. If so, the factors that lead to the

acquisition and maintenance of gambling behaviour may be more effectively dealt with.

Finally, mindfulness may teach problem gamblers to relate to problems caused by

gambling more effectively, including the personal, financial, social, and familial

difficulties they may encounter as they continue to gamble. This may contribute to

improvements in quality of life by allowing gamblers to respond to these problems rather

than react to them without awareness.

However, the methodological limitations imposed by performing a series of case

studies could not establish whether the intervention had any potential to improve treatment

effectiveness over that of current approaches. According to the American Psychiatric

Association Division 12 taskforce (Chambless et al., 1998), the criteria for empirically

supported treatments are:

I. At least two good between group design experiments demonstrating efficacy in one or

more of the following ways:

A. Superior (statistically significantly so) to pill or psychological placebo or to another

treatment.

B. Equivalent to an already established treatment in experiments with adequate sample

sizes

OR

II. A large series of single case design experiments (n >9) demonstrating efficacy. These

experiments must have:

A. Used good experimental designs and

B. Compared the intervention to another treatment as in IA

FURTHER CRITERIA FOR BOTH I AND II:

III. Experiments must be conducted with treatment manuals.

IV. Characteristics of the client samples must be clearly specified.

V. Effects must have been demonstrated by at least two different investigators or investigating teams.

In order to meet these criteria, it is recommended that future research compare a treatment as usual intervention with a mindfulness-based intervention and track outcomes using a long follow-up period. There is consensus that follow-up assessments be conducted at four periods of time, post-treatment, short-term (three to six months), medium term (one year), and long term (two years or more) (Walker, Toneatto et al., 2006).

7.3.3. Assessing other mindfulness interventions

Several manualised mindfulness interventions have been developed for the treatment of a wide range of disorders. These include MBSR (Kabat-Zinn, 2005), MBCT (Segal et al., 2002), DBT (Linehan, 1993a, 1993b), and ACT (Hayes, Strosahl, & Wilson, 1999). MBCT was selected for this research because of its emphasis on bringing awareness to, and acceptance of, present moment dysfunctional cognitions which are strongly implicated in continued problem gambling behaviour. The case studies presented in this thesis suggest that MBCT may be beneficial for problem gamblers. However, the data compiled thus far suggests that participants find the intensive mindfulness practices involved in MBCT difficult to implement and maintain. This is a serious issue that may be addressed by investigating the efficacy of other mindfulness interventions such as ACT, which do not emphasis a daily mindfulness practice to the same degree.

However, investigations into other mindfulness interventions should only be considered when it can be established that mindfulness can improve problem gambling behaviour over that of existing treatment approaches. For this reason, efforts to investigate other mindfulness interventions should only proceed if the specific role of components utilised in such therapies can be defined and measured. This research has already provided

preliminary data as to the efficacy of mindfulness-based cognitive therapy for problem gambling. It is hoped that the MBCT-PG treatment manual (refer Appendix A) may be of use to future researchers seeking to explore the specific role of mindfulness with a more robust experimental design.

7.3.4. Understanding the mechanisms of mindfulness

While this study identified rumination, emotional dysregulation, and thought suppression as mediators in the inverse relationship between dispositional mindfulness and psychological distress, other mechanisms may also be important. Shapiro, Carlson, Astin, and Freedman (2006) conjectured that these additional mechanisms may comprise self-regulation; values clarification; emotional, cognitive and behavioural flexibility; and exposure. Lakey et al. (2007) also implicate the role of overconfidence and risk willingness, myopic focus on reward, and ego involvement. While research efforts to investigate these mechanisms do exist, the number of studies that have investigated these mechanisms are few and results mixed. Furthermore, such efforts have been constrained by the lack of an operational definition of such variables and the prevailing absence of psychometrically sound instruments for measuring them (Carmody, Baer, Lykins, & Olendzki, 2009). Clearly, far more research into such mechanisms of mindfulness is required.

Furthermore, the current research was constrained by limited number of respondents in the Gamblers Help Southern study (see Study 1 of Chapter 4). Tabachnick and Fidell 2001) recommend $N \geq 50 + 8m$ (where m is the number of independent variables) for testing multiple correlation. As such, the sample size ($N = 78$) was insufficient to perform hierarchical regression analyses to confirm rumination, emotional dysregulation, or thought suppression as significant mediators in the inverse relationship

between dispositional mindfulness and psychological distress. While Study 2 supported the significant role of distress-tolerance (absorption) in this relationship, measures of rumination and thought suppression could not be included in the Gamblers Help City survey because of practical concerns. Therefore, future studies may benefit by surveying treatment seeking problem gamblers with the specific goal of assessing these relationships further.

7.3.5. What is mindfulness?

Mindfulness represents a new and innovative area for understanding and treating problem gambling. This research therefore represents the first step in what is hoped will develop into a promising new direction of research into problem gambling. However, mindfulness is a construct which is difficult to define, let alone assess (Baer, 2003; Brown & Ryan, 2004). While this dissertation employed several measures of the mindfulness construct with good psychometric properties, any investigation as to how a mindfulness-based intervention could improve problem gambling outcomes would benefit most by a clear operational definition of the mindfulness construct and a psychometrically valid measure for assessing it. A consensus panel derived an operational definition of mindfulness that comprised of two components: *self-regulation* and *orientation to experience* (Bishop et al. 2004). Following this, the Cognitive and Affective Mindfulness Scale-Revised (CAMS-R; Feldman, Hayes, Kumar, Greeson & Laurenceau, 2007) was derived as a single factor self-report measure to assess the mindfulness construct in accordance with this definition. However, Baer et al. (2006) stated that complex constructs such as mindfulness should be analysed at a facet level to clarify the relationship between the facets and other variables of interest. Therefore, ongoing debate in relation to the mindfulness construct will continue to hamper empirical investigations. This can only be

resolved when consensus can finally be reached among investigators. Future research is urgently recommended to resolve this issue.

7.4. CONCLUSION

Problem gambling is a complex disorder that is subject to ongoing debate in terms of its aetiology, phenomenology and treatment. This study set out to specifically understand the role of dispositional mindfulness in problem gambling behaviour, and to investigate whether raising mindfulness may add anything more to treatment effectiveness. A major strength of this study was to build a model of problem gambling based on psychological distress as a key mechanism involved in problem gambling behaviour. Moreover, it established that the inverse relationship between mindfulness and psychological distress was likely mediated by rumination, emotional dysregulation/distress-tolerance, and thought suppression. From a practical perspective, a mindfulness intervention appears to offer problem gamblers the opportunity to watch gambling-related and unwanted other cognitions come and go and improve their level of psychological functioning. In so doing, a mindfulness intervention may be helpful in improving gambling related psychopathology. It is hoped that this study has significantly contributed to understanding of the processes involved in these relationships. The next step is to focus on improving on the methodological limitations of this study to better understand how this process functions. In so doing, integrated treatments can be formulated which can effectively treat what is a complex and potentially worsening problem.

8. REFERENCES

AACBT. (2008). Baseline. Spring 2008. Retreived March 12, 2011 from

http://aacbtvic.org.au/contentDocuments/AACBT_Baseline_Spring_08.pdf

American Psychiatric Association. (1980). *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed.). Washington, DC: Author.

American Psychiatric Association. (2000). *Diagnostic and Statistical Manual of Mental Disorders, Text Revision* (4th ed.). Arlington, VA: Author.

Amies, M. (1999). *Gambling: Is it a health hazard?* Canberra, ACT: Commonwealth Department of Health and Aged Care.

Arribas Saiz, M., & Martinez Sanchez, J. (1991). Individual treatment of pathologic gamblers: Case descriptions. *Analisis y Modificacion de Conducta, 17*(52), 255-269.

Atlas, G. D., & Peterson, C. (1990). Explanatory style and gambling: How pessimists respond to losing wagers. *Behaviour Research and Therapy, 28*(6), 523-529.

Baer, R. A., & Krietemeyer, J. (2006). Overview of mindfulness and acceptance-based treatment approaches. In R. Baer (Ed.), *Mindfulness-Based Treatment Approaches: A Clinicians Guide to Evidence Base and Applications* (pp. 3-27). London: Academic Press.

Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report methods to explore facets of mindfulness. *Assessment, 13*(1), 27-45.

Baer, R.A., Smith, G.T., Lykins, E., Button, D., Krietemeyer, J., Sauer, S., et al. (2008). Construct validity of the Five Facet Mindfulness Questionnaire in meditating and nonmeditating samples. *Assessment, 15*, 329–342.

Bannister, G. (1977). Cognitive behaviour therapy in a case of compulsive gambler. *Cognitive Therapy and Research, 1*, 223-227.

Battersby, M. W., Thomas, L. J., Tolchard, B., & Esterman, A. (2002). The South Oaks Gambling Screen: A review with reference to Australian use. *Journal of Gambling Studies, 18*(3), 257-271.

Beck, A. T., & Steer, R. A. (1990). *Beck Anxiety Inventory - Manual.* San Antonio: Psychological Corporation.

Beck, A. T., & Steer, R. A. (1991). Relationship between the Beck Anxiety Inventory and the Hamilton Anxiety Rating Scale with anxious outpatients. *Journal of Anxiety Disorders, 5*, 213-223.

Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *Manual for the Beck Depression Inventory-II.* San Antonio: Psychological Corporation.

Ben-Tovim, D., Esterman, A., Tolchard, B., & Battersby, M. (2001). *The Victorian Gambling Screen*. Report prepared for the Gambling Research Panel, Melbourne, Victoria.

Bishop, S. R., Lau, M., Shapiro, S., Carlson, L., Anderson, N. D., Carmody, J., et al. (2004). Mindfulness: A proposed operational definition. *Clinical Psychology: Science and Practice, 11*(3), 230-241.

Blanco, C., Ibanez, A., Saiz-Ruiz, J., Blanco-Jerez, C., & Nunes, E. V. (2000). Epidemiology, pathophysiology and treatment of pathological gambling. *CNS Drugs, 13*(6), 397-407.

Blaszczynski, A. (1999). Pathological gambling: An impulse control, addictive or obsessive-compulsive disorder? *Anuario de Psicología, 30,* 93-109.

Blaszczynski, A. (2000). Pathways to pathological gambling: Identifying topologies. [Electronic Version]. *Journal of Gambling Issues*, *1*. Retrieved 11/12/07 from http://www.camh.net/egambling/issue1/feature/index.html

Blaszczynski, A., & Nower, L. (2002). A pathways model for problem and pathological gambling. *Addiction, 97*(5), 487-499.

Blaszczynski, A., & Silove, D. (1995). Cognitive and behavioral therapies for pathological gambling. *Journal of Gambling Studies, 11*(2), 195-220.

Blaszczynski, A., Ladouceur, R., Goulet, A., & Savard, C. (2006). 'How much do you spend gambling?': Ambiguities in questionnaire items assessing expenditure. *International Gambling Studies, 6*(2), 123-128.

Blaszczynski, A., Walker, M., Sagris, A., & Dickerson, M. (1999). Psychological aspects of gambling behaviour: An Australian Psychological Society position paper. *Australian Psychologist, 34*(1), 4-16.

Boyd, W. H., & Bolen, D. W. (1970). The compulsive gambler and spouse in group psychotherapy. *Journal of Group Psychotherapy, 20*, 77-90.

Boyer, M., & Dickerson, M. (2003). Attentional bias and addictive behaviour: automaticity in a gambling-specific modified Stroop task. *Addiction, 98*(1), 61-70.

Breen, R. B., Kruedelbach, N. G., & Walker, H. I. (2001). Cognitive changes in pathological gamblers following a 28-day inpatient program. *Psychology of Addictive Behaviors, 15*(3), 246-248.

Brown, K. W, & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*(4), 822-848.

Bujold, A., Ladouceur, R., Sylvain, C., & Boisvert, J.-M. (1994). Treatment of pathological gamblers: An experimental study. *Journal of Behavior Therapy and Experimental Psychiatry, 25*(4), 275-282.

Carlbring, P., & Smit, F. (2008). Randomized trial of internet-delivered self-help with telephone support for pathological gamblers. *Journal of Consulting and Clinical Psychology, 76*(6), 1090-1094.

Carlbring, P., Jonsson, J., Josephson, H., & Forsberg, L. (2010). Motivational interviewing versus cognitive behavioral group therapy in the treatment of problem and pathological gambling: A randomized controlled trial. *Cognitive Behaviour Therapy, 39*(2), 92-103.

Carmody, J., & Baer, R. A. (2008). Relationships between mindfulness practice and levels of mindfulness, medical and psychological symptoms and well-being in a mindfulness-based stress reduction program. *Journal of Behavioral Medicine, 31*, 23–33.

Carmody, J., Baer, R. A., Lykins, E. L. B., & Olendzki, N. (2009). An empirical study of the mechanisms of mindfulness in a mindfulness-based stress reduction program. *Journal of Clinical Psychology, 65*, 613-626.

Chambless, D. L., & Ollendick, T. H. (2001). Empirically supported psychological interventions: Controversies and evidence. *Annual Review of Psychology, 52*, 685-716.

Chambless, D. L., Baker, M., Baucom, D. H., Beutler, L. E., Calhoun, K. S., et al. (1998). Update on empirically validated therapies, II. *The Clinical Psychologist, 51*, 3-16.

Ciarrocchi, J., & Richardson, R. (1989). Profile of compulsive gamblers in treatment: Update and comparisons. *Journal of Gambling Behavior, 5*, 53-65.

Coffey, K. A., & Hartman, M. (2008). Mechanisms of action in the inverse relationship between mindfulness and psychological distress. *Complementary Health Practice Review, 13*(2), 79-91.

Cumming, G., & Finch, S. (2005). Inference by eye: Confidence intervals, and how to read pictures of data. *American Psychologist, 60,* 170–180.

Cunningham-Williams, R. M., Cottler, L. B., Compton, W. M., & Spitznagel, E. L. (1998). Taking chances: Problem gamblers and mental health disorders: Results from the St. Louis epidemiologic catchment area study. *American Journal of Public Health, 88*, 1093-1096.

Daghestani, A. N., Elenz, E., & Crayton, J. W. (1996). Pathological gambling in hospitalized substance abusing veterans. *Journal of Clinical Psychiatry, 57*(8), 360-363.

de Lisle, S. M., Allen, J. S., & Dowling, N. A. (2011). Mindfulness-based cognitive therapy for problem gambling. *Clinical Case Studies*. Prepublished March 7, 2011, DOI:10.1177/1534650111401016

Dickerson, M. (1989). Gambling: A dependence without a drug. *International Review of Psychiatry, 1*, 157-171.

Dowling, N. (2003). *Efficacy of a cognitive-behavioral approach in the treatment of female pathological electronic gaming machine gambling.* Melbourne: RMIT University.

Dowling, N., Smith, D., & Thomas, T. (2005). Electronic gaming machines: Are they the "crack-cocaine" of gambling? *Addiction*, *100*, 33-45.

Dowling, N., Smith, D., & Thomas, T. (2006). Treatment of female pathological gambling: Efficacy of a cognitive-behavioural approach. *Journal of Gambling Studies, 22,* 355-372.

Dowling, N., Smith, D., & Thomas, T. (2007). A comparison of individual and group cognitive behavioral treatment for female pathological gambling. *Behaviour Research and Therapy, 45*, 2192-2202.

Dowling, N., Smith, D., & Thomas, T. (2009). A preliminary investigation of abstinence and controlled gambling as self-selected goals of treatment for female pathological gambling. *Journal of Gambling Studies, 25*(2), 201-214.

Echeburúa, E., & Fernández-Montalvo, J. (2002). Psychological treatment of slot machine pathological gambling: A case study. *Clinical Case Studies, 1*(3), 240-253.

Echeburúa, E., Báez, C., & Fernández-Montalvo, J. (1996). Comparative effectiveness of three therapeutic modalities in the psychological treatment of pathological gambling: Long-term outcome. *Behavioural and Cognitive Psychotherapy, 24*(1), 51-72.

Echeburúa, E., Fernández-Montalvo, J., & Báez, C. (2000). Relapse prevention in the treatment of slot-machine pathological gambling: Long-term outcome. *Behavior Therapy, 31*(2), 351-364.

Fernández-Alba, A., & Labrador, F. J. (2005). Sociodemographic, psychopathological and clinical characteristics of pathological slot-machine gamblers in treatment: A descriptive study of Spanish male gamblers. *International Gambling Studies, 5*(1), 113-122.

Ferris. J., & Wynne, H. (2001). *The Canadian Problem Gambling Index Draft User Manual*. Toronto: Canadian Centre on Substance Abuse.

First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. W. (2002). *Structured Clinical Interview for DSM-IV-TR Axis I Disorders, Research Version, Non-patient Edition* (SCID-I/NP). New York: Biometrics Research, New York State Psychiatric Institute.

Freidenberg, B. M., Blanchard, E. B., Wulfert, E., & Malta, L. S. (2002). Changes in physiological arousal to gambling cues among participants in motivationally enhanced cognitive-behavior therapy for pathological gambling: A preliminary study. *Applied Psychophysiology and Biofeedback, 27*(4), 251-260.

Gebauer, L., LaBrie, R., & Shaffer, H. J. (2010). Optimizing DSM-IV-TR classification accuracy: a brief biosocial screen for detecting current gambling disorders among gamblers in the general household population. *Canadian Journal of Psychiatry, 55*(2), 82-90.

Gerstein, D. R., Volberg, R. A., Toce, M. T., Harwood, H., Johnson, R. A., Bule, T. (1999). Gambling Impact and Behavior Study: Report to the National Gambling Impact Study Commission. Chicago: National Opinion Research Centre.

González-Ibáñez, Á., Jimenez, S., & Aymami, M. N. (1999). Evaluation and cognitive-behavioral treatment of pathological slot machine gamblers. *Anuario de Psicologia, 30*(4), 111-125.

González-Ibáñez, Á., Rosel, P., & Moreno, I. (2005). Evaluation and treatment of pathological gambling. *Journal of Gambling Studies, 21*(1), 35-42.

Gooding, P. & Tarrier, N. (2009). A systematic review and meta-analysis of cognitive-behavioural interventions to reduce problem gambling: Hedging our bets? *Behaviour Research and Therapy, 47*, 592-607.

Grant, J. E., & Kim, S. W., & Potenza, M. N. (2003). Advances in the pharmacological treatment of pathological gambling, *Journal of Gambling Studies, 19*(1), 85-109.

Hayes, S. C. (2004). Acceptance and commitment therapy and the new behaviour therapies. In S. C. Hayes, V. M. Follette & M. M. Linehan (Eds.), *Mindfulness and Acceptance: Expanding the Cognitive Behavioral Tradition* (pp. 1-29). New York: Guilford Press.

Hodgins, D. C., Currie, S. R., & el-Guebaly, N. (2001). Motivational enhancement and self-help treatments for problem gambling. *Journal of Consulting and Clinical Psychology, 69*(1), 50-57.

Hodgins, D. C., Currie, S., el-Guebaly, N., & Peden, N. (2004). Brief motivational treatment for problem gambling: A 24-month follow-up. *Psychology of Addictive Behaviors, 18*(3), 293-296.

Jiménez-Murcia, S., Álvarez-Moya, E. M., Granero, R., Aymami, M. N., M., G.-P., Jaurrieta, N., et al. (2007). Cognitive-behavioral group treatment for pathological gambling: Analysis of effectiveness and predictors of therapy outcome. *Psychotherapy Research, 17*(5), 544-552.

Johnson, E. E, Hamer, R., Nora, R. M., & Tan, B. (1997). The Lie/Bet questionnaire for screening pathological gamblers. *Psychological Reports, 80*(1), 83-88.

Joukhador, J., Maccallum, F., & Blaszczynski, A. (2003). Differences in cognitive distortions between problem and social gamblers. Psychological Reports, 92, 1203-1214.

Kabat-Zinn, J. (2005). *Full Catastrophe Living – Using the Wisdom of your Body and Mind to face Stress, Pain, and Illness* (3rd ed.). New York: Bantam Dell.

Kabat-Zinn, J. (2005). *Full Catastrophe Living – Using the Wisdom of your Body and Mind to face Stress, Pain, and Illness* (3rd ed.). New York: Bantam Dell.

Kamalashila. (1999). *Meditation*. Birmhingham: Windhorse Publications.

Ladouceur, R., Boisvert, J.-M., & Dumont, J. (1994). Cognitive-behavioral treatment for adolescent pathological gamblers. *Behavior Modification, 18*(2), 230-242.

Ladouceur, R., Lachance, S., & Fournier, P. M. (2009). Is control a viable goal in the treatment of pathological gambling? *Behaviour Research and Therapy, 47(3),* 189-197.

Ladouceur, R., Sylvain, C., Boutin, C., Lachance, S., Doucet, C., Leblond, J., et al. (2001). Cognitive treatment of pathological gambling. *Journal of Nervous and Mental Disease, 189*(11), 774

Ladouceur, R., Sylvain, C., Boutin, C., Lachance, S., Doucet, C., & Leblond, J. (2003). Group therapy for pathological gamblers: A cognitive approach. *Behaviour Research and Therapy, 41*(5), 587-596.

Ladouceur, R., Sylvain, C., Duval, C., & Gaboury, A. (1989). Correction of irrational verbalizations among video poker players. *International Journal of Psychology, 24*(1), 43-56.

Ladouceur, R., Sylvain, C., Letarte, H., Giroux, I., & Jacques, C. (1998). Cognitive treatment of pathological gamblers. *Behaviour Research and Therapy, 36*(12), 1111-1119.

Lakey, C. E., Campbell, W. K., Brown, K. W., & Goodie, A. S. (2007). Dispositional mindfulness as a predictor of the severity of gambling outcomes. *Personality and Individual Differences, 43*, 1698-1710.

Larsen, D., Attkisson, C., Hargreaves, W., & Nguyen, J. (1979). Assessment of client/patient satisfaction: Development of a general scale. *Evaluation and Program Planning, 2*, 197-207.

Lau, M, A., & Yu, A. R. (2009). New developments in research on mindfulness-based treatments: Introduction to the special issue, *Journal of Cognitive Psychotherapy, 23*(3), 179- 184.

Lesieur, H. R. (2001). Cluster analysis of types of inpatient pathological gamblers. *Dissertation Abstracts International: Section B: The Sciences and Engineering,* 62(4-B), 2065.

Lesieur, H. R., & Blume, S. B. (1987). The south oaks gambling screen (The SOGS): A new instrument for the identification of pathological gamblers. *American Journal of Psychiatry, 144*, 1184-1888.

274

Letarte, H., Ladouceur, R., & Mayrand, M. (1986). Primary and secondary illusory control and risk-taking in gambling (roulette). *Psychological Reports, 58*, 299-302.

Leyfer, O., Ruberg, J., & Woodruff-Borden, J. (2006). Examination of the utility of the Beck Anxiety Inventory and its factors as a screener for anxiety disorders. *The Journal of Anxiety Disorders, 20*, 444-458.

Logan, G. D. (2004). Attention, automaticity, and executive control. In A. F. Healy (Ed.), *Experimental cognitive psychology and its applications: Festschrift in honor of Lyle Bourne, Walter Kintsch, and Thomas Landauer* (pp. 129-139). Washington, DC: American Psychological Association Press.

Longmore, R. J., & Worrel, M. (2007). Do we need to challenge thoughts in cognitive behaviour therapy? *Clinical Psychology Review 27*, 173-187.

López Viets, V. C., & Miller, W. R. (1997). Treatment approaches for pathological gamblers. *Clinical Psychology Review, 17*, 689-702.

Lorains, F. K., Cowlishaw, S., Thomas, S. (2011). Prevalence of comorbid disorders in problem and pathological gambling: Systematic review and meta-analysis of population surveys. Manuscript submitted for publication.

May, R. K., Whelan, J. P., Steenbergh, T. A., & Meyers, A. W. (2003). The gambling self-efficacy questionnaire: An initial psychometric evaluation. *Journal of Gambling Studies, 19*, 339–357.

McConaghy, N., Armstrong, M. S., Blaszczynski, A., & Allcock, C. (1983). Controlled comparison of aversive therapy and imaginal desensitization in compulsive gambling. *British Journal of Psychiatry, 142*, 366-372.

McConaghy, N., Blaszczynski, A., & Frankova, A. (1991). Comparison of imaginal desensitisation with other behavioural treatments of pathological gambling: A two-to nine-year follow-up. *British Journal of Psychiatry, 159*, 390-393.

McCormick, R. A., Russo, A. M., Ramirez, L. F., & Taber, J. I. (1984). Affective disorders among pathological gamblers seeking treatment. *American Journal of Psychiatry, 141*, 215-218.

McCown, W. G., & Howatt, W. A. (2007). *Treating Gambling Problems*. New Jersey: John Wiley & Sons, Inc.

McCusker, C. G., & Gettings, B. (1997). Automaticity of cognitive biases in addictive behaviours: further evidence with gamblers. *British Journal of Clinical Psychology, 36*(4), 543-554.

McMillen, J., Marshall, D., Ahmed, E., & Wenzel, M. (2004). Victorian longitudinal community attitudes survey. Melbourne: Victorian Gambling Research Panel.

Melbourne Academic Mindfulness Interest Group. (2006). Mindfulness-based psychotherapies: A review of conceptual foundations, empirical evidence and practical considerations. *Australian and New Zealand Journal of Psychiatry, 40*, 285-294.

Melville, C. L., Davis, C. S., Matzenbacher, D. L., & Clayborne, J. (2004). Node-link-mapping-enhanced group treatment for pathological gambling. *Addictive Behaviors, 29*(1), 73-87.

Milton, I. & Sharples, B. (2007). *MBCT-OZ: Lesson Plans for Australia*. Melbourne: The Southern Health Adult Psychiatry Research, Training and Evaluation Centre.

Milton, S., Crino, R., Hunt, C., & Prosser, E. (2002). The effect of compliance-improving interventions on the cognitive-behavioural treatment of pathological gambling. *Journal of Gambling Studies, 18*(2), 207-229.

Moreyra, P., Ibáñez, A., Liebowitz, M. R., Saiz Ruiz, J., & Blanco, C. (2002). Pathological gambling: Addiction or obsession? *Psychiatric Annals, 32*(3), 161-166.

Myrseth, H., Litleré, I., Støylen, I. J., & Pallesen, S. (2009). A controlled study of the effect of cognitive-behavioural group therapy for pathological gamblers. *Nordic Journal of Psychiatry, 63*, 22-31.

Najavits, L. M. (2003). How to design an effective treatment outcome study. *Journal of Gambling Studies, 19*, 317-337.

Najmi, S., & Wegner, D. M. (2008). Thought suppression and psychopathology. In A. J. Elliot (Ed.), *Handbook of Approach and Avoidance Motivation* (pp.447-459). New York: Psychology Press.

National Research Council. (1999). *Pathological Gambling: A Critical Review*. Washington, D.C: National Academy Press.

Neal, P., Delfrabbo, P., & O'Neil, M. (2005). *Problem Gambling and Harm: Toward a National Definition.* Melbourne: Office of Gaming and Racing.

Pallesen, S., Mitsem, M., Kvale, G., Johnsen, B., & Molde, H. (2005). Outcome of psychological treatments of pathological gambling: A review and meta-analysis. *Addiction, 100*, 1412-1422.

Petry, N. M. (2002). How treatments for pathological gambling can be informed by treatments for substance use disorders. *Experimental and Clinical Psychopharmacology, 10*(3), 184-192.

Petry, N. M. (2003). Validity of the Addiction Severity Index in assessing gambling problems. *Journal of Nervous and Mental Disease, 191*, 399-407.

Petry, N. M. (2005). *Pathological gambling: Etiology, comorbidity, and treatment*. Washington, D.C: American Psychological Association.

Petry, N. M., & Armentano, C. (1999). Prevalence, assessment, and treatment of pathological gambling: A review. *Psychiatric Services, 50*(8), 1021-1027.

Petry, N. M., Ammerman, Y., Bohl, J., Doersch, A., Gay, H., Kadden, R., et al. (2006). Cognitive-behavioral therapy for pathological gamblers. *Journal of Consulting and Clinical Psychology, 74*(3), 555-567.

Petry, N. M., Weinstock, J., Ledgerwood, D. M., & Morasco, B. (2008). A randomized trial of brief interventions for problem and pathological gamblers. *Journal of Consulting and Clinical Psychology, 76*(2), 318-328.

Problem Gambling Research and Treatment Centre. (2011). *Guideline for screening, assessment and treatment in problem and pathological gambling*. Melbourne: Monash University.

Productivity Commission. (1999). *Australia's gambling industries: Report No.10*. Canberra: AusInfo.

Ratelle, C. F., Vallerand, R. J., Mageau, G. A., Rousseau, F. L. & Provencher, P. (2004). When passion leads to problematic outcomes: A look at gambling. *Journal of Gambling Studies, 20*(2), 105-119.

Raylu, N., & Oei, T. P. (2002). Pathological gambling: A comprehensive review. *Clinical Psychology Review, 22*(7), 1009-1061.

Ree, M. J., & Craigie, M. A. (2007). Outcomes following mindfulness-based cognitive therapy in a heterogeneous sample of adult outpatients. *Behaviour Change, 24*(2), 70-86.

Rickwood, D., Blaszczynski, A., Delfabbro, P., Dowling, N., & Heading, K. (2010). The psychology of gambling. *InPsych, 32*(6), 11-21.

Robins, L., Cottler, L. B., Bucholz, K., & Compton, W. (1996). *Diagnostic Interview Schedule for DSM-IV*. St. Louis: Washington University School of Medicine.

Robson, E., Edwards, J., Smith, G., & Colman, I. (2002). Gambling decisions: An early intervention program for problem gamblers. *Journal of Gambling Studies, 18*(3), 235-255.

Rosenthal, R. J., & Rugle, L. J. (1994). A psychodynamic approach to the treatment of pathological gambling: I. Achieving abstinence. *Journal of Gambling Studies, 10*(1), 21-42.

Schwarz, J., & Lindner, A. (1992). Inpatient treatment of male pathological gamblers in Germany. *Journal of Gambling Studies, 8*(1), 93-109.

Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse.* New York: Guilford Press.

Shaffer, H. J., Hall, M. N., & Vander Bilt, J. V. (1999). Estimating the prevalence of disordered gambling behavior in the United States and Canada: a research synthesis. *American Journal of Public Health, 89,* 1369-75.

Sharpe, L. (2002). A reformulated cognitive-behavioral model of problem gambling: A biopsychosocial perspective. *Clinical Psychology Review, 22*(1), 1-25.

Sharpe, L. (2003). Understanding pathological gambling: Distinct pathways or individual formulations? In S. P. Shohov (Ed). *Advances in Psychology Research, Vol. 19.* (pp. 167-182). Hauppauge: Nova Science Publishers.

Shead, N. W., Callan, M. J., & Hodgins, D. C. (2008). Probability discounting among gamblers: Differences across problem severity and affect-regulation expectancies. *Personality and Individual Differences, 45*, 536-541.

Specker, S. M., Carlson, G. A., Christenson, G. A., & Marcotte, M. (1995). Impulse control disorders and attention deficit disorder in pathological gamblers. *Annals of Clinical Psychiatry, 7*, 175-179.

Steenbergh, T. A., Meyers, A. W., May, R. K., & Whelan, J. P. (2002). Development and validation of the Gambler's Belief Questionnaire. *Psychology of Addictive Behavior, 16*, 143-149.

Stinchfield, R. (2002). Reliability, validity, and classification accuracy of the South Oaks Gambling Screen (SOGS). *Addictive Behaviors, 27*, 1-19.

Sylvain, C., & Ladouceur, R. (1992). Corrective cognition and gambling habits of players of video poker. *Canadian Journal of Behavioural Science, 24*(4), 479-489.

Sylvain, C., Ladouceur, R., & Boisvert, J. M. (1997). Cognitive and behavioral treatment of pathological gambling: A controlled study. *Journal of Consulting and Clinical Psychology, 65*(5), 727-732.

Tavares, H., Martins, S. S., Zilberman, M. L., & el-Guebaly, N. (2002). Gamblers seeking treatment: Why haven't they come earlier? *Addictive Disorders & Their Treatment, 1*(2), 65-69.

Taylor, D. G., & Mireault, G. C. (2008). Mindfulness and self-regulation: A comparison of long-term and short-term meditators. *The Journal of Transpersonal Psychology, 40*(1), 88-99.

Toce-Gerstein, M., Gerstein, D. R., & Volberg, R. A. (2009). The NODS-CLiP: A rapid screen for adult pathological and problem gambling. *Journal of Gambling Studies, 25*, 541-55.

Toneatto, T., & Sobell, L. C. (1990). Pathological gambling treated with cognitive behavior therapy: A case report. *Addictive Behaviors, 15*(5), 497-501.

Toneatto, T., Vettese, L., & Nguyen, L. (2007). The role of mindfulness in the cognitive-behavioural treatment of problem gambling. *Journal of Gambling Issues, 19*, 91-100.

Turkheimer, E. (1998). Heritability and biological explanation. *Psychological Review, 105*, 782-791.

Victorian Commission for Gambling Regulation. (2010). Retrieved March 10, 2011 from http://www.vcgr.vic.gov.au/CA256F800017E8D4/research/1DE2731698205E68CA 2577810018AFE3?OpenDocument

Volberg, R. A. (2002). The epidemiology of pathological gambling. *Psychiatric Annals, 32*(3), 171-178.

Walker, M., Anjoul, F., Milton, S., & Shannon, K. (2006). A structured clinical interview for pathological gambling. *Gambling Research, 18*, 39-56.

Walker, M., Toneatto, T., Potenza, M. N., Petry, N., Ladouceur, R., Hodgins, D. C., et al. (2006). A framework for reporting outcomes in problem gambling treatment research: The Banff, Alberta Consensus. *Addiction, 101*(4), 504-511.

Walsh, R., & Roche, L. (1979). Precipitation of acute psychotic episodes in intensive meditation in individuals with a history of schizophrenia. *American Journal of Psychiatry, 136,* 1085-1086.

Washington, F. A. (2006). The relationship among rumination and distraction in pathological gamblers. *Dissertation Abstracts International: Section B: The Sciences and Engineering 67*(1-B), 573.

Wedgeworth, R. L. (1998). The reification of the "pathological" gambler: An analysis of gambling treatment and the application of the medical model to problem gambling. *Perspectives in Psychiatric Care, 34*, 5-13.

Weinstock, J., Whelan, J. P., & Meyers, A. W. (2004). Behavioral assessment of gambling: Psychometrics of a Gambling Timeline Followback. *Psychological Assessment, 16*, 72-80.

Welte, J., Barnes, G., Wieczorek, W., Tidwell, M. C., & Parker, J. (2001). Alcohol and gambling pathology among U.S. adults: Prevalence, demographic patterns and comorbidity. *Journal of Studies on Alcohol, 62,* 706–712.

Westphal, J. R. (2008). How well are we helping problem gamblers? An update to the evidence base supporting problem gambling treatment. *International Journal of Mental Health and Addiction. 6*(2), 249-264.

Westphal, J., & Abbott, M. W. (2006). Models for multi-site problem gambling clinical trials. *International Gambling Studies, 6*(2), 129-145.

Whelan, J. P., Steenbergh, T. A., & Meyers, A. W. (2007). *Problem and Pathological Gambling*. Cambridge: Hogrefe.

Whelan, J. P., Steenbergh, T. A., & Meyers, A. W. (2007). *Problem and Pathological Gambling*. Cambridge: Hogrefe.

Winters, K. C., & Kushner, M. G. (2003). Treatment issues pertaining to pathological gamblers with a comorbid disorder. *Journal of Gambling Studies, 19*(3), 261-277.

Winters. K. C., Specker, S., & Stinchfield, R. S. (2002). Measuring pathological gambling with the Diagnostic Interview for Gambling Severity (DIGS). In Marotta, J. J., Cornelius, J. A., Eadington, W. R. (Eds.). *The Downside: Problem and Pathological Gambling* (pp. 143-148). Reno: University of Nevada-Reno.

Wulfert, E., Blanchard, E. B., & Martell, R. (2003). Conceptualizing and treating pathological gambling: A motivationally enhanced cognitive behavioral approach. *Cognitive and Behavioral Practice, 10*(1), 61-72.

Wulfert, E., Blanchard, E. B., Freidenberg, B. M., & Martell, R. S. (2006). Retaining pathological gamblers in cognitive behavior therapy through motivational enhancement: A pilot study. *Behavior Modification, 30*(3), 315-340.

APPENDIX A: MINDFULNESS-BASED COGNITIVE THERAPY FOR PROBLEM GAMBLING – TREATMENT MANUAL

The central tenet of mindfulness-based cognitive therapy for problem gambling (MBCT-PG) is to use mindfulness as a skilful way to respond to present moment gambling-related thoughts, feelings and sensations. In this section, the core MBCT-PG treatment manual is presented. Each of the eight sessions is described in detail, beginning with an evidential justification for the content of each session followed by a discussion of the session structure. Examples of the handout material for each session are also provided. Guided audio presentations of each of the mindfulness techniques are distributed to each participant at the end of most sessions. Scripts for these techniques are provided in Segal, Williams, and Teasdale (2002).

Course Structure. MBCT-PG has been adapted for problem gambling from Mindfulness-based cognitive therapy (MBCT) developed by Segal et al., (2002). MBCT is typically conducted in a group format with no more than 12 participants. However, delivery of mindfulness-based treatments in individualised formats is also considered appropriate (Lau & Yu, 2009). MBCT comprises eight weekly sessions, each of two hours duration. MBCT interventions are usually followed by a residential retreat held over a weekend. Regular refresher classes are then held at three to six month intervals. MBCT-PG closely follows the MBCT course structure.

Therapist Proficiency. MBCT requires therapists to have a mindfulness practice of their own in addition to receiving formal MBCT qualifications (Baer & Krietemeyer, 2006). The reason for this is that mindfulness is a skill that operates on lower levels of cognitive processing that usually operate outside conscious awareness. Without first hand knowledge

of how participants relate to their respective experiences, it is unlikely that the therapist will properly understand or proficiently teach mindfulness skills (Melbourne Academic Mindfulness Interest Group, 2006). For this reason, MBCT-PG closely follows this protocol.

Participant Screening. Participants are met individually to assess for presence of any psychiatric condition which may preclude program participation. The literature on adverse consequences of mindfulness program participation is limited. However, mindfulness teaches skills that promote nonjudgmental awareness of present moment experiences. This applies to both negative and positive emotional states. As such, it is not surprising that some participants may become more distressed by such states as their mindfulness skills develop. The skill of the instructor in dealing with such eventualities is essential in ensuring that such experiences are seen as a valuable tool for learning rather than as an exacerbation of an existing psychiatric problem (Melbourne Academic Mindfulness Interest Group, 2006). However, there is risk in applying mindfulness skills to those with a history of psychosis (Walsh & Roche, 1979). As such, caution is required in the assessment process to ensure that the potential for adverse consequences is minimised. If inclusion criteria are met, each participant is informed that there is a requirement for a daily mindfulness meditation practice of approximately 40 minutes per day to maximise the therapeutic benefits of the program. Follow-up sessions after the therapy are recommended to review course content and refresh mindfulness practices learnt.

Materials. Mindfulness meditations can be performed on a chair, meditation cushions, or meditation stools. Each participant is encouraged to experiment with whatever they feel comfortable. However, none of the techniques should be performed if a prevailing medical condition precludes their use. Often, alternative positions are available (e.g. sitting on a chair instead of adopting a full lotus position). Usually, the body scan is performed when

lying down. Yoga mats are used for this purpose in addition to the yoga exercises. Since each participant remains still for protracted periods of time, blankets are useful in cold conditions.

Participants are arranged in a circle with the facilitator at the front of the class. A whiteboard and audio-visual devices are useful but not essential. However, a small table with aesthetically pleasing objects such as a vase of flowers, small rocks, or candles are desirable. These should be located in the centre of the group circle to serve as a useful reference point.

Acknowledgment is made to Segal et al. (2002) and the MBCT-OZ lessons plans for MBCT (Milton & Sharples, 2007) which have been adapted for use for problem gambling.

Session 1: Automatic Pilot

The first step in MBCT-PG is for the facilitator to welcome participants and briefly outline the course structure. Many problem gamblers delay seeking treatment due to factors such as shame and secrecy and lonely attempts at self-control (Tavares et al., 2002), so it is crucial to acknowledge the attempt made in coming to the treatment. An explanation of how mindfulness can be used to bring new awareness to gambling-related urges and desires and how this awareness can be used to make a more adaptive behavioural choice is briefly discussed before establishing ground rules and engaging in introductions.

The Raisin exercise. Previous research has already identified the role of automaticity in gambling-related cognitive biases (Boyer & Dickerson, 2003; McCusker & Gettings, 1997). With repeated associations between gambling behaviour and distorted thinking, there is a high likelihood of the urge to gamble to become habitually reactivated with subsequent exposure. This automatic processing limits consideration of the options that are the most congruent with a person's needs and values (Brown & Ryan, 2003). The facilitator introduces the concept of automatic pilot using the 'raisin exercise' as an introductory exercise to illustrate the concept. The raisin exercise is an introductory exercise in mindfulness. Participants are each provided with a single raisin and are instructed to hold the raisin in the palm of their hand and inspect it as if it was an object they had never encountered before. A gentle curiosity is brought to bear on the object using each of the senses, beginning with vision, progressing to touch, smell, hearing and ending in taste. The instructor guides the participants in noticing what is going on in terms of thought as they inspect the object.

Discussion following the exercise is designed to elicit individual reactions to the activity. For example, negative thoughts such as "What has this got to do with gambling?"

or "It was a waste of time" or positive thoughts such as "I've never really tasted a raisin before" may be expressed. The key learning is that mindfulness is all about becoming aware of current experience (whether good or bad) and letting go of automatic *reactions* to the experience by adopting a gentle interest and curiosity toward what is going on in the mind and accepting it just as it is. This is important for problem gambling because the cognitive distortions associated with gambling-related urges and desires often occur outside conscious awareness (Toneatto et al., 2007). As eating is a habitual behaviour performed without much awareness, the raisin exercise highlights how bringing awareness to an object provides more information as to what is going on in the mind.

Body Scan exercise. To expand on this theme, the body scan technique is introduced to gain greater awareness of physical sensations in the body, usually the most noticeable manifestation of thought processes and feelings that operate outside awareness. Participants are instructed to either lie down or remain seated and bring awareness to their breath. Following this, attention is directed to physical sensations (or even lack of sensations) in various parts of the body, beginning with the toes and progressing through to the head. Participants are instructed to return awareness to the object of their attention (i.e. an area of the body) with a sense of gentleness and curiosity whenever they notice that they have become distracted by thoughts, feelings or body sensations. Discussion at the end of the exercise highlights how the body scan can be used as a means of catching the often unconscious tendency for the mind to wander off and how generating a gentle and accepting awareness of this can be helpful in observing present moment gambling-related urges and desires. Many participants may struggle with the on-going tendency for the mind to wander off in this way, so it is helpful to expand on what they noticed by asking where their mind may have gone. It is stressed that there is no right or wrong way to do the exercise as it is important to foster an accepting attitude to current experience. However, as

mindfulness is a new skill that requires practice to develop, the body scan is a required

daily practice until the next session.

Handout 1.1

A Definition of Mindfulness

Mindfulness means paying attention in a particular way:

On purpose,

In the present moment,

and nonjudgmentally.

—JON KABAT-ZINN

Adapted from:

Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse.* New York: Guilford Press.

Handout 1.2

Summary of Session 1: Automatic Pilot

In a car; we can sometimes drive for miles "on automatic pilot," without really aware of what we are doing. In the same way, we may not be really "present moment-by-moment", for much of our lives: We can often be "miles away" without knowing it.

On automatic pilot, we are more likely to have our "buttons pressed": around us and thoughts, feelings, and sensations in the mind (of which we may be only dimly aware) can trigger old habits of thinking that are often unhelpful and may lead to gambling.

By becoming more aware of our thoughts, feelings, and body sensations, from moment to moment, we give ourselves the possibility of greater freedom and we do not have to go into the same old "mental ruts" that may have caused problems in the past.

The aim of this program is to increase awareness so that we can respond to situations with choice rather than react automatically. We do that by practicing to become more aware of where our attention is, and deliberately changing the focus of attention, over and over again.

To begin with, we use attention to different parts of the body as a focus to anchor our awareness in the moment. We will also be training ourselves to put attention and awareness in different places at will. This is the aim of the body scan exercise that is the main homework for next week

Adapted from:

Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse.* New York: Guilford Press.

Handout 1.3

Homework for Week Following Session 1

- Body Scan CD (CD1) six times before we meet again. Don't expect to feel anything in particular from listening to the CD. In fact, give up all expectations about it. Just let your experience be your experience. Don't judge it. Just keep doing it, and we'll talk about it next week

- Record on the Homework Record Form each time you listen to the CD and details of your gambling behaviour. Also, make a note of anything that comes up in the homework, so that we can talk about it at the next meeting.

- Choose one routine activity in your daily life and make a deliberate effort to bring moment-to-moment awareness to that activity each time you do it, just as we did with the raisin exercise. Possibilities include waking up in the morning, brushing your teeth, showering, drying your body, getting dressed, eating, driving, taking out the rubbish (garbage), shopping, and so on. Simply zero in on knowing what you are doing as you are actually doing it.

- Note any times when you find yourself able to notice what you eat, in the same way you noticed the raisin.

- Eat at least one meal "mindfully," in the way that you ate the raisin.

Adapted from:

Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse.* New York: Guilford Press.

Handout 1.4

A Patient's Report

Mr. S is married, in his sixties, and the father of four adult children, and has gambled most of his life. His game of choice has been roulette. When casinos arrived in his community 5 years ago, he began gambling more compulsively. Over the past 5 years, he had been visiting the nearest casino upon the monthly arrival of his pension cheque, which he immediately spent on gambling. While waiting for his cheque, he experienced a pattern of preoccupation with gambling consisting of fantasies of winning large sums of money, feeling "like a winner," and paying off his debts. He believed that, unlike other patrons, he had a special skill at playing roulette and was able to control the outcome of a game that he otherwise saw as influenced by random chance. While playing, his conviction that he could win strengthened and overwhelmed any incompatible beliefs. When he gambled, he inevitably lost the money he brought with him (approximately $2,000) within an hour of his arrival, prompting him to chase his losses by immediately withdrawing funds from the ATM on-site. During the course of a 24-hour period he typically lost $10,000. Physically and emotionally exhausted and full of self-loathing and guilt he would return home to face the anger of his family. A month later, the cycle would repeat itself. When he finally presented for treatment he was highly motivated to resolve this problem.

Based on a detailed examination of his gambling episodes, several cognitive distortions were identified: illusions of control, in which he believed that he could improve his chances at winning and that he could identify or develop unique "systems" to win; assumptions that discrete plays of roulette were connected and that losses would be diluted with wins if he persisted in playing; and pervasive feelings of superiority to other gamblers. Through a cognitive analysis Mr. S was able to clearly recognize these beliefs about gambling and to benefit from straightforward cognitive techniques that undermined the confidence with which he held these beliefs. He was able to entertain doubt about each of these beliefs and rationally understand their fallibility. Furthermore, Mr. S also became acutely aware of the consequences of his chronic gambling on the mental and physical health of his wife and children. Instead of dismissing their concerns, he felt guilty and remorseful that their wellbeing was being so severely affected by his gambling behaviour.

Despite these cognitive insights and understanding, Mr. S nevertheless found it difficult to refrain from gambling and had barely reduced his involvement after several months of treatment. He reported that he was able to circumvent his clinical understanding by entertaining beliefs that the "next time" he would win, or that "one more time won't hurt." He continued to fantasise about winning, generating very intense urges and leaving him vulnerable to returning to the casino once his cheque arrived. His awareness of the psychosocial consequences of his gambling diminished during these periods, especially when his cravings to gamble were intense and compelling.

As an additional component of treatment, Mr. S was agreeable to learning mindfulness meditation. He was presented with a rationale for this technique that focused on learning to attend to gambling-related thoughts and feelings with an attitude of discovery, observation, and dispassionate awareness. Over the course of several weeks Mr. S mastered the basic techniques of mindful meditation and breath control and committed himself to a daily practice routine of 45 minutes. Specifically, he was taught to permit thoughts related to gambling to arise and subside, initially only while meditating but eventually throughout the day. He was instructed neither to "cling" to a thought nor to elaborate it (e.g., fantasize) but to simply observe that the thought had occurred and to become aware of his breathing. He was encouraged to note that all thoughts, gambling-related or not, were very brief, transient, and impermanent, rather than to "react" by fantasising, distorting, suppressing, or dismissing. Instead, he was encouraged to observe his thoughts in the same way he might observe waves crashing on a shore or clouds drifting across the sky. Mr. S was instructed to

refrain from judging any specific thought or feeling as desirable or not, watching all of his mental events emerge into his conscious awareness and as rapidly disappear. Through such practice, he was able to clearly distinguish himself as the "observer" from the activity of his consciousness, the "observed."

Equally importantly, his mindfulness skills led him to be more aware of the thoughts and feelings he had about the consequences of his gambling. These tended to be dismissed or rationalized away when he was caught in a strong urge to gamble and would completely disappear while at the casino. By applying mindfulness skills, he became and remained aware of the harms his gambling had caused for his significant others. Mr. S also found that as he diligently practised his mindfulness skills, he was able to apply his attitude of uninvolved observation of his gambling-related cognitive processes throughout the day. He found himself responding to gambling thoughts with amusement, curiosity, and amazement but with reduced conviction in their validity or, most importantly, the need for a behavioural reaction on his part. He noted that this attitude generally led to a rapid dissolution of these thoughts and the elimination of any strong urges or temptations to gamble. He acknowledged that the gambling thoughts continued to occur at approximately the same frequency as before treatment but their intensity or salience in his awareness was much diminished (analogous to reducing the volume on the radio), and as a result he was able to make more adaptive decisions (i.e., not gamble).

Adapted from:

Toneatto, T., Vettese, L., & Nguyen, L. (2007). The role of mindfulness in the cognitive-behavioural treatment of problem gambling. *Journal of Gambling Issues, 19*, 91-100.

Handout 1.5

Homework Record Form – Session 1

Name:

_____

Record on the Homework Record Form your gambling behaviour and the details of your mindfulness practice over the next week. Also, make a note of anything that comes up in homework, so that we can talk about it at the next meeting.

Date	Gambling type (e.g., pokies)	How long there (hours)	Amount taken to venue ($)	Extra withdrawn from ATM ($)	Amount taken home ($)

Date	Practice (Y/N)	Total amount of time spent in practice today (minutes)	Comments

Note: Please record each day even if you did not gamble – in which case place an '**X**' in the relevant box

Session 2: Dealing with Barriers

The second session of MBCT-PG is focused on dealing with barriers to mindfulness practice. Despite initial commitment, it is easy for many people to become distracted by the many hindrances to meditation. These can be summarised as: sense desire, where the individual craves for pleasant sense experience; ill will, where the individual recognises an aversion to an experience yet is overpowered it; restlessness and anxiety, where it becomes difficult to begin practice or to concentrate; sloth and torpor, where an individual is unable to remain alert; and doubt and indecision, where the individual doubts that the practice offers anything for them (Kamalashila, 1999). These are significant issues to overcome and require both recognition by the practitioner and sensitive attention by the therapist.

The session begins with a body scan rather than immediately engaging participants in conversation about their experience. This encourages participants to adopt a 'being' mode of mind rather than engaging in a 'doing' mode which always subsumes gambling behaviour. Discussion following this exercise allows participants to compare current experience with whatever reactions they may have encountered in relation to the practice over the previous week. Common themes reported by Segal et al., (2002) include judgmental attitudes to the practice such as "Am I doing it right?", painful sensations, imperfect conditions that prevent practice, and varying responses to the practice such as getting bored, not having time, falling asleep, becoming irritated, and not understanding the purpose of the exercise. According to Kamalashila (1999), antidotes for such barriers to practice can be summarised as:

- Acknowledgment – acknowledge which hindrance is preventing the practitioner from deepening their concentration.

- Cultivate a sky-like attitude – the practitioner attempts to expand their awareness around the body, posture, and breath, and to think of the hindrance like a passing cloud.

- Cultivate the opposite quality. If the hindrance remains, the practitioner is encouraged to cultivate some positive quality to what they may be feeling. For example, if the hindrance is doubt, then confidence is cultivated.

- Consider the consequences. If the hindrance is allowed to continue, it will become stronger. The practitioner is encouraged to reflect on this so that the importance of what they are doing becomes clearer.

- Suppression. This is a last resort. The practitioner identifies the hindrance and pushes it aside.

Discussion about the barriers to practice reveals the relationship between how a situation is interpreted (i.e. thinking) and the feelings associated with the interpretation. This approach is commonly employed in traditional CBT where the cognitive model is presented to link situations, thoughts and feelings. However, rather than challenging the thoughts, MBCT encourages participants to change their relationship with their thoughts (Sauer & Baer, 2009). The connection between this and gambling is highlighted by inviting participants to close their eyes and imagine the following short scenario:

"You decide to go out and gamble. You arrive at the venue and place your first bet. You win a few bets and lose a few. And then the person next to you wins the jackpot. They yell with delight and excitement."

Participants are encouraged to become aware of their reactions to the scenario in terms of the thoughts passing through their mind and the feelings they experience in terms of emotions and body sensations. These are listed on a whiteboard according to four broad

categories: situation, thoughts, feelings and body sensation. Discussion highlights how appraisal of events is an automatic process that often operates outside conscious awareness and yet which often results in strong feelings. However, mindfulness is helpful in bringing awareness to what is going on in the mind which affords the opportunity to do something differently. The group is then asked what this might have to do with problem gambling, stressing that evaluation of a situation as good or bad is not a fact and that the thinking associated with this appraisal can often lead to further gambling.

The session is concluded by introducing participants to the brief sitting meditation described by Segal et al., (2002). This technique begins the transition from the body scan by introducing a technique that includes the breath as a single point of focus to which awareness is returned every time the mind becomes distracted by a thought, feeling or body sensation. As the breath usually operates outside of conscious awareness, this technique helps practitioners become aware of it. The breath then becomes a focal point to which awareness is returned every time a gambling-related cognition is noticed or to help deal with strong emotions which may precipitate gambling behaviour. Homework involves continued practice of the body scan, the sitting meditation, and both observing and recording the thoughts, feelings and sensations of a pleasant experience not associated with gambling.

Handout 2.1

Summary of Session 2: Dealing with Barriers

Our aim in this program is to be more aware, more often of the urges and triggers that lead to and maintain gambling behaviour. A powerful influence taking us away from being "fully present" in each moment is our automatic tendency to judge our current experience as being not quite right in some way—that it is not what should be happening, not good enough, or not what we expected or wanted. These judgments can lead to sequences of thoughts about escape, excitement, or how things could or should be different. Often, these thoughts will take us, quite automatically, down some fairly well-worn paths in our minds and we find ourselves gambling once more. In this way, we lose awareness of the moment, and also the freedom to *choose* what, if any, action needs to be taken.

We can regain our freedom if, as a first step, we simply acknowledge the actuality of our situation, without immediately being hooked into automatic tendencies to judge, fix, or want things to be other than they are. The body scan exercise provides an opportunity to practice simply bringing an interested and friendly awareness to the way things are in each moment, without having to do anything to change things. There is no goal to be achieved other than to bring awareness to bear as the instructions suggest—specifically, achieving some special state of relaxation is *not* a goal of the exercise.

Adapted from:
Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse.* New York: Guilford Press.

Handout 2.2

Tips for the Body Scan

---

1. Regardless of what happens (e.g., if you fall asleep, lose concentration, keep thinking of other things or focusing on the wrong bit of body, or not feeling anything), just do it! These are your experiences in the moment. Just be aware of them.

2. If your mind is wandering a lot, simply note the thoughts (as passing events) and then bring the mind gently back to the body scan.

3. Let go of ideas of "success," "failure," "doing it really well," or "trying to purify the body". This is not a competition. It is not a skill for which you need to strive. The discipline involved is regular and frequent practice. Just do it with an attitude openness and curiosity.

4. Let go of any expectations about what the body scan will do for you: Imagine it as seed you have planted. The more you poke around and interfere, the less it will be able to develop. So with the body scan, just give it the right conditions—peace and quiet, regular and frequent practice. That is all. The more you try to influence what it will do for you, the less it will do.

5. Try approaching your experience in each moment with the attitude: "OK, that's just the way things are right now." If you try to fight off unpleasant thoughts, feelings, or body sensations, the upsetting feelings will only distract you from doing anything else. Be aware, be nonstriving, be in the moment, accept things as they are. Just do it.

Adapted from:
Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse.* New York: Guilford Press.

Handout 2.3

Mindfulness of the Breath

---

1. Settle into a comfortable sitting position, either on a straight-backed chair or on a soft surface on the floor; with your buttocks supported by cushions or a low stool. If you use a chair, it is very helpful to sit away from the back of the chair; so that your spine is self supporting. If you sit on the floor, it is helpful if your knees actually touch the floor; experiment with the height of the cushions or stool until you feel comfortably and firmly supported.

2. Allow your back to adopt an erect, dignified, and comfortable posture. If sitting on a chair, place your feet flat on the floor, with your legs uncrossed. Gently close your eyes.

3. Bring your awareness to the level of physical sensations by focusing your attention on the sensations of touch and pressure in your body where it makes contact with the floor and whatever you are sitting on. Spend a minute or two these sensations, just as in the body scan.

4. Now bring your awareness to the changing patterns of physical sensations in the lower abdomen as the breath moves in and out of your body. (When you first try this practice, it may be helpful to place your hand on your lower abdomen and become aware of the changing pattern of sensations where your hand makes contact with your abdomen. Having "tuned in" to the physical sensations in this area in this way, you can remove your hand and continue to focus on the sensations in the abdominal wall.)

5. Focus your awareness on the sensations of slight stretching as the abdomen wall rises with each inbreath, and of gentle deflation as it falls with each outbreath. As best you can, follow with your awareness the changing physical sensations in the lower abdomen all the way through as the breath enters your body on the inbreath and all the way through as the breath leaves your body on the outbreath, perhaps noticing the slight pauses between one inbreath and the following outbreath, and between one outbreath and the following inbreath.

6. There is no need to try to control the breathing in any way—simply let the breath breathe itself. As best you can, also bring this attitude of allowing to the rest of your experience. There is nothing to be fixed, no particular state to be achieved. As best you can, simply allow your experience to be your experience, without needing it to be other than it is.

7. Sooner or later (usually sooner), your mind will wander away from the focus on the breath in the lower abdomen to thoughts, planning, daydreams, drifting along — whatever. This is perfectly OK—it's simply what minds do. It is not a mistake or a

failure. When you notice that your awareness is no longer on the breath, gently congratulate yourself—you have come back and are once more aware of your experience! You may want to acknowledge briefly where the mind has been ("Ah, there's thinking"). Then, gently escort the awareness back to a focus on the changing pattern of physical sensations in the lower abdomen, renewing the intention to pay attention to the ongoing inbreath or outbreath, whichever you find.

8. However often you notice that the mind has wandered (and this will quite likely happen over and over and over again), as best you can, congratulate yourself each time on reconnecting with your experience in the moment, gently escorting the attention back to the breath, and simply resume following in awareness the changing pattern of physical sensations that come with each inbreath and outbreath.

9. As best you can, bring a quality of kindliness to your awareness, perhaps seeing repeated wanderings of the mind as opportunities to bring patience and gentle curiosity to your experience.

10. Continue with the practice for 15 minutes, or longer if you wish, perhaps reminding yourself from time to time that the intention is simply to be aware of your experience in each moment, as best you can, using the breath as an anchor to gently reconnect with the here and now each time you notice that your mind has wandered and is no longer down in the abdomen, following the breath.

Adapted from:
Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse.* New York: Guilford Press.

<div style="border:1px solid">

Handout 2.4

The Breath

</div>

Breath is life. You could think of the breath as being like a thread or a chain that links and connects all the events of your life from birth, the beginning, to death, the end. The breath is always there every moment, moving by itself like a river.

Have you ever noticed how the breath changes with our moods—short and shallow when we're tense or angry, faster when we're excited, slow and full when we're happy, and almost disappearing when we're afraid? It's there with us all time. It can be used as a tool, like an anchor, to bring stability to the body and mind when we deliberately choose to become aware of it. We can tune into it at any moment during everyday life.

Mostly, we're not in touch with our breathing—it's just there, forgotten. So one of the first things we do in mindfulness-based cognitive therapy is to get in touch with it. We notice how the breath changes with our moods, our thoughts, our body movements. We don't have to control the breath, just notice it and get to know it like a friend. All that is necessary is to observe, watch, and feel the breath with a sense of interest, in a relaxed manner

With practice, we become more aware of our breathing. We can use it to direct our awareness to different aspects of our lives. For example, to relax tense muscles, or focus on a situation that requires attention. Breath can also be used to help deal with pain, anger, relationships or the stress of daily life. During this program, we will be exploring this in great detail.

Handout 2.5

Homework for Week Following Session 2

---

1. Use the Body Scan CD for 6 days and record your reactions on the record form.

2. At different times, practice 10-15 minutes' mindfulness of breathing for 6 days. Being with your breath in this way each day provides an opportunity to become aware of what it feels like to be connected and present in the moment without having to *do* anything.

3. Complete Handout 2.6. Record all details of your gambling behaviour (if any) and mindfulness practice on the record form.

4. Complete Handout 2.7, the Pleasant Events Calendar (one entry per day). Use this as an opportunity to become really aware of the thoughts, feelings, and body sensations around one pleasant event each day. Notice and record, as soon as you can, *in detail* (e.g., use the actual words or images in which the thoughts came) the precise nature and location of bodily sensations.

5. Choose a new routine activity to be especially mindful of (e.g., brushing your teeth, washing dishes, taking a shower, taking out garbage, reading to kids, shopping, eating).

> Handout 2.6
>
> **Homework Record Form – Session 2**

Name: _____

Record on the Homework Record Form your gambling behaviour and the details of your mindfulness practice over the next week. Also, make a note of anything that comes up in homework, so that we can talk about it at the next meeting.

Date	Gambling type (e.g., pokies)	How long there (hours)	Amount taken to venue ($)	Extra withdrawn from ATM ($)	Amount taken home ($)

Note: Please record each day even if you did not gamble – in which case place an '**X**' in the relevant box

Date	Practice (Y/N)	Total amount of time spent in practice today (minutes)	Comments
	CD: Breath:		
	CD: Breath:		
	CD: Breath:		
	CD: Breath:		
	CD: Breath:		
	CD: Breath:		
	CD: Breath:		

Adapted from:
Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse.* New York: Guilford Press.

Handout 2.7

Pleasant events Calendar

Name:_____

Be aware of a pleasant event at the time it is happening. Use the following questions to focus your awareness on the details of the experience as it is happening. Write it down later.

What was the experience?	Were you aware of the pleasant feelings while the event was happening?	How did your body feel, in detail, during this experience?	What moods, feelings and thoughts accompanied this event?	What thoughts are in your mind now as you write this down?
Example: Heading home at the end of my shift – stopping, hearing a bird sing	**Yes.**	**Lightness across the face, aware of shoulders dropping, uplift of corners of mouth.**	**Relief, pleasure, "That's good," "How lovely (the bird)", "It's so nice to be outside."**	**It was such a small thing but I'm glad I noticed it.**
Date:				
Date:				
Date:				
Date:				

307

Date:		
Date:		
Date:		

Adapted from:

Kabat-Zinn, J. (2005). Full Catastrophe Living. New York: Random House.

<div style="border:1px solid black; padding:10px;">

Handout 2.8

Hindrances to Meditation

</div>

Despite initial commitment, it is easy for many people to be diverted by many hindrances to meditation. These can be summarised as:

- sense desire - where the individual craves for pleasant sense experience.
- ill will - where the individual recognises an aversion to an experience yet is overpowered it.
- restlessness and anxiety - where it becomes difficult to begin practice or to concentrate.
- sloth and torpor - where an individual is unable to remain alert.
- doubt and indecision - where the individual doubts that the practice offers anything for them.

These are significant issues to overcome and require the practitioner to be attentive to them. If you become aware of these issues, the following strategies may be helpful.

- Acknowledge – acknowledge which hindrance is preventing you from deepening your concentration.

- Cultivate a sky-like attitude – that is, instead of trying to push the hindrance away, try to expand your awareness around your body, posture, and breath, and think of the hindrance like a passing cloud. Just let it go on its way.
- Cultivate the opposite quality. If the hindrance is still hanging around, try to cultivate some positive quality to what you are feeling. If it's doubt, cultivate confidence, if restlessness, cultivate peace and contentment, if the mind is too tight, relax it or if too loose, try to sharpen it.
- Consider the consequences. If you allow the hindrance to continue unchecked, all it's going to do is get stronger. If you reflect on this, the importance of what you are doing may become clearer and this may make you more inclined to try harder.
- Suppression. This is a last resort. Just say 'No' to whatever the hindrance is, and push it aside.

Adapted from:
Kamalashila. (1999). *Meditation* (2nd ed.). Birmingham: Windhorse Publications.

Session 3: Mindfulness of the Breath

Initial enthusiasm associated with the first two sessions of MBCT-PG has usually abated by session three, with many of the barriers to practice rapidly becoming evident (Segal et al., 2002). Many realise that MBCT-PG does not offer a quick fix for their problems and so the potential for drop-out strengthens. However, MBCT-PG is not a problem solving technique. Instead, MBCT-PG strengthens a person's ability to simply sit with the desire to gamble and to let go of the need to do anything. This affords the prospect of being able to see more clearly what the next skilful step should be when confronted by conditions which may result in further gambling. With practice, gamblers develop a reduced conviction as to the validity of their gambling-related cognitions (Tonneato et al., 2007). The focus of this session therefore is to develop mindfulness of the breath, where the breath is used as a single point of reference to both steady and open participants up to their current experience.

In context of problem gambling, the mind automatically interprets the pattern of wins and losses in such a way as to protract a gambling episode (Sharpe, 2002). This is often enhanced by the environment in which the gambler is located. For example, colours, sounds, and aromas associated with the gambling venue are all unconsciously processed by the mind and acted upon by the intellect. However, the new mode of 'being' enhanced by mindfulness enables a mindful gambler to renew their acquaintance with the sensations that make up the totality of their experience. A wide range of techniques are taught in this session that allows participants to sample this approach.

The session begins with a brief mindfulness of hearing exercise. Participants remain seated with their eyes closed and attention is brought to bear on the sounds that enter their awareness. However, rather than categorising the sounds, awareness is directed

to the quality of the sounds – volume, pitch, tone, location and so on. During the practice, the facilitator draws attention to the reactions people have to the sounds, such as whether the sounds are pleasant or unpleasant. Participants are encouraged to let go of these reactions and to simply notice them. Without inviting discussion, the sitting meditation practice using the breath and the body is then conducted. The sitting meditation involves a brief body mindfulness to adjust posture, followed by focussed awareness of the breath, and then an expanded awareness of the body. When thoughts interrupt this awareness, participants are instructed to gently return to the breath each time.

Discussion following the exercise is intended to explore group reactions rather than provide solutions for difficulties encountered during the practice. Common reactions are trying to control thoughts; becoming annoyed by the tendency of the mind to continually wander off; physical discomfort; recognising and judging automatic thinking patterns; and encountering strong emotions. All these reactions are a rich source of information. As such, discussion places these reactions in terms of problem gambling.

Controlling thoughts. Gamblers attempt to suppress gambling related thoughts in an attempt to control them. However, addictive behaviour research reveals that this paradoxically results in an increase in such thoughts. Instead, increasing mindfulness has been found to result in greater decreases in attempts to avoid unwanted thoughts (Bowen et al., 2007).

The 'wandering' mind. Problem gamblers are usually preoccupied with thoughts about gambling and become irritated or annoyed when they attempt to discontinue (American Psychiatric Association, 2000). Such thoughts may manifest during the meditation. By encouraging an attitude of acceptance, the irritation itself can be observed from a perspective of interest and curiosity. The thoughts are simply observed coming and

going and awareness returned to the breath whenever a person notices that they have become engaged with the narrative going on in their mind.

Physical discomfort. Pain and discomfort is the direct experience of unpleasantness. High self esteem gamblers interpret a loss as unpleasant and will attempt to regain the loss. Low self esteem gamblers may simply gamble as a means of escaping a dysphoric mood. Irrespective of the causal factors involved in gambling, the experience of unpleasantness is common. Discussion should encourage gamblers to develop a friendly interest in their discomfort without trying to make it go away. The facilitator emphasises how mindfulness can develop acceptance of unpleasantness by bringing attention back to the breath each time it is noticed. The theme of the difficult and the unwanted is developed later on in the program.

Automatic thinking patterns. Thoughts will always arise, only to be replaced by new thoughts. Often, thoughts follow deeply entrenched pathways. Mindfulness reveals such patterns of thinking to participants, often for the first time. Once noticed, the breath is used once more to return awareness to a single point without reacting to the thought. This is relevant for problem gamblers. For example, many interpret the pattern of wins and losses encountered to justify continued gambling. Other gamblers may encounter distressing situations and habitually react to the distress by using gambling as a maladaptive coping strategy. The practice brings awareness to such tendencies which are then observed and allowed to simply pass by.

Strong emotions. Unpleasant, neutral or pleasant feelings are observed in a similar manner to thoughts and physical sensations. If the feeling is judged as either good or bad, then an aversion or attraction to the feeling develops. This can become an issue for problem gamblers since factors such as intolerance of boredom, sensation seeking,

avoidance of stress or dysphoric mood all may contribute to a greater desire to engage in gambling behaviour (Sharpe, 2002). Instead, developing an accepting attitude to the feeling is important so that it can be observed without any reactivity.

This discussion should begin to clarify the importance of thoughts, feelings and physical sensations in problem gambling for most participants. The pleasant events calendar is used to extend this understanding by using a whiteboard to distinguish the various experiences participants had over the previous week. This serves not only to highlight other events in life that can be enjoyed instead of gambling but reveals the richness of the information that is processed unconsciously and how this information can be used to open up new possibilities in terms of how to respond to this information.

The three-minute breathing space. Participants are then introduced to the three-minute breathing space. This technique is a core skill of MBCT and involves paying attention to present moment thoughts, feelings and body sensations for one minute. Attention is then re-directed to the breath for the next minute. Awareness of the breath is then expanded in the final minute to include a sense of the body as a whole. The group decides on three occasions each day when this could be practiced. Later in the program, the technique is encouraged for use whenever the urge to gamble becomes particularly powerful. The third session also includes use of yoga and a walking meditation. These practices highlight the importance of the body in communicating information to the mind. Recognising the impact that even subtle changes in the body can have on emotions can be very useful for gamblers. Furthermore, these practices are useful for participants who find it difficult to remain still for protracted periods of time. For homework, participants are required to practice the techniques learnt as well attend to unpleasant events that could lead to gambling. The session concludes with a brief sitting practice to allow participants depart in a space of mindfulness.

Handout 3.1

Summary of Session 3: Mindfulness of the Breath

Focusing on the breath:

• Brings you back to this very moment - the here and now.

• Is always available as an anchor and haven, no matter where you are.

• Can actually change your experience by connecting you with a wider space and broader perspective from which to view things.

BASICS

It helps to adopt an erect and dignified posture, with your head, neck, and back aligned vertically - the physical counterpart of the inner attitudes of self-reliance, self-acceptance, patience, and alert attention that we are cultivating.

Practice on a chair or on the floor. If you use a chair, choose one that has a straight back and allows your feet to be flat on the floor. If at all possible, sit away from the back of the chair so that your spine is self supporting.

If you choose to sit on the floor, do so on a firm thick cushion (or a pillow folded over once or twice), which raises your buttocks off the floor 3 to 6 inches.

Handout 3.2

The 3-minute Breathing Space – Basic Instructions

---

1. AWARENESS

Bring yourself into the present moment by deliberately adopting an erect and dignified posture. If possible, close your eyes. Then ask:

"What is my experience right now.. .in thoughts.. .in feelings... and in bodily sensations?" Acknowledge and register your experience, even if it is unwanted.

2. GATHERING

Then gently redirect full attention to breathing, to each inbreath and to each outbreath as they follow one after the other.

Your breath can function as an anchor to bring you into the present and help you tune into a state of awareness and stillness.

3. EXPANDING

Expand the field of your awareness around your breathing, so that it includes a sense of the body as a whole, your posture, and facial expression.

The breathing space provides a way to step out of automatic pilot mode and reconnect with the present moment.

The key skill in using MBCT is to maintain awareness of the moment. Nothing else.

Adapted from:
Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse.* New York: Guilford Press.

Handout 3.3

Homework for Week Following Session 3

This week we are going to use two different CDs:

1.   On days 1, 3 and 5 follow the instructions on Yoga CD 1 and record your reactions on the Homework Record Form. This CD contains instructions for some gentle stretching exercises.

The point of the stretches and yoga is to provide a direct way to connect with awareness of the body. The body is a place where emotions often get expressed under the surface, and without our awareness. As such, it gives us an additional place from which to stand and look at our thoughts. If you have any back or other health difficulties that may cause problems, make your own decision as to which (if any) of these exercises to do.

2.   On days 2, 4 and 6, use the Guided Sitting Meditation Practice (CD 2) and record your reactions on the Homework Record Form.

3.   Practice using the 3-Minute Breathing Space three times a day, at set times that you have decided in advance, and record each time by circling an R on the Homework Record Form.

4.   Complete the Unpleasant Events Calendar (one entry per day) – use this as an opportunity to become really aware of the thoughts, feelings and body sensations in one unpleasant event each day, *at the time they are occurring*. Notice and record, as soon as you can, in detail (e.g. put the actual words or images in which thoughts came, and the precise nature and location of bodily sensations).

What are the unpleasant events that might "pull you off centre" or "get you down" (e.g. events that might lead you to gamble, or perhaps it may be your experience after you actually have gambled)?

Handout 3.4

Homework Record Form – Session 3

Name:

Record on the Homework Record Form your gambling behaviour and the details of your mindfulness practice over the next week. Also, make a note of anything that comes up in homework, so that we can talk about it at the next meeting.

Date	Gambling type (e.g., pokies)	How long there (hours)	Amount taken to venue ($)	Extra withdrawn from ATM ($)	Amount taken home ($)

Note: Please record each day even if you did not gamble – in which case place an 'X' in the relevant box

Date	Practice (Y/N)	Total amount of time spent in practice today (minutes)	Comments
	CD: R R R		
	CD: R R R		
	CD: R R R		
	CD: R R R		
	CD: R R R		
	CD: R R R		
	CD: R R R		

Adapted from:
Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse.* New York: Guilford Press.

318

Handout 3.5

Unpleasant Events Calendar

Name: _____

Be aware of an unpleasant event at the time it is happening. Use the following questions to focus your awareness on the details of the experience as it is happening. Write it down later.

What was the experience?	Were you aware of the unpleasant feelings while the event was happening?	How did your body feel, in detail, during this experience?	What moods, feelings and thoughts accompanied this event?	What thoughts are in your mind now as you write this down?
Example: Heading home after gambling, realising I had lost the money for my rent.	**Yes.**	**Temples throbbing, tightness in my neck and shoulders, pacing back and forth.**	**Angry, helpless. "Why do I do this all the time?"**	**"I hope I don't have to go through that ever again".**
Date:				
Date:				
Date:				
Date:				

Date:		
Date:		
Date:		

Adapted from:

Kabat-Zinn, J. (2005). Full Catastrophe Living. New York: Random House.

Yoga CD1

SEQUENCE OF YOGA POSTURES

Low back pressed against floor

Low back arched; Pelvis stays on floor

Both sides

Both sides

Both sides

Both sides

19 Both sides

20 Both sides

21 Refer to trainer's comments for this position

22

Yoga CD1

14 Both sides

15 Both sides

16 Both sides

17 Both sides

18
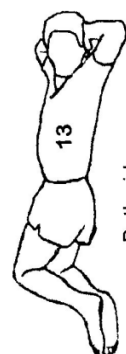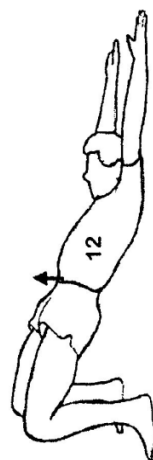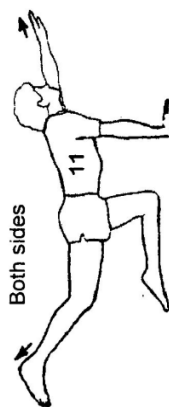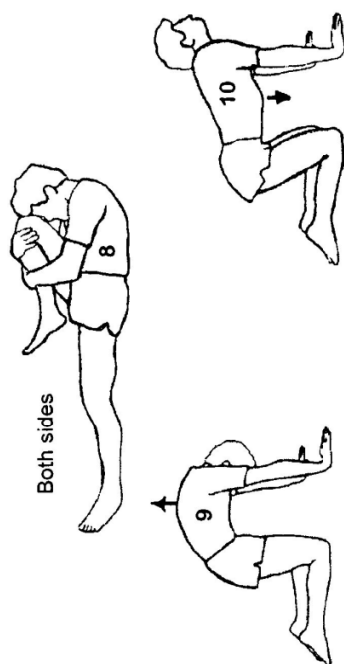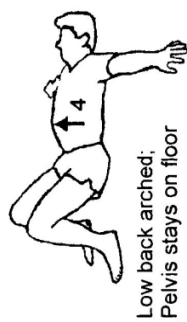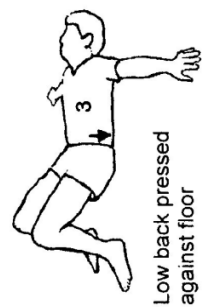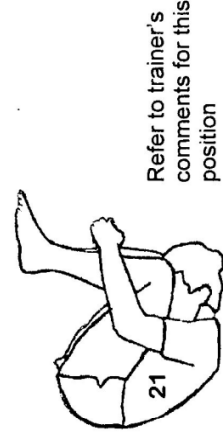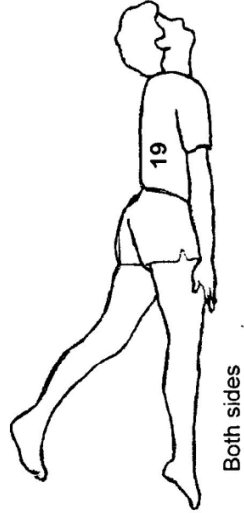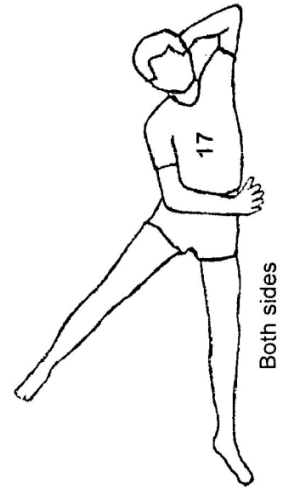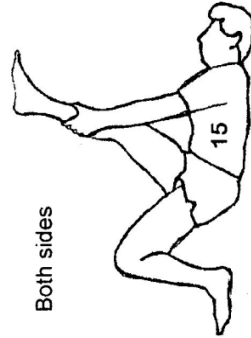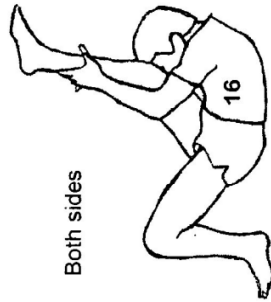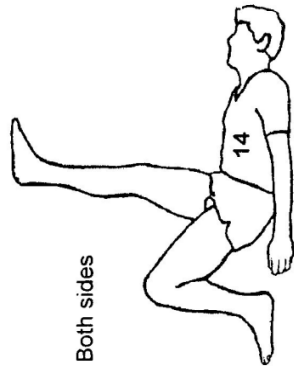
Session 4: Staying Present

Problem gamblers spend a lot of time ruminating about gambling (Washington, 2006). Rumination involves a judgement about current experience (Segal et al., 2002). This may result in use of gambling as a way to avoid problems or preoccupation with gambling as a way of recouping losses. For example, Ratelle et al. (2004) showed that obsessive passion for gambling predicted poorer vitality and concentration in daily tasks, as well as increased rumination, anxiety, negative mood, guilt, and problem gambling. Atlas & Peterson (1990) found that rumination after a loss was associated with larger wagers on subsequent races and a tendency toward less successful wagers. Either way, gambling represents a desire for current experience to be different than what it is. In attempting to avoid unpleasantness in this way, ongoing gambling merely reinforces its own use. Over time, gamblers come to rely upon gambling to take care of things automatically.

Being present is a skill by which this pattern can be broken because it affords a space where participants can stay with current experience and allow it to unfold without doing anything. However, staying with the unpleasant is not easy. There is always an aversion to a feeling judged as unpleasant. The fourth session therefore explores the present moment in detail by encouraging gamblers to be mindful of their current experience. This creates a space for the gambler to observe thoughts, feelings, and body sensations invoked by unpleasant events and to become free of habitual automatic reactions by responding mindfully each time they occur. This is also true of pleasant experiences or even experiences that may be considered neutral or trivial (Segal et al., 2002).

The session begins with a repeat of a brief hearing meditation as discussed in session three. This five minute exercise actively encourages participants to stay present

with sounds and let go of thoughts or feelings whenever awareness is drawn to them. The facilitator then moves directly into a thirty minute sitting meditation. After ensuring correct posture, participants are instructed to direct their attention to their breath. Attention is then expanded to include awareness of the body as a whole, followed by sounds and, with the same expanded awareness, to thoughts. Finally, attention is drawn to whatever comes to the attention of the practitioner. Each stage of the practice involves being with whatever comes to awareness with a sense of curiosity and acceptance. However, rather than the focussed attention used in earlier sessions, this practice cultivates an expansion of focus. This encourages participants to become sensitive to the wider context in which they live and offers a diametrically opposed perspective to the narrow focus often displayed in relation to gambling experiences. Discussion after the practice focuses on aversion and attachment to the objects that came to mind. This includes feedback as to the previous week's homework.

At this stage of MBCT-PG, each person will have begun to realise the patterns of aversion and attachment that manifest in their daily life and how this may be related to their gambling. The Gambling Self-Efficacy Questionnaire (Whelan, Steenbergh & Meyers, 2007) is administered to highlight the situations and events that are relevant for each gambler. In so doing, insight into their respective trigger points is gained and the opportunity to respond mindfully when such events occur becomes possible. This segues into a discussion about the DSM-IV-TR criteria (American Psychiatric Association, 2000) for pathological gambling which are presented to participants. Discussion is intended to show participants that what they may have thought of as personal failings are merely symptoms that others in the group also share. The three minute breathing space is offered as a technique to use over the following week whenever participants are confronted by such triggers.

Segal et al., (2002) advocate use of poetry during MBCT as a vehicle for communicating a different relationship to current experience. Following the three-minute breathing space, "Look ahead, don't look back" is offered as a positive motivational device that highlights how problem gamblers analyse every aspect of their current situation and that by opening up to this is a useful way to move forward. Gambling-related poetry is available from www.istoppedgambling.com. Participants are referred to "Full Catastrophe Living" by Kabat-Zinn (2005) and watch the first half of the video "Healing Within" which documents use of MBSR upon which MBCT-PG is based. The book and video are two more ways for participants to understand that there is a wider perspective from which to view their current situation.

Homework consists of the guided sitting meditation and use of the three-minute breathing space at regular intervals and at times when difficult situations occur during the week.

Handout 4.1

Summary of Session 4: Staying Present

Difficult things are part and parcel of life itself. It is how we handle those things that makes the difference between whether they rule (control) our lives or whether we can relate more lightly to them. Becoming more aware of the thoughts, feelings and body sensations evoked by events gives us the possibility of freeing ourselves from habitual, automatic ways of reacting, such as gambling, so that we can instead mindfully respond in more skilful ways.

In relation to gambling, we react to experience in one of three ways:

• We switch out from the present moment and gamble.

• We continue to gamble by not allowing ourselves to let go of thrill of the gambling experience that we are having right now, or wishing that we were having that thrill which we are not having right now.

• With wanting the feeling of failure to go away when we finally go home, being angry with it - wanting to get rid of experiences that we are having right now, or avoiding future experiences of this nature that we do not want.

As we will discuss further in class, each of these ways of reacting can cause problems, particularly the tendency to react to unpleasant feelings with aversion. For now, the main issue is to become more aware of our experience, so that we can respond mindfully rather than react automatically.

Regularly practicing sitting meditation gives us many opportunities to notice when we have drifted away from awareness of the moment, to note with a friendly awareness whatever it was that took our attention away and to gently and firmly bring our attention back to our focus, reconnecting with moment-by-moment awareness. At other times of the day, deliberately using the breathing space whenever we notice unpleasant feelings, of a sense of "tightening" or "holding" in the body, provides an opportunity to begin to respond rather than react.

Adapted from:
Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse.* New York: Guilford Press.

Handout 4.2

Homework for Week Following Session 4

---

1.   Practice the Guided Sitting Meditation Tape (CD 2) for 6 out of the next 7 days and record your reactions on the Homework Record Form. (Alternative option: Alternate Guided Sitting Meditation Tape (CD 2) with Yoga Tape (Yoga CD 1) - indicate which on the Homework Record Form.

2.   3-Minute Breathing Space-Regular; Practice three times a day, at the times that you have decided in advance. Record each time you do it by circling an R next to the appropriate day on the Homework Record Form; note any comments/difficulties.

3.   3-Minute Breathing Space-Coping: Practice whenever you notice unpleasant feelings. Record each time you do it by circling an X for the appropriate day on the Homework Record Form; note any comments/difficulties.

4.   Optional: If you have had a chance to view the video "Healing from Within", you might like to checkout the book of the film- Full Catastrophe Living.

Handout 4.3

Homework Record Form – Session 4

Name: _____

Record on the Homework Record Form your gambling behaviour and the details of your mindfulness practice over the next week. Also, make a note of anything that comes up in homework, so that we can talk about it at the next meeting.

Date	Gambling type (e.g., pokies)	How long there (hours)	Amount taken to venue ($)	Extra withdrawn from ATM ($)	Amount taken home ($)

Note: Please record each day even if you did not gamble – in which case place an '**X**' in the relevant box

328

Date	Practice (Y/N)	Total amount of time spent in practice today (minutes)	Comments
	CD: R R R X X X X X X X X X X X		
	CD: R R R X X X X X X X X X X X		
	CD: R R R X X X X X X X X X X X		
	CD: R R R X X X X X X X X X X X		
	CD: R R R X X X X X X X X X X X		
	CD: R R R X X X X X X X X X X X		
	CD: R R R X X X X X X X X X X X		

Adapted from:

Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse.* New York: Guilford Press.

Handout 4.4

Staying Present

Remember to use your body as a way to awareness. It can be as simple as staying mindful of your posture. You are probably sitting as you read this. What are the sensations in your body at this moment? When you finish reading and stand, feel the movements of standing, of walking to the next activity, of how you lie down at the end of the day. Be in your body as you move, as you reach for something, as you turn. It is as simple as that.

Just patiently practice feeling what is there - and the body is always there - until it becomes second nature to know even the small movements you make. If you are reaching for something, you are doing it anyway; there is nothing extra you have to do. Simply notice the reaching. You are moving. Can you train yourself to be there, to feel it?

It is very simple. Practice again and again bringing your attention back to your body. This basic effort, which, paradoxically, is a relaxing back into the moment, gives us the key to expanding our awareness from times of formal meditation to living mindfully in the world. Do not underestimate the power that comes to you from feeling the simple movements of your body throughout the day.

Handout 4.5

Gambling Self-Efficacy Questionnaire

Directions

Listed below are a number of situations or events in which some people experience problems in regards to gambling. Imagine yourself as you are *right now* in each of these situations. Indicate on the scale below how confident you are that you would be able to *control* your gambling behavior. For example: How confident would you be that you could limit the amount of time and money you were going to spend gambling so that it would not cause a problem, if you felt confident and relaxed? Circle *100* if you are 100% confident right now that you could control your gambling behavior; *80* if you are 80% confident; *60* if you are 60% confident. If you are more unconfident than confident, circle *40* to indicate that you are only 40% confident that you could control your gambling behavior; *20* for 20% confident; circle *0* if you have no confidence at all about that situation.

		Not at all confident					Very confident
I would be able to control my gambling:							
1.	If I felt that I had let myself down.	0	20	40	60	80	100
2.	If there were fights at home.	0	20	40	60	80	100
3.	If I had trouble sleeping.	0	20	40	60	80	100
4.	If I had an argument with a friend.	0	20	40	60	80	100
5.	If I felt confident and relaxed.	0	20	40	60	80	100
6.	If I were enjoying myself and I wanted to feel even better.	0	20	40	60	80	100
7.	If I had lost money gambling on one day and felt the urge to go win it back the next day.	0	20	40	60	80	100
8.	If I were at a place where other people were gambling.	0	20	40	60	80	100
9.	If I wondered about my self-control over gambling and felt like testing it.	0	20	40	60	80	100
10.	If I were angry at the way things turned out.	0	20	40	60	80	100
11.	If I were relaxing with a good friend and wanted to have a good time gambling.	0	20	40	60	80	100
12.	If my stomach felt like it was tied in knots.	0	20	40	60	80	100
13.	If I were out with friends "on the town" and wanted to increase my enjoyment.	0	20	40	60	80	100
14.	If I met a friend and he/she suggested that we go gambling together.	0	20	40	60	80	100
15.	If I suddenly had an urge to gamble.	0	20	40	60	80	100
16.	If I wanted to prove to myself that I could bet a few times without losing control.	0	20	40	60	80	100

Adapted From: J. P. Whelan, T. A. Steenbergh, & A. W. Meyers: *Problem and Pathological Gambling.* Reprinted with permission.

Handout 4.6

Diagnostic Criteria for Pathological Gambling

Persistent and recurrent maladaptive gambling behaviour as indicated by five (or more) of the following:

(1)   is preoccupied with gambling (e.g., preoccupied with reliving past gambling experiences, handicapping or planning the next venture, or thinking of ways to get money with which to gamble)

(2)   needs to gamble with increasing amounts of money in order to achieve the desired excitement

(3)   has repeated unsuccessful efforts to control, cut back, or stop gambling

(4)   is restless or irritable when attempting to cut down or stop gambling

(5)   gambles as a way of escaping from problems or of relieving a dysphoric mood (e.g., feelings of helplessness, guilt, anxiety, depression)

(6)   after losing money gambling, often returns another day to get even ("chasing" one's losses)

(7)   lies to family members, therapist, or others to conceal the extent of involvement with gambling

(8)   has committed illegal acts such as forgery, fraud, theft, or embezzlement to finance gambling

(9)   has jeopardized or lost a significant relationship, job, or educational or career opportunity because of gambling

(10) relies on others to provide money to relieve a desperate financial situation caused by gambling

This compulsive gambler is setting the tone for their future. "Look ahead don't look back" is very positive motivational concept. It's important to look forward as long as you have learned from your past. People with compulsive gambling addiction analyse every aspect of their situation. By setting a plan they will move forward.

Look Ahead Don't Look Back

How do I get from here to there?
Positive outlook, change, realization
Are the unlocking keys to share?
Then you will think life is fair

Keep things simple, start to grow
With each day the feeling will flow
Facing reality with a brighter course
Will be the first step in removing the remorse

No longer gamble and I see the Change
The pain from today
Will soon be a memory from yesterday
Stronger and stronger each moment you thrive
Take the time to let the feelings strive

No harping on negative
Implement the positive
What's going right?
What should I do?
What should I change?
All things come in time, don't scurry

Peaceful thoughts, a calm full deep breath
Empowering oneself to eliminate the worry
Let them flow for a brighter tomorrow
Before you know it there will be no sorrow

You will be high spirited with you
You will be light hearted with me
Serenity will come, just wait and see
I have a lot to look forward to
Look ahead don't look back.

From: http://www.istoppedgambling.com

Session 5: Acceptance/Allowing/Letting Be

The first half of MBCT-PG has focussed on building mindfulness skills in order to cultivate awareness of present moment thoughts, feelings and body sensations associated with gambling. The second half of MBCT-PG uses these skills to prevent relapse and help develop a more adaptive approach to life generally by cultivating an accepting relationship with current experience. This allows participants to become fully aware of difficulties that may lead to or prolong a gambling episode and respond skilfully when such difficulties arise. The theme of this session then is to cultivate a different relationship with the unpleasant by helping participants accept current experience just as it is. This is important since aversion to that which is unpleasant characterises much of the gambling experience. While gambling behaviour requires skill in terms of managing finances, calculating the pattern of wins and losses, and seamlessly incorporating gambling activity within other domains of life, problem gamblers obviously consider the activity worth the effort. This session must therefore convince gamblers that cultivating an accepting relationship with gambling-related cognitions offers a more adaptive strategy for dealing with the difficult. Segal et al.(2002) consider that it is helpful to ask three questions in preparing for this task: What is the flavour of acceptance/allowing/letting be? Why is it important? How can it be used? These questions are considered in context of problem gambling.

What is the flavour of acceptance? Segal et al. (2002) state that acceptance means "actively responding to feelings by *allowing* or *letting be* [sic] before rushing in and trying to fix or change them" (p.221). Problem gambling can be seen as the behavioural response to such feelings. By accepting feelings just as they are, feelings are permitted to consciously unfold without any behavioural response.

Why is it important for problem gambling? Unwillingness to accept feelings means that gambling behaviour becomes more automatic and habitual when continually used to cope

with such feelings. However, acceptance means that participants can break this cycle by opening up to their experience rather than avoiding it. This provides a space by which gamblers can view the validity of their usual behavioural reaction to such feelings.

How can it be used to prevent a gambling episode? The method used to cultivate acceptance is to use awareness of body sensations such as the breath, muscle tension, heart beat, and restlessness. Such sensations often represent the manifestation of unwanted feelings. The sitting meditation is used to first bring awareness to the thoughts, feelings and body sensations associated with a recent gambling experience. The second step is to bring awareness to how the body is responding to this awareness. Participants become mindful first of the body and the breath, followed by sounds, thoughts, and memory of a recent gambling experience. The final stage of this practice involves opening up to the experience in terms of thoughts, feelings and body sensations, before gently letting the experience go by returning awareness to the breath. This practice allows participants to explore their experience and stay with it without actually doing anything.

Discussion following the exercise is designed to elicit understanding what acceptance means by asking participants how the gambling experience was felt in terms of the body. The discussion then focuses on using this awareness to interrupt the habitual tendency to avoid such feelings by continuing to gamble. Participants are instructed to first bring awareness to the difficulty that is preoccupying them. Next, they are instructed to become aware of how the body is responding to the difficulty and allowing the responses to be as they are. For strong sensations, the breath is used to bring a sense of softness and acceptance to the area. Once attention is no longer drawn to the sensations, the breath then becomes the primary focus.

The three minute breathing space is conducted after the discussion followed by a reading of the poem "The Guest House". The poem highlights how acceptance means that

gamblers can allow current experience, whether good or bad, to be just as it was. This leads to presentation of the second half of the video "Healing Within". This part of the video focuses on people who are working with difficulty and highlights the themes already discussed. Discussion following the video emphasises that letting things be often reduces distress. The three minute breathing space is repeated to allow a space for participants to collect themselves once more after the discussion.

Homework following this session includes the sitting mediation as well as using the three-minute breathing space at regular periods during the day and also at times when difficulty arises. The session concludes with a short sitting practice that focuses on the breath.

Handout 5.1

Summary of Session 5: Allowing/Letting Be

The basic guideline in this practice is to become mindfully aware of whatever is most predominant in our moment-by-moment experience. So if the mind is being repeatedly drawn to a particular place, to particular thoughts, feelings, or bodily sensations, we deliberately and intentionally take a gentle and friendly awareness to that place. That is the first step.

The second step is to notice, as best we can, how we are relating to whatever arises in that place. Often, we can be with an arising thought, feeling, or bodily sensation, but in a nonaccepting, reactive way. If we like it, we tend to hold onto it; we become attached. If we do not like it, because it is painful, unpleasant, or uncomfortable in some way, we tend to contract, to push away out of fear, irritation, or annoyance. Each of these responses is the opposite of acceptance.
The easiest way to relax is, first, to stop trying to make things different. Accepting experience means simply allowing space for whatever is going on, rather than trying to create some other state. Through acceptance, we settle back into awareness of what is present. We let it be - we simply notice and observe whatever is already present. This is the way to relate to experiences that have a strong pull on our attention.

For example, if you notice that your awareness keeps being pulled away from the breath (or other focus of attention) to particular sensations in the body associated with physical discomfort, emotions, or feelings, the first step is to become mindfully aware of those physical sensations, to deliberately move your focus of awareness to the part of the body where those sensations are strongest. The breath provides a useful vehicle to do this -just as you practiced in the body scan you can take a gentle and friendly awareness to that part of the body by "breathing into" that part on the inbreath, and "breathing out" from it on the outbreath.

Once your attention has moved to the bodily sensations and you have the item in the field of awareness, say to yourself, "It's OK. Whatever it is, it is OK. Let me feel it."
Then, just stay with the awareness of these bodily sensations and your relationship to them, breathing with them, accepting them, letting them be. If may be helpful to repeat,
"It's OK. Whatever it is, it is OK. Let me feel it," using each outbreath to soften and open to the sensations of which you become aware.

Acceptance is not resignation: Acceptance, as a vital first step, allows us to become fully aware of difficulties, and then, if appropriate, to respond in a skilful way rather than to react in knee-jerk fashion, by automatically running off some of our old (often unhelpful) strategies for dealing with difficulties.

Adapted from:
Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse.* New York: Guilford Press.

Handout 5.2

Using the Breathing Space – Extended Instructions

When you are troubled in thoughts or feelings:

1.   AWARENESS

Observe - bring the focus of awareness to your inner experience and notice what is happening in your thoughts, feelings, and bodily sensations.

Describe, acknowledge, identify - put experiences into words, for example, say in your mind, "A feeling of anger is arising" or "Self-critical thoughts are here."

2.   REDIRECTING ATTENTION

Gently Redirect your full attention to the breath. Follow the breath all the way in and all the way out.

Try noting "at the back of your mind," "Breathing in.. .breathing out" or counting, "Inhaling, one... exhaling, one; inhaling, two...etc."

3.   EXPANDING ATTENTION

Allow your attention to expand to the whole body - especially to any sense of discomfort, tension, or resistance. If these sensations are there then take your awareness there by "breathing into them" on the inbreath. Then, breathe out from those sensations, softening and opening with the outbreath. Say to yourself on the outbreath, "It's OK, whatever it is, it's OK. Let me feel it."

Become aware of and adjust your posture and facial expression.

As best you can, bring this expanded awareness to the next moments of your day.

Handout 5.3

Homework Record Form – Session 5

---

1.   Practice Sitting Meditation daily (alternate days: CD 2; no CD - sit with silence for 30-40 minutes) and record your reactions on the Homework Record Form.

2.   3-Minute Breathing Space - Regular; Practice three times a day, at times that you have decided in advance. Record each time by circling an R next to the appropriate day on the Homework Record Form; note any comments/difficulties.

3.   3-Minute Breathing Space - Coping: Practice whenever you notice unpleasant feelings. Record each time you do it by circling an X for the appropriate day on the Homework Record Form; note any comments/difficulties.

<div style="border: 1px solid black; padding: 10px;">

Handout 5.4

Homework Record Form – Session 5

</div>

Name: _____

Record on the Homework Record Form your gambling behaviour and the details of your mindfulness practice over the next week. Also, make a note of anything that comes up in homework, so that we can talk about it at the next meeting.

Date	Gambling type (e.g., pokies)	How long there (hours)	Amount taken to venue ($)	Extra withdrawn from ATM ($)	Amount taken home ($)

Note: Please record each day even if you did not gamble – in which case place an '**X**' in the relevant box

Date	Practice (Y/N)	Total amount of time spent in practice today (minutes)	Comments
	CD: R R R X X X X X X X X X X		
	CD: R R R X X X X X X X X X X		
	CD: R R R X X X X X X X X X X		
	CD: R R R X X X X X X X X X X		
	CD: R R R X X X X X X X X X X		
	CD: R R R X X X X X X X X X X		
	CD: R R R X X X X X X X X X X		

Adapted from:
Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse.* New York: Guilford Press.

> **Handout 5.5**
>
> **Mindfulness-Based Cognitive Therapy**

"The Guest House"

This being human is a guest house.
Every morning a new arrival.

A joy, a depression, a meanness,
Some momentary awareness comes
as an unexpected visitor.

Welcome and entertain them all!
Even if they're a crowd of sorrows,
who violently sweep your house
empty of its furniture,

still, treat each guest honourably.
He may be clearing you out
for some new delight.

The dark thought, the shame, the malice.
meet them at the door laughing,
and invite them in.

Be grateful for whoever comes,
Because each has been sent
as a guide from beyond.

Session 6: Thoughts are Not Facts

Ongoing exposure to gambling facilitates the development of a perceptual filter where problem gamblers begin to interpret a pattern in the wins and losses they encounter as they continue to gamble. This contributes to the development of numerous cognitive biases and distortions such as illusions of control, biased evaluations, erroneous perceptions, and irrational thinking processes (Blaszczynski & Silove, 1995). Common to each is the belief that gambling outcomes can be both predicted and controlled (Letarte, Ladouceur, & Mayrand, 1986). The development of these cognitive biases and distortions are a strong risk factor for developing gambling problems. The sixth session of MBCT-PG therefore encourages gamblers to develop a gentle interest and curiosity about the content of their thoughts. However, rather than challenging the content of the thought, participants learn to change their relationship with them. This is achieved by letting go of the thought and to then re-direct their attention to the breath. In this way, participants learn that the power of the cognitive processes responsible for continued gambling greatly diminishes.

The session begins with the sitting meditation that opens participants to a recent gambling experience as described in session five. Participants are asked how they found they practice once it had concluded. After discussing the various experiences, the facilitator then explains that the principle of "gambling-related thoughts are not facts" will be the theme of the session. Homework is then briefly reviewed and the material presented used to develop the theme of the session.

To begin, the following is presented on a whiteboard or electronic display with a brief pause between each line. The pause allows participants to read the line and formulate a mental picture about what is going on.

- *John was on his way to work*

- *He neared a corner intersection near where the TAB was located*

- *He was not sure he would get to work on time*

- *Roadwork causes terrible traffic congestion at peak hour!*

Participants are then asked what they were thinking as each line was presented. As problem gamblers, some participants will assume that John is a gambler and will go into the TAB and be late for work. Others may have completely different ideas. The discussion highlights that thoughts are not facts. The facilitator explains that MBCT-PG does not seek to change the content of thoughts but to change the relationship with them. Discussion about the various cognitive distortions displayed by gamblers reveals that such patterns of thinking will continue to occur. However, because participants have spent six weeks practicing mindfulness, the growing familiarity with content of their thoughts helps each gambler to identify common patterns that can be recognised before they result in more gambling. The use of metaphor is also used to facilitate this discussion.

Metaphors used are:

- Imagine sitting in a cinema, waiting for thoughts to come. Watching an empty screen, just waiting for thoughts to come. Some will vanish as you become aware of them. And when they come, you see exactly what they are and what happens to them. Like when you see a movie and react to it but you know that it is not real – and the less real it seems, the less you react.

- Like a cat (our observing) patiently waiting at a mouse hole (our thoughts).

- Like entering stage right then exiting stage left (thoughts come in and leave depending on how much attention we give them).

- Mind as the sky with clouds moving past at various speeds.

- A lake with still water underneath and waves on the surface – there is always stillness in the depths.

- Standing behind a cascading waterfall, now seeing the force of the water tumbling past without being dragged down by it.

The use of metaphor serves to distance participants from their thoughts and establish an alternative perspective from which to view them.

Following this exercise, an alternative viewpoints exercise is presented to show how moods and thoughts can influence one another. A handout is distributed to participants with two scenarios on each side of the page. Participants are instructed to read the first scenario and record their reactions. This is repeated for the second scenario.

Scenario 1 - You are feeling down because you've just had a quarrel with a family member. Shortly afterward you go for a walk and see a Pokie venue down the street.

What do you think?

Scenario 2 - You are feeling happy because you've just been praised by a family member. Shortly afterward you go for a walk and see a Pokie venue down the street.

What do you think?

Participants are broken into pairs to discuss. Pairs are also invited to discuss situations in their life that have been similar to the scenario presented.

It is possible that either, both or even none of the scenarios may result in a participant attending a gambling venue. None of the gamblers will necessarily respond in the same way, with some participants gambling in response to negative mood and others in response to a positive one. Either way, it is the interpretation of events that brings a gambler to the venue. This exercise highlights that thinking is influenced by many factors,

including past learning and current mood (Segal et al., 2002). While compelling, thoughts are not an accurate reflection of reality that must be acted upon.

Having this awareness is not useful unless an alternative action can be performed when an opportunity to attend a gambling venue arises. To overcome such situations, gamblers are encouraged to use the three-minute breathing space as a means of placing a gap between the gambling-related thought and the decision to attend the venue. This gap enables a number of options to become available. These are summarised on the handout developed by Segal et al. (2002) that is distributed in this session. That is:

1. Watch the thoughts come and go

2. View thoughts as mental events – not facts. It may be tempting to think of the thought as being true. But it is up to you to decide to what degree it is true and how you want to deal with it.

3. Write thoughts down on paper – this lets you see the thought in a way that is less emotional and overwhelming. Writing the thought down also gives you a moment to reflect on its meaning.

4. Ask yourself – "Did this thought pop into my head automatically? Does it accord with the facts? Is there something about it I can question?"

It is important that the therapist emphasises that the breathing space is used as a way of bringing a gentle awareness of thoughts as they come and go without attempting to push them away or answering them back. However, some thoughts may be so powerful that it can be difficult to simply watch them. In such situations, the following strategy is used (Milton & Sharples, 2007):

- Bring awareness to that place in your body that the thinking may be affecting. Become curious and interested in the sensation. Use the body scan technique of breathing into it and then breathing it out. Say to yourself: "Softening, Opening" each time you breathe in and out.

- Focus directly on the feelings associated with the thought, allowing it some space. In this way, you may discover even more about what is happening than you first thought.

As the therapy is now nearing a close, participants are encouraged to choose a daily mindfulness practice they previously found helpful. This encourages participants to consider implementing a daily mindfulness practice once therapy has concluded. Incorporating mindfulness into daily life is essential for the change process to continue. While mindfulness is not a cure for problem gambling, it is vital in giving participants an opportunity to experience the 'being' mode rather than the 'doing' mode which has characterised much of their behaviour in the past (Segal et al., 2002). The session concludes with a brief sitting practice.

Handout 6.1

Summary of Session 6: Thoughts Are Not Facts

Our thoughts can have very powerful effects on how we feel and what we do. Often those thoughts are triggered and run off quite automatically. By becoming aware, over and over again, of the thoughts and images passing through the mind and letting go of them as we return our attention to the breath and the moment, it is possible to get some distance and perspective on them. This can allow us to see that there may be other ways to think about situations, freeing us from the tyranny of the old thought patterns that automatically "pop into mind." Most importantly, we may eventually come to realize deep "in our bones" that all thoughts are only mental events (including the thoughts that say they are not), that thoughts are not facts, and that we are not our thoughts.

Thoughts and images can often provide us with an indication of what is going on deeper in the mind; we can "get hold of them," so that we can look them over from a number of different perspectives, and by becoming very familiar with our own "top ten" habitual, automatic, unhelpful thinking patterns, we can more easily become aware of (and change) the processes that may lead us to gamble.

It is particularly important to become aware of thoughts that may unblock or undermine practice, such as "There's no point in doing this" or "It's not going to work, so why bother?" such pessimistic, hopeless thought patterns are one of the main factors that stop us taking actions that would help us get out of those states. It follows that it is particularly important to recognize such thoughts as "unhelpful thinking" and not automatically give up on efforts to apply skilful means to change the way we feel.

Adapted from:
Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse.* New York: Guilford Press.

Handout 6.2

Ways You Can See Your Thoughts Differently

Here are some of the things you can do with your thoughts:

1.   Just watch them come in and leave, without feeling that you have to follow them.

2.   View your thought as a mental event rather than a fact. It may be true that this event often occurs with other feelings. It is tempting to think of it as being true. But it is still up to you to decide whether it is true and how you want to deal with it.

3.   Write your thoughts down on paper. This lets you see them in a way that is less emotional and overwhelming. Also, the pause between having the thought and writing it down can give you a moment to reflect on its meaning.

4.   Ask yourself one of the following questions: Did this thought just pop into my head automatically? Does it fit with the facts of the situation? Is there something about it that I can question? How would I have thought about it at another time, in another mood? Are there alternatives?

5.   For particularly difficult thoughts, it may be helpful to take another look at them intentionally, in a balanced, open state of mind, as part of your sitting practice: Let your "wise mind" give its perspective.

Based in part on Fennell, as cited in:

Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse.* New York: Guilford Press.

Handout 6.3
Homework for Week Following Session 6

1. Record details of any time that you go out to gamble on the record form.

2. Practice with your own selection from CDs 3, 4, 5, 6, a minimum of 40 minutes a day (e.g., 20 + 20, 30 + 10, etc). Record your reactions on the Homework Record Form.

3. 3-Minute Breathing Space - Regular; Practice three times a day, at times that you have decided in advance. Record each time by circling an R next to the appropriate day on the Homework Record Form; note any comments/difficulties.

4. 3-Minute Breathing Space - Coping: Practice whenever you notice thoughts or feelings that make you think of going out to gamble (paying particular attention to thoughts) - If the thoughts are still around after the breathing space, then write them down. You might like to use some of the ideas in Handouts 6.2 and 6.5 to get a different perspective on these thoughts. Record each time you use the 3-Minute Breathing Space- Coping by circling an X for the appropriate day on the Homework Record Form; note any comments/difficulties.

5. Note situations in which you use the breath as an anchor to handle the situation as it is happening, and situations in which you use the mindfulness practice to deal with the issues later.

Adapted from:
Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse.* New York: Guilford Press.

Handout 6.4

Homework Record Form – Session 6

Name: _____

Record on the Homework Record Form your gambling behaviour and the details of your mindfulness practice over the next week. Also, make a note of anything that comes up in homework, so that we can talk about it at the next meeting.

Date	Gambling type (e.g., pokies)	How long there (hours)	Amount taken to venue ($)	Extra withdrawn from ATM ($)	Amount taken home ($)

Note: Please record each day even if you did not gamble – in which case place an '**X**' in the relevant box

Date	Practice (Y/N)	Total amount of time spent in practice today (minutes)	Comments
	CD: R R R X X X X X X X X X X		
	CD: R R R X X X X X X X X X X		
	CD: R R R X X X X X X X X X X		
	CD: R R R X X X X X X X X X X		
	CD: R R R X X X X X X X X X X		
	CD: R R R X X X X X X X X X X		
	CD: R R R X X X X X X X X X X		

Adapted from:
Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse.* New York: Guilford Press.

Handout 6.5

When You Become Aware of Gambling-Related Thoughts

When you become aware of gambling-related thoughts and images in your mind, hold them in awareness, with an attitude of gentle interest and curiosity, perhaps expanding awareness, to include one or more of the following (go back to the breath after each one):

* Perhaps I am confusing a thought with a fact? E.g. "I am bored" (as opposed to "I am thinking that I am bored").

* Perhaps I am jumping to conclusions? E.g. "I will never be able to stop my gambling".

* Perhaps I am thinking in black-and-white terms? E.g. I am right or wrong, or good or bad.

* Perhaps I am condemning myself totally because of one thing? E.g "I deserve to suffer because of the problems caused by my gambling".

* Perhaps I am concentrating on my weaknesses and forgetting my strengths? E.g. I am weak because I cannot control my gambling (and forgetting about how well you have supported those in your family/work place/community).

* Perhaps I am blaming myself for something that isn't my fault? E.g. It's all my fault that I started to gamble (and forgetting about the events/people/situations that may have led you to gamble in the first place).

* Perhaps I am judging myself? E.g. "It's all my fault", "I can't do this".

* Perhaps I am setting unrealistically high standards for myself, so that I will fail? E.g. Gambling will solve all my problems.

* Perhaps I am mind reading/crystal ball gazing? E.g. I know what will happen in the future.

* Perhaps I am expecting perfection? E.g. I expect to be able to beat the odds.

* Perhaps I am overestimating disaster? E.g. I will lose all my family and friends if they find out that I have spent all my savings.

The keynote attitude to take with your thoughts is gentle interest and curiosity.

Adapted from:
Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse.* New York: Guilford Press.

Handout 6.6

Relating to Thoughts - I

It is remarkable how liberating it feels to be able to see that your thoughts are just thoughts and not "you" or "reality." For instance, if you have the thought that you must go and gamble today and you don't recognize it as a thought, but act as if it's "the truth," then you have created in that moment a reality in which you really believe that this is something that must be done today.

If you recall Mr. S (from Session 1) who immediately spent his monthly pension cheque on gambling and tried to chase his losses. He came to a dramatic realisation one day of the catastrophic effect that this had not only on himself, but on his family as well. As he saw that his attempts to stop gambling were not working, he also saw after he had started to practice mindfulness that he had been previously unable to question the truth of his original conviction that "one more time wouldn't hurt" or "next time I will win" because he was already so completely caught up in believing it.

If you find yourself behaving in similar ways, it is likely that you will also feel driven, tense, and anxious without even knowing why, just as Mr. S did. So if the thought comes that you must go and gamble comes up while you are meditating, you will have to be very attentive to it as a thought or you may end up gambling before you know it, without any awareness that you decided to stop sitting simply because a thought came through your mind.

On the other hand, when such a thought comes up, if you are able to step back from it and see it clearly, then you will be able to prioritize things and make sensible decisions about what really does need to be done. So the simple act of recognizing your thoughts as thoughts can free you from the distorted reality they often create and allow for more clear-sightedness and a greater sense of manageability in your life.

This liberation from the tyranny of the thinking mind comes directly out of the meditation practice itself. When we spend some time each day in a state of non-doing, observing the flow of the breath and the activity of our mind and body, without getting caught up in that activity, we are cultivating calmness and mindfulness hand in hand. As the mind develops stability and is less caught up in the content of thinking, we strengthen the mind's ability to concentrate and be calm. And if each time we recognize a thought when it arises and register its content and discern the strength of its hold on us and the accuracy of its content, then each time we let go of it and come back to our breathing and a sense of our body, we are strengthening mindfulness. We come to know ourselves better and become more accepting of ourselves, not as we would like to be, but as we are actually are.

Handout 6.7

Relating to Thoughts - II

The thinking level of mind pervades our lives; consciously or unconsciously, we all spend much or most of our lives there. But meditation is a different process that does not involve discursive thought or reflection. Because meditation is not thought, through the continuous process of silent observation, new kinds of understanding emerge.

We do not need to fight with thoughts or struggle against them or judge them. Rather, we can simply choose not to follow the thoughts once we are aware that they have arisen.

When we lose ourselves in thought, identification is strong. Thought sweeps our mind and carries it away, and, in a very short time, we can be carried far indeed. We hop a train of association, not knowing that we have hopped on, and certainly not knowing the destination. Somewhere down the line, we may wake up and realise that we have been thinking, that we have been taken for a ride. And when we step down from the train, it may be a very different mental environment from where we jumped aboard.

Take a few moments right now to look directly at the thoughts arising in your mind. As an exercise, you might close your eyes and imagine yourself sitting in a cinema watching an empty screen. Simply wait for thoughts to arise. Because you are not doing anything except waiting for thoughts to appear, you may become aware of them very quickly. What exactly are they? What happens to them? Thoughts are like magic displays that seem real when we are lost in them but then vanish upon inspection.

But what about the strong thoughts that affect us? We are watching, watching, watching, and then, all of a sudden - whoosh! - We are gone, lost in a thought. What is that about? What are the mind states or the particular kinds of thoughts that catch us again and again, so that we forget that they are just empty phenomena passing on?

It is amazing to observe how much power we give unknowingly to uninvited thoughts: "Do this, say that, remember, plan, obsess, judge." They have the potential to drive us quite crazy, and they often do!

The kinds of thoughts we have, and their impact in our lives, depend on our understanding of things. If we are in the clear, powerful space of just seeing thoughts arise and pass, then it does not really matter what kind of thinking appears in the mind; we can see our thoughts as the passing show that they are.

From thoughts come actions. From actions come all sorts of consequences. In which thoughts will we invest? Our great task is to see them clearly, so that we can choose which ones to act on and which simply to let be.

Adapted from Goldstein as cited in :
Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse.* New York: Guilford Press.

Session 6 Alternative Viewpoints Exercise

Version 1.

You are feeling down because you've just had a quarrel with a family member. Shortly afterward you go for a walk and see a Pokie venue down the street. What do you think?

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Session 6 Alternative Viewpoints Exercise

Version 2.

You are feeling happy because you have been praised by a family member. Shortly afterward you go for a walk and see a Pokie venue down the street. What do you think?

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Session 7: Taking Care of Myself

The three-minute breathing space enables people to open up to difficult thoughts, feelings and body sensations (Segal et al., 2002). It connects people with their more formal meditation practice and provides a wider perspective from which to view life. This new vantage point should, by this stage of the therapy, allow participants to see more clearly the underlying triggers and urges that may precipitate a gambling episode. The seventh session builds on these skills by turning participant's attention to the potential of a return to gambling. Furthermore, the mindfulness skills learned should well equip gamblers to deal with the negative feelings they may encounter if they succumb to the urge to gamble in the future.

The session begins with another sitting meditation which includes opening up to a recent gambling experience before returning to the breath as a way of letting the experience go. The facilitator provides less instruction during this meditation and participants are invited to comment on this after the meditation has concluded. Participants also have the opportunity to discuss how their practice had been over the previous week. A homework review is then conducted to allow participants to discuss issues they may have encountered and to review how they went in selecting their own mindfulness practice. This discussion allows participants to support and help one another with the choices they have made. The facilitator then introduces the main theme of the session – to use alternative activities in order to circumvent a return to gambling.

When MBCT was first developed, it was recognised that traditional CBT contained elements that were important in preventing relapse from depression. In particular, the developers considered that 'taking action' was important whereby participants actively counter early warning signs of depression (Segal et al., 2002). This also hold true for

problem gambling. Gambling is a behaviour performed in response to a thought or feeling. As such, adopting a more adaptive behavioural choice is important in preventing a return to gambling. This means that alternative activities must be identified and scheduled before a person experiences any symptom of a gambling-related trigger or urge.

To achieve this aim, blank paper and pens are distributed to the group. Each participant is instructed to write down all the activities they perform each day and to then categorise them as either nourishing or depleting. A reading of the poem "The Summer Day" by Mary Oliver is conducted to remind participants that there are many choices available in life and that it is up to each person to decide what they really want to do. With the preceding exercise and the poem as a basis, participants are then instructed to sub-categorise the nourishing activities into those that invoke either a sense of mastery or pleasure. The goal is for each person to undertake a nourishing activity that can be performed instead of gambling. Discussion focuses on the following questions:

- If you do the activity, what keeps it going?
- What tends to make you stop doing these things once you start them?
- What stops you from doing some of these things?

This discussion helps people consider the obstacles that may prevent them from engaging in more adaptive behavioural pursuits and provides ideas from others to aid in scheduling them. If necessary, tips can be listed in making the activity more helpful. These include:

- Do any activity as an experiment and keep an open mind as to whether it is helpful or not.
- Consider a whole range of activities without getting stuck on a favourite few – try new things.

- Break activities into smaller parts to make them easier.

- Don't expect miracles!

For those activities that are depleting, the three-minute breathing space is prescribed as a way to either be with the invoked negative experience or as a way to consider a more adaptive course of action. This provides an opportunity for participants to decide how they can best respond right now and how they can best look after themselves. Furthermore, the breathing space is used as a way to open and soften the difficult experience so that they are in a better place in which to make an adaptive choice.

Since no person is the same, each has their own individual behavioural pattern which may result in a gambling episode. Examples from the DSM-IV-TR (American Psychiatric Association, 2000) are listed to prompt discussion. These include:

- Becoming irritable because you are not gambling

- Thinking about gambling to escape from problems

- Pre-occupation with gambling

- Lying to family

- Asking others for money

Participants are broken into pairs to discuss their individual patterns. Two questions are asked as part of this process:

1. What in the past has stopped me from noticing and attending to my feelings about gambling?

2. Can I (or should I) include others when I notice a gambling related trigger or urge?

The pairs come back into the group so that all can benefit from what was discussed. To summarise, the following action plan is presented as a framework to use when a gambling related trigger is particularly powerful:

- Step 1 – take a breathing space

- Step 2 - make a choice to do what is helpful (e.g. listen to a mindfulness CD, going back to handouts, remembering what we have discussed).

- Step 3 – take action – do something that gives you a sense of mastery or pleasure, even if it seems futile or a waste of time.

A three-minute breathing space is conducted before distributing handouts and the week's homework. Homework involves deciding on which mindfulness practice will become their main practice, undertaking the three-minute breathing space as a coping mechanism, and engaging friends and family (if appropriate) to develop an action plan to schedule nourishing activities in daily life and help with early warning signs. It is stressed that engaging friends and family is optional. The session concludes with a brief sitting meditation.

> Handout 7.1
>
> **Summary of Session 7: How Can I Best Take Care of Myself?**

What we actually do with our time from moment to moment, from hour to hour, from one year to the next, can be a very powerful influence affecting our general well-being and our ability to deal skilfully with gambling and the problems associated with it.

You might like to try asking yourself these questions:

1. Of the things that I do, what nourishes me, what increases my sense of actually being alive and present rather that merely existing? (up activities)
2. Of the things that I do, what drains me, what decreases my sense of actually being alive and present, what makes me feel I am merely existing, or worse? (down activities)
3. Accepting that there are some aspects of my life that I simply cannot change, am I consciously choosing to increase the time and effort I give to up activities and to decrease the time and effort I give to down activities?

By being actually present in more of our moments and making mindful decisions about what we really need in each of those moments, we can use activities to become more aware and alert, and to regulate mood.

This is true for dealing with both the regular pattern of our daily lives and the thoughts, feelings and body sensations that may lead to gambling - we can use our day-by-day experiences to discover and cultivate activities that we can use as tools to cope with those times when we want to gamble. Having these tools already available means that we will more likely to persist with them in the face of those times when gambling related thoughts and urges arise such as "One more time won't hurt" that are simply part of the territory of problem gambling.

For example, one of the simplest ways to take care of your physical and mental well-being is to take daily physical exercise - as a minimum, aim for three brisk, 10 minute walks a day and also, if at all possible, other types of exercise, such as mindful stretching, yoga, swimming, jogging, and so on. Once exercise is in your daily routine, it is a readily available response to those times when an urge to gamble arises.

The breathing space provides a way to remind us to use activity to deal with these urges as they arise.

Adapted from:
Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse.* New York: Guilford Press.

USING THE BREATHING SPACE: THE ACTION STEP

After reconnecting with an expanded awareness in the breathing space, it may feel appropriate to take some considered action. In dealing with gambling related feelings, the following activities may be particularly helpful:

1.   Do something else that is pleasurable.
2.   Do something that will give you a sense of satisfaction or mastery.
3.   Act mindfully.

Ask yourself: What do I need for myself right now? How can I best take care of myself right now? Try some of the following:

1.   Do something pleasurable.
      Be kind to your body: have a nice hot bath; have a nap; treat yourself to your favourite food without feeling guilty; have your favourite hot drink; give yourself a facial or manicure. Engage in enjoyable activities: Go for a walk (maybe with the dog or a friend); visit a friend; do your favourite hobby; do some gardening; take some exercise; phone a friend; spend time with someone you like; cook a meal; go shopping; watch something funny or uplifting on TV; read something that gives you pleasure; listen to music that makes you feel good.

2.   Do something that gives you a sense of mastery, satisfaction, achievement, or control. Clean the house; clear out a cupboard or drawer; catch up with letter writing; do some work; pay a bill; do something that you have been putting off doing; take some exercise (N.B. It's especially important to congratulate yourself whenever you complete a task or part of a task and to break tasks down into smaller steps and only tackle one step at a time.)

3.   Act mindfully (read Staying Present, Handout 4.4)
      Focus your entire attention on just what you are doing right now, keep yourself in the very moment you are in; put your mind in the present (e.g. "Now I am walking down the stairs... now I can feel the banister beneath my hand... now I'm walking into the kitchen.. .now I'm turning on the light..."); be aware of your breathing as you do other things; be aware of the contact of your feet with the floor as you walk.

REMEMBER

1.   Try to perform your action as an experiment. Try not to prejudge how you will feel after it is completed. Keep an open mind about whether doing this will be helpful in any way.
2.   Consider a range of activities and don't limit yourself to a favourite few. Sometimes, trying new behaviours can be interesting in itself. "Exploring" and "enquiring" often work against "withdrawal" and "retreat."
3.   Don't expect miracles. Try to carry out what you have planned as best you can. Putting extra pressure on yourself by expecting this to alter things dramatically may be unrealistic. Rather, activities are helpful in building your overall sense of control in the face of shifts in your mood.

Handout 7.2

When the Urge to Gamble is Overwhelming

Sometimes you may find that the urge to gamble comes out of the blue. For example, you may be invited to go out to the pub with friends and you know that there are pokies there. Or, you may find yourself at home and not have anything else to do.

When these situations occur, it may be useful for you to tell yourself, "Just because I *feel* like gambling does not mean that I *have* to gamble."

If you have always gambled as a result of these situations in the past, then you will find it particularly difficult to resist the urge once these situations arise again. As a result, attempting to resist the urge to gamble may become undermined.

Having the urge to gamble does not mean that it needs to go on for a long time or that you are going to relapse back into problem gambling.

Ask yourself, "What can I do to look after myself to get me through this period?"

Take a breathing space to help gather yourself. This may help you see your situation from a wider perspective. This wider perspective allows you to become aware of both the pull of the old habits of thinking and what skilled action you might take.

Adapted from:
Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse.* New York: Guilford Press.

Handout 7.3

Homework for Week Following Session 7

---

1. From all the different forms of formal mindfulness practice you have experienced (CD 1 - Body Scan, CD 2 - Guided Sitting Meditation, CD 3 - Sittings of different lengths, CD 4 - Lying Down meditations, CD 5 - Mountain and Lake, CD 6 - Silence with bells, Yoga CDs etc.), settle on a form of practice that you intend to use on a regular, daily basis for the next 5 weeks. Use this practice on a daily basis this week, and record your reactions on the Homework Record Form.
2. 3 -Minute Breathing Space-Regular: Practice three times a day at times that you have decided in advance. Record each time you do it by circling an R for the appropriate day on the Homework Record Form; note any comments/difficulties.
3. 3 -Minute Breathing Space - Coping plus Action: Practice whenever you notice unpleasant thoughts or feelings. Record each time you do the coping breathing space by circling an X for the appropriate day on the Homework Record Form; note any comments/difficulties.

RELAPSE PREVENTION

What are your warning signals that problem gambling might be trying to take hold again (e.g. pre-occupation with gambling, becoming irritable because you are not gambling, thinking about gambling in order to escape from problems, lying to family members, asking others for money)?

Set up an Early Warning System - write down on the next blank sheet the changes that you should look out for (if it feels comfortable, include those with whom you share your life in a collaborative effort to notice and then to respond rather than to react to these signs).

Write down on the next blank sheet suggestions to yourself for an Action Plan that you can use as a framework for coping action, once you or your friends/family have noticed early warning signs (remember to address the frame of mind that you will be in at the time, e.g., "I know you probably will not be keen on this idea but I think that, nonetheless, it is very important that you..."). For example, you might put on a yoga, body scan, or mindfulness CD; remind yourself of what you learned during the class that was helpful then; take frequent breathing spaces leading into thought review or considered action; read something that will "reconnect' you with your "wiser" mind, and so on.

It may be helpful to remind yourself that what you need at times of difficulty is not different from what you have already practiced many times throughout this course.

Action Plan

Situation	Response

Handout 7.4

Homework Record Form – Session 7

Name: _____

Record on the Homework Record Form your gambling behaviour and the details of your mindfulness practice over the next week. Also, make a note of anything that comes up in homework, so that we can talk about it at the next meeting.

Date	Gambling type (e.g., pokies)	How long there (hours)	Amount taken to venue ($)	Extra withdrawn from ATM ($)	Amount taken home ($)

Note: Please record each day even if you did not gamble – in which case place an 'X' in the relevant box

Date	Practice (Y/N)	Total amount of time spent in practice today (minutes)	Comments
	CD: R R R X X X X X X X X X X		
	CD: R R R X X X X X X X X X X		
	CD: R R R X X X X X X X X X X		
	CD: R R R X X X X X X X X X X		
	CD: R R R X X X X X X X X X X		
	CD: R R R X X X X X X X X X X		
	CD: R R R X X X X X X X X X X		

Adapted from:
Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse.* New York: Guilford Press.

Handout 7.5
"The Summer Day"

Who made the world?

Who made the swan, and the black bear?

Who made the grasshopper?

This grasshopper, I mean --

the one who has flung herself out of the grass,

the one who is eating sugar out of my hand,

who is moving her jaws back and forth instead of up and down--

who is gazing around with her enormous and complicated eyes.

Now she lifts her pale forearms and thoroughly washes her face.

Now she snaps her wings open, and floats away.

I don't know exactly what a prayer is.

I do know how to pay attention, how to fall down

into the grass, how to kneel down in the grass,

how to be idle and blessed, how to stroll through fields,

Which is what I have been doing all day.

Tell me, what else should I have done?

Doesn't everyone die at last, and too soon?

Tell me, what is it you plan to do

with your one wild and precious life?
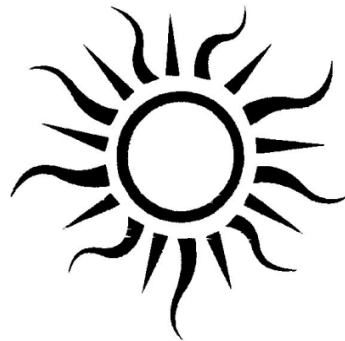
Handout 7.6

Pleasure and Mastery Activities

Liz, a woman in her mid-30s, who felt that the classes had taught her about the need to anticipate how to respond to early warning signs that could lead her to gamble, suggested that she was going to make a list and call it "My Anti-Gambling Activity List," and file it away until she needed to consult it. For her, this list would include material from the participant handouts, with instructions to herself saying, "Although you may not feel like doing any of these, select at least one and do it anyway":

Do something else today just because you enjoy it.

- Phone a friend.
- Rent a video you enjoy.
- Have a nice, hot bath.
- Have a nap.
- Treat yourself to your favourite food, without feeling guilty.
- Have your favourite hot drink.
- Go for a walk (maybe with the dog or a friend). —Visit a friend.
- Do your favourite hobby.
- Spend time with someone you like.
- Cook a meal.
- Go shopping.
- Watch something funny or uplifting on television.
- Read something that gives you pleasure.
- Listen to music that makes you feel good.

Do something else that gives you a sense of mastery, satisfaction, achievement, or control.

- Clean the house.
- Clear out a cupboard or drawer.
- Catch up with letter writing.
- Do some work.
- Pay a bill.
- Do some gardening.
- Do something that you have been putting off doing.
- Take some exercise.

Remember to take that big task and break it down into smaller steps and congratulate yourself afterwards.

Note: There are many of such ideas floating around. The important thing is to emphasise that any can be used in tandem with an early warning system, so long as you decide to do something early enough in the process

370

Yoga CD 2
Sequence of Yoga Postures

Squeeze together in back
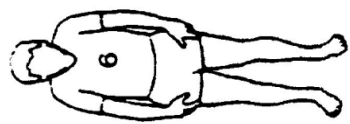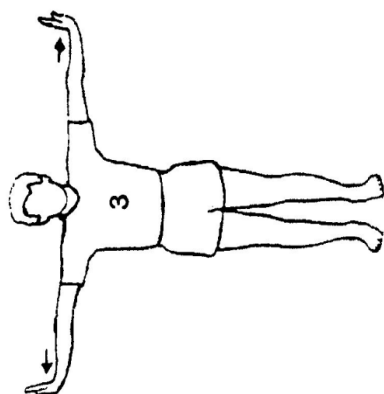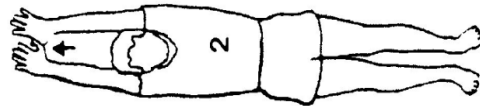
Let drop

Squeeze together in front

Raise up
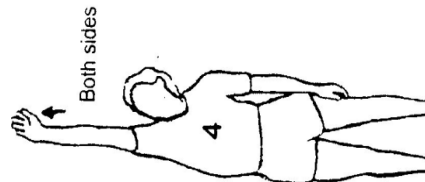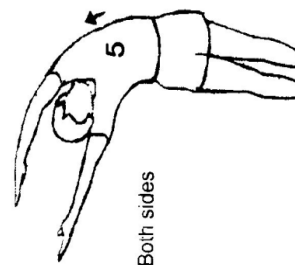
Neck rolls: do in one direction, then the other

Both sides

Both sides

Yoga CD 2

14

15

16

Both sides

17

18

Both sides

19

20

Both sides

21

22

23

24

25
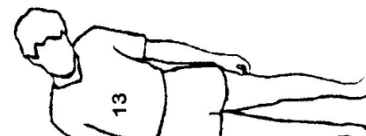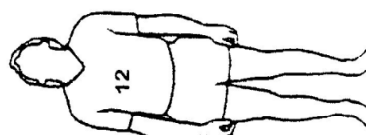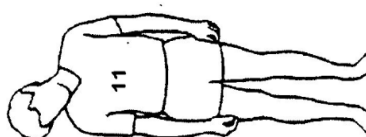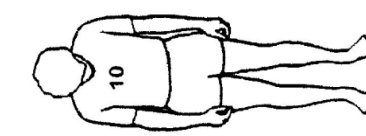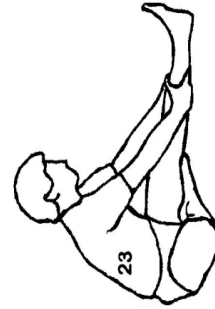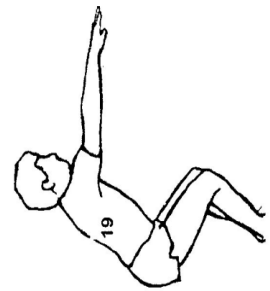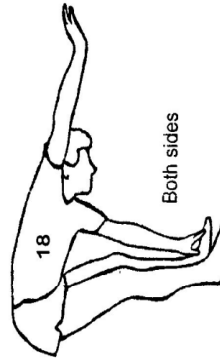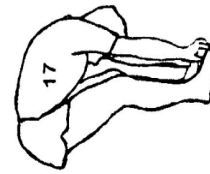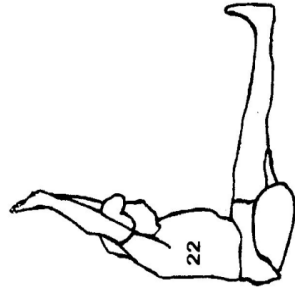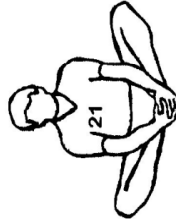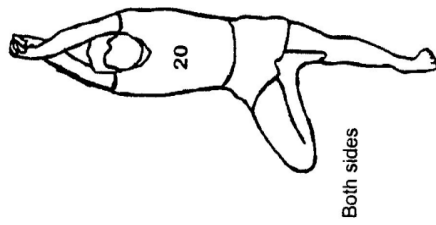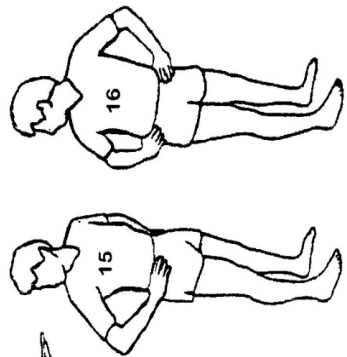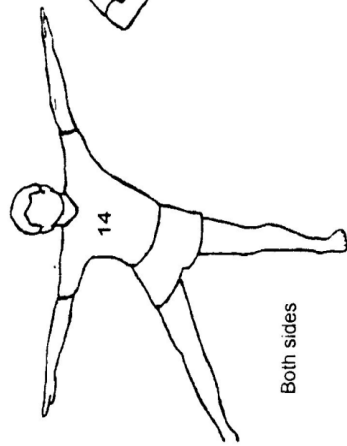
Repeat 22 to 24 on other side

Both sides

Session 8: Linking New Learning to the Future

Mindfulness is a skill that allows gambling-related thoughts, feelings and sensations to simply 'be' without the need to do anything. In session seven, participants discussed the early warns that could lead them to gamble. Session eight links this with the theme of acceptance that was discussed in earlier sessions. In accepting the desire to gamble in this way, the person is placed in a better position to consciously decide what action to perform. Of course, gambling behaviour may still result. However, the decision to do so should be a *mindful* decision rather than a *mindless* one. The final session of MBCT-PG is therefore intended to help sustain and motivate participants to continue practicing mindfulness skills once the therapy has concluded. To achieve this, each participant should have the opportunity to discuss what they have learned over the course of the program and to develop individual plans for how mindfulness will be applied in their life.

The session begins with a return to the body scan. This provides a sense of completion by coming full circle to the skills learned at the beginning of the program. The facilitator reminds participants to note the connection between awareness of the body and feelings and thoughts. When complete, participants are asked to discuss any differences they may have noted to when the body scan was first performed in the first session. Most will experience the body scan in a different way. Even those who find the exercise tedious or boring, the negative experience can still teach them much about how they respond to such experiences. For those who find the practice helpful, this is an affirmation of their mindfulness practice over the past seven weeks. This discussion leads to the homework performed over the previous week. The facilitator asks if participants have decided on a regular mindfulness practice, the reasons for their preferences, as well as what participants have found most helpful. Participants are also asked how they have gone in developing the

action plans discussed in session seven. The following questions from Segal et al. (2002)

are used to facilitate the review process:

- Think back to why you came originally. What were your expectations and
  why did you stay?

- What did you want/hope for?

- What did you get from coming, if anything? What did you learn?

- What were the costs to you?

- What are your biggest blocks/obstacles to continuing?

- What strategies might help you not get stuck?

In addition to this, the Client Satisfaction Questionnaire (Larsen, Attkisson, Hargrave, &

Nguyen, 1979) is distributed. This feedback helps the facilitator to learn what has been

most and least helpful.

Maintaining a regular mindfulness practice after the therapy has concluded will be

a challenge confronting each participant. Segal et al. (2002) recommend a regular daily

practice of 40 minutes, with a regular, daily, brief practice preferable to a longer infrequent

practice. However, all participants will vary as to their commitment to this. Some may

prefer to use a three minute breathing space as a coping mechanism during the week with a

more formal meditation on weekends. Others may prefer to alternate the techniques

learned each day. The group is invited to discuss what they have decided to do with a

sense of acceptance and encouragement. It is important to stress that making a mindfulness

practice a seamless part of everyday life is important because it is impossible to predict

when a gambling-related trigger will arise. To reinforce this, each participant is asked to

provide one reason why they should continue with a regular mindfulness practice. This

connects them more fully with the goals they wish to achieve and the potential

consequences of continuing to gamble

The facilitator then checks the individual actions plans that people should have

compiled to schedule nourishing activities in daily life and help with early warning signs.

A list of pleasure and mastery activities can be distributed if required. Discussion

emphasises that such activities can be performed along with the early warning system

provided that the decision to do something is made early enough in the process (Segal et

al., 2002). If gambling does result, then it is possible that the negative thinking invoked

may cause some gamblers to give up and continue gambling. However, the mindfulness

skills learned should offer a wider perspective from which to view the relapse. If this does

not occur, one additional technique not included in the original MBCT program, is

performed. This is the loving-kindness meditation.

The loving-kindness meditation involves sitting with how one feels in the current

moment and genuinely wishing oneself to be happy, to be free of pain and suffering, and

earnestly wishing to experience love and joy (Kabat-Zinn, 2005). The feelings of empathy,

compassion and love that are generated to oneself are then extended to include a close

friend, a neutral person, a difficult person and then to everyone, beginning with those in the

room and extending this feeling to all beings. Research has demonstrated that this

mediation is particularly effective in bolstering positive emotion which, in turn,

significantly increases personal resources such as life purpose, social support and physical

health (Fredrickson et al., 2008). As such, if a downward cascade of negative emotions

results due to a relapse, the meditation may protect against any return to self-destructive

behaviour (Kabat-Zinn, 2005).

This meditation marks the conclusion of the program. It is a reminder to participants that they can still live with the damaged part of themselves in a caring and kindly way (Segal et al., 2002). However, rather than ending the group, participants are invited to meet again after four weeks have elapsed in order to revise the practices learnt. This can be repeated as many times as necessary.

Handout 8.1

Summary of Session 8: Using What Has Been Learned to Deal with Urges to Gamble

---

The advantages of awareness, acceptance, and mindfully responding to situations rather than immediately running off pre-programmed, "automatic" reactions has been a recurring theme throughout this course.

Acceptance may often be the springboard to some form of skilful action directed at achieving a change in participants' inner or outer worlds. However, there are also situations and feelings that it may be very difficult, or actually impossible, to change. In such circumstances, there is the danger that one can feel like it's all too hard and simply give up any attempt to stop gambling. In these situations, you can still retain some sense of dignity and control by making a conscious, mindful, decision not to attempt to exert control and to accept the situation as it is, if possible, with a kindly attitude to the situation and your reactions to it. Choosing not to act is much less likely to result in a return gambling than being forced to give up attempts at control after repeated failures.
In the so-called "Serenity Prayer," we ask for the grace to accept with serenity the things that cannot be changed, the courage to change the things that should be changed, and the wisdom to distinguish one from the other.

Where do we find this grace, this courage, this wisdom? At some level, we already have all of these qualities- our task is to realise them (make them real), and our way is none other than moment-by-moment mindful awareness.

THE FUTURE

Remember Jon Kabat-Zinn's advice to weave your parachute every day, rather than leave it to the time you have to jump from the plane!

Decide, right now, what your regular pattern of practice will be over the next few weeks, until we meet again, and stick to it as best you can throughout this period. Note any difficulties that you have, so that we can discuss them next time.

Also, remember that the regular breathing space practice provides a way of "checking in with yourself" a few times a day. Let it also be your first response in times of difficulty, stress, or unhappiness - KEEP BREATHING!

Adapted from:
Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse.* New York: Guilford Press.

```
┌─────────────────────────────────────────────────────────┐
│                      Handout 8.2                        │
│                                                         │
│                  Daily Mindfulness                      │
└─────────────────────────────────────────────────────────┘
```

- When you first wake up in the morning, before you get out of bed, bring your attention to your breathing. Observe five mindful breaths.

- Notice changes in your posture. Be aware of how your body and mind feel when you move from lying down to sitting, to standing, to walking. Notice each time you make a transition from one posture to the next.

- Whenever you hear a phone ring, a bird sing, a train pass by, laughter, a car horn, the wind, the sound of a door closing - use any sound as the bell of mindfulness. Really listen and be present and awake.

- Throughout the day, take a few moments to bring your attention to your breathing. Observe five mindful breaths.

- Whenever you eat or drink something, take a minute and breathe. Look at your food and realise that the food was connected to something that nourished its growth. Can you see the sunlight, the rain, the earth, the farmer; the trucker in your food? Pay attention as you eat, consciously consuming this food for your physical health. Bring awareness to seeing your food, smelling your food, tasting your food, chewing your food, and swallowing your food.

- Notice your body while you walk or stand. Take a moment to notice your posture. Pay attention to the contact of the ground under your feet. Feel the air on your face, arms, and legs as you walk. Are you rushing?

- Bring awareness to listening and talking. Can you listen without agreeing or disagreeing, liking or disliking, or planning what you will say when it is your turn? When talking, can you just say what you need to say without overstating or understating? Can you notice how your mind and body feel?

- Whenever you wait in a line, use this time to notice standing and breathing. Feel the contact of your feet on the floor and how your body feels. Bring attention to the rise and fall of your abdomen. Are you feeling impatient?

- Be aware of any points of tightness in your body throughout the day. See if you can breathe into them and, as you exhale, let go of excess tension. Is there tension stored anywhere in your body? For example, your neck, shoulders, stomach, jaw, or lower back? If possible, stretch or do yoga once a day.

- Focus attention on your daily activities such as brushing your teeth, washing up, brushing your hair, putting on your shoes, doing your job. Bring mindfulness to each activity.

- Before you go to sleep at night, take a few minutes and bring your attention to your breathing. Observe five mindful breaths.

> ## Handout 8.3
>
> ## Loving/Kindness Meditation

1. Sitting comfortably

Tuning in – do you feel pleasantness/unpleasantness or just nothing?

Using mindfulness to just being aware of your body, feelings of body sensations, of breathing.

Staying present, not judging, just accepting of whatever is there with a sense of openness and curiosity.

2. Now developing this awareness in terms of an attitude of friendliness and kindness firstly to yourself. Wishing yourself to be happy, to be well, to be free from suffering.

Once you have this attitude of friendliness to yourself, focus on it with as much energy as you can. Imagine yourself like a flower opening to the sun or your body slowly filling with light and peace.

If you notice you mind wandering, just notice this and gently bring your mind back to yourself in the present moment.

3. Now extending this feeling towards a good friend – imagining them visually or in some other way. Just stay with them. May they be happy, may they be well, may they be free from suffering. Even if you have difficulty developing any feeling towards them, just stay with them.

4. Now try to extend these feelings towards a neutral person. You will probably feel very little towards them. Just concentrating on them as much as you can. Expanding your connection to them – stretching your capacity to feel and to imagine.

5. Now stretching yourself this time to a difficult person. Remembering that the exercise is about loving kindness, not about negativity.

If you find yourself being distracted, just bringing yourself back with kindness and gentleness to the difficult person. Remembering that the way they experience their life is different to the way you perceive it. Reflecting that if they were happy, they may be different to the way they seem to you right now.

6. Now imagine each of the four people in the practice. Retaining a feeling of loving kindness to them all equally. Having equalised it, loving kindness is now at its fullest and strongest. Try now to extend it to the rest of the people in this room, to those around you, to the people of Melbourne, Victoria, on and out. To all beings everywhere. To all beings of past and future time. Expanding beyond all conceivable limits. May they all be well, may they all be happy. May they all be free from suffering.

APPENDIX B: ETHICS APPROVAL CERTIFICATES

MONASH University

Standing Committee on Ethics in Research Involving Humans (SCERH)
Research Office

Human Ethics Certificate of Approval

Date:	3 July 2008
Project Number:	CF08/1123 - 2008000551
Project Title:	Mindfulness-based cognitive therapy in the treatment of problem gambling
Chief Investigator:	Dr J Sabura Allen
Approved:	From: 3 July 2008 to 3 July 2013

Terms of approval

1. The Chief investigator is responsible for ensuring that permission letters are obtained and a copy forwarded to SCERH before any data collection can occur at the specified organisation. **Failure to provide permission letters to SCERH before data collection commences is in breach of the National Statement on Ethical Conduct in Human Research and the Australian Code for the Responsible Conduct of Research.**
2. Approval is only valid whilst you hold a position at Monash University.
3. It is the responsibility of the Chief Investigator to ensure that all investigators are aware of the terms of approval and to ensure the project is conducted as approved by SCERH.
4. You should notify SCERH immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.
5. The Explanatory Statement must be on Monash University letterhead and the Monash University complaints clause must contain your project number.
6. **Amendments to the approved project:** Requires the submission of a Request for Amendment form to SCERH and must not begin without written approval from SCERH. Substantial variations may require a new application.
7. **Future correspondence:** Please quote the project number and project title above in any further correspondence.
8. **Annual reports:** Continued approval of this project is dependent on the submission of an Annual Report. This is determined by the date of your letter of approval.
9. **Final report:** A Final Report should be provided at the conclusion of the project. SCERH should be notified if the project is discontinued before the expected date of completion.
10. **Monitoring:** Projects may be subject to an audit or any other form of monitoring by SCERH at any time.
11. **Retention and storage of data:** The Chief Investigator is responsible for the storage and retention of original data pertaining to a project for a minimum period of five years.

Professor Ben Canny
Chair, SCERH

Cc: Steven de Lisle; Dr Nicole Dowling

🛡 MONASH University

Human Ethics Certificate of Approval

Date:	**25 November 2009**
Project Number:	CF09/1544 - 2009000828
Project Title:	**Understanding the relationship between thoughts, feelings and gambling behaviour**
Chief Investigator:	**Dr Janice Sabura Allen**
Approved:	**From: 25 November 2009 To: 25 November 2014**

Terms of approval

1. The Chief investigator is responsible for ensuring that permission letters are obtained, if relevant, and a copy forwarded to MUHREC before any data collection can occur at the specified organisation. **Failure to provide permission letters to MUHREC before data collection commences is in breach of the National Statement on Ethical Conduct in Human Research and the Australian Code for the Responsible Conduct of Research.**
2. Approval is only valid whilst you hold a position at Monash University.
3. It is the responsibility of the Chief Investigator to ensure that all investigators are aware of the terms of approval and to ensure the project is conducted as approved by MUHREC.
4. You should notify MUHREC immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.
5. The Explanatory Statement must be on Monash University letterhead and the Monash University complaints clause must contain your project number.
6. **Amendments to the approved project (including changes in personnel):** Requires the submission of a Request for Amendment form to MUHREC and must not begin without written approval from MUHREC. Substantial variations may require a new application.
7. **Future correspondence:** Please quote the project number and project title above in any further correspondence.
8. **Annual reports:** Continued approval of this project is dependent on the submission of an Annual Report. This is determined by the date of your letter of approval.
9. **Final report:** A Final Report should be provided at the conclusion of the project. MUHREC should be notified if the project is discontinued before the expected date of completion.
10. **Monitoring:** Projects may be subject to an audit or any other form of monitoring by MUHREC at any time.
11. **Retention and storage of data:** The Chief Investigator is responsible for the storage and retention of original data pertaining to a project for a minimum period of five years.

Professor Ben Canny
Chair, MUHREC

cc: Mr Steven De Lisle; Dr Nicki (Nicole) Dowling

MONASH University

Human Ethics Certificate of Approval

Date:	17 August 2009
Project Number:	CF09/1592 - 2009000829
Project Title:	Dispositional Mindfulness and Personality as Predictors of Gambling Outcomes
Chief Investigator:	Dr Janice Sabura Allen
Approved:	From: 17 August 2009 To: 17 August 2014

Terms of approval

1. The Chief investigator is responsible for ensuring that permission letters are obtained, if relevant, and a copy forwarded to MUHREC before any data collection can occur at the specified organisation. **Failure to provide permission letters to MUHREC before data collection commences is in breach of the National Statement on Ethical Conduct in Human Research and the Australian Code for the Responsible Conduct of Research.**
2. Approval is only valid whilst you hold a position at Monash University.
3. It is the responsibility of the Chief Investigator to ensure that all investigators are aware of the terms of approval and to ensure the project is conducted as approved by MUHREC.
4. You should notify MUHREC immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.
5. The Explanatory Statement must be on Monash University letterhead and the Monash University complaints clause must contain your project number.
6. **Amendments to the approved project (including changes in personnel):** Requires the submission of a Request for Amendment form to MUHREC and must not begin without written approval from MUHREC. Substantial variations may require a new application.
7. **Future correspondence:** Please quote the project number and project title above in any further correspondence.
8. **Annual reports:** Continued approval of this project is dependent on the submission of an Annual Report. This is determined by the date of your letter of approval.
9. **Final report:** A Final Report should be provided at the conclusion of the project. MUHREC should be notified if the project is discontinued before the expected date of completion.
10. **Monitoring:** Projects may be subject to an audit or any other form of monitoring by MUHREC at any time.
11. **Retention and storage of data:** The Chief Investigator is responsible for the storage and retention of original data pertaining to a project for a minimum period of five years.

Professor Ben Canny
Chair, MUHREC

cc: Mr Steven De Lisle, Miss Meredith Brown, Dr Nicole Dowling

APPENDIX C: MBCT-PG ADVERTISING MATERIAL, POSTER AND FLYER

PROBLEMS WITH GAMBLING?

A new program is being trialled to help adults who are having difficulties with gambling.

The program is being run at Monash University's Clinical Psychology Centre
(270 Ferntree Gully Rd. Notting Hill).

For more information about this program, contact us on 03 9905 4725.

Problem Gambling?

A treatment trial for people who are having problems with their gambling.

Participant information

About the project…

My name is Steve de Lisle and I am conducting a research project towards a doctorate in clinical psychology at Monash University. I have many years experience in mindfulness and am qualified to teach mindfulness-based cognitive therapy to the general public. In recent years, mindfulness meditation has been shown to be a useful approach for helping people deal with many chronic medical and psychiatric conditions, including depression. More recently, mindfulness meditation has also shown promise in helping gamblers learn additional ways to cope with the cognitive distortions that maintain their gambling behaviour. The purpose of this project is to compare mindfulness-based cognitive therapy with a wait-list control to investigate this more fully.

Mindfulness-based cognitive therapy (MBCT) aims to help people find new ways to deal with their moods and emotions. It includes meditative and cognitive elements designed to promote awareness of gambling related thoughts and feelings in the present moment. It involves groups of about 8-12 people attending one 2 hour session each week for 8 weeks.

If you take part, you will be assessed and then randomly placed in one of two treatment groups. *Both groups receive the same treatment.* The difference is that one group will be placed on a waiting-list and receive the treatment one week after the first group has been completed. In both cases, your well-being will be monitored and you will be provided with resources to help you with any personal difficulties.

We would like you to complete some questionnaires before treatment begins and again when it finishes. We ask that you complete the same questionnaires again at 4 weeks and then 3 months after the treatment to see how you are going.

All material is treated as private and confidential.

Ethics approval for this project has been granted by Monash University.
If you are aged over 18 years, consider that you have a gambling problem, are currently well, currently not receiving treatment for problem gambling, and can speak and read English fluently, please contact myself on 99054725 or email Steven.deLisle@med.monash.edu.au

Steve de Lisle
99054725
Steven.deLisle@med.monash.edu.au

Problem Gambling?

A treatment trial for people who are having problems with their gambling.

Participant information

About the project...

In recent years, mindfulness meditation has been shown to be a useful approach for helping people deal with many chronic medical and psychiatric conditions, including depression. More recently, mindfulness meditation has also shown promise in helping gamblers learn additional ways to cope with the cognitive distortions that maintain their gambling behaviour. The purpose of this project is to compare mindfulness-based cognitive therapy with a wait-list control to investigate this more fully.

Participation in the project is entirely voluntary

Mindfulness-based cognitive therapy in the treatment of problem gambling

About the researchers:

My name is Steve de Lisle and I am conducting a research project towards a doctorate in clinical psychology at Monash University. I have many years experience in mindfulness and am qualified to teach mindfulness-based cognitive therapy to the general public.

My research supervisors are Dr. Sabura Allen, a clinical psychologist in the School of Psychology, Psychiatry and Psychological Medicine, Monash University and Dr. Nicki Dowling, a clinical psychologist and senior research fellow at the Problem Gambling Research and Treatment Centre, Melbourne University.

MONASH University

What you will be asked to do ...

If you take part, you will be assessed and then randomly placed in one of two treatment groups. *Both groups receive the same treatment.* The difference is that one group will be placed on a waiting-list and receive the treatment one week after the first group has been completed. In both cases, your well-being will be monitored and you will be provided with resources to help you with any personal difficulties.

We would like you to complete some questionnaires before treatment begins and again when it finishes. We ask that you complete the same questionnaires again at 4 weeks and then 3 months after the treatment to see how you are going.

All material is treated as private and confidential.

About the treatment ...

Mindfulness-based cognitive therapy (MBCT)

This therapy aims to help people find new ways to deal with their moods and emotions. It includes meditative and cognitive elements designed to promote awareness of gambling related thoughts and feelings in the present moment. It involves groups of about 8-12 people attending one 2 hour session each week for 8 weeks.

Ethics approval for this project has been granted by Monash University.

Who are we looking for?

If you:

➤ Are aged over 18 years

➤ Consider that you have a gambling problem

➤ Are currently well

➤ Currently not receiving treatment for problem gambling

➤ Can speak and read English fluently (unfortunately, there is no provision to translate the questionnaires and materials covered in each session or to provide a translator).

For more information, contact:

Steve de Lisle
Doctor of Psychology (Clinical) Candidate
Monash University

Steven.delisle@med.monash.edu.au

Phone: 9905 4725

APPENDIX D: MBCT-PG TREATMENT STUDY - SCREENING QUESTIONS

DEMOGRAPHIC INFORMATION

Name**: _____**

Address**: _____**

Telephone Number**: _____**

Age**: _____**

Date of birth**: _____ / _____ / _____**

What is your marital status**?**
_____

What is your yearly gross income?
_____

Do you have any children? If so, what are their ages?
_____

Name of a significant other (eg. parent or partner):_____

Address**: _____**

Telephone Number**: _____**

GAMBLING HISTORY

Precipitating factors leading to admission [why now? Cause of seeking treatment?]
_____
_____
_____
_____
_____
_____
_____
_____
_____

Gambling Type (e.g., pokies)	Age first gambled	Age start noticing problem	Days gambled /7	Days gambled /28	Days binge gambled /28	Goal of treatment (e.g., abstinence, control)

Other comments (patterns, triggers, substitutes such as substance use including caffeine/work/shopping)

_____
_____
_____
_____
_____
_____
_____
_____
_____

Client's perception of their gambling behaviour [motivation and understanding of their behaviour]

_____
_____
_____
_____
_____
_____
_____
_____
_____

Client's cognitions relating to gambling

      1.   **Thoughts before gambling:**

_____
_____
_____
_____

      2.   **Thoughts during gambling:**

_____
_____
_____
_____

      3.   **Thoughts following gambling session:**

_____
_____
_____
_____

Experience of abstinence

_____
_____
_____
_____
_____
_____
_____

PSYCH/MEDICAL/HEALTH

Current relevant psychiatric diagnosis and history

_____
_____
_____
_____

_____
_____
_____
_____

Mood/affect [observed as well as ongoing]

_____
_____
_____
_____
_____
_____
_____
_____

Emotional self-care [managing emotions and emotional health, self-esteem, perceived strengths]

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Past/Current risk to self and others & protective factors

_____
_____
_____
_____
_____
_____
_____
_____

Relevant Medical Conditions and History [e.g., physical health, chronic pain]

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

General health & physical self-care [sleep, caffeine, appetite, nutrition, fitness]

_____
_____
_____
_____
_____
_____

_____
_____
_____
_____
_____
_____
_____

Psycho/Social Assessment

Psychosocial history [e.g., significant life events or stressful life events]

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Genogram

Comments on relationships in genogram:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

_____
_____
_____
_____

Social networks and support [e.g., friends, including both intimate and recreational relationships]

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Recreation [e.g., hobbies, pleasurable activities]

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Employment and finances
1. Stability, job satisfaction

_____
_____
_____
_____
_____
_____

2. Debts [e.g., loans from banks or financial institutions]

_____
_____
_____
_____
_____
_____
_____

3. Gambling related debts

_____
_____
_____
_____
_____
_____
_____

4. How do they fund their gambling?

_____
_____
_____
_____
_____
_____
_____

Purpose, direction and goals
1. Spiritual beliefs

_____
_____
_____
_____
_____
_____
_____

2. Do they feel life has a meaning?

_____
_____
_____
_____
_____
_____
_____
_____

Accommodation (stability, safety, likeability of surroundings)

1. Do they live alone? If not who do they live with?

_____
_____
_____
_____
_____

2. How do they like their environment/ do they feel safe?

_____
_____
_____
_____
_____

Education/Training [inc highest year level completed]

_____
_____
_____
_____
_____
_____

Legal [e.g., current charges, impending court cases, current orders etc]

_____
_____
_____
_____
_____

The Structured Clinical Interview for Pathological Gambling

<u>The Essential Criterion</u>

Pathological gambling is persistent and recurrent maladaptive gambling behaviour (criterion A) that disrupts personal, family, or vocational pursuits.

A.1 In the past six months, on how many occasions have you gambled?
_ No occasions (SKIP TO END)
_ One occasion (SKIP TO END)
_ Two to five occasions (GO TO A2)
_ Six or more occasions

(MEETS ESSENTIAL CRITERION)

A.2 What effect did gambling on these occasions have on your life? (Refer Global Functioning Index)

_ No impact (SKIP TO END)
_ Mild impact (SKIP TO END)
_ Moderate impact (SKIP TO END)
_ Severe impact on at least one domain of GFI

(MEETS ESSENTIAL CRITERION)

_ Extreme impact on at least one domain of GFI

(MEETS ESSENTIAL CRITERION)

<u>MEETS ESSENTIAL CRITERION? YES   NO</u>

<u>Criterion 1</u>

The individual is preoccupied with gambling (e.g., preoccupied with reliving past gambling experiences, handicapping or planning the next venture, or thinking of ways to get money with which to gamble).

C1.1 In the past month, how often have you thought about gambling? (For example, reliving past gambling experiences, planning the next venture, thinking about how you will bet next time, or thinking about ways to get money to gamble)
_ No days   (SKIP TO C2)
_ One or two days a month (SKIP TO C2)
_ One or two days a week (SKIP TO C2)
_ Three or four days a week (more days than not)
_ Daily or almost everyday

C1.2 When you are thinking about gambling, how much of the day is typically taken up by this activity?

_ None of the day
_ A few minutes
_ A few minutes to less than an hour
_ 1 hour to 7 hours

(MEETS CRITERION)

_ All day or most of the day (8 or more hours)

(MEETS CRITERION)

<u>MEETS CRITERION 1?   YES   NO</u>

Criterion 2

The individual needs to gamble with increasing amounts of money in order to achieve the desired level of excitement.

C2.1 In the past six months, do you typically bet more in the first half of a gambling session, more in the second half, or about the same in each half?
__ More in first half- decrease   (GO TO C2.4)
__ Same in each half   (GO TO C2.4)
__ More in second half- increase

C2.2 Does increasing your bet size during a gambling session make the gambling more boring, more exciting or does it have no effect on you?
__ Boring   (GO TO C2.4)
__ No effect   (GO TO C2.4)
__ Exciting

C2.3 How much excitement or thrill do you experience by increasing your bet size during a gambling session?
__ No increase in excitement (GO TO C2.4)
__ Mild increase in excitement (GO TO C2.4)
__ Moderate increase in excitement (GO TO C2.4)
__ Considerable increase in excitement

      (MEETS CRITERION)

__ Extreme increase in excitement

      (MEETS CRITERION)

C2.4 In the past six months, has the amount of money you have gambled in each session steadily increased, steadily decreased, varied up and down, or stayed about the same from one session to the next?
__ Stayed about the same   (SKIP TO C3)
__ Varied up and down   (SKIP TO C3)
__ Steadily decreased   (SKIP TO C3)
__ Steadily increased

C2.5 Does increasing your betting (bet size or total amount gambled) from one gambling session to the next make the gambling more boring, more exciting or does it have no effect on you?
__ More boring   (SKIP TO C3)
__ No effect   (SKIP TO C3)
__ More exciting

C2.6 How much excitement or thrill do you experience by increasing your betting (bet size or total amount gambled) from one gambling session to the next?
__ No increase in excitement
__ Mild increase in excitement
__ Moderate increase in excitement
__ Considerable increase in excitement

      (MEETS CRITERION)

__ Extreme increase in excitement

      (MEETS CRITERION)

MEETS CRITERION 2?   YES   NO

Criterion 3

The individual has made repeated unsuccessful efforts to control, cut back or stop gambling.

C3.1 In the past six months, have you tried to control, cut back or stop gambling?
Yes   No   (SKIP TO C5)

C3.2 How many attempts have you made to control, cut back or stop gambling in the last six months?
__ One   (SKIP TO C4)
__ Two or more

C3.3 What did you do to help cut back or stop gambling?
__ No effort (SKIP TO C5)
__ Mild (contemplation only) (SKIP TO C5)
__ Moderate (contemplation and consultation only) (SKIP TO C5)
__ Considerable -behavioural evidence :
(a) on 2 or more occasions when money was available for gambling there was a major reduction in the amount spent

            (MEETS CRITERION)

 OR

(b) On 2 or more occasions there was voluntary
      avoidance of gambling when it would have otherwise occurred

        (MEETS CRITERION)

MEETS CRITERION 3?   YES   NO

Criterion 4

**The individual is restless or irritable when
 attempting to cut down or stop gambling.**

C4.1 How did you feel or behave when you were trying to cut down or stop gambling?
Circle some form of psychomotor agitation such as:
    restless   anxious
    irritable   nervous
    pacing   stressed
    tense   uneasy
    trembling OR
if no psychomotor agitation (SKIP TO C5)

C4.2 How much {feelings at C4.1 or "distress"} did you typically experience when you were trying to cut
 down or stop gambling?
__ No distress
__ Mild distress
__ Moderate distress - clearly present but
 Manageable
__ Severe distress - difficult to manage

        (MEETS CRITERION)

 _ Extreme distress - unable to manage

          (MEETS CRITERION)

 MEETS CRITERION 4?   YES   NO

Criterion 5
After losing money gambling, the individual often returns another day to get even ("chasing" ones' losses).

C5.1 In the past six months, after you have <u>lost </u>money gambling, have you ever returned on another day to get even?
    Yes   No   (SKIP TO C6)

C5.2 How often have you done this?
_ Rarely (1%-5%)
_ Not often (6% - 20%)
_ Often (21%-50%)

      (MEETS CRITERION)

_ Always/ Most of the time (51 % - 100%)

      (MEETS CRITERION)

<u>MEETS CRITERION 5?   YES   NO</u>

Criterion 6
The individual gambles as a way of escaping from problems or of relieving a dysphoric mood (e.g., feelings of helplessness, guilt, anxiety, depression).

C6.1 In the past six months, have there been occasions when you have gambled <u>specifically</u> to get away from your problems?

    Yes   No   (GO TO C6.3)

C6.2 How often do you gamble as a way of escaping your problems?
_ Occasionally (0-10%)
_ Some of the time (10-40%)
_ Quite a lot (40-60%)
_ Most of the time (60-90%)

      (MEETS CRITERION)

_ All the time (90-100%)

      (MEETS CRITERION)

C6.3 In the past six months, have there been occasions when you have gambled <u>specifically</u> to help you stop feeling low? (for example, feeling helpless, feeling guilty, feeling anxious, feeling depressed)

    Yes   No   (GO TO C7)

C6.4 How often do you gamble as a way of avoiding feeling low?
_ Occasionally (0-10%)
_ Some of the time (10-40%)
_ Quite a lot (40-60%)
_ Most of the time (60-90%)

      (MEETS CRITERION)

_ All the time (90-100%)

      (MEETS CRITERION)

C6.5 Joint criterion:

C6.2 Quite a lot (40-60%) and
C6.4 Quite a lot (40-60%)

      (MEETS CRITERION)

MEETS CRITERION 6?   YES   NO

Criterion 7

The individual lies to family members, therapist, or others to conceal the extent of involvement in gambling.

C7.1 In the past six months, after gambling have you ever lied about how much you bet or lost?
      Yes   No   (GO TO C7.6)

C7.2 In the past six months, how often has this happened?

_ Once (GO TO C7.6)
_ Two or more occasions

C7.3 Was the truth ever revealed?
_ No (GO TO C7.5)
_ Yes

C7.4 When the truth was revealed about how much you bet or lost, what were the consequences? (see Global Functioning Index)?
_ No effect on global functioning
_ Mild - minimal effect on global functioning
_ Moderate - clearly present but manageable
effect on global functioning
_ Severe - difficult to manage effect on global functioning

   (MEETS CRITERION - SKIP TO C8)

_ Extreme - unable to manage effect on global functioning

   (MEETS CRITERION - SKIP TO C8)

C7.5 Had the truth been revealed about how much you had bet or lost what would have been the consequences (see Global Functioning Index)?

_ No effect on global functioning
_ Mild - minimal effect on global functioning
_ Moderate - clearly present but manageable
effect on global functioning
_ Severe - difficult to manage effect on global functioning

   (MEETS CRITERION - SKIP TO C8)

_ Extreme - unable to manage effect on global functioning

   (MEETS CRITERION - SKIP TO C8)

C7.6 In the past six months, have you told others that you were doing something else besides gambling when you were in fact gambling?
   Yes   No   (SKIP TO C8)

C7.7 In the past six months, how often has this happened?
_ Once (SKIP TO C8)
_ Two or more occasions

C7.8 Was the truth ever revealed
_ No (GO TO C7.10)
_Yes

C7.9 What were the consequences when it was revealed that you were actually gambling (see Global Functioning Index)?

_ No effect on global functioning (SKIP TO C8)
_ Mild - minimal effect on global functioning (SKIP TO C8)
_ Moderate - clearly present but manageable effect on global functioning (SKIP TO C8)
_ Severe - difficult to manage effect on global functioning

  (MEETS CRITERION - SKIP TO C8)

_ Extreme - unable to manage effect on global functioning

 (MEETS CRITERION - SKIP TO C8)

C7.10 What would have been the consequences had it been revealed that you were actually gambling (see Global Functioning Index)?
_ No effect on global functioning
_ Mild - minimal effect on global functioning _ Moderate - clearly present but manageable effect on global functioning
_ Severe - difficult to manage effect on global functioning

(MEETS CRITERION)

 _ Extreme - unable to manage effect on global functioning

(MEETS CRITERION)

MEETS CRITERION 7?   YES   NO

Criterion 8
The individual has committed illegal acts such as forgery, fraud, theft or embezzlement to finance gambling.

C8.1 In the past six months, have you done anything illegal to get money to gamble? (e.g.; forgery, theft, embezzlement, fraud, passing bad cheques or taken money from others without their permission). We do not need to know specific details nor will this information be released without your consent.

Yes   No   (SKIP TO C9)

C8.2 In the past six months, how often has this happened?
_ Once (SKIP TO C9)
_ Two or more occasions

C8.3 Were these acts ever discovered?
_ None were discovered (GO TO C8.5)
_ Some were discovered

C 8.4 What happened when they were discovered (see Global Functioning Index)?
_ No effect on global functioning (SKIP TO C9)
_ Mild - minimal effect on global functioning
(SKIP TO C9)
_ Moderate - clearly present but manageable effect on global functioning (SKIP TO C9)
_ Severe - difficult to manage effect on global functioning

(MEETS CRITERION- SKIP TO C9)

_ Extreme - unable to manage effect on global functioning

(MEETS CRITERION- SKIP TO C9)

C8.5 What would have happened if these acts were discovered? (see Global Functioning Index)?
_ No effect on global functioning
_ Mild - minimal effect on global functioning
_ Moderate - clearly present but manageable effect on global functioning
_ Severe - difficult to manage effect on global functioning

(MEETS CRITERION)

_ Extreme - unable to manage effect on global functioning

(MEETS CRITERION)

MEETS CRITERION 8?   YES   NO

Criterion 9

The individual has jeopardized or lost a significant relationship, job, or educational or career opportunity because of gambling.

C9.1 In the past six months, how has gambling affected your employment (see Global Functioning Index)?
_ No effect on employment
_Mild - minimal effect on employment _Moderate - clearly present but manageable
effect on employment
_Severe - difficult to manage effect on
employment

(MEETS CRITERION- SKIP TO C10)

_ Extreme - unable to manage effect on global employment

(MEETS CRITERION- SKIP TO C10)

C9.2 In the past six months, how has gambling affected your relationships (see Global Functioning Index)?
_ No effect on relationships
_ Mild - minimal effect on relationships
_ Moderate - clearly present but manageable
effect on relationships
_ Severe - difficult to manage effect on
relationships

(MEETS CRITERION- SKIP TO C10)
_ Extreme - unable to manage effect on global relationships

(MEETS CRITERION- SKIP TO C10)

C9.3 In the past six months, how has gambling affected your educational opportunities (see Global Functioning Index)?
_ No effect on educational opportunities _ Mild - minimal effect on educational opportunities
_ Moderate - clearly present but manageable
 effect on educational opportunities
_ Severe - difficult to manage effect on educational opportunities

      (MEETS CRITERION)

_ Extreme - unable to manage effect on global
educational opportunities

      (MEETS CRITERION)

MEETS CRITERION 9?   YES   NO

Criterion 10
The individual relies on others to provide money to relieve a desperate financial situation caused by gambling.

C10.1 In the past six months, have you ever relied on others to relieve a desperate financial situation caused by gambling?
Yes   No   (SKIP TO END)

C10.2 In the past six months, how often have you relied on others to relieve a desperate financial situation caused by gambling?
_ Once   (SKIP TO END)
_ Two occasions

C10.3 In the past six months, what would have happened if others had not relieved your financial situation (see Global Functioning Index)?
_ No effect on global functioning
_Mild - minimal effect on global functioning
_ Moderate - clearly present but manageable effect on global functioning
_ Severe - difficult to manage effect on global functioning

(MEETS CRITERION)

_ Extreme - unable to manage effect on global functioning

(MEETS CRITERION)

MEETS CRITERION 10?   YES   NO

Overall Score

Date:

Client Identifier:

Number of DSM criteria met:

Please note: A Pathological Gambling Disorder is indicated by the fulfillment of five or more of the criteria. The essential criterion is not scored

APPENDIX E: MBCT-PG TREATMENT STUDY – ASSESSMENT MEASURES

5-FACET MINDFULNESS QUESTIONNAIRE

Please rate each of the following statements using the scale provided. Write the number in the blank that best describes <u>your own opinion</u> of what is <u>generally true for you</u>.

1	2	3	4	5
never or very rarely true	rarely true	sometimes true	often true	very often or always true

_____ 1. When I'm walking, I deliberately notice the sensations of my body moving.

_____ 2. I'm good at finding words to describe my feelings.

_____ 3. I criticize myself for having irrational or inappropriate emotions.

_____ 4. I perceive my feelings and emotions without having to react to them.

_____ 5. When I do things, my mind wanders off and I'm easily distracted.

_____ 6. When I take a shower or bath, I stay alert to the sensations of water on my body.

_____ 7. I can easily put my beliefs, opinions, and expectations into words.

_____ 8. I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted.

_____ 9. I watch my feelings without getting lost in them.

_____ 10. I tell myself I shouldn't be feeling the way I'm feeling.

_____ 11. I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.

_____ 12. It's hard for me to find the words to describe what I'm thinking.

_____ 13. I am easily distracted.

_____ 14. I believe some of my thoughts are abnormal or bad and I shouldn't think that way.

_____ 15. I pay attention to sensations, such as the wind in my hair or sun on my face.

_____ 16. I have trouble thinking of the right words to express how I feel about things

_____ 17. I make judgments about whether my thoughts are good or bad.

_____ 18. I find it difficult to stay focused on what's happening in the present.

_____ 19. When I have distressing thoughts or images, I "step back" and am aware of the thought or image without getting taken over by it.

_____ 20. I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.

_____ 21. In difficult situations, I can pause without immediately reacting.

_____ 22. When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words.

1	2	3	4	5
never or very rarely true	rarely true	sometimes true	often true	very often or always true

_____ 23. It seems I am "running on automatic" without much awareness of what I'm doing.

_____ 24. When I have distressing thoughts or images, I feel calm soon after.

_____ 25. I tell myself that I shouldn't be thinking the way I'm thinking.

_____ 26. I notice the smells and aromas of things.

_____ 27. Even when I'm feeling terribly upset, I can find a way to put it into words.

_____ 28. I rush through activities without being really attentive to them.

_____ 29. When I have distressing thoughts or images I am able just to notice them without reacting.

_____ 30. I think some of my emotions are bad or inappropriate and I shouldn't feel them.

_____ 31. I notice visual elements in art or nature, such as colours, shapes, textures, or patterns of light and shadow.

_____ 32. My natural tendency is to put my experiences into words.

_____ 33. When I have distressing thoughts or images, I just notice them and let them go.

_____ 34. I do jobs or tasks automatically without being aware of what I'm doing.

_____ 35. When I have distressing thoughts or images, I judge myself as good or bad, depending what the thought/image is about.

_____ 36. I pay attention to how my emotions affect my thoughts and behaviour.

_____ 37. I can usually describe how I feel at the moment in considerable detail.

_____ 38. I find myself doing things without paying attention.

_____ 39. I disapprove of myself when I have irrational ideas.

THE CLIENT SATISFACTION QUESTIONNAIRE (CSQ)

We are interested in your honest opinions, whether they are positive or negative. Please answer all of the questions. We also welcome your comments and suggestions. Thank you very much, we appreciate your help

CIRCLE YOUR ANSWER

1 How would you rate the quality of service you received?

4	3	2	1
Excellent	Good	Fair	Poor

2 Did you get the kind of service you wanted?

1	2	3	4
No, definitely	No, not really	Yes, generally	Yes, definitely

*3 To what extent has our program met your needs?

4	3	2	1
Almost all of my needs have been met	Most of my needs have been met	Only a few of my needs have been	None of my needs have been met

4 If a friend were in need of similar help, would you recommend our program to him/her?

1	2	3	4
No, definitely not	No, I don't think so	Yes, I think so	Yes, definitely

5 How satisfied are you with the amount of help you received?

1	2	3	4
Quite dissatisfied	Indifferent or mildly dissatisfied	Mostly satisfied	Very satisfied

6 Have the services you received helped you to deal more effectively with your problems?

4	3	2	1
Yes, they helped a great deal	Yes, they helped somewhat	No, they really didn't help	No, they seemed to make things worse

*7 In an overall, general sense, how satisfied are you with the service you received?

4	3	2	1
Very satisfied	Mostly satisfied	Indifferent or mildly dissatisfied	Quite dissatisfied

*8 If you were to seek help again, would you come back to our program?

1	2	3	4
No, definitely not	No, I don't think so	Yes, I think so	Yes, definitely

408

WRITE COMMENTS BELOW

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

APPENDIX F: GAMBLERS HELP (SOUTHERN) SURVEY QUESTIONS

Understanding the relationship between thoughts, feelings and gambling behaviour

This questionnaire is designed to ask you about your thoughts, feelings and gambling behaviour. It will take no more than 10 minutes to complete. Please complete this questionnaire in the waiting room, seal it in the envelope provided, and return it to reception.

Demographic Information

1. What is your gender?   ☐ Male   ☐ Female
2. What is your age? _____ years
3. What is your current marital status?   ☐ Married/defacto   ☐ Single   ☐ Separated/Divorced
4. What is your gross annual income? $_____

Gambling and Drinking Behaviour

5. How much money did you spend on gambling in the last fortnight? $_____
6. How often did you gamble in the last fortnight? _____
7. What type(s) of gambling are seeking help for? (e.g. pokies, horse racing, etc.) _____
8. How long have you been undertaking your current episode of counselling? _____ months
9. In the last four weeks, how often have you felt that you might have a problem with gambling?

     (0) Never   (1) Sometimes   (2) Most of the time   (3) Almost always

10. *Over the last four weeks*, please indicate how much you either agree or disagree with the following statements:

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
a. All I wanted to do was to gamble	0	1	2	3	4	5	6
b. I found it difficult to turn down a gamble	0	1	2	3	4	5	6
c. Having a gamble would have made things seem just perfect	0	1	2	3	4	5	6
d. I wanted to gamble so bad that I could almost feel it	0	1	2	3	4	5	6
e. Nothing would have been better than having a gamble	0	1	2	3	4	5	6
f. I craved a gamble	0	1	2	3	4	5	6

11. How often do you have six or more drinks on one occasion? (please circle)

     (0) Never   (1) less than monthly   (2) monthly   (3) weekly   (4) daily or almost daily

Everyday Thoughts and Feelings

12. *In the last four weeks*, about how much of the time did you...

	None of the time	A little of the time	Some of the time	Most of the time	All of the time
a. feel so sad that nothing could cheer you up?	1	2	3	4	5
b. feel nervous?	1	2	3	4	5
c. feel restless or fidgety?	1	2	3	4	5
d. feel hopeless?	1	2	3	4	5
e. feel that everything was an effort?	1	2	3	4	5
f. feel worthless?	1	2	3	4	5

13. Below are a collection of statements about your everyday experience. Please indicate how frequently or infrequently you currently have each experience. Please answer according to what really reflects your experience rather than what you think your experience should be.

	Almost Always	Very Frequently	Somewhat Frequently	Somewhat Infrequently	Very Infrequently	Almost Never
a. I could be experiencing some emotion and not be conscious of it until some time later	1	2	3	4	5	6
b. I break or spill things because of carelessness, not paying attention, or thinking of something else	1	2	3	4	5	6
c. I find it difficult to stay focused on what's happening in the present	1	2	3	4	5	6
d. I tend to walk quickly to get where I'm going without paying attention to what I experience along the way	1	2	3	4	5	6
e. I tend not to notice feelings of physical tension or discomfort until they really grab my attention	1	2	3	4	5	6
f. I forget a person's name almost as soon as I've been told it for the first time	1	2	3	4	5	6

13 (continued). Below are a collection of statements about your everyday experience. Please indicate how frequently or infrequently you currently have each experience. Please answer according to what really reflects your experience rather than what you think your experience should be.

		Almost Always	Very Frequently	Somewhat Frequently	Somewhat Infrequently	Very Infrequently	Almost Never
g.	It seems I am "running on automatic," without much awareness of what I'm doing	1	2	3	4	5	6
h.	I rush through activities without being really attentive to them	1	2	3	4	5	6
i.	I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there	1	2	3	4	5	6
j.	I do jobs or tasks automatically, without being aware of what I'm doing	1	2	3	4	5	6
k.	I find myself listening to someone with one ear, doing something else at the same time	1	2	3	4	5	6
l.	I drive places on "automatic pilot" and then wonder why I went there	1	2	3	4	5	6
m.	I find myself preoccupied with the future or the past	1	2	3	4	5	6
n.	I find myself doing things without paying attention	1	2	3	4	5	6
o.	I snack without being aware that I'm eating	1	2	3	4	5	6

14. Please indicate your level of agreement or disagreement with each of the statements below.

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a.	My attention is often focused on aspects of myself I wish I'd stop thinking about	1	2	3	4	5
b.	I always seem to be "re-hashing" in my mind recent things I've said or done	1	2	3	4	5
c.	Sometimes it is hard for me to shut off thoughts about myself	1	2	3	4	5
d.	Long after an argument or disagreement is over with, my thoughts keep going back to what happened	1	2	3	4	5
e.	I tend to "ruminate" or dwell over things that happen to me for a really long time afterward	1	2	3	4	5
f.	I don't waste time re-thinking things that are over and done with	1	2	3	4	5
g.	Often I'm playing back over in my mind how I acted in a past situation	1	2	3	4	5
h.	I often find myself re-evaluating something I've done	1	2	3	4	5
i.	I never ruminate or dwell on myself for very long	1	2	3	4	5
j.	It is easy for me to put unwanted thoughts out of my mind	1	2	3	4	5
k.	I often reflect on episodes in my life that I should no longer concern myself with	1	2	3	4	5
l.	I spend a great deal of time thinking back over my embarrassing or disappointing moments	1	2	3	4	5
m.	I try to think good thoughts now matter how badly I feel	1	2	3	4	5
n.	Although I am sometimes sad, I have a mostly optimistic outlook	1	2	3	4	5
o.	When I am upset I realize that the "good things in life" are illusions	1	2	3	4	5
p.	When I become upset I remind myself of all the pleasures in life	1	2	3	4	5
q.	Although I am sometimes happy, I have a mostly pessimistic outlook	1	2	3	4	5
r.	No matter how badly I feel, I try to think about pleasant things	1	2	3	4	5
s.	There are things I prefer not to think about	1	2	3	4	5
t.	Sometimes I wonder why I have the thoughts I do	1	2	3	4	5
u.	I have thoughts that I cannot stop	1	2	3	4	5
v.	There are images that come to mind that I cannot erase	1	2	3	4	5
w.	My thoughts frequently return to one idea	1	2	3	4	5
x.	I wish I could stop thinking of certain things	1	2	3	4	5
y.	Sometimes my mind races so fast I wish I could stop it	1	2	3	4	5
z.	I always try to put problems out of mind	1	2	3	4	5
aa.	There are thoughts that keep jumping into my head	1	2	3	4	5
bb.	There are things that I try not to think about	1	2	3	4	5
cc.	Sometimes I really wish I could stop thinking	1	2	3	4	5
dd.	I often do things to distract myself from my thoughts	1	2	3	4	5
ee.	I have thoughts that I try to avoid	1	2	3	4	5
ff.	There are many thoughts that I have that I don't tell anyone	1	2	3	4	5
gg.	Sometimes I stay busy just to keep thoughts from intruding on my mind	1	2	3	4	5

Thank you for completing this questionnaire. Please seal in the envelope provided and return to reception.

Scoring Key – Gamblers Help (Southern) Survey

- Gambling Urges Scale (GUS; Raylu & Oei, 2004). Question 10 – Total score is the sum of Item *a* to Item *f*, inclusive.

- Kessler 6 (K6; Kessler et al., 2002). Question 12 - Total score is the sum of Item *a* to Item *f*, inclusive.

- Mindfulness Awareness Assessment Scale (MAAS; Brown & Ryan, 2003). Question 13 – Total score is the mean of the sum of Item *a* to Item *o*, inclusive.

- The White Bear Suppression Inventory (WBSI; Wegner & Zanakos, 1994). Question 14 – Item *f*, Item *i* and Item *j* are reverse scored. Scores for Item *a* to Item *l*, inclusive, are then totalled.

- The Repair subscale of the Trait Meta-Mood Scale (TMMS; Salovey, Mayer, Goldman, Turvey & Palfai, 1995). Question 14 – Items *o* and Items *q* are reverse scored. Scores for Item *m* to Item *r*, inclusive, are then totalled.

- The White Bear Suppression Inventory (WBSI; Wegner & Zanakos, 1994). Question 14 –Total score is the sum of Item *s* to Item *gg*, inclusive.

APPENDIX G: GAMBLERS HELP (CITY) SURVEY QUESTIONS

Cognitive and Affective Mindfulness Scale-Revised

People have a variety of ways of relating to their thoughts and feelings. For each of the items below, rate how much each of these ways applies to *you*.	Rarely/ Not at all	Some- times	Often	Almost Always
a. It is easy for me to concentrate on what I am doing.	1	2	3	4
b. I am preoccupied by the future.	1	2	3	4
c. I can tolerate emotional pain.	1	2	3	4
d. I can accept things I cannot change.	1	2	3	4
e. I can usually describe how I feel at the moment in considerable detail.	1	2	3	4
f. I am easily distracted.	1	2	3	4
g. I am preoccupied by the past.	1	2	3	4
h. It's easy for me to keep track of my thoughts and feelings.	1	2	3	4
i. I try to notice my thoughts without judging them.	1	2	3	4
j. I am able to accept the thoughts and feelings I have.	1	2	3	4
k. I am able to focus on the present moment.	1	2	3	4
l. I am able to pay close attention to one thing for a long period of time.	1	2	3	4

The Distress-Tolerance Scale

Think of times that you feel distressed or upset and rate each of the following statements.	Strongly agree	Mildly agree	Agree and disagree equally	Mildly disagree	Strongly disagree
a. Feeling distressed or upset is unbearable to me.	1	2	3	4	5

b. When I feel distressed or upset, all I can think about is how bad I feel.

c. I can't handle feeling distressed or upset.

d. My feelings of distress are so intense that they completely take over.

e. There's nothing worse than feeling distressed or upset.

f. I'll do anything to avoid feeling distressed or upset.

h. I'll do anything to stop feeling distressed or upset.

i. When I feel distressed or upset, I must do something about it immediately.

j. When I feel distressed or upset, I cannot help but concentrate on how bad the distress actually feels.

Note: item *g* was included in the Gamblers Help (City) survey. Inclusion of this item was error as it forms part of the DTS-Appraisal sub-scale. Other items of this sub-scale were excluded from the survey.

Scoring Key – Gamblers Help (City) Survey

- Kessler 6 (K6; Kessler et al., 2002) is a six item questionnaire about the level of nervousness, agitation, psychological fatigue and depression, which clients may have experienced over the previous four weeks. Items are rated on a 5-point scale ranging from (1) *None of the time* to (5) *All of the time*. Total score is the sum of scores for each item. Refer Question 12 of the Gamblers Help (Southern) survey for an example of this questionnaire.

- The Distress-Tolerance Scale (DTS; Simons & Gaher, 2005) is a 15 item questionnaire. The DTS encompasses four types of emotional distress (perceived ability to tolerate emotional distress, subjective appraisal of distress, attention being absorbed by negative emotions, and regulation efforts to alleviate distress) (Simons & Gaher, 2005). Items are rated on a 5-point scale ranging from (1) *Strongly agree* to (5) *Strongly disagree*. High scores represent high distress tolerance. The Tolerance sub-scale is the sum of items a, c, and e. The Absorption sub-scale is the sum of items b, d, and j. The Regulation sub-scale is the sum of items f, h, and i. The Appraisal sub-scale was not included in the Gamblers Help (City) survey.

- Cognitive and Affective Mindfulness Scale-Revised (CAMS-R; Feldman, Hayes, Kumar, Greeson & Laurenceau, 2007). The CAMS-R is a 12-item, single factor measure of mindfulness. Items are arranged on a four-point Likert scale (1) *rarely/not at all* to (4) *almost always*. Items b, f, and g are reverse scored. Scores for each item are then summed for a total score.