An Investigation of Dropout from Face-to-Face and Internet-based Psychological Treatment for Pathological Gamblers

Katherine Maree Melville, BA Psychology (honours),

School of Psychology, Griffith Health, Griffith University, Mt Gravatt Campus.

Submitted in fulfillment of the requirements of the degree of Doctor of Philosophy in Clinical Psychology.

(September, 2009)

Abstract

This thesis conducted an in-depth analysis of dropout within two psychological treatment programs for pathological gambling: face-to-face and internet-based treatment. The extent of dropout was examined at two different points throughout treatment: pre-treatment dropout and dropout during treatment. One hundred and fifty seven pathological gamblers registered to participate in the face-to-face treatment program. A high rate of dropout (42%) was identified with the majority of dropout occurring during treatment. A high rate of dropout was also found within a sample of 223 pathological gamblers who registered for the internet-based treatment program. Fifty-nine percent of participants dropped out from the internet-based program with the majority of dropout occurring during treatment. The variables associated with dropout were also assessed. Within face-to-face treatment, dropout at any time from registration to completing treatment was associated with using cognitive coping strategies. Dropping out prior to commencing treatment was associated with spending a greater amount of money per day on gambling and using cognitive coping strategies; whilst dropout from treatment sessions was associated with using emotion-focused coping strategies. Within internet-based treatment, dropout at any time was associated with increased impulsivity, decreased frequency of internet use and a negative attitude towards reading. Dropout prior to commencing treatment was associated with increased impulsivity, younger age, a negative attitude towards reading online and not previously seeking professional help for gambling. Participants who dropped out from treatment sessions used the computer or internet less often than completers and were less likely than completers to have noticed a positive change in their gambling behaviour prior to commencing session two.

Qualitative information identified that pathological gamblers had many and varied reasons for dropping out of the face-to-face and internet-based treatment programs including logistical, treatment and psychological difficulties This thesis also evaluated the success of an intervention designed to encourage pathological gamblers who dropped out of internet-based treatment to return to treatment. A return to treatment intervention was developed that addressed a range of variables that may be associated with dropout from the internet-based treatment program. Pathological gamblers who received the intervention were significantly more likely to return to the internet-based treatment after dropping out than those who did not receive the intervention. Overall, these results not only increase our understanding about which pathological gamblers are at greatest risk for dropping out of treatment, but provide evidence that distinct variables are associated with dropout at different stages of treatment and within different forms of psychological treatment for pathological gambling. Furthermore, the findings provide valuable information about intervening to reduce the extent of dropout from internet-based treatment for pathological gambling.

Declaration

This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

_____

Katherine Melville

Date:

Papers Arising from the Thesis

Melville, K. M., Casey, L. M. & Kavanagh, D. J. (2007). Psychological treatment dropout among pathological gamblers. *Clinical Psychology Review, 27*(8), 944-958.

Melville, K. M., Casey, L. M. & Kavanagh, D. J. (in press). Dropout from internet-based treatment for psychological disorders. *British Journal of Clinical Psychology.*

Acknowledgements

There are a number of people who I would like to thank for their assistance in the production of this thesis. First and foremost, I would like to express my deeply felt appreciation for my primary supervisor Dr. Leanne Casey. Over the past five years you have given me much more than research supervision. Thank you for your guidance, patience and compassion. This thesis would not have been possible without you. I am also thankful to my associate supervisor Professor David Kavanagh. Thank you for your encouragement and support, and also for your very useful feedback on my thesis. For financial assistance with this project I would like to thank the Griffith University Psychological Health Research Centre for a completion scholarship that allowed me to focus more directly on my thesis in the last six months of my candidature.

There are numerous colleagues and friends both within and external to the university who I would like to thank for their encouragement, support and friendship over the last five years. Thank you for reminding me that I am not alone and that there is much more to life than a thesis. I would also like to thank my family: my parents for their love and encouragement, and also for financially supporting me well into adulthood; my siblings for their love, support and for allowing me to "hog" the family computer during the early PhD years; and my wonderful partner Jason for making me laugh, for being so proud of me and for your unconditional love and support.

Finally, and most importantly, I would like to thank the individuals who participated in the current studies. It was only through their willingness to engage in the programs that this thesis could be prepared.

Table of Contents

Appendix

Appendix 3.1 Brief Cope

Appendix 3.2 Gambling Urge Scale

Appendix 3.3 Gambling Refusal Self Efficacy Scale

Appendix 3.4 Gambling Related Cognitions Scale

Appendix 3.5 Treatment Expectations Questionnaire

Appendix 3.6 Working Alliance Inventory

Appendix 3.7 Participant Information and Consent Form (Study I)

Appendix 3.8 Reminder Letter (Study I)

Appendix 5.1 South Oaks Gambling Screen

Appendix 5.2 Barrett Impulsiveness Scale

Appendix 5.3 Treatment Motivation Questionnaire

Appendix 5.4 The Rhody Secondary Reading Assessment Scale

Appendix 5.5 Reasons for Discontinuing Treatment Checklist

Appendix 5.6 Gambling Symptom Assessment Scale

Appendix 5.7 Participant Information and Consent Form (Study II)

Appendix 5.8 Reminder Letter (Study II)

Appendix 5.9 Treatment Reminder Email (Study II)

Appendix 5.10 Dropout Email without Invitation to Access Dropout
 Intervention (Studies II and III)

Appendix 7.1 Dropout Email with Invitation to Access Dropout
 Intervention (Study III)

List of Tables

List of Figures

CHAPTER 1

THE NATURE OF PATHOLOGICAL GAMBLING

1.1 Introduction

Pathological gambling is a significant public health problem involving a failure to resist impulses to gamble, which often results in negative consequences to the gambler and their families (Blaszczynski, Huynh, Dumlao, & Farrell, 1998). Results from a growing number of treatment studies indicate that a majority of individuals who complete psychological treatment find considerable symptom relief (Pallesen, Mitsen, Kvale, Johnson, & Molde, 2005). However, despite the success of pathological gambling treatment programs, a problem for treatment providers is the difficulty of retaining pathological gamblers in treatment. Researchers and clinicians have observed that the decision to remain in treatment for pathological gambling is not always made with ease or with a high level of commitment (Sylvain, Ladouceur, & Boisvert, 1997). It is common for individuals to repeatedly re-schedule sessions, cancel assessment, fail to attend sessions and subsequently drop out of treatment (Toneatto, 2005). This ambivalence towards treatment presents a considerable challenge to clinicians treating pathological gamblers and is a threat to the utility of research exploring the outcome of pathological gambling treatment programs (Toneatto, 2005; Walker, 2005).

Dropout is a universal phenomenon in the psychotherapy literature (Ladouceur, Gosselin, Laberge, & Blaszczynski, 2001; Persons, Burns, & Perloff, 1988; Samstag, Batchelder, Muran, Safran, & Winston, 1998). Although many factors may potentially relate to dropout, across a range of psychological disorders different attempts have been

made to increase the accessibility of psychological treatment. Some researchers have developed self-help approaches such as bibliotherapy to assist people with psychological problems who are unwilling or unable to access face-to-face treatment (Burns & Hoeksema, 1992; Ghosh & Marks, 1987). One of the more recent approaches to increasing the accessibility of psychological treatment is Internet-based psychological treatment. Internet-based psychological treatment refers to web-based programs administered by structured web pages to present information and involves minimal therapist contact (Strom, 2003). Although Internet-based psychological treatment has been shown to be effective for a variety of psychological disorders including pathological gambling (Carlbring & Smit, 2008; Klein & Richards, 2001; Strom, Pettersson, & Andersson, 2004), studies have shown that high dropout rates are also a problem for these treatment programs (Carlbring, Westling, Ljungstrand, Ekselius, & Andersson, 2001; Christensen & Griffiths, 2002; Lange, van de Ven, Schrieken, & Emmelkamp, 2001).

Examining dropout from treatment for specific psychological disorders is an essential step in advancing our understanding of this problem that has important implications for both research and treatment programs. Furthermore, exploring dropout from different treatment modalities should provide the means for understanding and intervening with dropout from different approaches to providing psychological intervention. The aim of this thesis is to present an in-depth analysis of the extent of dropout and variables associated with dropout from two psychological treatment programs for pathological gamblers: face-to-face cognitive behavioural therapy and Internet-based treatment with minimal therapist contact. Exploring the variables that put individuals at risk for dropping out of pathological gambling treatment programs should

provide both the means for identifying clients at risk of dropping out and establish the basis for developing interventions to reduce dropout. This thesis reports on the development and evaluation of an intervention designed to reduce dropout from Internet-based treatment for pathological gamblers.

1.2 Pathological Gambling

In order to effectively study dropout from treatment for pathological gamblers, it is initially important to understand what constitutes pathological gambling. Broadly, gambling is defined as risking something of value on the outcome of an event when the probability of winning or losing is less than certain and determined by chance (Korn & Shaffer, 1999). Gambling can include a range of diverse activities that take place in an array of different settings. For example, gambling may involve betting on activities such as: lotteries, casino games (e.g., black- jack, roulette), horse racing, sports, bingo games, electronic gambling devices or scratch raffle tickets (Smeaton & Griffiths, 2004). The organisations and settings that provide these services typically include: casinos, clubs, hotels, sports betting enterprises and lottery organisations. Many individuals are also beginning to gamble on games and activities based on the Internet (i.e., Internet gambling) (Smeaton & Griffiths, 2004).

Gambling behaviour can vary from one individual to another in terms of the intensity and duration of the behaviour, and the consequences associated with the behaviour (Productivity Commission, 1999). The Productivity Commission (1999) observed that gambling behaviour occurs on a continuum ranging from social gambling to pathological gambling. For social gamblers, gambling is a recreational pursuit that brings either no problems or only a small number of minor, transient problems. However

for pathological gamblers, gambling becomes a significant concern. The American Psychiatric Association, in the Diagnostic and Statistical Manual of Mental Disorders 4th edition text revision (DSM-IV-TR), classifies pathological gambling as occurring when attempts to win money by investing on the outcome of uncertain events are persistent and maladaptive (American Psychiatric Association, 2000). The essential features of pathological gambling outlined by the American Psychiatric Association (2000) are (1) a continuous or periodic loss of control over gambling; (2) a progression, in gambling frequency and amounts wagered, in the preoccupation with gambling and in obtaining monies with which to gamble; and (3) a continuation of gambling involvement despite adverse consequences.

The DSM-IV-TR specifies ten clinical criteria for determining pathological gambling. The criteria cover many characteristics of the problem but have a greater emphasis on psychological characteristics such as preoccupation, development of tolerance, irritability, and gambling as an escape. The ten criteria are as follows:

(1) preoccupied with gambling

(2) needs to gamble with increasing amounts of money in order to achieve the desired excitement

(3) 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

(6) after losing money gambling, often returns another day to get even

(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, educational or career

opportunity because of gambling

(10) relies on others to provide money to relieve a desperate financial situation

caused by gambling.

Five of the ten criteria must be present for a diagnosis of pathological gambling to be

made. Pathological gambling has also been called compulsive gambling or disordered

gambling. Similarly, although not a formal diagnostic category, problem gambling is a

term often used to describe a person has developed some of the occupational, financial or

family problems associated with gambling but has not met at least five of the DSM-IV-

TR criteria (Blaszczynski, 2005; Productivity Commission, 1999). The categorisation of

individuals as problem gamblers is often used within studies assessing the prevalence of

gambling problems.

In addition to American Psychiatric Association diagnostic criteria, there are a

number of screening and diagnostic criteria used to assess problem or pathological

gambling. The most widely used measure is the South Oaks Gambling Screen (SOGS)

(Lesieur & Blume, 1987). The SOGS is a 20-item questionnaire which is based on DSM

IV criteria to screen for pathological and problem gambling (Lesieur & Blume, 1987).

This measure poses questions about a gambler's behaviour, such as whether they 'chase'

losses, have problems controlling their gambling, gamble more than intended, feel guilty

about gambling and believe that they have a problem. The SOGS assesses gambling

behaviour on a continuum ranging from: no problem with gambling, some problem with

gambling, and probably pathological gambling. Another measure of gambling behaviour is the Canadian Problem Gambling Index (CPGI) (Smith & Wynne, 2002). The CPGI is a 31-item self-report measure that assesses involvement in various forms of gambling, problem gambling, correlates of problem gambling and demographic variables (Smith & Wynne, 2002). The CPGI assess gambling behaviour as non-problem gambling, low risk, moderate risk, problem gambling. The DSM-IV, SOGS and CPGI have been used widely in research assessing the extent of problem /pathological gambling among the general public.

1.2.1 The Extent of Pathological Gambling

A significant number of individuals experience substantial problems as a result of their gambling behaviour. The Productivity Commission's (1999) study with 10 6000 adults found that approximately 300 000 (2.07%) Australian adults had significant problems with their gambling, and a further 130 000 (0.33%) experienced severe problems. The Commission's assessment of the prevalence of problem gambling used the SOGS supported by self-assessment questions and other indicators. These findings are consistent with a number of regional studies of gambling behaviour in Australia. For instance, a study conducted in South Australia using a random sample of 6045 adults, estimated that 1.9 per cent of adult South Australians were problem gamblers (Centre for Population Studies in Epidemiology, 2001). A further study surveyed 5445 adults in the Australian Capital Territory (Australian Institute for Gambling Research, 2001). The results indicated that 1.9% or 5297 adults living in the Australian Capital Territory were experiencing gambling problems. Assessment of the prevalence of problem gambling in both studies used the same methodology as the Productivity Commission (i.e., SOGS

supported by self-assessment questions and other indicators). A more recent survey

conducted by the Queensland Government identified that 0.47% of Queenslanders have a

sufficient problem with their gambling that they face financial difficulties, jeopardise

relationships, and risk their jobs (Queensland Government, 2008). A further 1.80% of

Queenslanders were identified as at risk of facing financial difficulties, jeopardising

relationships, and risking their jobs as a result of gambling behaviour.

Problem gambling is also experienced by a considerable number of individuals in

other parts of world. For example, in Canada the 2003 Nova Scotia Prevalence study

documented that about 6.9% or about 50 000 adults in Nova Scotia are at some level of

risk for problem gambling. Approximately 0.8% of adults were identified as

experiencing severe gambling problems. A more recent study conducted with 34 770

individuals across several Canadian provinces, reported that the 12-month prevalence of

severe problem gambling in Canada was 2.0% (Cox, Yu, Afifi, & Ladouceur, 2005).

Assessment of prevalence in both studies used the CPGI to assess gambling problems.

Within the United States, the National Opinion Research Centre's (NORC) gambling

impact and behaviour study (1999) explored the prevalence of problem gambling in a

sample of 2947 individuals. A structured interview, the DSM Screen for Gambling

Problems was developed to determine the prevalence of problem gambling in this study.

The screen classified respondents as non-gamblers, low-risk (gamblers with no adverse

effects), at-risk (gamblers meeting one or two of the DSM criteria), problem (gamblers

meeting three or four criteria), and pathological (gamblers meeting five or more criteria).

The results indicated that about 7.9% of individuals were at risk of developing problems

with their gambling behaviour; a further 1.3% were identified as problem gamblers, and

0.8% as pathological gamblers. In Great Britain, a random survey of the 5453

individuals in England, Wales and Scotland, documented problem gambling prevalence

rates of 0.8% according to the SOGS. Overall, these findings suggest that globally a

significant number of individuals experience problems as a result of gambling behaviour.

1.2.2 The Impact of Pathological Gambling

Pathological gambling is associated with a range of negative consequences that

are not only confined to the gambler themselves, but also impact on family members,

friends, employers and other unrelated people. Individuals with pathological gambling

have been shown to exhibit a greater amount of psychological difficulties such as

increased anxiety disorders, mood disorders, feelings of guilt, thoughts of suicide or

attempted suicide, lower quality of life, substance use, personality disorders and attention

deficit disorders (Crockford & el Guebaly, 1998; Grant & Kim, 2005). Family and

marital problems such as domestic violence and divorce are also a common result of

pathological gambling (Lorenz & Shuttlesworth, 1983; Productivity Commission, 1999).

Spouses of pathological gamblers report higher rates of emotional distress with feelings

of anger, depression, and helplessness as well as higher levels of physical symptoms such

as severe headaches, nausea, ulcers, bowel problems and breathing difficulties, and are

major users of psychological help services (Lorenz & Shuttlesworth, 1983; Lorenz &

Yaffee, 1988). Children of pathological gamblers are more likely to experience

psychological difficulties such as feelings of anger, hurt, loneliness, guilt, abandonment,

rejection, anxiety, depression, insecurity, inadequacy and inferiority, and are more at risk

of encountering physical violence from their parents than children of parents without

gambling problems (Jacobs, Marston, Singer, Widaman, & et al., 1989; Leiseur &

Rothschild, 1989). Financial, employment and legal problems are also common among pathological gamblers (Lorenz & Shuttlesworth, 1983). Preoccupation with gambling, absenteeism due to gambling during work hours, gambling induced physical illnesses, poor concentration and attention due to gambling induced psychological difficulties, theft to finance gambling debts and co morbid substance abuse all act to reduce an individual's efficiency and productivity in the workplace (Productivity Commission, 1999). In severe cases, these may result in court cases, police charges and prison sentences.

1.2.3 Psychological Treatment for Pathological Gambling

In response to the widespread prevalence and negative impacts of pathological gambling, a range of psychological treatment approaches have been developed. Psychological treatments for pathological gamblers include psychodynamic therapy (Victor & Krug, 1967), couples or family based treatment (Heineman, 1994), supportive group therapy (Stewart & Brown, 1988), aversion therapy (Anderson & Brown, 1984), self-help treatments (Hodgins, Currie, & el Guebaly, 2001), motivational treatments (Hodgins, Currie, el-Guebaly, & Peden, 2004; Petry, Weinstock, Ledgerwood, & Morasco, 2008), single session consultations (Gavan & Slowo, 1997), online counselling (McCorriston & Laidlaw, 2000), behavioural therapy (McConaghy, 1991; McConaghy, Armstrong, Blaszczynski, & Allcock, 1988), cognitive therapy (Gaboury & Ladouceur, 1990) and cognitive- behavioural therapy (Echeburua, Baez, & Fernandez-Montalvo, 1996; Raylu & Oei, 2002a).

Currently behavioural, cognitive and cognitive- behavioural therapy have received the greatest amount of research attention and appear to be the most effective approaches for treating pathological gamblers (Raylu & Oei, 2002b). Cognitive

treatments focus on challenging and correcting the client's thinking errors by for example, exploring and understanding the illusion of control over chance events. Behavioural therapy considers pathological gambling a learned behaviour and relies on techniques such as systemic exposure or desensitisation and skill development (e.g., coping and communication skills). Cognitive- behavioural therapy combines elements from both the behavioural and cognitive treatment approaches, and therefore assumes that pathological gambling is precipitated and maintained by a set of cognitive distortions and problematic reinforcement schedules. During cognitive- behaviour therapy, the therapist and client work together to identify specific patterns of thinking and behaviour that underpin the clients gambling difficulties. Treatment continues between sessions with homework assignments intended to monitor and challenge specific thinking patterns and also to implement behavioural changes.

Two recent reviews of outpatient psychological treatments for pathological gambling concluded that cognitive- behavioural interventions show considerable promise for the treatment of pathological gambling (Pallesen, et al., 2005; Toneatto & Millar, 2004). Furthermore, a recent meta-analysis of psychological treatments for problem gambling showed a large effect size of favourable outcomes (2.01 at post-treatment) (Pallesen, et al., 2005). The efficacy of cognitive- behavioural therapy has also been demonstrated in several studies (Ladouceur & Sylvain, 1999; Ladouceur, et al., 2003). For instance, Ladouceur and Sylvain (1999) examined the efficacy of a cognitive-behavioural program in a sample of pathological gamblers. Pathological gamblers were randomly assigned to a cognitive- behavioural program consisting of cognitive correction of erroneous perceptions about gambling, problem-solving training, social-skills training

and relapse prevention, or a wait-list control condition. Results indicated significant changes in the treatment group on all outcome measures, including reduction in gambling severity, frequency of gambling and desire to gamble, as well as an increase in perception of control and perceived self-efficacy. Treatment gains were maintained at 6- and 12 month follow-ups. A further study conducted by Ladouceur, Sylvain, Boutin, Lachance, Doucet and Leblond (2003) explored the effectiveness of group-based cognitive treatment for pathological gambling. Post-treatment results showed that 88% of the treated participants no longer met the DSM-IV-TR criteria for pathological gambling compared with only 20% in the control group. Again, treatment gains were maintained at 6-, 12- and 24-month follow-ups.

Research has also shown the efficacy of cognitive- behavioural treatment that is delivered via the Internet. For instance, Carlbring and Smit (2008) examined the efficacy of an Internet-based cognitive- behavioural program in a sample of 66 pathological gamblers. Pathological gamblers were randomly assigned to an Internet-based cognitive-behavioural program within minimal therapist contact and weekly support calls, or a waitlist control condition. Results indicated significant changes in the treatment group on outcome measures assessing pathological gambling, anxiety, depression and quality of life. Follow-ups carried out in the treatment group at 6, 18 and 36 months post-treatment indicated that the treatment effects were sustained.

Despite such promising results, psychological treatment programs for pathological gambling have been hampered by high dropout rates (Nathan, 2005; Toneatto, 2005; Walker, 2005). Unfortunately, little research has been directed towards understanding the extent of dropout from pathological gambling treatment programs, or

identifying key variables that may predict pathological gamblers dropping out. A better understanding of the variables that place pathological gamblers at risk of dropping out is vital for developing new treatments as well as modifying existing treatments. The following chapter reviews the available literature exploring dropout from face-to-face psychological treatment programs for pathological gamblers.

CHAPTER 2

LITERATURE REVIEW I: DROPOUT FROM FACE-TO-FACE

PSYCHOLOGICAL TREATMENT FOR PATHOLOGICAL GAMBLING

2.1 Overview of Chapter Two

The purpose of this chapter is to present an in-depth analysis of literature identifying the extent of dropout from face-to-face psychological treatment programs for pathological gamblers, and literature exploring the variables associated with dropout from such programs.

2.2 Defining Dropout among Pathological Gamblers

Dropout among pathological gamblers is broadly defined by Davis and colleagues (Davis, Hooke and Page, 2006) as leaving treatment before the completion of a treatment program. Similarly, the Consolidated Standards of Reporting Trials (CONSORT) guidelines suggest that dropout is defined as leaving treatment following randomisation to a treatment condition (Altman, 1996). However, as discussed by Eysenbach (2005), dropout from a research program may occur at one of a number of points throughout treatment. For example, a client may drop out after providing informed consent and prior to randomisation to a treatment condition (pre-treatment dropout), prior to completion of treatment phase (treatment phase dropout) or prior to completing follow-up assessments (follow-up dropout). Comparisons of pre-treatment dropout rates can however prove difficult if consent is given at different stages in different studies (e.g. pre- vs. post-baseline assessment). Pre-treatment dropout also needs to be distinguished from

withholding consent to assessment, treatment or associated research; or a failure to engage following initial interest in a treatment program. Exploring dropout at different stages of longitudinal treatment programs is critical in enhancing understanding of the specific "risk" points at which clients are most likely to be lost. Thus in any longitudinal treatment program, attempts should be made to distinguish three types of dropout: pre-treatment dropout, treatment phase dropout and follow-up dropout. Throughout this thesis, pre-treatment dropout will refer to withdrawal from participation subsequent to clients completing a recruitment, selection and informed consent process and prior to randomisation to a treatment condition.

Researchers vary considerably in their use of the terms to describe dropout. "Premature termination", "attrition" and "dropout" are used interchangeably in the literature to indicate clients who terminate before the completion of treatment. Moreover, researchers have used different definitions to define dropout. Two general approaches to defining dropout from pathological gambling treatment programs have been adopted. The less common approach relies on the therapist's judgement of appropriate termination. In this case, dropout is defined as client-initiated termination occurring without discussion with the therapist, or when the therapist believes the client is in need of further therapy (Sylvain, et al., 1997). This approach is generally applied when the treatment program is of an open or unspecified duration. The second, more common approach classifies dropout based on attendance at a specific number of sessions. For example, many researchers have defined dropout as termination prior to completing a pre-determined treatment program consisting of a specified number of sessions (Milton, Crino, Hunt, & Prosser, 2002; Robson & Edwards, 2003; Robson, Edwards, Smith, &

Colman, 2002). Evaluations of dropout rates would be greatly assisted by a more

consistent approach to the operationalisation of dropout.

2.3 Extent of Dropout from Pathological Gambling Treatment Programs

2.3.1 Data Selection, Study Selection and Data Extraction

A comprehensive literature search was conducted on PsycINFO and PUBMED

databases for the period 1960 to April 2009. Key search terms were: dropouts, drop out,

dropout, dropping out, attrition, premature termination, termination, non-compliance,

treatment, intervention and program each in combination with the key words gambler,

gamblers, or gambling. Articles were also retrieved from reference lists of articles that

were identified through database searches. Children or adolescents, incarcerated

individuals and inpatients psychiatric patients with gambling difficulties were excluded

from this review, since their problems and management are likely to be different from

those of adult gamblers in the general community. Studies involving non-psychological

treatment (e.g. drug therapy) were also excluded as being beyond the scope of this

review. Given the difficulty in assessing dropout from one-session treatment

interventions, studies involving these treatment programs were also excluded. Studies

were not excluded because of restriction to a type of gambling or to outpatient treatment,

design, sample size or type of analysis.

2.3.2 Results

Of the 2943 studies returned through database searches, 14 studies that reported

on the extent of dropout from psychological treatment programs for pathological

gamblers were identified. Year of publication ranged from 1988 to 2007. Studies came

from USA (1 study), Australia (2), Canada (6), Spain (3), and UK (1). Sample sizes

ranged from 21 to 232.

Dropout from pathological gambling treatment programs ranged from 14% to

50%. The median percentage of dropout was 26%, and the weighted average (correcting

for sample size) was 31%. Cognitive and behavioural therapies (CBTs) have received the

greatest amount of research attention, and appear to be the most effective approaches for

treating pathological gamblers (Raylu & Oei, 2002b). Twelve studies included in the

review reported dropout from such programs (Dowling, Smith, & Thomas, 2006;

Echeburua, Baez, & Montalvo, 1996; Echeburua, Montalvo, & Baez, 2001; Hodgins, et

al., 2004; Hodgins, et al., 2001; Jimenez-Murcia, et al., 2007; Ladouceur, et al., 2003;

Ladouceur, et al., 2001; Leblond, Ladouceur, & Blaszczynski, 2003; Milton, et al., 2002;

Robson, et al., 2002; Sylvain, et al., 1997; Wulfert, Blanchard, Freidenberg, & Martell,

2006). The extent of dropout within these studies ranged from 14% to 50%, with a

median dropout of 38% and the weighted average dropout of 32%. Researchers

exploring dropout from other types of treatment programs have also reported high

dropout rates. One study reported dropout from a brief self-help program (Hodgins, et

al., 2001) and one reported dropout from Gamblers Anonymous (Stewart & Brown,

1988). The extent of dropout within both of these studies was 22%. A summary of all

studies is presented in Table 2.1. The table also notes the stages of treatment or follow-up

over which dropout was measured.

Table 2.1. Extent of pre-treatment dropout, treatment dropout and follow-up dropout from pathological gambling treatment

Study (Country)	Clients and treatment	Extent of Dropout		
		Pre-treatment dropout	**Treatment phase dropout**	**Follow-up dropout**
Dowling, Smith & Thomas, 2007. (Australia)	81 pathological gamblers who enrolled in 12-week cognitive- behavioural treatment program.	31% (n=25)	9% (n=7)	
Echeburua, Baez & Fernandez-Montalvo, 1996. (Spain)	64 pathological gamblers enrolled in 6-week outpatient individual or group CBT	22% (n=14) ← spanning →		
Echeburua, Fernandez-Montalvo, & Baez, 2001. (Spain)	69 pathological gamblers attending a 6 week behavioural treatment program		4% (n=10)	
Hodgins, Currie, &El-Guebaly, 2001. Hodgins, Currie, El-Guebaly & Peden, 2004 (Canada)	102 pathological gamblers receiving a self-help workbook with or without a brief motivational interview	22% (n = 15) ← spanning →		
Jimenez-Murcia, Alvarz-Moya, Granero, Aymani, Gomez-Oena, Jaurrieta, Sans, Rodriguez-Marti & Vallejo, 2007 (Spain)	290 pathological gamblers attending a 16-week group cognitive- behavioural treatment program.		30% (n=88)	
Ladouceur, Sylvain, Boutin, Lachance, Doucet & LeBlond, 2003. (Canada)	46 pathological gamblers attending a 10 session group outpatient CBT		26% (n =12) prior to third session.	
Ladouceur, Sylvain, Boutin, Lachance, Doucet, Leblond & Jacques, 2001 (Canada)	66 pathological gamblers attending a 10 session individual outpatient CBT	47% (n = 31) ← spanning →		
Leblond, Ladouceur & Blaszczynski, 2003. (Canada)	112 pathological gamblers attending either a 10 session individual or group cognitive treatment program		38% (n = 43)	
Milton, Crino, Hunt & Prosser, 2002. (Australia)	40 pathological gamblers receiving an 8 session individual out-patient CBT program		50% (n=20)	
Petry, Ammerman, Bohl, Doersch, Gay, Kadden, Molina & Steinberg, 2006. (America)	231 pathological gamblers randomly assigned to GA only, GA plus CBT workbook, or GA plus 8 sessions of individual CBT.	16% (n=37) ← spanning →		6% (n=13)
Robson, Edwards, Smith & Colman, 2002. (Canada)	117 pathological gamblers receiving either a self-help program including 2 sessions, or a 6 session outpatient group CBT	32.5% (n=38) (prior to treatment or after one session)	1% (n=1)	13% (n=15)

Table 2.1. Extent of pre-treatment dropout, treatment dropout and follow-up dropout from pathological gambling treatment (continued)

Study (Country)	Clients and treatment	Extent of Dropout		
		Pre-treatment dropout	**Treatment phase dropout**	**Follow-up dropout**
Stewart & Brown, 1988. (United Kingdom)	232 gamblers attending Gamblers Anonymous (GA)		22% (n = 51) after 1st meeting; 70% (n = 162) by 10th meeting.	
Sylvain, Ladouceur & Boisvert, 1997. (Canada)	58 pathological gamblers attending individual outpatient CBT (open duration).	← 31% (n =18) →	← 19% (n=11) →	
Wulfert, Blanchard, Freidenberg & Martell, 2006. (America)	21 pathological gamblers receiving individual outpatient CBT or treatment as usual.		← 19% (n=4) →	

2.3.2.1 The timing of dropout.

Several researchers have documented a trend for most dropouts from gambling treatments to occur before treatment begins (Robson et al., 2002). For example, in a study of 117 problem gamblers receiving outpatient CBT, 32.5% terminated prior to commencing treatment or after attending one session, whilst only 1% terminated throughout treatment, and 13% terminated prior to completing follow-up assessments (Robson, et al., 2002). A second study exploring the efficacy of individual CBT in a sample of 58 pathological gamblers found that 31% of clients dropped out after completing pre-treatment evaluations and prior to treatment, whilst only 19% dropped out during treatment (Sylvain, et al., 1997). Given such results, it is clearly important to consider dropout prior to entering treatment, as well as dropout during treatment.

2.3.2.2 Limitations to current research

Variation in definitions used to classify a client as a dropout has been a major methodological difficulty. Differences between definitions of dropout from pathological gambling treatment programs can mean that dropouts in some studies may meet criteria for completion in others. For example, clients who completed three treatment sessions were counted as completers in Ladouceur et al's (2003) study, but were considered dropouts by Robson et al (2002). Using such different criteria to measure the same phenomenon makes interpretation and comparison of results across studies difficult (Armbruster & Fallon, 1994). Obtaining a common definition of dropout has also been a considerable problem within research exploring dropout from outpatient psychological treatment programs in general. Over forty years ago, Brandt (1965) noted a lack of consistency in definition as the primary barrier to consistent results across studies of dropout from psychological treatment. As yet there is no consensus, and the issue remains a problem, with almost all published articles exploring dropout reporting the need for a common definition of a therapy dropout (Brandt, 1965; Garfield, 1994; Pekarik, 1985). Adherence to CONSORT criteria for reporting studies (Moher, Schultz, & Altman, 2001) is clearly required.

A second limitation relates to measurement. When considering an individual's decision to prematurely terminate pathological gambling treatment programs, it is important to consider the specific point of treatment at which a client drops out. As noted earlier, exploring dropout at these different stages of the treatment process may enhance understanding of the specific "risk" points at which clients are most likely to be lost. Unfortunately, only a handful of studies explored dropout at several points throughout

treatment for pathological gamblers (Hodgins, et al., 2001; Robson, et al., 2002; Sylvain, et al., 1997). Most studies only inquired about the prevalence of dropout during the entire treatment process or at one specific point (e.g., early in treatment; (Ladouceur, et al., 2001; Leblond, et al., 2003). Such differences in measurement make interpretation and comparisons of overall rates of dropout across studies extremely difficult, if not impossible.

In summary, dropout from gambling treatment programs appears to occur with high frequency, to the extent that some evidence suggests that a majority drop out prior to commencing treatment. Such findings point to the importance of research that addresses methodological limitations to the existing studies. A better understanding of why pathological gamblers drop out is also important in developing our knowledge of this problem.

2.4 Explaining Dropout among Pathological Gamblers

Although no theoretical models have been developed to explain dropout among pathological gamblers, a number of models been proposed to explain dropout more broadly in the psychotherapy literature. One of the most influential and widely accepted of these is the stage of change model (Prochaska, DiClemente, & Norcross, 1992), which proposes that people move through a series of stages of motivation or readiness to change, from having no desire to change, to preparing, acting, and maintaining changed behaviour (Prochaska & DiClemente, 1992). This model outlines that movement through these stages occurs as a result of gradual internal changes (e.g., cognitive changes) or changes in factors external to the individual (e.g., family and friends). This model predicts that a client's level of motivation or stage of change at the beginning of

treatment can serve as useful tool for identifying those most at risk of dropout (Callaghan, et al., 2005). In particular, those in earlier stages (i.e., precontemplation) may manifest higher rates of dropout than individuals in other stages, as they may be unaware of a problem or uncommitted to change.

Although the stages of change model and motivational enhancement therapy has gained considerable acceptance and has been shown to be an efficacious brief intervention for treating pathological gambling (Petry, et al., 2008), evidence supporting its utility in understanding dropout has been mixed at best (Belding, Iguchi, & Lamb, 1996). For instance, in a sample of 276 methadone maintenance clients, clients in earlier stages of change stayed for a shorter time in treatment than clients in later stages. In another study with 81 methadone maintenance clients, stage of change failed to predict dropout from treatment (Belding, Iguchi, & Lamb, 1997). In a third, the prediction of treatment attendance from stages of change only approached statistical significance in a sample of 185 cocaine users participating in a 12-week, 26-session program (Lamb, Belding, & Festinger, 1995).

Operationalisation of the stage of change model has been criticised. The definition of the various stages of change has been modified several times since the concept was first introduced, and a number of the questionnaires currently used to assess stages lack adequate validation (Callaghan, et al., 2005). Moreover, there is no evidence to support the proposition that the stages are independent, throwing into question the entire emphasis in the model on the stages of change as being sequential (Herzog, Abrams, Emmons, Linnan, & Shadel, 1999). Given the lack of research supporting in use in understanding dropout and lack of standardization, it is unlikely that adoption of

the stage of change model will advance our understanding of dropout in treatment of pathological gambling.

A more promising approach is provided by Liese and Beck (1997), who have developed a cognitive model of dropout among individuals with drug dependence (Liese & Beck, 1997). This model outlines that a variety of circumstances, including relapse, or problems involving legal, medical, psychological, family or relationship, logistical or therapeutic relationship issues, place people at high risk for dropping out, by activating certain beliefs about treatment or the therapist. For example, in a course of treatment for drug dependence, an individual may become sceptical and believe that "treatment isn't working" or that "my therapist won't be able to help me", in response to uncontrollable urges, craving or lapses. These beliefs or expectations about the likely success of treatment may lead to emotions of apathy, discouragement, shame or guilt. These emotions may lead to missed sessions, non-compliance with treatment, and to the client dropping out of treatment altogether.

Although research into this model is limited, evidence to date suggests that it may provide a helpful approach for explaining dropout. For instance, research with individuals seeking help from substance abuse treatment services suggests that predictors of dropout fall into the range of categories outlined by the approach (e.g., psychological or disorder related, sociodemographic and treatment related variables) (Melville, Casey, & Kavanagh, 2007; Stark, 1992). There is also evidence that client expectations predict dropout from treatment for psychological disorders (Dew & Bickman, 2005). In turn, several predictors identified by the approach (e.g., psychological variables, therapeutic relationship problems) have been shown to be associated with client expectancies for

treatment success (Nock & Kazdin, 2001; Safren, Heimburg, & Juster, 1997). The extent to which client expectations for treatment success mediate the relationship between predictors such as relapse, or legal, medical, psychological, family, relationship or logistical problems and dropout has not however been explored. It may be useful to examine predictors of dropout in more detail, to see if they are consistent with the approach of Liese and Beck's (1997).

2.4.1 Data Selection, Study Selection and Data Extraction

A comprehensive literature search was conducted on PsychINFO and PUBMED databases for the period 1960 to 2006. Key words and selection criteria for this search were identical to those in the previous search on the extent of dropout.

2.4.2 Results

Of the 2943 studies returned through database searches, 11 studies reported on the variables associated with dropout from psychological treatment programs for pathological gamblers. The year of publication ranged from 1986 to 2007, and sample sizes ranged from 21 to 232. Seven studies examined cognitive or behavioural treatments, three were on Gamblers Anonymous, and one focused on brief or self-help intervention.

Four broad categories of predictors were identified: sociodemographic, gambling-related, psychological and treatment-related variables. Table 2.2 displays the number of studies in which each variable was examined; whether the variable was a significant predictor of dropout; and the direction of the relationship.

Table 2.2. Significant predictors of dropout from pathological gambling treatment

Predictor Variables	Number of studies	Significant*
Sociodemographic and contextual variables		
Older Age	8	1 (+)
Gender	6	0
Ethnicity	1	0
Years of education	1	0
Income	3	0
No full-time employment	2	1 (+)
Relationship status	1	0
Stressful life events	1	1 (+)
Social support	1	1 (+)
Gambling-related variables		
Younger age of onset of gambling behaviour	1	1 (+)
Longer duration of gambling behaviour	1	1 (+)
Greater amount of time invested in gambling	3	1 (+)
Money invested in gambling	3	0
Less gambling debt	1	1 (+)
Severity of gambling behaviour	5	0
Type of gambling	2	0
Motivation to stop gambling	1	0
Urge to gamble	1	0
Self-efficacy to control /stop gambling	1	0
Other Psychological problems		
Comorbid depression	5	0
Comorbid anxiety	5	1 (+)
Obsessive compulsive symptoms	1	1 (+)
Comorbid drug or alcohol disorder	3	1 (+)
Increased impulsivity	2	1 (+)
Social problem-solving skills	1	0

Table 2.2. Significant predictors of dropout from pathological gambling treatment (continued)

Treatment		
Prior treatment experience	1	0
Satisfaction with treatment	1	0
Treatment motivation	1	0

* Number of studies with either a positive (+) or negative (-) relation with dropout.

2.4.2.1 Sociodemographic and contextual variables

Age. Older age was linked with an increased risk of dropout in a study conducted by Echeburua, Baez and Fernandez-Montalvo (1996). Using multivariate analyses, these authors explored predictors associated with dropout in a sample of 64 pathological gamblers registered for a six-session CBT program. The mean age of the participants was 35 years (SD = 11). Age significantly differentiated dropouts from completers, with clients who dropped out prior to completing the treatment program having a higher mean age (M=40.54; SD=11.96) than those who completed treatment (M=33.43; SD=10.39; (Echeburua, Baez, & Fernandez-Montalvo, 1996). However, there was no association between age and dropout in another seven studies (Brown, 1986; Echeburua, et al., 2001; Hodgins, et al., 2004; Leblond, et al., 2003; Milton, et al., 2002; Robson, et al., 2002; Sylvain, et al., 1997). Overall, there is little evidence that age is related to dropout from gambling treatment.

Unemployment. Research on the influence of employment has produced equivocal results. One study with 67 pathological gamblers receiving a brief self-help intervention (Hodgins et al., 2004) identified a lack of full-time employment as a significant predictor

of dropping out prior to completing treatment and follow-up (compared with people who completed treatment, those who dropped out of treatment were less likely to be employed; 67% vs. 40% respectively). A lack of full-time employment is likely to increase stress, and may make it difficult to attend treatment (e.g. because of transport costs, or competition with job-seeking). No relationship between employment (i.e., working hours) and dropout was found by Brown (1986) in a sample of 12 dropouts and 12 continuers of Gamblers Anonymous, but it is not clear what this variable represented. Further research is required on the predictive influence of employment.

Stressful situations. Brown (1986) did identify that high stress situations, such as a change in circumstances due to the loss of a job or arrival of a new baby, were associated with dropping out of the Gamblers Anonymous treatment program (Brown, 1986). These findings may suggest that effects of unemployment (above) may also be due to it being a high-stress situation. Results of other studies have suggested ability to cope with stressful situations is important for preventing dropout. In particular, results of several studies have suggested that gamblers generally have poor methods of coping with high stress situations, and that such situations are often perceived as a barrier to seeking help (Barker & Miller, 1968; Brown, 1986; Brown & Coventry, 1997; McCormick, 1994).

Social support. One study provided indirect evidence for the influence of social support on dropout. Brown (1986) examined the influence of spousal attendance at GamAnon on dropout from Gamblers Anonymous. Among the dropout group, fewer spouses had ever attended Gam-Anon and no dropout's spouse was still going to Gam-Anon at the time of dropout. Researchers in the substance abuse field have also

documented that a lack of support in coping with stressful situations is associated with dropout from outpatient psychological treatment for substance abuse (Sayre, et al., 2002). These findings suggest that the influence of social support on dropout from treatment for pathological gamblers merits further investigation.

Ethnicity. Ethnic minorities have been shown to have elevated rates of gambling, and are thought to be underrepresented in many treatment samples (Cuadrado, 1999; Welte, Barnes, Wieczorek, Tidwell, & Parker, 2002). However, ethnicity was explored for its influence on dropout in only one study (Hodgins, et al., 2004). In a sample of 67 pathological gamblers receiving a brief self-help workbook with or without a motivational interview, Hodgins et al. (2004) found no association between client ethnicity and dropout. However, this sample was predominantly English Canadian (90%), and contained a limited number of individuals of other ethnicities (Indigenous, 2%; French Canadian, 2%; other, 6%).

Other demographic variables. Gender, income, years of education and relationship status do not appear to reliably predict dropout from gambling treatments. Gender was unrelated to dropout in all six studies that explored its influence (Echeburua et al., 1996, 2001; Leblond et al., 2003; Milton et al., 2002; Robson et al., 2002; Sylvain et al., 1997). Three studies on client income all documented that it was unrelated to dropout (Brown, 1986; Echebura et a., 1996; Milton et al., 2002). Years of education and relationship status were also unrelated to dropout within a sample of 67 pathological gamblers receiving a brief self-help intervention (Hodgins et al., 2004).

2.4.2.2 Gambling-related variables

Onset and duration of gambling. In principle, pathological gamblers with an earlier onset and/or longer duration of gambling behaviour may have more entrenched difficulties, and may require more time and effort in treatment to produce change. They may therefore be at risk of dropping out through becoming frustrated by the treatment process. In a sample of 58 pathological gamblers attending CBT, Sylvain et al. (1997) reported a significant association between age of onset of gambling behaviour and dropout prior to completing treatment. Univariate analyses indicated that dropouts began their gambling activities at a younger age than completers.

Milton et al. (2002) explored the association between duration of gambling behaviour and dropout in a sample of 40 of pathological gamblers receiving CBT. The results indicated that duration of gambling behaviour significantly differentiated dropouts from completers. In particular, individuals who had gambled at a problem level for 10 years or longer were more likely to drop out of treatment than those with shorter problem-gambling histories.

Time invested in gambling. Arguably, pathological gamblers who spend more time gambling may have more pervasive and fixed difficulties that may be more difficult to change through treatment. In a sample of 117 pathological gamblers, Robson et al. (2002) identified that those clients who dropped out prior to follow-up spent more time (duration and occasions) gambling at the time of pre-treatment assessment. Unfortunately, the authors provided no details of the analysis and no information was included on the specific duration and occasions reported by respondents. Two other

studies found no association between the time invested in gambling behaviour and dropout (Echeburua et al., 1996, 2001).

Gambling debt. Arguably, gamblers who have higher levels of debt may be more likely to recognize that they need to commit to treatment, or conversely, may be more tempted to chase their losses and continue gambling. Three studies found no association between the level of gambling debt and dropout (Echeburua et al., 1996, 2001; Robson et al., 2002). For instance, Echeburua et al (1996) found no association between the amount of money invested in gambling and dropout in a sample of 64 pathological gamblers registered for a six-session CBT program. Differences in money invested between dropouts and completers were also not found in a later study by Echeburua et al (2001) with 69 pathological gamblers attending a 6-week behavioural program, and Robson et al (2002) with a sample of 117 pathological gamblers in treatment. Only one study to date has found level of gambling debt was associated with dropout. Brown (1986) documented that lower gambling debts (especially to money lenders) were associated with dropout from treatment. The average dropout owed 16 weeks of his income, whilst the average completer owed 51 weeks of his income.

Severity of gambling pathology. Two indices have been used to assess the severity of pathological gambling: the South Oaks Gambling Screen (SOGS) (Lesieur & Blume, 1987) and the number of diagnostic criteria satisfied (e.g. from the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 2000). Pathological gamblers with more severe difficulties may require more time and effort in treatment to produce change; they may have had unsuccessful treatment experiences in the past; and they may be more likely to be experiencing comorbid psychological

difficulties which may complicate treatment. As a result, such individuals may be more

at risk of dropping out because they may be more likely to become discouraged with the

treatment process. Prediction of dropout from severity of gambling was explored in five

studies (Echeburua et al., 1996; Hodgins et al., 2004; Leblond et al., 2003; Robson et al.,

2002; Sylvain et al., 1997). Surprisingly, none of the studies found an association

between severity of gambling behaviour and dropout (Echeburua et al., 1996; Hodgins et

al., 2004; Leblond et al., 2003; Robson et al., 2002; Sylvain et al., 1997). For instance, in

a sample of 112 pathological gamblers attending a 10-session cognitive treatment

program, Leblond et al (2003) explored the influence of severity of gambling behaviour

on dropout. All respondents endorsed five or more DSM-IV criteria ($M = 7.4$, $SD = 1.6$),

as required for a diagnosis of pathological gambling and there was no significant

difference between the severity reported by dropouts and completers.

Type of gambling. Two studies explored the influence of the type of gambling

behaviour on dropout from treatment (Milton et al., 2002; Sylvain et al., 1997). Milton et

al. (2002) explored the influence of type of gambling behaviour on dropout in a sample of

40 of pathological gamblers, in which 30 experienced their problems as a result of

playing poker machines, 6 were off-course house racing gamblers, 2 played casino

blackjack, 1 gambled on sports and 1 gambled on a lotto-type game that allows frequent

play (Keno). The results indicated no association between type of gambling and dropout

prior to completion of treatment. Similarly, in a sample of 58 pathological gamblers

attending CBT, Sylvain et al. (1997) reported no association between type of gambling

behaviour and dropout. Although details were not provided on the proportion of

individuals playing each type of gambling, the authors indicated that majority of

gamblers were video poker players; while the others gambled on horse races or at casino games. Results of these studies suggest that type of gambling behaviour is unrelated to dropout from pathological gambling treatment programs.

Gambling-related cognitions. Irrational beliefs, cognitive errors and erroneous perceptions are believed to play a pivotal role in the development and maintenance of pathological gambling (Baboushkin, Hardoon, Derevensky, & Gupta, 2001). For example, some gamblers have superstitious beliefs such as the idea that a "lucky" item will improve one's chances of winning (Ledgerwood & Petry, 2006). Only one study has examined the association between superstitious beliefs and dropout (Leblond et al., 2003). This study found no association between superstitious beliefs and dropout. However, it may be useful to explore other beliefs of pathological gamblers such as their illusion of control, gambler's fallacy (i.e., a biased belief that a series of independent events influence or predict a subsequent independent event) and availability bias (i.e. tendency to recall past wins as opposed to past losses; Ledgerwood & Petry, 2006). The tendency for gamblers to chase losses (i.e., attempting to recover gambling losses by further gambling) may also be associated with dropout. It is possible that clients who have a greater belief in cognitive distortions may experience frustration with treatments which emphasis correction of these beliefs. This frustration may lead to non-compliance or dropout.

Urges and self-efficacy. Pathological gamblers who experience low self-efficacy to control gambling or strong urges to gamble may be at higher risk for dropping out, because they may feel that they will not be able to successfully change their gambling behaviour. Leblond et al. (2003) explored the influence of urge to gamble and self-

efficacy to control gambling on dropout in a sample of 112 pathological gamblers attending a 10-session cognitive treatment program. Although results indicated that urge to gamble and self-efficacy to control gambling were not associated with treatment dropout, this study did not use validated measures to assess these variables.

Motivation to change. Insufficient desire or commitment to change gambling (Joe, Simpson, & Broome, 1998) may also be related to dropout in that clients who are unwilling to change their behaviour may be less likely to identify with treatment goals and may therefore be at a higher risk for terminating treatment. Only one study has explored the influence of motivation to change on dropout. Leblond et al. (2003) used the Motivation Towards Gambling Scale (Chantal & Vallerant, 1996) to explore the influence of motivation to change gambling behaviour on dropout. Results reportedly indicated no association between motivation to change gambling behaviour and dropout, but the authors provided no details of the analysis, and no information was included on the range of respondent scores. Variation in motivation is needed in order to demonstrate an impact on dropout. Further research on the influence of motivation to change gambling behaviour is warranted.

2.4.2.3 Other psychological problems

Depression. The role of depression as a predictor of dropout was examined in five studies (Brown, 1986; Echeburua et al., 1996, 2001; Leblond et al., 2003; Milton et al., 2002; Robson et al., 2002). Pathological gamblers experiencing depression in addition to their gambling problem may be at a higher risk of dropout because they experience extra difficulties such as a depressed mood, feelings of hopelessness, lethargy and a lack of interest and motivation. However, none of the studies found a relationship between

depression and dropout. For example, Milton et al. (2002) found no association between scores on the Beck Depression Inventory (BDI, Beck, 1978) and dropout in a sample of 40 pathological gamblers receiving CBT, despite relatively high average BDI scores in the sample (M = 18.78; SD = 11.44).

Anxiety. Research on the influence of anxiety has produced mixed findings. In one study with 69 pathological gamblers attending a 6-session behavioural program, Echeburua et al. (2001) found that the state anxiety (on the State-Trait Anxiety Inventory, STAI, Spielberger, Goruch, Lushene, Vagg & Jacobs, 1983) of participants who dropped out (M =39.6, SD =4.50) was significantly higher than for those who completed treatment (*M* =29.5, SD =9.89). No relationship between anxiety and dropout was observed in another four studies (Echeburua et al., 1996; Leblond et al., 2003; Milton et al., 2002; Robson et al., 2002). For example, in an earlier study with 64 pathological gamblers attending a 6-week CBT program, Echeburua and colleagues (1996) found no significant difference between dropouts and completers on the STAI.

Obsessive compulsive symptoms. In one study with 290 pathological gamblers who registered to attend a 16 week group cognitive- behavioural therapy program, Jimenez-Murcia et al (2007) found that an increased report of obsessive compulsive symptoms (on the Symptom Checklist-90-Revised) (Derogatis, Lipman, & Covi, 1973) was related to higher risk of dropping out. Unfortunately, no other studies have explored the influence of obsessive compulsive symptoms on dropout from pathological gambling treatment programs.

Impulsivity. Rapid decision-making without regard to the consequences of behaviour is generally seen as central to pathological gambling (Steel & Blaszczynski,

1998). A recent conceptualisation of impulsivity proposes that it consists of two facets: reward drive, or the tendency to engage in purposeful, goal directed behaviour, and rash impulsivity—an inability to stop approach behaviour in light of potential punishment (Dawe & Loxton, 2004; Verheul, van den Brink, & Geerlings, 1999). Pathological gamblers are believed to be highly sensitive to the rewarding cues of gambling and also unable to overcome their urges to gamble problematically. Thus, high levels of impulsivity may make it difficult for gamblers to persist in treatment, because their high sensitivity to the immediate rewards of gambling may be more powerful than the longer-term rewards of treatment. Impulsive individuals may be therefore more likely to drop out or disengage when they become bored with routine clinical tasks and procedures (Blaszczynski, Steel, & McConaghy, 1997).

The influence of impulsivity on dropout has been explored in only two studies. In one study with 112 pathological gamblers receiving outpatient cognitive treatment, Leblond et al (2003) identified impulsivity as a significant predictor of dropping out prior to completing treatment. Treatment dropouts (M = 26.81, SD = 6.64) reported a significantly higher score on the Eysenck's Impulsiveness Scale as compared with treatment completers (M = 22.42, SD = 7.12). Despite such results, however, no relationship between impulsivity and dropout was found in the other study that has explored impulsivity (Echeburua et al., 2001). Unfortunately, the mean score obtained on the Eysenck Impulsiveness Scale was not provided in this study.

Substance use disorders. Pathological gamblers have high rates of concurrent substance abuse, and greater severity of substance abuse in pathological gamblers has been associated with higher impulsivity and poorer treatment outcomes (Echeburua, et

al., 2001; Petry, 2001). Milton et al. (2002) explored the influence of drug or alcohol use on dropout within sample of 40 pathological gamblers receiving outpatient CBT. Using multivariate analyses, the authors identified that alcohol or drug abuse on the Drug Abuse Screening Test was a significant predictor of dropout. However, no relationship between drug or alcohol use was found in another two studies (Echeburua et al., 2001; Leblond et al., 2003). Further research is required on the potential influence of substance use and abuse on dropout.

Social problem solving. Individuals with poor social problem-solving skills may be at risk of dropout for two reasons. Firstly, treatment for pathological gambling is normally dependent upon interpersonal interactions between the client and therapist and /or between members of a treatment group. Pathological gamblers with poor social problem-solving skills drop out from group treatments, because of greater difficulties maintaining harmonious relationships with the therapist and other group members. Secondly, recovery from pathological gambling may be in part determined by an individual's ability to cope in stressful social situations (e.g., arguments with their partner, socialising with gambling peers). An individual's ability to deal with such situations may influence whether or not they decide to continue with treatment. Only one study explored the influence of social problem-solving skills (Leblond et al., 2003). No significant difference between dropouts and continuers was observed on the Social Problem Solving Inventory.

Other personality or coping style variables. Future research might benefit from exploring other personality constructs such as neuroticism and psychoticism. In particular, pathological gamblers have been shown to have greater neuroticism and

psychoticism that controls (Blaszczynski, Buhrich, & McConaghy, 1985). Echeburua et al. (2001) found neuroticism to be a predictor of treatment failure (i.e., relapse) in a sample of 69 pathological gamblers attending a 6-week behavioural program (perhaps because of a close association between neuroticism and trait anxiety; DeNeve & Cooper, 1998).

As psychological treatments generally require that gamblers openly confront their gambling problems, it is possible that fear of stigma, shame, embarrassment or avoidance may also play a role in dropout. These variables have been identified as barriers to seeking psychological help (Hodgins & El Guebaly, 2000). In a sample of 43 resolved and 63 unresolved pathological gamblers, Hodgins and el-Guebaly (2000) identified that fear of stigma and embarrassment /pride were significant barriers to obtaining professional help.

2.4.2.4 Treatment variables

Motivation to participate in treatment. This concept is closely related to motivation to change gambling behaviour, but can be distinguished from it (Ryan, Plant, & O'Malley, 1995); Leblond et al., 2003; Milton et al., 2002). Two studies have explored the influence of motivation-enhancing treatment components on dropout among pathological gamblers (Milton, et al., 2002; Wulfert, et al., 2006). Although these studies showed decreased dropout in response to these motivational-enhancing components, they did not directly address whether motivation was related to dropout. Only one study directly explored the influence of motivation on dropout. Leblond et al. (2003) explored the influence of treatment motivation on dropout in a sample of 112 pathological gamblers attending a cognitive treatment program (Leblond et al., 2003). Although the

results indicated no association between treatment motivation and dropout, Leblond et al. (2003) relied on global clinical impressions to assess treatment motivation, rather than a validated self-report measure. Additional research is needed to explore whether motivation to participate in treatment directly or indirectly leads to dropout among pathological gamblers.

Previous experience with psychological treatment. Clients may be more likely to remain in treatment if they are familiar with the nature of psychological treatment (Stark, 1992), or have been otherwise 'prepared' for treatment by their previous experiences. In the only study to examine this variable to date, Hodgins et al (2004) found no significant differences between the previous treatment experience of participants who dropped out from a self-help intervention and those who continued.

Satisfaction with treatment. We might expect that clients would be less likely to drop out if they are satisfied with the treatment that they are receiving. In a sample of 69 pathological gamblers attending a 6-week behavioural program, Echeburua et al (2001) explored the influence of treatment satisfaction assessed using the Questionnaire of Satisfaction with Treatment (Larsen, Attkinson, Hargreaves, & Nguyen, 1979). No relationship between satisfaction with treatment and dropout was found. However, no detailed report of the results was provided, and it was not clear when this variable was assessed. As a client's satisfaction with treatment is likely to vary throughout treatment, it is imperative that researchers assess this variable at various points.

Related variables that warrant investigation include client expectations about the potential effectiveness and success of treatment, and initial improvement from treatment (which may be expected to bolster treatment expectancies further). Confidence in the

treatment's ability to produce positive change is potentially of importance to dropout (Liese and Beck, 2000), but the review found no attention to this variable in the research to date. Similarly, dropping out of treatment may be a likely consequence of a weak alliance (Bordin, 1979; Horvath & Luborsky, 1993). Unfortunately, little is known about the role of alliance in treatment for pathological gambling.

Specific Gamblers Anonymous (GA) variables. The role of GA treatment components were examined as predictors of dropout in a series of studies conducted by Brown (Brown, 1987a, 1987b, 1987c; Brown, 1986). Brown (1987a) explored qualitative descriptions of experiences with GA in a sample of 12 gamblers who had attended more than one meeting and subsequently dropped out, versus 12 gamblers who had continued involvement. Results indicated that those who dropped out had more positive reactions to individual meetings (linked to dreams of an instant passive cure: "I thought that I was cured"), felt superior to other group members from the beginning of their association with GA, and at the end of their association, made more negative statements than continuers about other group members (although not about GA itself). When asked why they terminated association with GA, 50% of dropouts reported withdrawing due to a change in circumstances (e.g., wife took job, job prevented from attending, injury, wife had a baby), and 17% withdrew due to worry about personality clashes and cliques within the treatment group.

In a subsequent study with the same sample, Brown (1987b) investigated other reasons for dropout. Compared with those who continued with the program, those who dropped out were more unsympathetic and punishing to those who had falls (i.e., relapses), more often felt that others' falls helped them understand their own, and were

more likely to feel superior about other individuals' falls. They were also more likely to

think there was something wrong with the GA handbook, more likely to like the

description of pathological gambling as an illness, more often rejected the complete ban

on gambling, more often felt that there were too few interventions, more often felt

superior on listening to them or found them frightening and thought less of the advice

given about them, and more often felt that too much of the time of the meeting was spent

on administration. They were less likely to phone anther attendee for purely social

reasons, had difficulties with identification with GA, saw themselves as more intelligent

but not able to talk as well as other group members, and more often chose to describe

themselves as controlled gamblers. Although these results may provide an insight into

reasons for dropping out of GA, findings were derived from only one group meeting, in

one location. They may not be generalisable to other groups or other treatment

approaches.

2.4.3 Limitations to research on variables associated with dropout

The review above and the information in Table 2.2 shows that most predictors

have been examined in very few studies and some potentially important variables have

not been studied at all. For instance, future research might benefit from exploring

variables such as the presence of environmental stressors and related coping styles, the

influence of supportive social relationships, gambling-related beliefs, the tendency to

chase losses, urges to gamble, self-efficacy to control or stop gambling, and motivation to

change. Other psychological variables such as impulsivity, neuroticism, psychoticism,

fear of stigma, shame, embarrassment and avoidance, and treatment-related variables

such as initial improvement, treatment expectations and the therapeutic alliance also

warrant investigation. Furthermore, although several studies drew on research findings concerning pathological gambling relapse or drug or alcohol abuse treatment dropout, most did not examine dropout from pathological gambling treatment within the context of a cohesive model of dropout, such as those models developing in the study of addictions. Research to date has failed to separate variables associated with dropout at different points throughout the treatment process. All of the studies placed dropouts in a single group, regardless of the specific point at which they dropped out of treatment. Many of the studies also do not fully report results or use unvalidated measures.

2.5 Summary of Chapter Two

Review of face-to-face pathological gambling treatment studies indicates that dropout occurs at a high frequency. While there are some studies that attempt to predict dropout, current evidence for specific variables is limited or inconsistent. This review demonstrated the importance of further research that addresses methodological limitations and explores key predictors within a coherent theoretical framework. The following chapter presents the results of an in-depth analysis of the extent of dropout and variables associated with dropout within a sample of pathological gamblers attending face-to-face cognitive-behavioural treatment.

CHAPTER 3

STUDY I: AN EXPLORATION OF DROPOUT FROM COGNITIVE-BEHAVIOURAL TREATMENT FOR PATHOLOGICAL GAMBLING

3.1 Overview of Chapter Three

The literature review reported in Chapter Two highlighted the importance of further research that addresses dropout at different points throughout contact with treatment providers, investigates a broader range of predictor variables and explores key predictors of dropout within a coherent theoretical framework (Melville, et al., 2007). To address these issues, this aim of this study was to conduct an analysis of dropout within a sample of pathological gamblers who volunteered to take part in a face-to-face cognitive-behavioural treatment program. Firstly, the extent of dropout was examined at two different points throughout treatment: pre-treatment dropout (i.e., dropout occurring after recruitment, selection and providing informed consent, and prior to randomisation to a treatment condition), and treatment phase dropout (i.e., dropout occurring after randomisation to a treatment condition and prior to completing that condition). Based on prior research it was predicted that the majority of dropout would occur prior to randomisation to a treatment condition (Melville, et al., 2007). Using Liese and Beck's (1997) cognitive model of dropout as a guiding theoretical model, a range of variables were explored as predictors of dropout before and during treatment. In addition, this study examined whether client expectations for treatment success mediate the relationship between predictor variables and dropout (Liese & Beck, 1997).

3.2 Method

3.2.1 Participants

Participants for the study were individuals living in Brisbane who volunteered to take part in a cognitive-behavioural therapy (CBT) program (Oei, Raylu, & Casey, submitted) to treat their gambling problems. Participants were recruited via TV and radio interviews and local newspaper advertisements about the CBT program offered at the University of Queensland. They were required to be over 18 years of age, to have met Diagnostic and Statistical Manual for Mental Disorders (4th ed.; DSM-IV) (American Psychiatric Association, 1994) criteria for pathological gambling, and have signed their informed consent after reading a description of the study. Participants were excluded from the study if they were receiving additional assistance for their gambling problem; were not proficient with English; at a high risk of suicide; were acutely psychotic; or if their gambling behaviour only occurred in the context of a Manic Episode. Registrations for the study were received from 157 people. The mean age of participants was 36 years (SD = 14.61; range 18 – 80 years). Table 3.1 outlines additional demographics for the participants.

3.2.2 Selection of Predictor Variables

A pool of potential predictor variables was generated based on Liese and Beck's (1997) cognitive model as well as findings from the literature review reported in Chapter 2. Unfortunately, because this study utilised archival data that was collected as part of a larger study on the cognitive- behavioural treatment program (Oei, Raylu, & Casey,

Table 3.1. Demographic Characteristics of Participants

Variable	Clinical %
Gender	
Male	61%
Female	39%
Marital Status	
Married	29.8
Single	27.7
Living together/ Engaged	17.0
Divorced/Separated/Widowed	23.4
Did not report	2.1
Annual Income	
<$10000AU	11.7
$10000-29000	27.6
$30000-49000	29.8
>$50000	30.8
Education (highest level)	
Primary	1.1
Junior secondary	28.7
Senior Secondary	18.1
Tertiary Diploma	51.1
Did not report	1.1
Employment	
Full time	53.3
Part time	15.9
Full time students	2.8
Other	21.6
Did not report	6.5
Race/Ethnicity	
Caucasian	76.6
Asian	2.8
Other	14.0
Did not report	6.5
Religion	
Catholic	33.6
No religion	36.4
Protestant	14.0
Other	14.0
Did not report	1.9

2008), not all potential predictor variables were available and thus able to be explored in this study. A total of seven predictor variables were explored: coping style, amount spent per day on gambling, urge to gamble, self-efficacy to control gambling, gambling-related cognitions, expectations for treatment success and therapeutic alliance.

3.2.3 Measures

Coping Style. Coping style was assessed using items derived from the Brief COPE (Carver, 1997). Items assess active coping ("Planning to take or taking active steps to deal with the problem: e.g., I concentrate my efforts on doing something about it"), cognitive coping ("Accepting the reality of the problem or viewing the problem in a positive manner: e.g., I accept the reality of the fact that it happened"), emotion coping ("Seeking social support to for instrumental reasons, seeking advice or assistance; or emotional reasons, getting moral support, venting emotions or understanding—e.g., I feel a lot of emotional distress and I find myself expressing those feelings a lot") and avoidance coping ("Avoid dealing with the problem by engaging in other behaviours such as alcohol and drugs, praying, substitute activities to take mind off the problem; or denying a problem exists or by giving up—e.g., I use alcohol and drugs to deal with it"). Respondents were required to rate each item on a 7-point Likert scale ranging from "I haven't been doing this at all" to "I have been doing this a lot". Total scores range from 1 to 7 with higher scores indicating that the individual frequently uses this coping style. The brief version of the COPE inventory has been shown to have adequate reliability and validity, with alphas ranging from 0.50 to 0.90 (Carver, 1997). The Brief COPE is contained in Appendix 3.1

Gambling Urge Scale *(GUS) (Raylu & Oei, 2004b).* The GUS is a six-item questionnaire developed to assess gambling-related urges. Participants rate their agreement with each item using a 7 point semantic differential scale ranging from 1 (strongly disagree) to 7 (strongly agree). Individual item responses are summed for a total score ranging from 6 to 42. Higher scores correspond to increased urge to gamble. The GUS has been shown to have high internal consistency (alpha=0.81) and good reliability (Raylu & Oei, 2004b). Significant positive correlations have been demonstrated with other gambling-related instruments including the GRCS. Internal consistency in the current study was excellent (alpha = 0.96). The GUS is contained in Appendix 3.2.

G*ambling refusal self-efficacy questionnaire (GRSEQ).* The GRSEQ is a 26-item questionnaire developed to assess an individual's perceived self-efficacy to refuse an opportunity to gamble in a variety of situations or under certain circumstances. Preliminary analyses indicate that the scale is comprised of four factors including: situations /thoughts, drugs, positive emotions and negative emotions (Casey, Oei, Melville, Bourke, & Newcombe, 2008). Participants respond to each item by indicating how confident they are that they could refuse to gamble on a scale from 0 *'No Confidence, Cannot refuse'* to 100 *'Extreme Confidence, Certain can refuse'* in increments of 10. A total score is obtained by calculating the mean score across all items. Total scores range from 0 to 2600 with higher scores corresponding to increased gambling refusal self-efficacy. The scale has shown to have high internal consistency (Cronbach alpha = 0.98) and each subscale has been shown to have high reliability. Significant negative correlations have been found with gambling behaviour. In the

current study, the lowest measure of internal consistency was found for Factor 2 drugs

(alpha = 0.92), however this is still well above the accepted limit of 0.70 (Cicchetti, 1994;

Cicchetti & Sparrow, 1990). Cronbach's alpha for the overall scale was also high (0.98).

The GRSEQ is contained in Appendix 3.3.

Gambling-related Cognitions Scale (GRCS; (Raylu & Oei, 2004a). The GRCS is

a 23-item questionnaire designed to identify the distorted beliefs common amongst

pathological gamblers. The scale is comprised of five factors - the illusion of control,

interpretative bias, predictive control, expectations of gambling and perceived inability to

stop gambling. Participants use a 7-point Likert scale to indicate the extent to which they

agree with the value expressed in each statement. Scoring consists of totalling the values

such that higher scores indicate higher levels of cognitive distortions (scores range from

23 to 161). The scale has high internal consistency (alpha = 0.93) and each subscale has

moderate to high reliability (Raylu & Oei, 2004a). Significant positive but relatively low

correlations have been found with mood (depression, anxiety and stress), and significant

positive and moderate correlations have been found with gambling behaviour. Internal

consistency in the current study was excellent (alpha = 0.94). The GRCS is contained in

Appendix 3.4.

Treatment Expectations Questionnaire (TEQ). The TEQ is a version of the

Credibility /Expectancy Questionnaire (Devilly & Borkovec, 2000) that was modified for

this study to focus on treatment of pathological gambling. The TEQ assesses an

individual's beliefs about how much they feel the treatment for gambling problems might

help. The first section of the TEQ contains four items assessing treatment credibility

(i.e., logicalness, usefulness, confidence in success, confidence in recommending to a

friend). Respondents are required to rate each item on a 7-point Likert scale ranging

from 1 to 7. Individual item responses are summed for a total score ranging from 4 to 28.

Higher scores correspond to higher perceived credibility. The second section contains

four items assessing expectations about treatment (e.g., 'to what extent do you expect the

frequency of your gambling to change'). Respondents are required to rate each item on a

9-point Likert scale according to how much change they expect over the next six weeks

(i.e., duration of treatment). Individual item responses are summed for a total score

ranging from 4 to 36. Higher scores correspond to increased expectations of treatment

success. Previous evaluations have revealed the Credibility /Expectancy Questionnaire to

have good psychometric properties (Devilly & Borkovec, 2000) and analyses currently

being conducted on the modified version used in this study similarly indicate satisfactory

psychometric properties (Casey, Melville, Oei & Raylu, in preparation). Analyses on the

modified version used in this Study Indicate similarly satisfactory psychometrics (Casey,

Melville & Oei, in preparation), including internal consistency by Cronbach's alpha of

0.73. The TEQ is contained in Appendix 3.5.

   Working Alliance Inventory (WAI, client version) (Horvath & Greenberg, 1986).
The WAI is a 36-item self-report instrument that assesses the components of task, goal,

and bond, proposed by Bordin (1979) in his conceptualization of the working alliance

(Horvath & Greenberg, 1989). Respondents are required to rate each item on a 7-point

scale ranging from 1 to 7 with higher scores indicating a stronger working alliance.

Individual item responses are summed for a total score ranging from 36 to 252. The WAI

was developed as a transtheoretical measure of alliance that is suitable for use in CBT

(Raue & Goldfried, 1994). The WAI has well-established psychometric properties with

evidence of adequate reliability (alpha of 0.93) and convergent and discriminant validity (Horvath, 1994). Internal consistency in the current study was good with Cronbach's alpha at 0.94. The WAI is contained in Appendix 3.6.

Participants also reported their age, gender, income, education, marital status, employment, religion, ethnic background and daily amount spent per day on gambling.

3.2.4 Procedure

Data was collected as part of a larger study on individual and group-base cognitive- behavioural treatment for pathological gambling. A detailed description and outcomes of this project are currently in preparation (Oei, et al., 2008). When participants contacted the treatment project, they were given preliminary information about the study. Participant information and consent forms are contained in Appendix 3.7. A semi-structured interview was then conducted by telephone to assess if they met inclusion criteria. Eligible participants were provided with more detailed information about the treatment offered in the study (i.e., that it was cognitive-behavioural therapy that would involve recognising and learning to manage thoughts and behaviours associated with problem gambling, and learning new strategies to overcome the problem). They were posted the pre-treatment questionnaire package, which included the TEQ, GRCS, GUS, GRSEQ, Brief COPE and questions about amount ($) spent per day on gambling. They then completed a face-to-face clinical interview, during which suicide risk and any symptoms of mania were assessed, and the diagnosis of pathological gambling was confirmed using the Minnesota Impulsive Disorders Interview (Christenson, Faber & deZwaan, 1994). Participants were then allocated to a treatment

condition: individual CBT (n=37), group CBT (n=37) or waitlist (n=22). Participants were required to complete the WAI after treatment Session 1.

Dropouts were eligible participants who terminated participation before completion of the treatment program. Telephone and post reminders (Appendix 3.8), to a maximum of three, were made to individuals who were unable to be contacted. Dropouts were assessed at two points: pre-treatment dropout (i.e., dropout occurring after recruitment, selection and providing informed consent, and prior to randomisation to a treatment condition), and treatment phase dropout (i.e., dropout occurring after randomisation to a treatment condition and prior to completing that condition). Reasons for dropout were obtained from treatment discharge information that was recorded by therapists or the project manager.

3.2.5 The Treatment Program

The manualised cognitive- behavioural treatment program was developed by Raylu and Oei (Raylu & Oei, 2002) and was based on Sharpe & Tarrier's (1993) cognitive- behavioural theory for problem gambling. The program was divided into four parts. Part 1 aimed to assess the client's problems and needs and to encourage or motivate the client towards change. Part 2 aimed to assist the client to successfully stop or stabilise their gambling, and increase their motivation and sense of efficacy in relation to successfully completing the program. Part 3 aimed to help clients to develop strategies to maintain changes that they have made in their gambling behaviour. Part 4 aimed to teach clients strategies to maintain therapeutic gains and minimise the potential for relapse in the future.

Individual treatment sessions were designed to be 1 to 1 ½ hrs long, approximately 12 modules. Individual sessions were provided in two hour weekly sessions (covering two modules per session) for 6 weeks. Group therapy was run for a six-week period, once a week. The groups are approximately 2 ½ hours long with (excluding ½ break) and they covered similar material as in the individual therapy condition.

There were 16 therapists, all of whom were undertaking advanced training in Clinical Psychology. All met criteria for conditional registration with the Psychologists Board of Queensland and had previous experience in delivering CBT. To enhance treatment fidelity, all therapy was administered based on the treatment manual. Prior to commencing contact with clients, therapists attended a training workshop provided by the developer of the manual (NR). Each session was videotaped and therapists were provided with weekly supervision by the supervisor of this thesis (Casey).

3.3 Results

3.3.1 Extent of Dropout

Figure 3.1 below shows a flowchart to track the participant flow and dropouts at each stage of the study. Of the 157 individuals who registered for the study, six were assessed to meet exclusion criteria. Thus 151 eligible participants registered for the study. At total of 55 participants (36%) dropped out prior to commencing treatment (i.e., pre-treatment dropout). Of the 96 participants allocated to treatment, there were 8 treatment phase dropouts (8% of eligible participants). Overall, 63 participants dropped out of the study (42% of eligible participants).
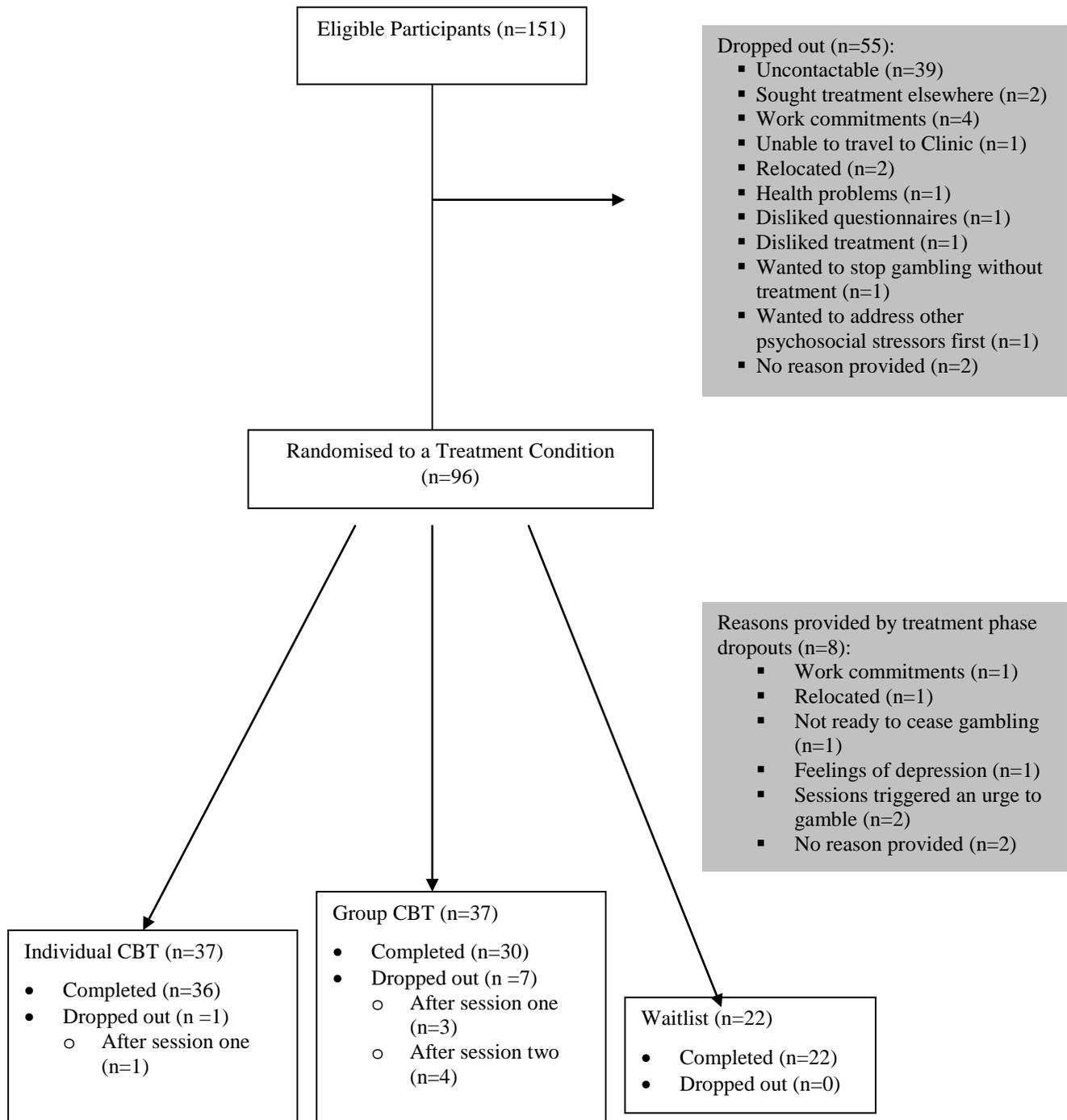
Figure 3.1. Participant flow and dropouts at each stage of the study.

3.3.2 Reasons for Dropout from Treatment

The 55 participants who discontinued prior to commencing treatment outlined a variety of reasons for dropping out. Reasons provided by pre-treatment dropouts were: seeking treatment elsewhere (n=2), work commitments (n=4), being unable to travel to the Clinic (n=1), relocating away from the Clinic (n=2), health problems (n=1), disliking the pre-treatment questionnaires (n=1), disliking the treatment (n=1), wanting to stop gambling without formal treatment (n=1) and wanting to address other psychosocial stressors first (n=1). Two participants did not provide a reason for withdrawing from the study and 39 participants were unable to be contacted via telephone calls or letters, and thus no reason for dropout was recorded.

Eight participants dropped out during the treatment phase. Reasons given for discontinuing were work commitments (n=1), relocating away from the Clinic (n=1), not being ready to cease gambling (n=1) and feelings of depression (n=1). Two participants reported terminating treatment sessions because they believed attending treatment triggered an urge to gamble. Two participants did not provide a reason for withdrawing from the treatment.

3.3.3 Prediction of Dropout

Predictors of dropout were examined through two types of analyses. Firstly, univariate analyses (i.e., one-way univariate analyses or Chi-squared analyses) were conducted on the variables hypothesised to be predictors of dropout from psychological treatment for pathological gambling. Next, discriminant function analyses were conducted using those variables that were significantly associated with dropout ($p < 0.05$)

in the univariate analyses. Analyses were conducted for the entire sample of dropouts (i.e., all dropouts versus completers), as well as for pre-treatment dropouts (i.e., pre-treatment dropouts versus continuers) and treatment phase dropouts (i.e., treatment phase dropouts versus completers) separately. An alternative statistical procedure that can be used in the prediction of dropout is logistic regression. Both procedures allow researchers to determine the significance of predictor variables in determining treatment dropout and both procedures are widely utilised by researchers in this field (Dakof, Tejeda, & Liddle, 2001; Waller, 1997). Discriminant function analysis was selected as it can be used with a smaller sample size, allows for the possible intercorrelation of predictor variables and produces more accurate calculations of power (Tabachnik & Fidell, 1996). Finally, the mediating role of client expectations for treatment success was examined using Baron and Kenny's (1986) guidelines with modifications for use with dichotomous outcomes (MacKinnon & Dwyer, 1993). Forty-eight pre-treatment dropouts terminated treatment prior to returning pre-treatment questionnaires. Thus, data from 103 eligible participants was included in analyses: 88 completers, 7 pre-treatment dropouts and 8 treatment phase dropouts. Table 3.2 outlines details of the study variables for pre-treatment dropouts, treatment dropouts and completers separately. All correlations with among study variables are listed in Table 3.3.

3.3.3.1 All dropouts vs. completers

Univariate analyses. Of the hypothesised predictor variables, only coping style yielded a significant association with dropping out. Those who dropped out were more likely to use cognitive coping strategies (e.g., accepting the reality of the problem, viewing the problem in a positive manner) than those who completed treatment (F (1,

100) = 6.41, *p* <.01). No significant differences were found between dropouts and completers with regard to amount of money spent on gambling (F (1, 96) =1.84, p =0.18), urge to gamble (F (1, 101) =1.29, p = 0.26), self-efficacy to control gambling (F (1, 99) =0.36, p = 0.56), gambling-related cognitions (F (1, 99) =1.42, p = 0.24), treatment credibility (F (1, 97) =0.39, p = 0.54), and expectations for treatment success (F (1, 97) =0.81, p = 0.37).

Table 3.2. Mean and Standard Deviation (SD) of study variables for pre-treatment dropouts, treatment dropouts and completers.

	Pre-treatment Dropouts			Treatment Dropouts			Completers		
	Mean	SD	N	Mean	SD	N	Mean	SD	N
Brief COPE									
Emotion-focused coping	4.06	2.24	7	5.54	1.20	8	3.99	1.81	88
Cognitive Coping	5.31	1.30	7	5.08	1.61	8	4.25	1.82	88
Active Coping	4.81	1.56	7	4.46	1.98	8	4.42	1.51	88
Avoidance Coping	4.94	2.21	7	4.15	2.54	8	4.10	2.07	88
Gambling Amount ($ per day)	1566.28	900.97	7	291.82	334.63	8	351.02	652.08	88
GUS Total Score	19.69	11.74	7	22.46	9.80	8	18.36	10.16	88
GRSEQ Total Score	862.00	441.15	7	806.15	476.63	8	884.44	424.74	88
GRCS Total Score	82.93	15.81	7	85.69	24.99	8	78.94	19.74	88
TEQ									
Expectations	30.25	5.78	7	27.90	7.43	8	28.09	5.95	88
Credibility	21.44	5.11	7	22.50	4.84	8	21.23	4.04	88
WAI	-	-	-	213.13	22.96	7	207.64	29.24	88

GUS = Gambling Urge Scale; GRSEQ = Gambling Refusal Self-Efficacy Questionnaire; GRCS = Gambling-related Cognitions Scale; TEQ = Treatment Expectations Questionnaire; WAI = Working Alliance Inventory.

Table 3.3. Correlations between the study variables.

Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. Emotion-focused coping	-											
2. Cognitive Coping	0.28**	-										
3. Active Coping	0.28**	0.56**	-									
4. Avoidance Coping	-0.05	-0.25*	-0.13	-								
5. Gambling Amount ($ per day)	-0.19	-0.05	-0.03	0.12	-							
6. Gambling Frequency	-.010	0.06	-0.15	-0.04	0.05	-						
7. GUS Total Score	0.05	-0.20*	-0.22*	0.15	-0.14	0.02	-					
8. GRSEQ Total Score	0.05	0.25*	0.16	-0.05	0.10	-0.10	-0.26**	-				
9. GRCS Total Score	-0.01	-0.21*	-0.13	0.22*	0.05	0.22*	0.27**	-0.28**	-			
10. TEQ – credibility subscale	0.27**	0.19	0.13	-0.04	-0.27**	-0.14	-0.12	0.07	0.04	-		
11. TEQ – expectations subscale	0.13	0.23*	0.16	0.137	0.09	-0.07	-0.18	0.01	-0.08	0.31**	-	
12. WAI	0.10	0.07	0.10	0.01	-0.27*	0.02	0.02	-0.17	-0.08	0.33**	0.29*	-

GUS = Gambling Urge Scale; GRSEQ = Gambling Refusal Self-Efficacy Questionnaire; GRCS = Gambling-related Cognitions Scale; TEQ = Treatment Expectations Questionnaire; WAI = Working Alliance Inventory.
* $p < 0.05$ **$p < 0.001$

Discriminant function analysis. Cognitive coping significantly discriminated dropouts from completers, $\lambda = 0.91$, $\chi^2 (2) = 9.92$, $p < .01$ (N=101), when entered into the discriminant function analysis. Univariate analyses revealed that use of cognitive coping strategies was a reliable predictor of dropping out, $\lambda = 0.94$, $F(1, 101) = 6.41$, $p < .01$. Overall, 56% of the sample was correctly classified as a dropout or completer. At the individual level, 59% of the dropouts and 63% of completers were correctly classified, based on cognitive coping.

3.3.3.2 Pre-treatment dropouts vs. continuers

Univariate analyses. Of the hypothesised predictor variables, amount of money spent per day and coping style yielded a significant association with dropping out at pre-treatment. Pre-treatment dropouts reported spending significantly more money per day on gambling than those who did not dropout ($F (1, 96) = 4.11$, $p < .05$). Those who dropped out at pre-treatment were also more likely to cope using cognitive coping strategies (e.g., accepting the reality of the problem, viewing the problem in a positive manner) than those who continued ($F (1, 100) = 3.91$, $p < .05$). No statistically significant differences were found between pre-treatment dropouts and continuers with regard to urge to gamble ($F (1, 101) = 0.06$, $p = 0.80$), self-efficacy to control gambling ($F (1, 99) = 0.01$, $p = 0.93$), gambling-related cognitions ($F (1, 99) = 0.28$, $p = 0.60$), treatment credibility ($F (1, 97) = 0.01$, $p = 0.97$), and expectations for treatment success ($F (1, \geq 97) = 1.74$, $p = 0.19$).

Discriminant function analysis. Amount spent on gambling per day and cognitive coping significantly discriminated pre-treatment dropouts from continuers, $\lambda = 0.92$, $\chi^2 (2,) = 7.87$, $p < .05$ (N=101), when entered into the discriminant function simultaneously. Univariate analyses revealed that a higher amount spent on gambling was the most

reliable predictor of dropping out at pre-treatment, $\lambda = 0.96$, F(1, 101) = 4.03, p < .05, followed by use of cognitive coping strategies, $\lambda = 0.96$, F(1, 101) = 3.54, p < .05. Overall, 66% of the sample was correctly classified as a pre-dropout or continuer. At the individual level, 53% of the pre-treatment dropouts and 68% of continuers were correctly classified, based on gambling amount and cognitive coping.

3.3.3.3 Treatment phase dropouts vs. completers

Univariate analyses. Of the hypothesised predictor variables, only coping style yielded a significant association with dropping out from treatment sessions. Those who dropped out from treatment sessions were more likely to cope using emotional coping strategies (e.g., seeking support) than those who completed treatment (F (1, 100) = 8.16, p <.01). No significant differences were found between treatment phase dropouts and completers with regard to amount spent on gambling (F (1, 96) =0.15, p = 0.70), gambling urge to gamble (F (1, 101) =1.59, p = 0.21), self-efficacy to control gambling (F (1, 99) =0.25, p = 0.62), gambling-related cognitions (F (1, 99) =1.05, p = 0.31), treatment credibility (F (1, 97) =0.74, p = 0.39), expectations for treatment success (F (1, 97) =0.08, p = 0.77), and therapeutic alliance (F (1, 66) =0.26, p = 0.62).

Discriminant function analysis. In the prediction of treatment phase dropout, emotion-focused coping significantly discriminated treatment phase dropouts from completers, $\lambda = 0.90$, χ^2 (2) = 10.85, p < .01 (N=101), when entered into the discriminant function analysis. Univariate analyses revealed that use of emotion focused coping strategies was a reliable predictor of dropping out, $\lambda = 0.93$, F(1, 101) = 8.16, p < .01. Overall, 61% of the sample was correctly classified as a treatment phase dropout or

completer. At the individual level, 77% of the treatment phase dropouts and 58% of continuers were correctly classified, based on emotion-focused coping.

3.3.3.4 Expectations for treatment success as a mediator

The final aim of this study was to explore the mediating role of client expectations for treatment success. However, client expectations for treatment success were found not to be a predictor of dropout (F $(1, \geq 97) \geq 0.08$, p ≥ 0.19). Client expectations did not therefore mediate the relationship between psychological, gambling-related and treatment-related variables and dropout from pathological gambling treatment.

3.4 Discussion

This study was an in-depth exploration of dropout from cognitive-behavioural treatment for pathological gambling. Consistent with previous literature a substantial proportion of pathological gamblers did not complete treatment. The rate of dropout (42%) identified in the current study is however higher than reported previously regarding the extent of dropout from pathological gambling treatment. For instance, the review of the literature reported in Chapter Two found that on average, 31% of the participants dropped out of treatment (Melville et al., 2007). The comparatively higher rate of dropout detected here may reflect the extended investigation of dropout undertaken in this study. Whilst most studies only inquired about the prevalence of dropout during treatment sessions (Ladouceur, et al., 2001; Leblond, et al., 2003), this study explored dropout prior to commencing treatment sessions as well as dropout from treatment sessions. Overall, this finding supports earlier literature demonstrating that the

decision to remain in treatment for pathological gambling is not always made with ease or with a high level of commitment (Sylvain, et al., 1997).

In support of the extended investigation of dropout undertaken in this thesis, the results of this study suggest that participants who dropout are likely to do so early and if they remain long enough to commence treatment they are more likely to complete the entire course of treatment. In particular, majority of dropout occurred prior to commencing treatment: 36% of eligible participants dropped out prior to commencing treatment compared with 8% dropout from treatment sessions. This finding strongly suggests that exploring dropout at different stages of psychological treatment programs is critical in increasing our understanding of the specific "risk" points at which clients are most likely to be lost. Furthermore, these results have critical implications for clinicians working within this field. Specifically, allocating time prior to clients commencing treatment sessions to intervene and prevent dropout may ultimately enhance treatment retention.

Consistent with Liese and Beck's (1997) cognitive model, clients who dropped out outlined a variety of reasons for prematurely terminating treatment. Reasons for dropping out related to: logistical (e.g. work commitments, inability to travel to the Clinic, relocating house, being too busy), psychological (e.g. health problems, depressive mood, exacerbation of urge to gamble), medical (e.g., health difficulties) or treatment difficulties (e.g. disliking pre-treatment questionnaires). This finding supports Liese and Beck's (1997) prediction that a variety of factors place people at high risk for dropping out of psychological treatment and suggest that dropout is a multifaceted phenomenon and that reasons for dropout tend to be specific and relevant to each individual's own

circumstances. Despite this heterogeneity, several variables were found to reliably discriminate between dropouts and completers, including the use of cognitive coping strategies, use of emotion focused coping strategies and amount of money spent per day on gambling.

Dropping out at any time and dropping out prior to commencing treatment was associated with use of cognitive coping strategies. Cognitive coping strategies involve changing or re-evaluating the way a person thinks about something and may involve accepting the reality of the situation or viewing the problem in a positive manner (e.g. I accept the reality of the fact that it happened; Bifulco & Brown, 1996). This study was the first to document an association between use of cognitive coping strategies and dropout from treatment for pathological gambling. It is difficult to understand why pathological gamblers who use cognitive coping strategies are more likely to drop out of cognitive- behavioural treatment. However, research on help-seeking attitudes of pathological gamblers may shed some light on this finding. Specifically, researchers have noted that it is common for pathological gamblers to view their difficulties in an unrealistically positive manner, believing that they are experiencing fewer difficulties with gambling than they actually are, and downplaying the effort involved in recovering (Brown, 1986; Evans & Delfabbro, 2005; Hodgins & El Guebaly, 2000).

In contrast, use of emotion-focused coping strategies was found to be associated with dropping out from treatment sessions. Emotion-focused coping strategies are used to moderate or eliminate unpleasant emotions and may involve seeking social support, seeking advice, receiving moral support, venting emotions or seeking understanding (Lazarus & Folkman, 1998). No previous research has documented an association

between use of emotion-focused coping skills and dropout from treatment for pathological gambling. This result may reflect the nature of the cognitive- behavioural treatment program. This 6-session program focused on providing psycho-education on pathological gambling and the cognitive- behavioural framework, and helping clients to monitor their gambling behaviour and develop strategies to successfully stop or stabilize their gambling. Given the directive, structured and brief nature of this program, clients with a preference for emotion-focused coping strategies may prefer a treatment that provides more opportunities for expressing and exploring emotions, and seeking emotional support. Further research is needed to explore whether use of emotion-focused coping strategies is less likely to be associated with dropout from longer duration, more intensive psychological treatment, or in emotion-focused treatment approaches for pathological gamblers.

Amount ($ spent per day) gambled was associated with dropping out of psychological treatment for pathological gamblers. The association between amount gambled and dropout was specific to the time that dropout was assessed, with the effect only being seen for dropout prior to commencing treatment. Although this study was the first to report an association between amount ($ spent per day) gambled and dropout from treatment for pathological gambling, the finding is consistent with research that has documented a relationship between higher rates of substance (alcohol and drug) use and dropout from substance use treatment programs (Stark, 1992). Pathological gamblers who gamble at a more severe level may perceive that more time and effort will be required in treatment to produce change. Alternatively, they may have had unsuccessful treatment experiences in the past, or may be more likely to have comorbid psychological

difficulties that may complicate treatment. Such individuals may be more reluctant to begin treatment or more likely to be discouraged by the pre-treatment process.

The relationship between dropout and client expectations for treatment success, predicted by Liese and Beck's (1997) cognitive model and documented in research with other psychological disorders (Stark, 1992) was not evident in the present study. There are several possible explanations for this finding. It may be that the relationship of expectancies to dropout may be disorder-specific, and is not present in psychological treatment for pathological gamblers. However research findings in the broader psychological literature relating expectations to dropout are varied, and although significant findings exist, about equal numbers of studies reported significant, mixed and non-significant findings (Dew & Bickman, 2005). Alternatively, it is possible that these results were influenced by the timing of expectancy assessment. In line with many other studies in the area (Connolly Gibbons, et al., 2003), treatment expectations was assessed prior to contact with the therapist. However, expectations are also shaped by the client's early experiences of therapy and the therapist, and expectancies assessed after contact with the therapist may be very different from those assessed during the pre-treatment assessment. The latter are more likely to influence retention. Accordingly, it is recommend that further research assesses expectations at various points throughout treatment.

Several limitations are evident in the current study. Firstly, results can only be generalized to pathological gamblers receiving face-to-face CBT. Although evidence to date most strongly supports the use of face-to-face CBT, other types of modalities for delivering CBT are emerging (e.g., Internet-based delivery of CBT) (Pallanti, Rossi, &

Hollander, 2006). It would be of interest to examine whether there is a similar extent of dropout and similar predictors of dropout when other modalities are used to deliver CBT. In addition, participants in this study received CBT in a group or individual format. It is possible that group interpersonal factors may have been involved in drop-out from this study. Unfortunately exploration of the influence of group factors on dropout is beyond the scope of this thesis and as such is an important avenue for future research. Finally, although this Study identified some reliable predictors of dropout from cognitive-behavioural treatment for pathological gamblers, the best combination of predictors explained only a moderate amount of the variance. Future investigations should explore the effect of a wider range of predictor variables within a larger sample of pathological gamblers. In particular, research might benefit from exploring variables such as the presence of environmental stressors, the influence of supportive social relationships, motivation to change, impulsivity and early treatment response. Increased accuracy of predicting which clients prematurely terminate treatment may provide important insights into strategies that may be used to engage and retain greater proportions of gamblers, and thereby increase the impact of psychological interventions for pathological gambling.

3.5 Summary of Chapter Three

This Study identified a high rate of dropout (42%) with majority occurring prior to commencing treatment sessions. Clients who dropped out outlined a variety of reasons for dropping out including logistical, psychological, medical and treatment difficulties. Furthermore, dropping out at any time from registration to completing treatment was associated with using cognitive coping strategies; dropping out prior to commencing treatment was associated with spending a greater amount of money per day on gambling

and using cognitive coping strategies; and dropping out from treatment sessions was associated with using emotion-focused coping strategies. These findings not only increase our understanding about which pathological gamblers are at greatest risk for dropping out of cognitive- behavioural treatment, but provide further evidence of the difficulty in retaining pathological gamblers in treatment. Consequently, a major challenge for treatment providers is to increase the accessibility of treatment for pathological gamblers. A novel and promising approach is Internet- delivered psychological treatment (Griffiths & Cooper, 2003). It is not known, however, whether dropout is also a problem within this form of treatment. The following chapter reviews the available literature exploring dropout from Internet-based treatment for psychological disorders.

CHAPTER 4

LITERATURE REVIEW II: DROPOUT FROM INTERNET-BASED

TREATMENT FOR PSYCHOLOGICAL DISORDERS

4.1 Overview of Chapter Four

The purpose of this chapter is to present an in-depth analysis of literature

identifying the extent of dropout from Internet-based treatment programs for

psychological disorders, and literature exploring the variables associated with dropout

from such programs.

4.2 Internet-based Treatment for Psychological Disorders

The Internet is fast becoming an important tool for delivering mental health

interventions due to its relative advantages over face-to-face treatment. Internet-based

psychological treatment can be more accessible than face-to-face treatment. Recent

Australian Bureau of Statistics (Australian Bureau of Statistics, 2007) figures indicate

that 60% of Australian homes have access to a computer and that the percentage of

households with Internet access continues to increase and has almost quadrupled between

1998 (16%) and 2005-06 (60%). Internet- based psychological treatment is also more

cost-effective, less labour intensive, updateable, available on a 24-hour basis, self-paced

and available to anyone (including those who are constantly on the move and those who

live rural or regional areas) who has access to the Internet. Internet-based treatment may

also overcome barriers that may prevent pathological gamblers from persisting in face-to-

face treatment. For instance, of particular relevance to the use of Internet-delivered

treatment for pathological gambling is the observation that some individuals may prefer the Internet to other methods of delivering and receiving mental health interventions because of its anonymity (Griffiths & Cooper, 2003). Examining the reasons that pathological gamblers may delay seeking treatment, Tavares and his colleagues (Tavares, Martins, Zilberman, & el Guebaly, 2002) found that shame and secrecy regarding gambling were amongst the strongest predictors of delay. Certainly, there is evidence that people generally are more willing to admit vulnerabilities to a computer (Robinson, Patrick, Eng, & Gustafson, 1998). In a small group of studies comparing e-therapy with traditional psychotherapy, it was found that many individuals find it easier to self-disclose on the computer than in face-to-face situations (Wallace, 1999). Thus, development of Internet-based interventions may reduce the embarrassment and shame that prevents some pathological gamblers from persisting in treatment by more traditional means and provide a highly useful addition to treatment options in this area.

There are two main approaches to using the Internet to provide psychological treatment. The first, online therapy, involves exchanges via email or chat between the client and therapist (Strom, 2003). Online therapy has been widely discussed in the literature, and concerns relating to confidentiality, licensing of therapists and the effectiveness have been identified (Griffiths, 2001). A second approach, Internet-based treatment, refers to web-based treatment programs delivered by structured web pages that the participant works through more or less independently on the Internet (i.e. with minimal therapist contact) (Strom, 2003). This approach has been found to be associated with positive outcome in a number of psychological disorders including depression (Clarke, et al., 2005; Clarke, et al., 2002; Patten, 2003), panic disorder (Carlbring, et al.,

2005; Carlbring, Westling, Ljungstrand, Ekselius, & Andersson, 2001), posttraumatic stress disorder (Lange, et al., 2003; Lange, et al., 2000; Lange, et al., 2001) and social phobia (Carlbring, Furmark, Steczko, Ekselius, & Andersson, 2006).

When the present thesis was initiated, there were no published studies concerning the efficacy of Internet-based treatment for pathological gambling. More recently, however, progress has been made by researchers in Sweden with the development of an Internet-based program for the treatment of pathological gambling (Carlbring & Smit, 2008). As previously noted, this program was based on established cognitive-behavioural methods and was divided into eight online treatment modules. Sixty-six participants were randomly allocated to either the Internet-based treatment program (n=34) or a waitlist-control condition (n=32). The results indicated that the Internet-based intervention resulted in favourable changes in pathological gambling, anxiety, depression and quality of life that were sustained at 6-, 18- and 36- months post-treatment. Dropout within the program appeared to be low, with results suggesting that 9% (n=6) of participants dropped out following randomisation to a treatment condition (i.e., treatment session dropout).

Although this study provides valuable information about dropout from Internet-based treatment for problem gambling it has important limitations. Most notably, the therapists in this study maintained weekly telephone contact with participants. There has been a trend within some structured Internet-based programs to maintain a certain level of telephone or online therapy contact with participants (e.g. chat or discussion forums) to follow progress, answer questions or provide encouragement and motivation (Strom, 2003). In such cases, there is no precise definition of where structured Internet-based

treatment stops and online therapy or telephone-based support starts. In the absence of research that dismantles studies of such compound treatment packages, this tendency makes it difficult to evaluate the relative contribution of each aspect of treatment to dropout. To address this issue, only Internet-based treatments involving minimal therapist contact were included in the following review. That is, interventions involving face-to-face therapist contact beyond a clinical interview, ongoing exchanges beyond emails, discussion forums or scheduled telephone calls were excluded.

4.3 Defining Dropout from Internet-based Treatment for Psychological Disorders

As was suggested by Eysenbach (2005) and noted in Chapter Two dropout from psychological treatment programs may occur at any one of a number of points of a research project. Exploring dropout at different stages of longitudinal treatment programs is critical in enhancing understanding of the specific "risk" points at which clients are most likely to be lost. Thus three types of dropout will be explored: pre-treatment dropout, treatment phase dropout and follow-up dropout. Pre-treatment dropout will refer to withdrawal from participation subsequent to clients completing a recruitment, selection and informed consent process. Researchers reporting dropout from Internet-based treatments also vary in their use of terms to describe dropout. For instance, "premature termination", "attrition", "non-usage" and "dropout" are used interchangeably in the literature to indicate clients who do not complete treatment. Researchers also use different approaches to define dropout. For example, many researchers have defined dropout as termination at any point between registering for treatment and completing post-treatment questionnaires (Andersson, Strom, & Pettersson, 2002; Carlbring, et al., 2001; Lange, et al., 2003; Lange, et al., 2000; Lange, 2001; Lars

Strom, et al., 2004). A less common approach restricts the definition of dropout to people who commence treatment, but fail to complete all treatment sessions (Carlbring, et al., 2006; Carlbring, et al., 2005). As was noted in Chapter Two, evaluations of dropout rates would be greatly assisted by a more consistent approach to its operationalisation.

4.4 Data Selection, Study Extraction and Data Extraction

A comprehensive literature search was conducted on PSYCHINFO and PUBMED databases for the period 1960 to April 2009. Key search terms were: dropouts, drop out, dropout, dropping out, attrition, premature termination, termination, non-compliance, treatment, intervention and program, each in combination with the key words Internet and web. Papers were also retrieved from the reference lists of papers that were identified through database searches. Internet-based psychological treatments were defined as structured psychological treatments which the participant undertook more or less independently on the Internet (i.e. with either limited or no therapist support). Interventions involving face-to-face therapist contact beyond a clinical interview; that is ongoing exchanges beyond emails, discussion forums or scheduled telephone calls were excluded. Studies in the current review were also restricted to trials of psychological interventions that were aimed at relieving distress or dysfunction associated with psychiatric disorders of adults (as included in the DSM-IV (American Psychiatric Association, 2000) or ICD-10 mental disorders (World Health Organisation, 1992). Studies addressing medical difficulties (e.g., tinnitus) or ones that aimed to prevent psychological disorders in at-risk populations (e.g., heavy drinkers) were excluded. Studies were also excluded if criteria used to determine a psychological disorder were unclear. The target populations were restricted to adults, since the retention of children

or adolescents may present different issues (e.g., requiring the continued engagement of both parents and their children). Studies involving non-psychological treatment (e.g. medical or drug therapy, dietary advice) were excluded. Given the difficulty in assessing dropout from open-access and one-session treatment interventions, studies involving these treatment programs were also excluded. However, studies were not excluded because of restriction to a type of psychological disorder, design, sample size or type of analysis.

4.5 Results

4.5.1 Extent of Dropout from Internet-based Treatment for Psychological Disorders

Of the 542 studies returned through database searches, 56 were retrieved for more detailed evaluation. Thirty-seven of these studies were excluded as they addressed medical conditions (8 studies), included a discussion forum within the treatment program (7), addressed subclinical psychological symptoms (9), explored one session interventions (5) contained face-to-face contact beyond a clinical interview (3), explored open-access interventions (3) or contained regular telephone support (2). Nineteen studies that reported on the extent of dropout from Internet-based treatment programs with minimal therapist contact were identified (Figure 4.1). A summary of their results is in Table 4.1. The year of publication ranged from 2000 to 2007. Studies came from Australia (4 studies), Sweden (8), The Netherlands (5) and the UK (2). Sample sizes ranged from 11 to 184. Dropout from Internet-based treatment programs ranged from 2% to 83%, with a median of 19%, and a weighted average (correcting for sample size)

Table 4.1. Extent of dropout throughout Internet-based treatment

Study	Clients and treatment	Extent of Dropout		
		Pre-treatment dropout	Treatment Phase Dropout	Follow-up dropout
Andersson, Strom & Pettersson, 2002	109 individuals registered to receive a 5-week cognitive-behavioural program for insomnia.		← 24% (n=26) →	
Carlbring, Nilsson-Ihrfelt, Waara, Kollenstam, Buhrman, Kald et al., 2005	25 individual allocated to receive a 10-session cognitive- behavioural program for panic disorder		← 12% (n=3) →	
Carlbring, Westling, Ljungstrand, Ekselius & Andersson, 2001	41 individuals registered to receive a 6-session cognitive- behavioural program for panic disorder.	← 24% (n=10) →	← 12% (n=5) →	
Carlbring, Ekselius & Andersson, 2003	22 individuals registered to receive a 9 week cognitive-behavioural program for panic disorder		← 23% (n=5) →	
Carlbring, Gunnarsdottir, Hedensjo, Andersson, Ekselius & Furmark, 2007	126 individuals who fulfilled inclusion criteria to receive a 9-week cognitive-behavioural program for social phobia.	← 54% (n=68) →	← 4% (n=5) →	← 1% (n=1) →
Carlbring, Bohman, Brunt, Buhrman, Westling, Ekselius & Andersson, 2006	60 individuals who registered to receive a 10-week cognitive- behavioural program for panic disorder		← 2% (n=1) →	
Kenwright, Marks, Gega & Mataix-Cols, 2004	11 individuals randomly allocated to receive cognitive-behavioural treatment for phobia /panic.	← 9% (n=1) →	← 0% (n=0) →	
Klein & Richards, 2001	22 individuals allocated to receive a 3-week cognitive-behavioural program for panic disorder.		← 5% (n=1) →	
Klein, Richards & Austin, 2006	19 individuals allocated to receive a 6-week cognitive-behavioural program for panic disorder.		← 5% (n=1) →	
Knaevelsrud & Maercker, 2007	96 individuals allocated to receive a 5-week cognitive-behavioural program for posttraumatic stress disorder.		← 9% (n=9) →	← 0% (n=0) →
Lange, Schrieken, van de Ven, Bredeweg & Emmelkamp, 2000	24 individuals receiving a 5-week program for posttraumatic stress disorder and pathological grief	← 4% (n=1) →	← 8% (n=2) →	← 12% (n=1) →
Lange, van de Ven, Schrieken & Emmelkamp, 2001	30 individuals allocated to receive a 5 week program for posttraumatic stress disorder		← 17% (n=5) →	
Lange, van de Ven & Schrieken, 2003	184 individuals who fulfilled criteria to receive a 5 week program for posttraumatic stress disorder		← 24% (n=44) →	← 28% (=51) →

Table 4.1. Extent of dropout throughout Internet-based treatment (cont.)

Study	Clients and treatment	Extent of Dropout		
		Pre-treatment dropout	Treatment Phase Dropout	Follow-up dropout
Nevronen, Mark, Levin, Lindstrom & Paulson-Karlsson, 2006	40 individuals who fulfilled inclusion criteria to receive a cognitive- behavioural program for bulimic symptoms	← 5% (n=2) →	← 78% (n=31) →	
Richards & Alvarenga, 2002	14 individuals allocated to receive a 5 module cognitive- behavioural program for panic disorder		← 36% (n=5) →	
Richards, Klein & Austin, 2006	32 individuals allocated to receive a 8 week cognitive-behavioural program for panic disorder		← 16% (n=5) →	
Schneider, Mataix-Cols, Marks & Bachofen, 2005	68 individuals who fulfilled criteria to receive a 10 week cognitive- behavioural program for phobic or panic disorders with or without exposure instructions	← 6% (n=4) →	← 24% (n=16) →	← 6% (n=4) →
Strom, Pettersson & Andersson, 2004	109 insomnia sufferers enrolled in a 5-week cognitive- behavioural program	← 10% (n=11) →	← 10% (n=11) →	← 4% (n=4) →
Wagner, Knaevalsrud & Maercker, 2006	55 individuals allocated to a 5-week cognitive-behavioural intervention for complicated grief		← 8% (n=4) →	← 2% (n=1) →

of 31%. Only 10 of the 19 studies examined dropouts at different stages of the treatment

process (Carlbring, et al., 2007; Carlbring, et al., 2001; Kenwright, Marks, Gega, &

Mataix Cols, 2004; Klein & Richards, 2001; Knaevelsrud & Maercker, 2007; Lange, et

al., 2003; Lange, et al., 2000; Nevonen, Mark, Levin, Lindstrom, & Paulson-Karlsson,

2006; Schneider, Mataix Cols, Marks, & Bachofen, 2005; Strom, et al., 2004; Wagner,

Knaevelsrud, & Maercker, 2006). As the table shows, the extent of dropout occurring

prior to commencing ranged from 4% to 52%, with a median of 10% and a weighted

average of 21%. Dropouts during treatment ranged from 0% to 78%, with a median of

10% and a weighted average of 21%. Follow-up dropouts ranged from 0% to 18%, with

a median of 4% and a weighted average of 8%. In addition, it is clearly also important to consider dropout occurring at a number of points throughout Internet-based treatment. Overall, these results suggest that dropout from Internet-based treatment programs for psychological disorders occurs at a high frequency. The evidence obtained here also suggests that the extent of dropout is similar to that found in face-to-face treatment programs for pathological gamblers.

4.5.2 Variables Associated with Dropout from Internet-based Psychological Treatment Programs

Thirteen studies reported on the variables associated with dropout from Internet-based treatment programs. Years of publication ranged from 2000 to 2006, and sample sizes ranged from 11 to 184. Three broad categories of predictors were identified: sociodemographic and contextual variables, psychological problems and treatment-related variables. Table 4.2 displays the number of studies in which each variable was examined; whether the variable was a significant predictor of dropout; and the direction of the relationship.

4.5.2.1 Sociodemographic and contextual variables

Age. In one study with 184 individuals who commenced an Internet-based cognitive-behavioural program for post-traumatic stress disorder (PTSD), Lange et al (2003) reported that the mean age of participants who dropped out (33 years) was significantly less than that of those who completed the program (38 years). It is possible that younger clients are more geographically mobile and are likely to have less family

Table 4.2. Predictors of dropout from Internet-based psychological treatment.

Predictor Variables		Number of studies	Non Significant (p >0.05)	Significant (p <0.05)
Sociodemographics	Age	2	1	1 (-)*
	Gender	2	1	1 (male)
	Years of education	2	2	0
	Relationship status	1	0	1 (+)
Psychological	Duration of target disorder	2	2	0
	Severity of target disorder	3	0	3 (3-)
	Comorbid depression	2	2	0
	Comorbid anxiety	2	2	0
Treatment-related	Treatment credibility	2	2	0
	Internet /computer experience	1	1	0

* Number of studies with either a positive (+) or negative (-) relation with dropout.

and community ties that might stabilise the individual and support continuation in treatment (Baekeland & Lundwall, 1975). Alternatively, their behaviour may reflect differential use of the Internet more generally. No association between age and dropout was observed in a study of 109 individuals who registered to receive Internet-based cognitive-behavioural treatment for insomnia (Strom et al., 2004). However, since the age of participants in that study was greater than that of participants in the Lange et al (2003) paper (mean age 44 years versus 36years) it is possible that the potential for identifying the impact of younger age on dropout was restricted.

Gender. Research on the influence of gender has produced equivocal results. A study with 184 individuals who received an Internet-based program for PTSD found that a significantly higher proportion of males (71%) than females (19%) dropped out of

treatment (Lange et al., 2003). However, no relationship between gender and dropout was found in the Strom et al. (2004) insomnia study. In the face-to-face treatment literature, complex interactions between gender and dropout have been documented (Stark, 1992). Interactions between gender, treatment type and dropout have been found with individuals completing substance abuse treatment programs. For example, Greene and Ryser (1987) found that women were less likely to drop out of detoxification, hospital, drug-free outpatient and day treatment modalities than males. In addition, researchers have noted that the relationship between gender and dropout may be mediated by other variables. Beckman and Bardsley (1986) reported that variables associated with continuation in face-to-face treatment for women included the belief that a person's health is not controlled largely by chance and the reporting of more availability of health services. For men, variables associated with continuation in treatment were being employed, having a professional occupation, being married, having a larger number of children, and having children ages 5-17 who lived with them and for whom they had some source of child care. Men also remained in treatment longer if they had less prior treatment, lower alcohol consumption, less pathological drinking, lower self-reported depression, and higher self-efficacy regarding the use of alcohol. Taken together, these results suggest that the relationship between dropout and gender is complex even in face-to-face treatment. This relationship is likely to require further investigation in Internet-based interventions, particularly given evidence of gender differences in general use of the Internet (Wasserman & Richmond-Abbott, 2005).

Socioeconomic variables. Researchers have predicted that socioeconomic difficulties, such as a limited education, low income or a lack of full-time employment,

are likely to increase stress, and may make it difficult to complete psychological

treatment (e.g. because of web access, computing and treatment costs, or competition

with job-seeking) (Baekeland & Lundwall, 1975; Stark, 1992). On the other hand, it is

also possible that individuals with increased education and earning a higher income from

full-time employment may be too busy to complete treatment. Two studies explored the

influence of education on dropout from Internet-based treatment (Lange et al., 2003;

Strom et al., 2004). However, neither study showed an association between dropout and

level of education. Associations of dropout with other potentially important

socioeconomic variables such as income and employment require further examination.

Relationship status. The quality of an individual's social environment may be

related to dropping out of Internet-based treatment. Participants with a partner who can

provide support for continued involvement might be expected to have a lower risk of

dropping out. However, the Lange et al. (2003) study found that participants living with

a partner were actually more likely to drop out of treatment than those without. This

finding underlines the fact that partners can be a potential source of stress as well as a

source of social support (Kavanagh, 1992). For example, in the face-to-face treatment

literature, high expressed emotion, including critical, hostile and emotional over-

involvement among family members, is related to decreased outcome following

cognitive- behavioural treatment for post-traumatic stress disorder (Tarrier, Sommerfield,

& Pilgrim, 1999). Alternatively, it is also possible that Internet-based treatment may

provide a source of support for participants who do not have a partner, however provide

no added benefit to those who already have support from a partner. The effects of

relationship status, social support and related variables on dropout from Internet-based psychological treatment require more research attention.

4.5.2.2 Psychological problems

Duration and severity of target psychological problem. Individuals with a longer duration of psychological difficulties may require more time and effort in treatment to produce change; they may have had unsuccessful treatment experiences in the past; and they may be more likely to be experiencing comorbid psychological difficulties that may complicate treatment. As a result, such individuals may be may be more likely to become discouraged with treatment and therefore be more at risk of dropping out. Prediction of dropout from duration of psychological problems was explored in Lange et al. (2003) and Strom et al. (2004). Neither study found an association between duration of psychological problems and dropout. A longer duration of psychological difficulties may be influenced more by age and may not reflect the intensity of the psychological difficulties. Severity of the current psychological problem, rather than the duration, may be associated with dropping out of treatment. Conversely, clients with less severe problems may be less motivated to receive ongoing help and subsequently more likely to drop out of treatment. It is the latter hypothesis that has received most support to date: All three studies that have explored the influence of severity of target psychological problem on dropout have found that people with less severe psychological difficulties were more likely to drop out of Internet-based treatment (Lange et al., 2001; Schneider et al., 2005; Strom et al., 2004). For example, in a sample of 68 individuals who fulfilled criteria to receive a 10 week cognitive- behavioural program for phobic or panic disorders, Schneider et al. (2005) found that dropouts had a significantly less severe

disorder than completers. Similar results were obtained with PTSD (Lange et al., 2001) and insomnia (Strom et al., 2004).

Comorbid depression or anxiety. When participants have been asked why they terminated Internet-based treatment, several researchers have noted that they report withdrawing due to the onset or worsening of depressive symptoms (Klein et al., 2006; Richards et al., 2006; Scheider et al. 2005). Depressed mood, feelings of hopelessness, lethargy and a lack of interest and motivation might all be expected to increase the risk of dropout. However, neither of the two studies that have examined this question has found a relationship between depression and dropout. For example, Lange et al (2001) found no association between self-reported depression, assessed at baseline on the Symptom Checklist-90 (SCL-90; Derogatis, Lipman, & Rickels, 1974), and dropout from treatment for PTSD.

Research on the influence of comorbid anxiety has also produced non-significant results. For instance, Strom et al. (2004) found that anxiety assessed on the Hospital Anxiety and Depression Scale (HADS; Lisspers, Nygren, & Söderman, 1997) did not predict dropout from insomnia treatment. Similarly, Lange et al. (2001) found no difference between dropouts and completers on SCL-90 anxiety assessed at baseline.

Other psychological variables. Future research might benefit from exploring the influence of personality variables such as impulsivity, distractibility and conscientiousness on dropout from Internet-based treatment. High impulsivity may make it difficult for individuals to persist in treatment without dropping out, because their high sensitivity to immediate rewards may be more powerful than the longer term rewards of treatment. Impulsive individuals may therefore be more likely to drop out or disengage

when they become bored with routine clinical tasks and procedures (Blaszczynski, et al., 1997). Individuals high on distractibility may also be more likely to drop out due to ease with which they can disengage from Internet-based sessions when they become bored with routine clinical tasks and procedures. Finally, individuals who are low in conscientiousness may be less responsible, reliable and committed to treatment, and hence, more likely to leave voluntarily.

4.5.2.3 Treatment-related variables

Treatment credibility. Clients may be less likely to drop out if they have positive beliefs about the treatment program's credibility (Liese & Beck, 1997). Two studies have explored the influence of perceived treatment credibility on dropout from Internet-based treatment (Carlbring et al., 2001; Carlbring et al., 2003). No relationship was found between treatment credibility and dropout in either study. For example, in a study with 41 people completing an Internet-based cognitive-behavioural treatment for panic, Carlbring and colleagues (2001) found no significant difference between dropouts and completers on a 10-point treatment credibility scale adapted from Borkevec and Nau (1972).

Related variables that warrant investigation include client expectations about the potential effectiveness and success of treatment, and initial improvement from treatment (i.e., treatment response; which may be expected to bolster treatment expectancies further). Confidence in the treatment's ability to produce positive change, as well as treatment outcome, are potentially of importance to dropout (Liese and Beck, 1997), but no studies were identified that have examined these variable in Internet-based psychological treatment to date. Within the computer-aided psychological treatment

literature, associations between expectancies and outcome have been found.   For

example, within a sample of 191 participants completing computer-aided cognitive-

behavioural treatment for depression and anxiety, Cavanagh and colleagues (Cavanagh,

et al., in press) identified that participants who indicated more positive pre-treatment

expectations of treatment were less likely to drop out of the treatment program.

     Computer and Internet experience. Clients may be more likely to remain in

Internet-based treatment if they have had experience with and are therefore more familiar

and comfortable with using a computer and the Internet (Devineni & Blanchard, 2005).

Only one study to date has explored the influence of computer and Internet experience on

dropout from Internet-based treatment for psychological disorders. Surprisingly, Lange

et al. (2003) documented that clients with greater levels of computing or Internet

experience were *more* likely to drop out of Internet-based PTSD treatment. It is possible

that individuals with greater levels of computer or Internet experience may be more likely

to experiment with Internet-based treatment without a high degree of commitment to

completing it. Similarly, individuals with more computer or Internet experience may be

likely to drop out as they are more capable of seeking alternative Internet-based sources

of support when they become dissatisfied with their initial Internet-based program.

     Related variables that warrant investigation include a negative attitude towards

computers and reading. People who dislike computers or reading moderate amounts of

text may be at risk of dropping out because they may be more likely to become irritated

or frustrated by Internet-based treatment. Similarly, a lack of reliable computer and

Internet access or suitably quiet surroundings may create considerable barriers to

regularly completing treatment sessions. Several qualitative investigations of client's

reasons for dropping out of treatment have reported that clients reported a lack of reliable computer access, a lack of computing experience, computer or Internet problems, a dislike of computers, preferring face-to-face treatment and a lack of peace and quiet in their computing environment as reasons for terminating Internet-based psychological treatment (Carlbring et al., 2001; Kenwright et al., 2004; Lange et al., 2000, Lange et al., 2003; Scheider et al., 2005), but there have been no prospective studies on these variables to date.

Motivation to participate in treatment. Future research should also explore the influence of client motivation and related variables on treatment dropout. Insufficient motivation may be related to dropout in that clients who are unmotivated to participate in treatment may be less likely to identify with treatment goals, less likely to comply with treatment tasks and may ultimately be at a higher risk for terminating treatment. Richards et al. (2006) explored client's qualitative reasons for terminating Internet-based treatment for panic disorder. A central theme in the responses provided by clients was a lack of motivation. Competing activities or feeling too busy to complete treatment are other variables that may contribute to dropout. Several qualitative studies have found that clients report a lack of time, being too busy, or the treatment being too time-consuming as reasons for terminating Internet-based treatment (Carlbring et al., 2001, Carlbring et al., 2003, Carlbring et al., 2005, Carlbring et al., 2006; Lange et al., 2003; Schneider et al., 2005).

Other treatment variables. Research should also explore the impact of working alliance on dropout from Internet-based treatment programs. The importance of a strong working alliance in preventing dropout has been demonstrated across a number of studies

within the face-to-face psychological treatment literature (Meier, Donmall, Barrowclough, McElduff, & Heller, 2005). A strong working alliance may be related to dropout in that those clients who feel that their therapist is more understanding, more involved and more agreeable about the goals and tasks of treatment may be at a decreased risk for dropping out. Cook and Doyle (2002) explored the working alliance in a sample of 15 online therapy clients. Results revealed that overall online therapy clients felt a collaborative, bonding relationship with their therapist. Similar results were documented by Knaevelsrud and Maercker (2006) in a sample of 48 individuals receiving Internet-based treatment for posttraumatic stress disorder. Unfortunately, there have been no studies to date exploring the influence of the working alliance on dropout from Internet-based treatment programs.

A related variable that warrants investigation includes the amount and type of therapist contact provided throughout the Internet-based intervention. It is possible that individuals receiving greater levels of therapist contact may be more likely to persist in Internet-based treatment due to feeling more supported and accountable throughout treatment. The importance of therapist contact has been demonstrated across a number of studies within the computer-aided psychological treatment literature (Kenwright, Marks, Graham, Franses, & Mataix Cols, 2005; Palmqvist, Carlbring, & Andersson, 2007). For example, Kenwright and colleagues (Kenwright, et al., 2005) explored the impact of brief live phone support in a sample of 44 individuals completing computer-guided self-help for obsessive-compulsive disorder. Results revealed that participants receiving phone support dropped out significantly less often (95% retention vs. 57% retention; $\chi^2 = 17.31$, $p = 0.01$) than those who did not receive the phone support. Unfortunately, there have

been no studies to date exploring the influence of the therapist contact on dropout from Internet-based treatment programs for psychological disorders. Furthermore, exclusion of programs involving face-to-face therapist contact beyond a clinical interview, ongoing exchanges beyond emails, discussion forums or scheduled telephone calls prevented exploration of the impact of therapist contact within this review. It is recommended that future research explore associations between dropout and the amount and type of therapist contact.

4.6 Limitations to Current Research

There are a number of ways in which research in this area could be improved. It is recommended that future research exploring dropout from Internet-based treatment programs for psychological disorders addresses the following limitations:

1. *Unclear and inconsistent definitions of dropout.* Substantial variation in the definitions used to classify a client as a dropout or continuer as a major methodological difficulty. Dropouts in some studies were not considered as dropouts in others. For example, clients who dropped out after registering for the program and prior to commencing treatment were counted as dropouts in Carlbring et al's (2001) study, but were not considered dropouts by others (Strom, et al., 2004). Using such different criteria to measure the same phenomenon makes interpretation and comparison of results across studies difficult (Armbruster & Fallon, 1994). As suggested in Chapter Two adherence to CONSORT criteria for reporting studies (Moher, Schultz, & Altman, 2001) is clearly required.

2. *Disregarding stage of dropout.* When exploring dropout, it is important to consider the point of treatment at which a client prematurely terminates. Examining dropout at

different stages of the treatment process allows an analysis of the specific points at

which clients are most likely to be lost. Many studies only inquired about the

prevalence of dropout during the entire treatment process (i.e. registration to follow-

up) or at one specific point, such as during treatment (e.g. Richards et al., 2006).

Such differences in measurement make comparisons of overall rates of dropout

difficult. Examining the point of treatment at which a client terminates may also help

in identifying the underlying cause for dropout (Rogers, 2003). Similarly, research to

date has failed to separate variables associated with dropout at different points

throughout the treatment process. All of the studies placed dropouts in a single group

when exploring associations with predictor variables, regardless of the specific point

at which they dropped out of treatment.

3. *Lack of a guiding theoretical model to explore dropout.* Most studies did not examine

dropout within the context of a cohesive model of dropout. One model was identified

which has been used to explain dropout from Internet-based programs for health

conditions (Rogers, 2003). According to this perspective, an individual who drops

out of Internet-based treatment program may have encountered conflicting messages

about the helpfulness of the intervention. For example, following an initial decision

to register for a treatment intervention an individual may seek evidence to support this

decision. If inconsistent evidence about the utility of the intervention is perceived,

dropout may occur. Rogers (2003) outlines characteristics of an Internet intervention

which may play a role in the decision to drop out. These characteristics include:

   a. Relative advantage: the extent to which the Internet intervention is

      believed to be better than alternative treatments

b. Compatibility: the degree to which the Internet intervention is compatible with the values, past experiences and needs of the individual

c. Complexity: how difficult the Internet intervention is to understand and use

d. Trialability: whether the intervention can be experimented on a limited basis prior to commencing formal treatment

e. Observability: whether the results of the intervention are visible to others

For instance, based these characteristics, dropout may occur if the Internet intervention is not perceived as having any benefit (relative advantage); if it is not accessible, takes too long to complete or is expensive (compatibility); if it has usability problems (complexity); if it does not permit a trial (Trialability); or if no positive outcomes are attained (observability). Unfortunately research into this model is limited. Furthermore, this model can be criticised as it fails to consider the influence of factors that are not related to the intervention per se, but more to the participant. These factors may include client socio-demographic factors such as age and education, and disorder /psychological factors such as severity of the target condition.

Although no theoretical models have been developed to explain dropout specifically from Internet-based treatment programs for psychological disorders, models proposed to explain dropout in the face-to-face psychological treatment literature may prove to be useful. As was noted in Chapter Two a promising theoretical approach is provided by Liese and Beck (1997), who developed a cognitive model of dropout among individuals with drug dependence (Liese & Beck,

1997). Although there is limited research that examines the application of this model to Internet-based treatment, evidence from face-to-face treatment for psychological disorders suggests that it may prove to be useful (Melville, et al., 2007). There is a clear need to further explore the variables associated with dropping out of Internet-based psychological treatment, to establish if they are consistent with those outlined by Liese and Beck's (1997) and to examine whether they are mediated by client expectations for treatment success.

4.7 Summary of Chapter Four

The findings of this chapter suggest that many individuals who could benefit from Internet-based treatment services are not receiving the full extent of this support. Additional research is needed to understand and prevent dropout in Internet-based treatment for psychological disorders. Despite numerous variables explored, evidence to date regarding specific variables that may make an individual more likely to drop out is limited. Examples of contextual variables that require attention are income, ethnicity, employment status, the presence of stressful life events, and the influence of supportive social relationships. Psychological variables such as impulsivity, distractibility and conscientiousness, as well as treatment-related variables such as client treatment expectations, the therapeutic alliance, disorder, treatment length, therapist contact, client motivation, a dislike of computers or Internet-based treatment, availability of a reliable computer or Internet access, and availability of a quiet and private computing environment also warrant examination. This chapter also highlighted limitations in the current literature including the need for future research to be grounded in a coherent theoretical framework. The following chapter presents the results of an in-depth analysis

of the extent of dropout and variables associated with dropout within a sample of

pathological gamblers receiving Internet-based psychological treatment.

CHAPTER 5

STUDY II: AN EXPLORATION OF DROPOUT FROM INTERNET-BASED

TREATMENT FOR PATHOLOGICAL GAMBLING

5.1 Overview of Chapter Five

The literature review reported in Chapter Four highlighted that dropout from Internet-based treatment programs is a serious problem that remains poorly understood. This is a cause for concern in view of the possible potential for Internet-based treatment with pathological gamblers. The review also outlined a need for further research that addresses dropout at different points throughout Internet-based treatment programs, investigates a broader range of predictor variables and explores key predictors of dropout within a coherent theoretical framework. To address the above issues, this chapter explores dropout within a sample of pathological gamblers that volunteered to take part in an Internet-based treatment within minimal therapist contact for pathological gambling. The extent of dropout was examined at two different points throughout treatment: pre-treatment dropout (i.e., dropout occurring after providing informed consent and prior to randomisation to a treatment condition), and treatment phase dropout (i.e., dropout occurring after commencing randomisation to a treatment condition and prior to completing that condition). Using Liese and Beck's (1997) cognitive model of dropout as a guiding theoretical model, a range of variables were explored as predictors of dropout before and during treatment. Finally, this study examined whether client expectations for treatment success mediate the relationship between predictor variables and dropout (Liese & Beck, 1997).

5.2 Method

5.2.1 Participants

Participants were individuals living in Australia who volunteered to take part in an Internet-based program to treat their gambling problems. Participants were recruited via Internet, newspaper and radio advertisements about the program offered by Griffith University and the University of Queensland. They were required to be over 18 years of age and to have provided their informed consent after reading information about the study. They were also required to meet Diagnostic and Statistical Manual for Mental Disorders (4th ed.; DSM-IV; American Psychiatric Association, 1994) criteria for pathological gambling as initially assessed using an online checklist. The checklist comprised of ten questions based on DSM-IV criteria for pathological gambling. Respondents were required to indicate yes or no to each item on the checklist. A response of yes to five or more items suggested that the individual would meet DSM-IV criteria for pathological gambling. Participants were excluded from the project if they were receiving additional assistance for their gambling problem; were involved in legal proceedings related to their gambling behaviour; were not proficient with English; at a high risk of suicide; were acutely psychotic; or if their gambling behaviour only occurred in the context of a Manic Episode. Two hundred and twenty three eligible participants registered for the study. The mean age of participants was 42 years (SD = 10.42; range 21 – 67 years). Table 5.1 outlines additional demographics for the participants.

Table 5.1. Demographic Characteristics of Participants

Variable	%
Gender	
Male	41
Female	59
Relationship Status	
Single	36
In a relationship	64
Annual Income	
<$10000AU	3
$10000-29000	17
$30000-49000	31
>$50000	49
Education (highest level)	
Primary	1
Junior secondary	14
Senior Secondary	30
Certificate /Diploma	35
Bachelor /Higher Degree	20
Employment	
Full time	65
Part time	23
Full time students	1
Other	11
Race/Ethnicity	
Caucasian	77
Asian	4
Other	15
Did not report	4
Religion	
Catholic	37
No religion	37
Protestant	9
Other	16
Did not report	1

5.2.2 Selection of Predictor Variables

A pool of potential predictor variables was generated based on Liese and Beck's (1997) cognitive model. As this model was developed largely in relation to clinical observations by its authors, results of the literature reviews presented in Chapters Two and Four were also considered when developing this pool. Unfortunately, because data was collected as part of a larger study on the *Improving the Odds* Internet-based treatment program (Casey, Oei, Raylu, & Lim, 2007) not all potential predictor variables were able to be explored in this study. A total of eleven variables were explored: age, gender, relationship status, previous professional help-seeking, severity of gambling behaviour, impulsiveness, coping style, client motivation, attitude towards reading, frequency of computer and Internet use, expectations for treatment success and early treatment response (assessed prior to session two).

5.2.3 Measures

South Oaks gambling Screen (SOGS) (Lesieur & Blume, 1987). Gambling behaviour over the previous month was assessed using the SOGS. Although the SOGS was originally based on DSM-III criteria for pathological gambling, it is highly correlated with DSM-IV diagnostic criteria (r = .83; Stinchfield, 2002) and has been widely used in gambling research (Stinchfield, 2002). It has been shown to have high validity and high internal consistency and reliability (Cronbach's alpha=0.97, p<0.001) (Lesieur & Blume, 1987, 1993). The SOGS is a 20-item questionnaire that is scored by summing selected items. Scores range from 0 to 20 with a score of five or higher indicating probable

pathological gambling. Internal consistency in the current study was acceptable

(Cronbach's alpha = 0.69). The SOGS is contained in Appendix 5.1.

The Barratt Impulsiveness Scale (11th version; BIS – 11) (Patton, Stanford, &

Barratt, 1995). The BIS-11 is a 30 item questionnaire designed to assess the biological

and behavioural correlates of impulsiveness (Dawe & Loxton, 2004; Quilty & Oakman,

2004). The items of the BIS-11 assess attention, motor impulsiveness, self-control,

cognitive complexity, perseverance and cognitive instability. Respondents are required

to rate each item on a 4-point Likert scale. A total score is obtained by summing the 30

items. Total scores range from 30 to 120 with higher scores indicating increased

impulsivity. The BIS-11has been found to load with other measures of rash impulsivity

and to have high internal consistency (Cronbach's alpha = 0.83) (Torrubia, Avila, Molto,

& Caseras, 2001). Internal consistency in the current study was acceptable (Cronbach's

alphas ≥ 0.82). The BIS-11 is contained in Appendix 5.2.

Coping Style. Coping style was assessed using items derived from the Brief

COPE (Carver, 1997). A detailed description of this measure, including psychometric

properties, is reported in Chapter Three.

Treatment Motivation Questionnaire (TMQ)(Ryan, et al., 1995). The TMQ is a

26-item scale that was developed to assess client's beliefs regarding their reasons for

entering and remaining in treatment. Respondents rate each item on a 7-point Likert

scale ranging from 1 (not true at all) to 7 (very true). The measure is comprised of four

subscales assessing internalised motivation, externalised motivation, interpersonal help

seeking and confidence in treatment. Subscale scores are calculated by averaging the

responses for item in that subscale. The scale has shown to have high internal

consistency and each subscale has been shown to have moderate to high reliability (coefficient alphas ranging from 0.70 to 0.98) (Ryan, et al., 1995). Significant correlations have been found with a variety of psychological indices (i.e., depression, anxiety, problem severity) as well as with treatment dropout. Given the self-help nature of the Internet-based treatment, the interpersonal help-seeking subscale was not administered. Furthermore, the confidence in treatment was not administered as this construct was assessed by the TEQ. Only items assessing internalised and externalised motivation were administered. Internal consistency in the current study was acceptable (Cronbach's alpha = 0.73). The TMQ is contained in Appendix 5.3.

The Rhody Secondary Reading Attitude Assessment (Rhody) (Tullock-Rhody & Alexander, 1980). The Rhody is a 25-item self-report measure that was developed to assess how individuals feel about reading. Whilst the measure was initially developed for use with high school students it is frequently used with adults (Smith, 1991). A typical item states: "You like to stay at home and read." Respondents are required to rate each item on a 5-point Likert scale. Strong agreement with items is indicated by a score of five and a strong disagreement receives a score of one. Total scores on the measure range from 25 to 125; increased scores indicate positive attitudes towards reading. The Rhody scale has good construct validity and the test-retest reliability coefficient = .84 (Tullock-Rhody & Alexander, 1980). The Rhody is contained in Appendix 5.4.

Treatment Expectations Questionnaire (TEQ). The TEQ is a version of the Credibility /Expectancy Questionnaire (Devilly & Borkovec, 2000) that was modified for this study. A detailed description of this measure, including psychometric properties, is

reported in Chapter Three. Internal consistency in the current study was good

(Cronbach's alpha = 0.95).

      Reasons for Discontinuing Treatment Checklist. The Reasons for Discontinuing

Treatment Checklist is a 20-item self-report measure that was developed for this project

to assess client's reasons for dropping out of Internet-based treatment. The checklist

contains 20 items (contained in Table 5.2) that covered a range of client (7 items, e.g., "I

don't have enough time for sessions", "I'm not ready to make a change in my

behaviour"), program (8 items, e.g., "I forgot how to log on", "I'm not comfortable using

a computer") and external (5 items, e.g., "Family/relationship difficulties made it hard for

me to complete treatment") factors that were identified in Chapters Two and Four and

may relate to dropout from pathological gambling and Internet-based treatment programs.

Respondents are asked to rate whether or not they encountered variables by indicating yes

or no to each item. In addition, to allow participants to provide alternative reasons for

dropping out, an open-ended question preceded the checklist items. The Reasons for

Discontinuing Treatment Checklist is contained in Appendix 5.5.

      Gambling Symptom Assessment Scale (GSAS) (Kim, Grant, Potenza & Hollander,

2009). The GSAS is a 12-item self-report measure of gambling urges, thoughts and

behaviour. Respondents are required to rate each item on a 5 point Likert scale ranging

from 0 (no symptoms) to 4 (extreme symptoms). Thus, total scores range from 0 to 48.

Items ask respondents to rate the average intensity of symptoms over the past week. The

GSAS has been shown to have high validity and high internal consistency and reliability

(Kim et al., 2009). Internal consistency in the current study was good (Cronbach's alpha

= 0.84). The GSAS is contained in Appendix 5.6.

Table 5.2. Items contained within the Reasons for Discontinuing Treatment Checklist.

Item

Client Factors

I don't have enough time for weekly sessions

I do not expect the severity of my gambling to change after this treatment

I tried to stop gambling before and I couldn't do it

I'm not ready to make a change in my gambling behaviour

My gambling is not severe enough to need treatment

As I know that it is best for me to not gamble I have stopped and don't need treatment

I don't know whether I should make a change in my gambling behaviour

Treatment Factors

I'm not comfortable using a computer

This treatment does not seem useful

I am having computer /Internet problems

I don't know how to log on

I forgot how to log on

I don't think that this is the best program for me and am seeking treatment elsewhere

I worry if my answers will be kept confidential

The location of my computer (e.g., noise and activities, lack of privacy)

External Factors

Emotional difficulties (i.e., sadness and anxiety) make it hard for me to complete treatment

Employment /financial difficulties make it hard for me to complete treatment

Legal difficulties make it hard for me to complete treatment

Accommodation difficulties make it hard for me to complete treatment

Family /relationship difficulties make it hard for me to complete treatment

All respondents were asked questions on age, gender, income, education, relationship status, employment, religion, ethnic background, previous professional help-seeking and frequency of computer and Internet use.

5.2.4 Procedure

All individuals who fulfilled the initial inclusion criteria according to online screening completed an online registration and consent form (Appendix 5.7) and were posted or emailed the pre-treatment questionnaire package which included the SOGS, BIS, Brief COPE, TMQ, Rhody, TEQ, GSAS and questions about age, gender, income, education, relationship status, employment, religion, ethnic background, previous professional help-seeking and frequency of computer and Internet use. They were also provided with information about the procedure of the study. Once the questionnaire package was returned, they were randomly allocated to a therapist and required to complete a telephone clinical interview during which the presence /absence of suicidal symptoms or mania were assessed and the diagnosis of pathological gambling was confirmed using the Diagnostic Interview for Gambling Severity (Winters, Specker, & Stinchfield, 2002). Participants were then randomly allocated to an active treatment condition (Internet-based Cognitive-Behavioural Treatment (I-CBT) (n=60), Internet-based Monitoring, Support and Feedback (I-MFS) (n=59)) or the six-week waitlist group (n=56). Those assigned to a treatment condition were sent an email with a user name and password to access the treatment areas of the Internet site. Those assigned to the wait-list condition were required to complete a subset of the questionnaires three weeks later (mid-wait) and six weeks later (end of wait period). To fulfil an ethical requirement to provide access to treatment, waitlisted participants were randomly allocated to I-CBT or I-MFS

following completion of the waitlist period. Treatment data from waitlisted participants was not used in statistical analyses in this study. Participants were required to complete the TEQ again online after treatment session one and the GSAS online prior to session two.

Dropouts were defined by non-completion of all treatment requirements (i.e., pre-treatment interview, completion of sessions). Thus, dropouts were eligible clients who registered for the program and returned pre-treatment data, however terminated treatment before the completion of the 6 treatment sessions. Dropouts were assessed at two points throughout treatment: pre-treatment dropout (i.e., dropout occurring prior to commencing treatment sessions), and treatment phase dropout (i.e., dropout occurring after randomisation to a treatment condition and prior to completing that condition). Email and post reminders (Appendix 5.8), up to a maximum of three over a nine-week period, were made to individuals who had not returned questionnaires (pre-, post-treatment). During treatment, if more than one week passed with no activity from a participant (i.e., has not logged on) who was due to commence a session, or from a participant who had completed only part of a treatment session, a reminder was sent via email (Appendix 5.9). If more than two weeks passed with no activity from these participants a second email was sent confirming that the individual did not wish to continue with the program (Appendix 5.10). Participants who dropped out were required to complete the Reasons for Discontinuing Treatment Checklist on-line or during a post-treatment interview.

5.2.5 The Treatment Program

The *Improving the Odds* program was developed to assist pathological gamblers to either control or abstain from gambling. The program was available in Australia only,

where face-to-face gambling treatment services are also freely available primarily

through government-based funding to counselling agencies. Participants completed

sessions online, once a week for six weeks. The program was designed so that

participants received access to a session one week after completing the previous session.

Session content was presented mainly through online text (Flesch-Kincaid Grade 5

readability); however diagrams, graphics and online exercises were included throughout

the program. Participants completed the program from the privacy of their own computer

and were able to use email to correspond with their allocated therapist on issues of

technical problems, completing the program and crisis management. Telephone contact

was kept to a minimum with the exception of the telephone-based clinical interview.

The average therapist time spend on each participant for writing emails and providing

telephone support whilst completing treatment sessions was approximately 10 minutes

and 5 minutes respectively. There were four therapists, all of whom were completing

advanced training in Clinical Psychology. All met criteria for conditional registration

with the Psychologists Board of Queensland and had previous experience in delivering

CBT. Therapists were provided with weekly supervision by one of the Chief

Investigators (Casey).

     I-CBT. Development of I-CBT treatment condition was based on CBT principles

as used in the face-to-face treatment program developed by Raylu and Oei (2002) and

reported in Oei, Raylu & Casey (2008). The Internet-based version of the treatment was

developed by the first author (Casey). In order to duplicate the interactive style of face-

to-face treatment as much as possible, participants were provided with a series of

interactive exercises throughout each session, as well as graphical feedback on their

progress at the beginning of each session. Session one aimed to increase awareness of factors that may be playing a role in gambling behaviour and also to provide strategies to stabilise gambling. Sessions two and three aimed to identify gambling and general thinking errors, challenge these thinking errors and replace them with more helpful thoughts and help individuals to get out of debt. Session four focused on imaginal exposure and also aimed to help individuals learn how to apply relaxation strategies. Session five focused on problem solving, setting goals and learning how to deal with negative emotions. Finally, session six aimed to help individuals to maintain their progress and prevent relapse.

I-MFS. Participants in the I-MFS treatment condition were only provided access to selected portions (or "pages") of the weekly session content provided to participants in the I-CBT condition. These pages dealt only with assisting them to monitor their gambling, providing feedback on their progress and giving supportive messages. Participants in I-MFS did not have access to any additional CBT tasks or strategies during their Internet treatment period. This treatment condition was not only intended to provide a control for the non-specific effects of treatment engagement via the Internet, but was included to assess whether a brief intervention delivered via the Internet may in fact represent an effective treatment for some individuals. Whereas completion of I-CBT required approximately one hour per session, participants in the I-MFS condition were required to spend only 5 to 10 minutes completing each session.

5.3 Results

5.3.1 Extent of Dropout

Figure 5.1 below shows a flowchart to track the participant flow and dropouts at each stage of the study. Two hundred and twenty three eligible participants registered for the study. A total of 49 participants (22%) dropped out prior to commencing treatment (i.e., pre-treatment dropout). Seventy-two participants failed to complete the full course of treatment (38 from the I-CBT group, 34 the I-MFS group) and eleven participants failed to return wait-list data (non-significant group difference, χ^2 (2, $\underline{N}$ = 174) = 3.18, p =.20). Overall, 132 participants dropped out of the study (59% of eligible participants).

5.3.2 Reasons for Dropout

The 49 participants who discontinued prior to commencing treatment outlined a variety of reasons for dropping out. Reasons provided by pre-treatment dropouts were: being too busy to continue with treatment (n=7), commencing treatment elsewhere (n=6), computer or Internet difficulties (n=2), emotional difficulties (n=1), relocating (n=1), and having stopped gambling without treatment (n=1). Two participants did not provide a reason for withdrawing from the study and 29 participants were unable to be contacted via telephone calls, emails or letters and thus no reason for dropout was recorded.

Seventy-two participants dropped out during the treatment phase (i.e., dropped out after allocation to a treatment condition and prior to completing the condition). Reasons given for discontinuing were: computer /Internet problems (n=8), feeling that the location of their computer lacks privacy or is too noisy (n=7), feeling that the treatment was not useful for them (n=9), seeking treatment elsewhere (n=6), not having enough time for
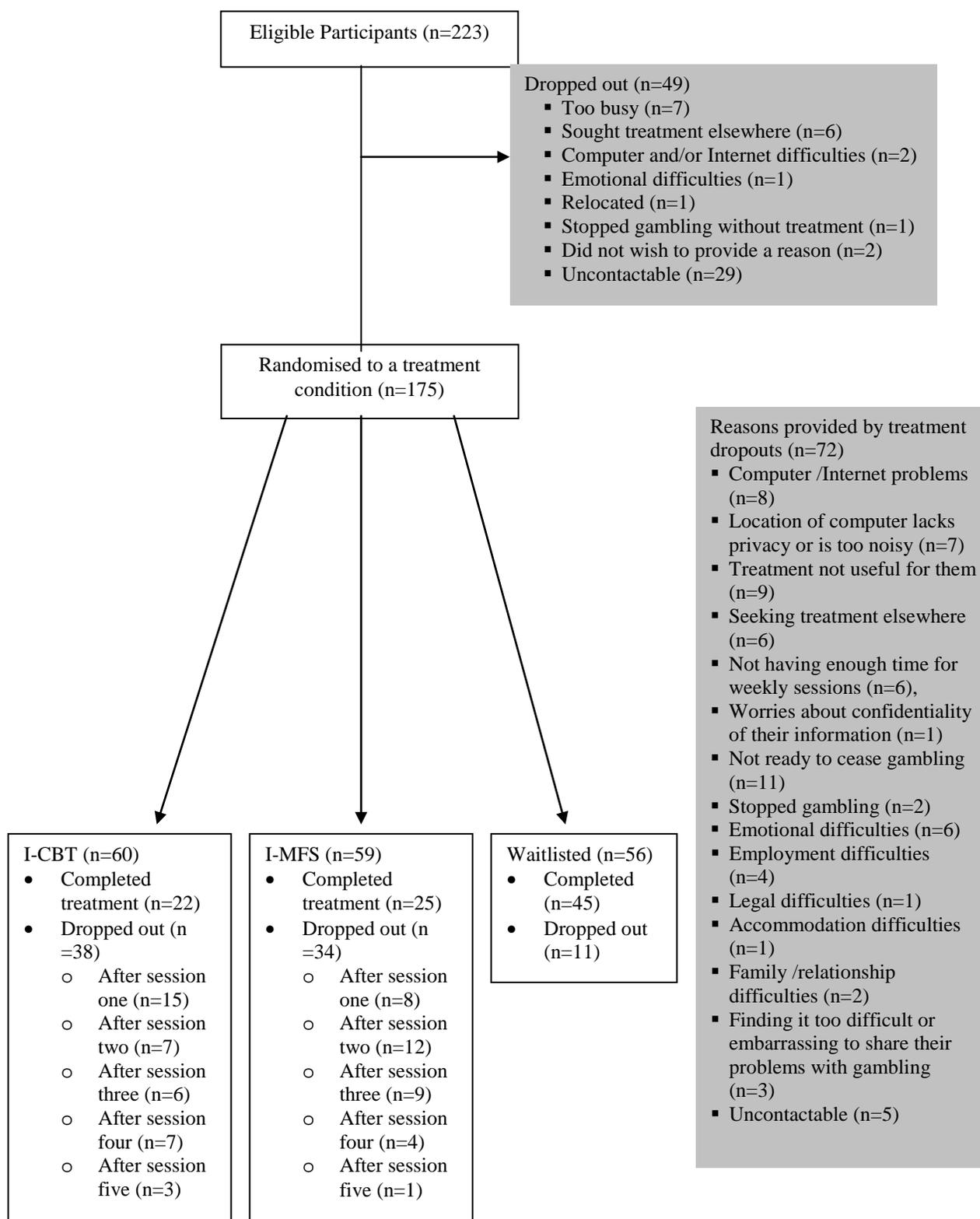
Figure 5.1. Participant flow and dropouts at each stage of the study.

weekly sessions (n=6), worries about confidentiality of their information (n=1), not being ready to cease gambling (n=11), having stopped gambling (n=2), emotional difficulties (n=6), employment difficulties (n=4), legal difficulties (n=1), accommodation difficulties (n=1), family /relationship difficulties (n=2) and finding it too difficult or embarrassing to share their problems with gambling (n=3). Five participants did not provide a reason.

5.3.3 Prediction of Dropout

Predictors of dropout were examined through two types of analyses. Firstly, univariate analyses (i.e., one-way univariate analyses or Chi-squared analyses) were conducted on the variables hypothesised to be predictors of dropout from Internet-based treatment for pathological gambling. To assess early treatment response, residualised change scores (pre-treatment to session two) were calculated for GSAS scores. Next, multivariate analyses (i.e., discriminant function analyses or binary logistic regression analyses) were conducted using those variables that were significantly associated with dropout (p<0.05) in the univariate analyses. Both procedures allow researchers to determine the significance of predictor variables in determining treatment dropout and both procedures are widely utilised by researchers in this field (Dakof, et al., 2001; Waller, 1997). Discriminant function analysis was favoured as it can be used with a smaller sample size, allows for the possible intercorrelation of predictor variables and produces more accurate calculations of power (Tabachnik & Fidell, 1996). However, where there were binary predictor variables, logistic regression was the required analysis. Analyses were conducted for the entire sample of dropouts (i.e., all dropouts versus completers), as well as for pre-treatment dropouts (i.e., pre-treatment dropouts versus continuers) and treatment phase dropouts (i.e., treatment phase dropouts versus

completers) separately. Finally, the mediating role of client expectations for treatment success was examined using Baron and Kenny's (1986) guidelines with modifications for use with dichotomous outcomes (MacKinnon & Dwyer, 1993). Data from all 223 eligible participants was included in analyses: 92 completers, 48 pre-treatment dropouts and 72 treatment phase dropouts. Table 5.3 outlines details of the continuous study variables and Table 5.4 outlines details of the categorical study variables for pre-treatment dropouts, treatment dropouts and completers separately. All correlations with among study variables are listed in Table 5.5.

5.3.3.1 All Dropouts vs. Completers

Univariate analyses. Of the hypothesised predictor variables, impulsivity, attitude towards reading and frequency of Internet use yielded a significant association with dropping out. Those who dropped out were more likely to score higher on impulsivity than those who completed treatment (F (1, 216) = 3.98, p <.05). They were also more likely to have a negative attitude towards reading (F (1, 216) = 4.98, p <.05). Finally, participants who dropped out of the Internet-based treatment program used the Internet less often at pre-treatment than those who completed treatment (F (1, 215) = 4.93, p <.05). No significant differences were found between dropouts and completers with regard to age ((F (1, 216) = 2.22, p =.14), gender (χ^2 (2, $\underline{N}$ = 218) = 2.65, p = .07), relationship status ((χ^2 (2, $\underline{N}$ = 218) = 3.01, p =.06), previous professional help-seeking ((χ^2 (2, $\underline{N}$ = 218) = 2.22, p = .33), severity of gambling behaviour ((F (1, 216) = 1.93, p =.16), coping style ((F (1, 213) ≥ 0.05, p ≥.82), client motivation ((F (1, 213) ≥ 0.17, p ≥.68), frequency of computer use ((F (1, 215) = 3.67, p =.06), and expectations for treatment success ((F (1, 213) = 0.24, p =.62).

Table 5.3. Mean and Standard Deviation (SD) of continuous study variables for pre-treatment dropouts, treatment dropouts and completers.

	Pre-treatment Dropouts			Treatment Dropouts			Completers		
	Mean	SD	N	Mean	SD	N	Mean	SD	N
Age	37.43	11.01	60	44.88	8.12	104	44.58	10.18	57
SOGS Total Score	10.42	2.71	60	10.29	3.24	104	9.74	2.36	57
BIS-11 Total Score	58.55	12.26	60	55.95	3.24	104	53.53	10.25	57
Brief COPE									
Emotion-focused coping	3.22	1.81	60	3.40	1.84	104	3.58	1.96	57
Cognitive Coping	4.24	1.78	60	4.77	1.82	104	4.63	1.70	57
Active Coping	3.75	1.78	60	4.30	1.58	104	3.95	1.99	57
Avoidance Coping	3.77	2.51	60	3.64	2.16	104	3.81	0.19	57
Motivation									
Internalised	5.40	0.59	60	5.40	0.63	104	5.35	0.67	57
Externalised	1.44	1.20	60	1.57	1.41	104	1.63	1.26	57
Rhody Total Score	78.88	23.43	60	90.62	23.18	104	94.21	18.76	57
TEQ – Expectations	29.95	6.69	60	29.89	8.27	104	30.44	6.52	56
GSAS									
Pre-treatment	30.91	8.69	60	31.11	8.76	104	30.31	7.91	57
Session Two	-	-	-	24.81	10.44	71	21.05	9.13	57

SOGS = South Oaks Gambling Screen; BIS-11 = Barratt Impulsiveness Scale; TEQ = Treatment Expectations Questionnaire; GSAS = Gambling Symptom Assessment Scale.

Table 5.4. Details of categorical study variables for pre-treatment dropouts, treatment dropouts and completers.

	Pre-treatment Dropouts		Treatment Dropouts		Completers	
	%age	N	%age	N	%age	N
Gender						
Male	42%	25	36%	38	47%	27
Female	58%	35	64%	66	53%	30
Relationship Status						
Single	38%	23	39%	41	26%	15
In a relationship	62%	37	61%	63	74%	42
Previous Professional Help-Seeking						
Yes	30%	18	55%	55	56%	32
No	70%	42	35%	46	44%	25
Frequency of Computer Use						
< once per week	3%	2	4%	4	0%	0
Weekly	7%	4	10%	10	4%	2
Daily	90%	54	86%	89	96%	55
Frequency of Internet Use						
< once per week	5%	3	6%	6	0%	0
Weekly	17%	10	17%	17	11%	6
Daily	78%	47	77%	79	89%	51

Table 5.5. Correlations between the study variables.

Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.
1. Age	1																	
2. SOGS Total Score	-0.21**	1																
3. BIS-11 Total Score	-0.24**	0.25**	1															
4. Emotion-focused coping	0.02	0.06	0.06	1														
5. Cognitive Coping	0.28**	-0.14*	-0.26**	0.39**	1													
6. Active Coping	0.19**	-0.08	-0.16*	0.32**	0.62**	1												
7. Avoidance Coping	-0.24**	0.24**	0.18**	0.13	-0.11	-0.01	1											
8. Internalised Motivation	0.08	0.21**	0.05	0.01	0.12	0.05	-0.08	1										
9. Externalised Motivation	-0.02	0.10	0.04	0.20^{**}	-0.04	0.02	0.11	0.06	1									
10. Rhody Total Score	0.31**	-0.14*	-0.20**	0.05	0.24**	0.23**	0.01	0.18**	0.01	1								

SOGS = South Oaks Gambling Screen; BIS-11 = Barratt Impulsiveness Scale.

Table 5.5. Correlations between the study variables (continued).

Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.
11. TEQ – expectations subscale	-0.05	0.05	0.08	-0.09	-0.13	-0.12	0.04	-0.06	0.08	-0.10	-							
12. GSAS – Pre-treatment	-0.11*	0.39**	0.33**	0.01	-0.16*	-0.17*	0.09	0.25**	0.07	0.15*	-0.01	-						
13. GSAS – Session Two	-0.05	0.17	0.18	0.03	-0.14	-0.18*	0.10	0.14	0.05	0.18*	0.18*	0.54**	-					
14. Gender	0.25**	-0.17*	-0.07	-0.01	0.05	0.13	-0.08	0.22**	-0.14*	0.01	-0.04	-0.04	0.06	-				
15. Relationship Status	-0.03	0.17*	-0.05	0.01	-0.08	-0.05	0.12	-0.04	-0.02	-0.01	0.08	-0.01	-0.13	-0.10	-			
16. Previous Professional Help-seeking	0.192**	0.18**	0.27*	0.02	-0.02	0.03	0.10	0.03	0.10	-0.03	-0.08	0.05	0.31**	0.03	0.01	-		
17. Frequency of Computer Use	-0.04	-0.05	-0.14	-0.13	0.07	0.01	0.01	-0.01	-0.13	-0.02	0.11	-0.01	-0.08	-0.13	0.09	-0.05	-	
18. Frequency of Internet Use	-0.07	0.01	-0.07	-0.12	0.01	-0.02	0.04	-0.01	-0.17*	-0.01	0.02	-0.02	-0.13	-0.07	0.15*	-0.03	0.80**	-

TEQ = Treatment Expectations Questionnaire; GSAS = Gambling Symptom Assessment Scale.

Multivariate analyses. Impulsivity, attitude towards reading and frequency of Internet use significantly discriminated dropouts from completers, $\lambda = 0.95$, χ^2 (3, N=216) = 11.49, p < .01, when entered into the discriminant function simultaneously. Univariate analyses revealed that frequency of Internet use was the most reliable predictor of dropping out, $\lambda = 0.98$, F(1, 214) = 4.93, p < .05, followed by attitude towards reading, $\lambda = 0.98$, F(1, 214) = 4.78, p < .05, and then impulsivity, $\lambda = 0.98$, F(1, 214) = 3.97, p < .05. Overall, 59% of the sample was correctly classified as a dropout or completer. At the individual level, 56% of the dropouts and 67% of completers were correctly classified, based on impulsivity, attitude towards reading and frequency of Internet use.

5.3.3.2 Pre-treatment dropouts vs. continuers

Univariate analyses. Of the hypothesised predictor variables, impulsivity, attitude towards reading, age and previous professional help-seeking yielded a significant association with dropping out prior to commencing treatment. Those who dropped out were more likely to score higher on impulsivity than those who continued with treatment (F (1, 216) = 4.77, p <.05). They were also more likely to have a negative attitude towards reading (F (1, 216) = 15.17, p <.001) and be younger in age (F (1, 216) = 24.67, p <.001). Finally, participants who dropped out of the Internet-based treatment program used were less likely to have previously sought professional help for their gambling than those who continued with treatment (χ^2 (2, $\underline{N}$ = 212) = 11.64, p <.001). No significant differences were found between pre-treatment dropouts and continuers with regard to gender ((χ^2 (2, $\underline{N}$ = 215) = 0.03, p =.44), relationship status ((χ^2 (2, $\underline{N}$ = 216) = 0.63, p =.37), severity of gambling behaviour ((F (1, 216) = 4.13, p =.48), coping style ((F (1, 216) $\geq$ 0.36, p $\geq$.81), client motivation ((F (1, 213) $\geq$ 0.05, p $\geq$.83), frequency of

computer use ((F (1, 216) = 0.03, p =.86), frequency of Internet use ((F (1, 216) = 0.13,

p =.72), and expectations for treatment success ((F (1, 213) = 0.02, p =.98).

Multivariate analyses. Attitude towards reading, age and previous professional

help-seeking significantly discriminated pre-treatment dropouts from continuers, χ^2 0.98

(4, N=177) = 36.95, p < .001, when entered into the binary logistic regression analysis

simultaneously. Overall, 77% of the sample was correctly classified as a pre-treatment

dropout or continuer. Age ((OR=0.94, Wald x^2=11.81, df =1, p < .001, CI=0.91 to 0.97),

previous professional help-seeking ((OR=2.41, Wald x^2=6.45, df =1, p < .05, CI=1.22 to

4.78), and attitude towards reading ((OR=0.98, Wald x^2=7.46, df =1, p < .01, CI=0.96 to

0.99) were all significant in the model.

5.3.3.3 Treatment phase dropouts vs. completers

Univariate analyses. Of the hypothesised predictor variables, frequency of

computer use, frequency of Internet use and early treatment response yielded a significant

association with dropping out from treatment sessions. Participants who dropped out of

the Internet-based treatment program used the computer (F (1, 156) = 4.21, p <.05) and

Internet (F (1, 155) = 5.05, p <.05) less often at pre-treatment than those who completed

treatment, and were less likely to have noticed a positive change in their gambling

behaviour prior to commencing session two (F (1, 124) = 6.95, p <.01). No significant

differences were found between treatment phase dropouts and completers with regard to

gender ((χ^2 (2, $\underline{N}$ = 67) = 2.62, p =.07), age ((F (1, 157) = 0.07, p =.78), relationship

status ((χ^2 (2, $\underline{N}$ = 55) = 2.84, p =.06), previous professional help seeking ((χ^2 (2, $\underline{N}$ =

70) = 0.59, p =.75), severity of gambling behaviour (F (1, 156) = 1.40, p =.24),

impulsiveness (F (1, 156) = 1.66, p =.20), coping style (F (1, 157) $\geq$ 1.64, p $\geq$.20), client

motivation (F (1, 156) $\geq$ 0.26, $p \geq$.61), attitude towards reading (F (1, 156) = 0.88, p =.35), and expectations for treatment success assessed at pre-treatment (F (1, 154) = 0.26, p =.61), or after session one (F (1, 106) = 2.05, p =.16).

Multivariate analyses. In the prediction of treatment phase dropout, the model containing frequency of computer use, frequency of Internet use and early treatment response significantly discriminated treatment phase dropouts from completers, λ = 0.97, χ^2 (3, N=119) = 11.30, p < .01, when entered into the discriminant function analysis. Univariate analyses revealed that frequency of computer use was the most reliable predictor of dropping out, F(1, 117) = 5.95, p < .05, followed frequency of Internet use, F(1, 117) = 5.84, p < .05, and then early treatment response, F(1, 117) = 5.44, p < .05. Overall, 66% of the sample was correctly classified as a treatment dropout or completer. At the individual level, 65% of the treatment dropouts and 73% of completers were correctly classified, based on frequency of computer use, frequency of Internet use and early treatment response.

5.3.3.4 Expectations for treatment success as a mediator

The final aim of this study was to explore the mediating role of client expectations for treatment success. However as observed in the previous analyses, client expectations for treatment success assessed at pre-treatment or after session one were not found to be a predictor of overall dropout, pre-treatment dropout or treatment phase dropout (F (1, 213) $\geq$ 0.02, $p \geq$.98). Client expectations did not mediate the relationship between predictor variables and dropout from Internet-based treatment for pathological gambling.

5.4 Discussion

This study was the first to explore dropout from Internet-based treatment with minimal therapist contact for pathological gambling. It was identified that a substantial proportion of pathological gamblers did not complete the Internet-based treatment program. The rate of dropout found here (59%) was considerably higher than that reported previously regarding the extent of dropout from pathological gambling treatment programs and the extent of dropout from Internet-based treatment programs for psychological disorders. For instance, in Chapter Two it was found that on average 31% of participants dropped out of Internet-based treatment programs. Similarly, in Chapter Four it was found that on average 31% of the participants dropped out of Internet-based treatment programs. As noted in Study I, the higher rate of dropout found here may reflect the extended investigation of dropout undertaken in this study. Specifically, whilst dropout is often defined as leaving treatment following randomisation to a treatment condition (i.e., Altman, 1996; Davis, Hooke and Page, 2006) and a majority of the reviewed studies only inquired about the prevalence of dropout that occurs during treatment sessions (e.g., Lange et al., 2001); this thesis explored dropout that occurred prior to commencing treatment sessions as well as dropout occurring from treatment sessions. Exploring dropout at different stages of this treatment program enhanced understanding of the specific "risk" points at which pathological gamblers were most likely to be lost from Internet-based treatment.

In further support of the extended investigation of dropout undertaken in this thesis, the overall findings suggest different risk points for dropout from face-to-face and Internet-based treatment programs for pathological gamblers. In Study I the majority of

dropout occurred prior to commencing the face-face treatment: 36% of eligible

participants dropped out prior to commencing treatment compared with 8% dropout

during the treatment phase. However, this Study identified that majority of dropout from

Internet-based treatment occurred during treatment: 22% of eligible participants dropped

out prior to commencing treatment compared with 37% dropout during the treatment

phase. Clearly, exploring dropout at different stages of psychological treatment programs

is critical in increasing our understanding of the specific "risk" points at which clients are

most likely to be lost.

The overall drop-out rate identified in this study (59%) was also considerably

higher than that found for the face-to-face treatment program explored in Study I (42%).

Arguably, this finding could be the result of clients perceiving the Internet-based

treatment program as less credible than face-to-face treatment. However, post-hoc

analyses comparing client pre-treatment ratings of treatment credibility (F (1, 318) =

0.17, p =.90), and expectations of treatment success (F (1, 318) = 3.65, p =.06), between

the two studies, found no differences. Similarly, we might expect that clients would be

more likely to drop out if they are making little progress in treatment (Stark, 1992).

Whilst a direct comparison of the effectiveness of the face-to-face and Internet-based

treatment programs is beyond the scope of this thesis, this study did explore the

association between early treatment response and dropout from treatment. The results

suggested that clients who dropped out from treatment sessions were less likely to have

noticed a positive change in their gambling behaviour prior to commencing session two

(F (1, 124) = 6.95, p <.01). Unfortunately, as early treatment response was not explored

as a predictor in Study I, it is not known whether a relationship between early treatment response and dropout also exists in face-to-face treatment for pathological gambling.

It is also possible that clients are more likely to dropout out of the Internet-based programs to seek alternative treatment (i.e., face-to-face treatment). Internet interventions have a number of features (i.e., anonymity, accessibility, ease of access) that may engage individuals who are initially reluctant to participant in face-to-face treatment. One possibility is that Internet-based interventions create a safe 'first step' to engaging in professional psychological treatment and promotes transition into face-to-face forms of treatment. In support of this possibility, research conducted by Christensen and colleagues (Christensen, Leach, Barney, Mackinnon, & Griffiths, 2006) identified that Internet-delivery of CBT increased subsequent help-seeking for face-to-face CBT. Alternatively, by increasing the accessibility and ease with which gamblers can attend psychological treatment, the Internet-based program may have engaged clients who are reluctant engage in any form of treatment. Such clients may be unsure as to whether they want to change their gambling behaviour; may be experiencing comorbid psychological, medical, health or social difficulties which create a barrier to treatment entry; or they may be hesitant about participating in face-to-face treatment due to embarrassment, shame or unsuccessful treatment experiences in the past and may therefore be at a higher risk for terminating treatment. Research is needed comparing the characteristics of pathological gamblers who register for face-to-face and Internet-based treatment programs.

Consistent with the results of Study I, clients who dropped out provide a range of reasons for discontinuing treatment. Reasons related to logistical (e.g., work commitments, computer /Internet difficulties, legal difficulties, accommodation

difficulties), psychological (e.g., emotional difficulties, not ready to cease gambling, embarrassment) and treatment (e.g., feeling that the treatment is not useful) difficulties. This finding supports Liese and Beck's (1997) cognitive model that outlines that a variety of factors place people at high risk for dropping out of psychological treatment and suggest that dropout is a multifaceted phenomenon and that reasons for dropout tend to be specific and relevant to each individual's own circumstances. However, despite this heterogeneity, several variables were found to reliably discriminate between dropouts and completers. Specifically, in addition to early treatment response; impulsivity, attitude towards reading, previous professional help-seeking, age, frequency of computer use and frequency of Internet use were significantly associated with dropping out.

Dropping out at any time and dropping out prior to commencing treatment was associated with increased impulsivity. Impulsivity, or rapid decision-making without regard to the consequences of behaviour, is seen as a central component of pathological gambling (Steel & Blaszczynski, 1998). The influence of impulsivity on dropout from treatment for pathological gambling has been documented in one other study. Specifically, in a sample of 112 pathological gamblers receiving outpatient cognitive treatment, Leblond et al (2003) identified that treatment dropouts (M = 26.81, SD = 6.64) reported a significantly higher score on the Eysenck's Impulsiveness Scale compared with treatment completers (M = 22.42, SD = 7.12). Arguably, high levels of impulsivity may make it difficult for gamblers to persist in treatment, because their high sensitivity to the immediate rewards of gambling may be more powerful than the longer-term rewards of treatment (Blaszczynski, et al., 1997). The results suggest that impulsive individuals may be more likely to drop out of treatment early when they become bored with routine

clinical tasks and procedures. This finding has important implications for clinicians working within this field. Specifically, allocating time prior to clients commencing treatment sessions to intervening and addressing high levels of impulsivity may enhance treatment retention.

A negative attitude towards reading was also found to be associated with dropping out at any time and dropping out prior to commencing treatment. No previous research has documented an association between a negative attitude towards reading and dropout from Internet-based or pathological gambling treatment programs. This result may reflect the nature of the Internet-based treatment program. Participants were required to read and complete a large number of self-report measures during pre-treatment assessments. The information provided throughout treatment sessions was also heavily text based. Thus, people who dislike reading text may be at risk of dropping out because they may be more likely to become irritated or frustrated by the pre-treatment assessments and treatment program. Further research is needed to explore whether a negative attitude towards reading is less likely to be associated with drop out from Internet-based treatment approaches that include a smaller number of pre-treatment assessment measures, utilise a wider range of modes for gathering pre-treatment material (e.g., interviews, telephone calls) or are further enhanced by graphics, animations, audio and possibly video.

Participants who dropped out prior to commencing treatment sessions were less likely to have previously sought professional help for their gambling. This study was the first to document an association between previous help-seeking and dropout from Internet-based treatment or treatment for pathological gambling. Clients that have

previously received professional help may be more may be more likely to remain in treatment because they are familiar with the nature of professional help-seeking (Stark, 1992), or have been otherwise 'prepared' for treatment by their previous experiences. The results also suggested that younger age was associated with dropping out prior to commencing treatment sessions. This finding is consistent with previous research. In a study with 184 individuals completing Internet-based treatment for PTSD, Lange et al (2003) reported that the mean age of participants who dropped out (33 years) was significantly less than that of those who completed the program (38 years). Younger clients may be more geographically mobile and be likely to have less family and community ties that might stabilise the individual and support continuation in treatment (Baekeland & Lundwall, 1975). As a result, such individuals may be more at risk of dropping out of Internet-based treatment.

Participants who reported using a computer or the Internet less often were more likely to drop out. The association between frequency of computer and Internet use tended to be specific to the time that dropout was assessed. Specifically, frequency of computer and Internet use were found to be associated with dropping out from treatment sessions. Although this finding is inconsistent with research that documented an association between *greater* levels of computing or Internet experience and drop out from Internet-based treatment (Lange et al., 2003), this finding is consistent with several qualitative investigations of clients reasons for dropping out of treatment. These studies have reported that clients identify a lack of computing and Internet experience as reasons for terminating Internet-based psychological treatment (Carlbring et al., 2001; Kenwright et al., 2004; Lange et al., 2000, Lange et al., 2003; Scheider et al., 2005). Clients with

decreased experience using a computer or the Internet may require more time and effort to complete Internet-based sessions; they may have unsuccessful computing experiences; and they may be less likely to be have basic computing and Internet skills which may assist in completing treatment. As a result, such individuals may be more at risk of dropping out of treatment because they may be more likely to encounter difficulties whilst using a computer and the Internet to complete treatment sessions. It is also possible that clients use a computer or the Internet less often due to a lack of time or a lack of computer or Internet access. Such difficulties may also lead to non-compliance and dropout from the Internet-based program. As noted earlier, Internet access is accelerating at an exponential rate in Australia and use of the Internet across an increasingly broad range of activities is likely to increase. With increasing penetration of this form of technology, it seems likely that more and more Australians will find themselves making use of the Internet on a daily basis. In turn, this increased usage of Internet may ultimately mean that clients are less likely to discontinue treatment because of reduced use of a computer or the Internet.

The relationship between dropout and client expectations for treatment success, predicted by Liese and Beck's (1997) cognitive model and found in research with other psychological disorders (Dew & Bickman, 2005; Stark, 1992), was not evident. This finding is consistent with the results of the previous study reported in Chapter Three exploring dropout from face-to-face treatment for pathological gamblers. In line with the hypothesis that the previous results may have been influenced by the timing of expectancy assessment, in the current study treatment expectations was assessed prior to contact with the treatment as well as following session one. However, both measures of

expectancy failed to demonstrate any influence on retention. It is possible that the relationship of expectancies to dropout is disorder-specific, and not present in psychological treatment for pathological gamblers. However as noted previously, research findings in the broader psychological literature relating expectations to dropout are varied, and although significant findings exist, about equal numbers of studies reported significant, mixed and non-significant findings (Dew & Bickman, 2005). Thus overall the findings relating expectations to dropout amongst pathological gamblers do not provide adequate evidence to support the proposed relationship at this time.

A number of limitations must be considered. Firstly, results can only be generalised to Internet-based treatments for pathological gamblers and may not be relevant for Internet-based programs for other psychological disorders. Finally, similar to the results of the previous study exploring dropout from face-to-face treatment for pathological gamblers, the best combination of predictors explained only a moderate amount of variance. Thus, whilst several variables were found to predict dropout from face-to-face and Internet-based treatments for pathological gamblers, it is possible that a range of additional variables may be related to dropout. Future investigations should explore the effect of a wider range of predictor variables within a larger sample of pathological gamblers receiving Internet-based treatment. In particular, researchers might benefit from exploring variables such as the presence of environmental stressors, the influence of supportive social relationships, therapist contact, availability of a reliable computer or Internet access and availability of a quiet and private computing environment. Such research might increase our accuracy of predicting dropout amongst

pathological gamblers and also from Internet-based treatment programs for psychological disorders.

5.5 Summary of Chapter Five

This Study identified a high rate of dropout (59%) with the majority of dropout occurring during treatment. Clients who dropped out outlined a variety of reasons for dropping out including logistical, psychological and treatment difficulties. Furthermore, dropping out at any time from registration to completing treatment was associated with increased impulsivity, decreased frequency of Internet use and a negative attitude towards reading; dropout prior to commencing treatment was associated with increased impulsivity, younger age, a negative attitude towards reading online and less prior professional help-seeking for gambling; and finally participants who dropped out from treatment sessions used the computer or Internet less often than completers and were less likely than completers to have noticed a positive change in their gambling behaviour prior to commencing session two. These findings not only provide us with some information about which pathological gamblers may be at greatest risk for dropping out of Internet-based treatment, but provide evidence that dropout is also a serious problem within Internet-based treatment for pathological gambling. The following chapter reviews the available literature exploring interventions to reduce the extent of dropout from psychological treatment programs.

CHAPTER 6

LITERATURE REVIEW III: INTERVENTIONS TO REDUCE DROPOUT

6.1 Overview of Chapter Six

The findings of this thesis suggest that dropout from both face-to-face and Internet-based treatment for pathological gambling is a serious problem that presents an enormous challenge for treatment providers. In order to enhance the effectiveness of psychological treatment programs for pathological gambling, interventions need to be developed which increase the number of pathological gamblers who adhere to and complete these programs. Where effective strategies can be implemented there are potentially benefits for researchers, gamblers, families, communities and society. The purpose of this chapter is to present an in-depth analysis of literature exploring interventions to reduce dropout from psychological treatment programs. Exploring interventions that address dropout within the broader psychological treatment literature should assist in developing an intervention to reduce dropout from pathological gambling treatment programs.

6.2 Reducing Dropout from Psychological Treatment Programs

6.2.1 Data Selection, Study Selection and Data Extraction

A comprehensive literature search was conducted on PsychINFO and PUBMED databases for the period 1960 to April 2009. Key search terms were: dropouts, drop out,

dropout, dropping out, attrition, premature termination, termination, non-compliance each in combination with the key words reducing, preventing, prevention, minimise or reduce. Articles were also retrieved from reference lists of articles that were identified through database searches. Studies included in the review were restricted to evaluations of programs aimed at reducing dropout from psychological treatment programs for adults with psychiatric disorders (as included in the DSM-IV-TR (American Psychiatric Association, 2000) or ICD-10 mental disorders (World Health Organisation, 1992). Treatment programs addressing medical difficulties (e.g., tinnitus) or ones that aimed to prevent psychological disorders in at-risk populations (e.g., heavy drinkers) were excluded. Studies were also excluded if criteria used to determine a psychological disorder were unclear. The target populations were restricted to adults, since the retention of children or adolescents may present different issues (e.g., requiring the continued engagement of both parents and their children). Studies involving non-psychological treatment (e.g. medical or drug therapy, dietary advice) were excluded. Studies were not excluded because of restriction to a type of psychological disorder, design, sample size or type of analysis.

6.2.2 Results

Of the 2678 studies returned through database searches, 18 studies that evaluated programs aimed at reducing dropout from psychological treatment programs were identified. A summary of their results is in Table 6.1. Year of publication ranged from 1970 to 2006. Sample sizes ranged from 21 to 122. The majority of identified studies included a heterogeneous group of clients who were receiving psychological treatment for a variety of psychological disorders (n=12). The remaining studies included clients

Table 6.1. Summary of studies of interventions to reduce dropout from psychological treatment programs.

Study	Details of Intervention	Clients	Finding
Pre-therapy Preparation			
France & Dugo (1985)	Pre-therapy preparatory technique (pre-training interview and videotape)	40 individuals receiving outpatient psychotherapy groups	No significant difference in dropout rate for prepared (10% dropout) vs. non-prepared (25% dropout) clients (p>0.05)
Garrison (1978)	Pre-therapy preparatory technique (role induction interview or written material)	27 individuals receiving outpatient group psychotherapy for a variety of psychological conditions	No significant difference in dropout rate for prepared vs. non-prepared clients (p>0.05)
Hilkey et al (1982)	Pre-therapy preparatory technique (pre-training videotape and group exercises)	38 inmates receiving psychological treatment	No significant difference in attendance rate for prepared vs. non-prepared clients (p>0.05)
Jacobs et al (1972)	Pre-therapy preparatory technique (role induction interview)	120 low-income individuals receiving outpatient psychological treatment for a variety of psychological conditions	Significantly reduced dropout for prepared vs. non-prepared clients (p<0.05)
Lambert & Lambert (1984)	Pre-therapy preparatory technique (role induction audiotape)	30 immigrants receiving outpatient psychological treatment for a variety of psychological conditions	Lower dropout rate for prepared (13% dropout) vs. non-prepared (47% dropout) clients (p<0.05)
Latour & Cappeliez (1994)	Pre-therapy preparatory technique (pre-training group, videotape and exercises)	29 individuals receiving geriatric outpatient psychological treatment for depression	No significant difference in dropout rate for prepared vs. non-prepared clients (p<0.05)
Piper et al (1979)	Pre-therapy preparatory technique (pre-training written material and experiential session)	38 individuals receiving outpatient psychological treatment for a variety of psychological conditions	Significantly lower dropout rate for prepared (4.3% dropout) vs. non-prepared (31.3% dropout) clients (p<0.05)
Piper et al. (1982)	Pre-therapy preparatory technique (pre-training written material and experiential session)	69 individuals receiving outpatient psychological treatment for a variety of psychological conditions	No significant difference in dropout rate for prepared (13.5% dropout) vs. non-prepared (30.4% dropout) clients (p>0.05)

Table 6.1. Summary of studies of interventions to reduce dropout from psychological treatment programs (continued).

Study	Details of Intervention	Clients	Finding
Pre-therapy Preparation (continued)			
Reis & Brown (2006)	Pre-therapy preparatory technique (role induction videotape)	125 individuals receiving outpatient psychological treatment for a variety of psychological conditions	Significantly reduced dropout for prepared vs. non-prepared clients (p<0.05)
Sloane et al. (1970)	Pre-therapy preparatory technique (role induction interview)	36 psychoneurotic clients receiving outpatient psychological treatment	No significant difference in attendance rate for prepared vs. non-prepared clients (p>0.05)
Strupp & Bloxom (1973)	Pre-therapy preparatory technique (role induction film or interview)	122 low-income individuals receiving outpatient psychological treatment for a variety of psychological conditions	No significant difference in attendance rate for prepared vs. non-prepared clients
Warren & Rice (1972)	Pre-therapy preparatory technique (pre-training role induction audiotape)	55 individuals receiving outpatient psychological treatment for a variety of psychological conditions	Lower dropout rate for prepared (5.2% dropout) vs. non-prepared (27.8% dropout) clients (p<0.05)
Zwick & Attkisson (1985)	Pre-therapy preparatory technique (role induction videotape)	62 individuals receiving outpatient psychotherapy	No significant difference in dropout rate for prepared (50% dropout) vs. non-prepared (40% dropout) clients (p=0.43)
Motivational Enhancement			
Brown & Miller (1993)	Motivational enhancement techniques were provided in addition to treatment	28 individuals receiving psychological treatment for substance abuse	Lower treatment compliance for clients receiving motivational enhancement techniques vs. those not (p<0.01)
Carroll et al (2001)	Motivational enhancement techniques were provided in addition to treatment	60 individuals receiving psychological treatment for substance abuse	Lower dropout rate for clients receiving motivational enhancement techniques vs. those not (p<0.05)

Table 6.1. Summary of studies of interventions to reduce dropout from psychological treatment programs (continued).

Study	Details of Intervention	Clients	Finding
Motivational Enhancement (continued)			
Milton et al. (2002)	Motivational enhancement techniques were provided in addition to CBT treatment	40 pathological gamblers receiving outpatient CBT for pathological gambling	Lower dropout rate for clients receiving motivational enhancement techniques (35% dropout) vs. those not (65% dropout) ($p<0.05$)
Wulfert et al (2006)	Motivational enhancement techniques were incorporated into CBT treatment	21 pathological gamblers receiving outpatient CBT for pathological gambling	Lower dropout rate for clients receiving motivational enhancement techniques (0% dropout) vs. those not (25% dropout) ($p <0.01$)
Clinical Case Management			
Miranda et al. (2003)	Clinical case management provided in addition to CBT	Low-income individuals receiving outpatient CBT for depression	Significantly lower dropout rate for case managed vs. non-case managed clients ($p<0.05$)

presenting with depression (n=2), substance abuse (n=2) and pathological gambling (2). No studies were identified that evaluated programs to reduce dropout from Internet-based treatment programs for psychological disorders. The reviewed articles are presented in three sections below: pre-therapy preparation techniques (n=13), motivation enhancement (n=4) and case management (n=1).

6.2.2.1 Pre-therapy preparation techniques

Pre-therapy preparation techniques refer to procedures conducted prior to the commencement of treatment sessions that attempt to educate the client about the nature of psychological treatment (Ogrodniczuk, Joyce, & Piper, 2005). Pre-therapy preparation

procedures generally involve three types of interventions: role induction, vicarious therapy pre-training and experiential pre-training. These interventions aim to provide clients with information about the process of psychological treatment, about the roles of the therapist and client, and about some of the common difficulties that can arise in the process of psychological treatment. Pre-therapy preparation techniques are intended to reduce dropout in several ways. Firstly, based on the hypothesis that clients who are unfamiliar with psychological treatment are more likely to prematurely terminate treatment due inaccurate expectations about the process of psychological treatment, educating clients about the nature and rational for treatment is believed to lead to reduced dropout. Likewise, reducing incongruence between the client and therapist's expectations for treatment by providing clients with information about psychological treatment may also be important. Finally, providing forewarning of possible negative reactions to treatment and encouraging appropriate client behaviours, such as a willingness to self-disclose, discuss problems and be direct with the therapist, may minimise premature termination (Ogrodniczuk, et al., 2005; Walitzer, Dermen, & Connors, 1999).

Research on the success of pre-therapy preparatory techniques in reducing the extent of dropout has produced equivocal results. Five studies found that pre-therapy preparation techniques were effective in reducing dropout from psychological treatment programs (Jacobs, Jacobs, Jacobs, Weinstein, & Mann, 1972; Lambert & Lambert, 1984; Piper, Debbane, Garant, & Bienvenu, 1979; Reis & Brown, 2006; Warren & Rice, 1972). Stark and Kane (1985) explored the impact of a role induction interview on dropout from a psychological treatment program for substance abuse. The information presented in the

role induction interview included: the goals and outcomes of psychological treatment; the role of the client; the nature of resistance to treatment; the importance of an open and honest therapeutic relationship; and the importance of taking an active role in treatment. The results indicated that clients who were assigned to receive the role induction interview were more likely to return to treatment following the initial interview than those not assigned to receive the role induction interview. Likewise, in a sample of 125 clients attending an outpatient psychology clinic, Reis and Brown (2006) documented that clients that received the pre-therapy preparation (i.e., a brief videotape) were significantly less likely to dropout than clients that did not receive the intervention.

However, pre-therapy preparation techniques were not effective in reducing dropout in another eight other studies (France & Dugo, 1985; Garrison, 1978; Hilkey, Wilhelm, & Horne, 1982; Latour & Cappeliez, 1994; Piper, Debbane, Bienvenu, & Garant, 1982; Sloane, Cristol, Pepernik, & Staples, 1970; Strupp & Bloxom, 1973; Zwick & Attkisson, 1985). In the study conducted by Strupp and Bloxom (1973), clients either participated in a role induction interview or viewed a 32-minute film. The interview focused on providing clients with a rational basis for psychological treatment, clarifying the role of the client and therapist, a providing a general outline of the course of treatment. The film depicted a simulated client's life before, during, and after receiving psychological treatment to manage a volatile temper. Clients who participated in the role induction interview did not have better retention rates than clients who viewed the film. Likewise in a sample of 29 clients receiving outpatient psychological treatment, Latour and Cappeliez (1994) documented that clients who received pre-therapy preparation

training (pre-training group, videotape and exercises) did not have reduced dropout rates compared with non-prepared clients.

Overall, these studies suggest that there is mixed evidence that pre-therapy preparation procedures can reduce dropout from psychological treatment programs. It should be noted, however, that only one of the studies reviewed was published after 1995. Furthermore, majority of the identified studies explored pre-therapy preparation procedures with clients presenting with a variety of psychological disorders. More contemporary research that explores these procedures within treatment for specific psychological disorders and overcomes other methodological problems of earlier studies (e.g., small sample size) is required.

6.2.2.2 Motivational Enhancement

Defined as the likelihood that an individual will begin, continue, and adhere to a treatment program, motivation is thought to be an important variable influencing client dropout (Walitzer, et al., 1999). It is believed that clients with a lower level of motivation may be more likely to dropout as they may be unaware of a problem or uncommitted to change (Stark, 1992). Thus, from this perspective, intervening with clients to enhance motivation is believed to be a logical way to reduce dropout from psychological treatment programs. Six factors that describe the components of motivational enhancement techniques are summarised by Walitzer and colleagues (Walitzer, et al., 1999) and consist of feedback (providing results from pre-treatment assessments and information on personal risk or impairment), responsibility (emphasising the client's personal responsibility for change), advice (offering guidance or suggestions for change), menu (providing a menu of alternative change options), empathy

(demonstrating concern and understanding for the client), and self-efficacy (enhancing client's self-efficacy to change). Curtis (1984) and Newman (1994) have also suggested the following motivational enhancement strategies to increase treatment completion: correcting clients' misconceptions about psychological treatment; creating incentives for change; eliciting self-motivational statements; acknowledging and praising client's serious consideration of change; and reframing problem behaviors so that they appear less intimidating.

Four studies found that motivational enhancement techniques were effective in reducing dropout from psychological treatment programs (Brown & Miller, 1993; Carroll, Libby, Sheehan, & Hyland, 2001; Milton, et al., 2002; Wulfert, et al., 2006). Milton et al (2000) explored the impact of motivational enhancement interventions on dropout within 40 individuals attending CBT for pathological gambling. The results indicated that addition of motivation-enhancing interventions had a positive effect, in that a significantly higher proportion of clients who received CBT without the motivation-enhancing interventions dropped out prior to completing the program (65%), compared with only 35% of clients receiving CBT with motivation-enhancing interventions (Cohen's h = 0.061, p <0.05). Clients receiving the motivation-enhancing interventions also had superior outcomes at post-treatment compared with CBT alone, although that effect dissipated by the 9-month follow-up, when both conditions showed a clinically significant improvement from Baseline. Similarly, in a sample of 21 clients attending CBT for pathological gambling Wulfert et al (2006) documented that clients that received a motivationally enhanced treatment were retained at a significantly higher rate (100%) than gamblers who received treatment as usual (75%) (χ^2 (1, N=20) = 8.05, p=0.005).

Clients receiving motivational enhanced treatment also had superior outcomes at post-treatment compared with those receiving treatment as usual, and in contrast to the previous study, the superior outcomes were maintained over a 12-month follow-up. Two other studies exploring the impact of motivational enhancement strategies on dropout from psychological treatment for substance abuse, reported that clients receiving motivational enhancement strategies were less likely to drop out of treatment than those who did not receive these strategies (Brown & Miller, 1993; Carroll, et al., 2001). Overall, these studies provide evidence of the usefulness of motivational-enhancement interventions in reducing dropout from psychological treatment programs.

6.2.2.3 Clinical case management

Clinical case management is an individualised approach to case management that moves beyond role of the case manager as systems coordinator, service broker or supportive companion. The clinical case management approach integrates clinical expertise, personal involvement and environmental interventions to address the overall maintenance of the client's physical and social environments and may involve a range of activities including: engagement of the client, assessment, planning, connection with resources, consultation with families, collaboration with psychiatrists, client psycho-education and crisis intervention. Clinical case management may help to reduce dropout by assisting clients to deal with difficult, present life circumstances that may prevent their continued involvement in treatment. Unfortunately, whilst case management has been shown to be effective in keeping individuals engaged in outpatient community psychology treatment (Stein & Santos, 1998), only one study has explored the influence of case management on preventing dropout from psychological treatment. In a sample of

199 clients attending CBT for depression, Miranda and colleagues (Miranda, Azocar, Organista, Dwyer, & Areane, 2003) explored the success of clinical case management in reducing the extent of dropout. The clinical case management was a flexible intervention that was provided by social workers who were trained in CBT. The case managers engaged in active telephone outreach as soon as clients were recruited into treatment. They assessed client's self-reports of problems in housing, employment, recreation, and relationships with family and friends and, jointly with patients, set goals to work toward together in areas they assessed as problematic. The results indicated that clients who received clinical case management in addition to CBT had lower dropout rates than those who received CBT alone (x^2=5.0, df=1, p=.03). Further evidence is needed on the success of clinical case management in reducing dropout from psychological treatment programs.

6.3 Critical Issues for Further Research

The approaches described above targeted clients prior to dropping out of treatment and provided all clients with an intervention intended to reduce the extent of dropout. The potential problem with this approach is that the intervention is completed by many clients who are not likely to drop out. This approach also consumes considerable time and resources without a guarantee that it will provide benefit for all clients. An alternative approach may involve intervention with clients who are at a higher risk of dropping out. Unfortunately this approach requires accuracy in detection of 'at-risk' clients and as has been shown throughout this thesis, the current state of the literature precludes this approach at this point in time. A possible solution may involve targeting the dropped out client rather than focusing on 'at-risk' clients or preventing

dropout in clients who are currently active. Unfortunately, little research has been conducted specifically on recovering clients who leave psychological treatment prematurely. In the drug abuse treatment literature, one study with 175 participants was identified that explored the success of an intervention designed to assist dropouts to return to a methadone maintenance treatment program (Goldstein, Deren, Kang, Jarlais, & Magura, 2002). The results indicated that dropouts assigned to the intervention were more likely to return to treatment than those who were not assigned to receive the intervention. These results suggest that dropouts need not be regarded as unrecoverable and that if special efforts are made they can be re-engaged in treatment programs. Research is needed that explores the success of recovering dropouts from psychological treatment programs.

It is also important to know more about strategies to reduce dropout from Internet-based programs for psychological disorders. At this time, there are no known ways of successfully reducing the extent of dropout from Internet-based treatment for psychological disorders. However, one study was identified that examined a technique for reducing the extent of dropout from Internet-based treatment for a medical condition (headache) (Andersson, Lundstrom, & Strom, 2003). This study tested the hypothesis that adding weekly telephone contact (lasting 5-10 minutes) would decrease the extent of dropout from an Internet-based cognitive-behavioural program for headache. The results indicated that telephone contact failed to have a positive effect on dropout. Specifically, individuals receiving weekly telephone calls in addition to the Internet-based program had a similar rate of dropout to those receiving only the Internet-based program.

6.4 Conclusions

Despite the above research findings we still do not have a clear idea of what is the best strategy to use to reduce client dropout from psychological treatment programs. The discussed strategies have not been evaluated for use with clients across a range of psychological disorders. However, whilst the best strategy for reducing dropout from psychological treatment programs is unclear, the findings suggest that motivational enhancement and clinical case management may have a positive impact on dropout. In developing an intervention to reduce dropout from psychological treatment for pathological gambling several conclusions can be made:

1. *Utilise a concise, comprehensive synthesis of strategies*. Given that the evidence for specific predictors of dropout is incomplete, it is conceivable that a large number of factors may be involved in a pathological gamblers decision to drop out of treatment. Motivational enhancement appears to hold promise, however, because of the many factors that may be involved no one strategy may be optimally effective for reducing dropout within pathological gambling treatment programs. As a result a concise, comprehensive synthesis of strategies addressing a range of possible predictors may be useful in reducing dropout amongst pathological gamblers.

2. *Consider qualitative research data*. Until predictors of dropout are clearly understood, greater consideration and use of qualitative data when intervening to reduce dropout is needed. Researchers that explore qualitative data collected from dropped out clients can provide a wealth of information about client's reasons for discontinuing treatment. For example, the results of this thesis identified that pathological gamblers who dropped out of both face-to-face and Internet-based

treatment provided a wide range of reasons for discontinuing treatment. Reasons related to logistical (e.g., work commitments, computer /Internet difficulties, legal difficulties, accommodation difficulties), psychological (e.g., emotional difficulties, not ready to cease gambling, embarrassment) and treatment (e.g., feeling that the treatment is not useful) difficulties. By utilising this data, an intervention programs to reduce dropout can more specifically address and overcome the specific barriers to completing psychological treatment amongst pathological gamblers.

3. *Attempting recovery of dropped out clients*. As previously mentioned, a successful dropout recovery program has been demonstrated to re-engage clients who have dropped out of treatment (Goldstein, et al., 2002). A general approach to dropout recovery with pathological gamblers might involve: (1) identifying barriers to continued participation in the treatment program; (2) explore or present a range of strategies to overcome the identified barriers; and (3) apply motivational enhancement strategies to increase the client's motivation to continue treatment.

6.5 Summary of Chapter Six

The findings of this chapter documented that pre-therapy preparation techniques, motivational enhancement and clinical case management approaches have been examined for their influence on dropout from psychological treatment programs. Whilst conclusions about the best strategy cannot yet be made, it appears that motivational enhancement is likely to have a positive impact on dropout. Additional research is however needed to understand and effectively reduce dropout from psychological treatment programs. There is a particular need for further research exploring interventions to reduce dropout from Internet-based programs for psychological

disorders. This chapter also outlined recommendations in intervening to reduce dropout from psychological treatment for pathological gambling. The following chapter presents the results of an intervention designed to encourage pathological gamblers who prematurely terminated Internet-based treatment to return to treatment.

CHAPTER 7

STUDY III: EVALUATION OF A PROGRAM FOR RECOVERY OF DROPOUTS TO INTERNET-BASED PSYCHOLOGICAL TREATMENT FOR PATHOLOGICAL GAMBLING

7.1 Overview of Chapter Seven

The literature review reported in Chapter Six highlighted that additional research is needed to understand and effectively reduce dropout from psychological treatment programs. There is a particular need for research exploring interventions to reduce dropout from Internet-based programs for psychological disorders. The review also outlined a need for further research that addresses interventions that utilise a concise and comprehensive synthesis of strategies addressing a range of possible predictors of dropout, consider the findings of qualitative research outlining client's reasons for discontinuing treatment and attempt recovery of dropped out clients. To address the above issues, this chapter explores an intervention to return dropped out participants to Internet-based treatment for pathological gambling. The intervention targeted a number of variables that have shown an association with dropout, or have been identified by clients as reasons for dropout, from pathological gambling and Internet-based treatment programs. Drawing primarily upon motivational enhancement and clinical case management approaches, a synthesis of dropout reducing strategies was used to address these variables with the aim of encouraging pathological gamblers who prematurely terminated the Improving the Odds Internet-based treatment program to return to

treatment. Finally, as exploring the variables that increase participants likelihood of returning to treatment may establish the basis for subsequent interventions to reduce dropout, the final aim of this chapter was to explore a range of demographic, gambling and treatment factors as predictors of return to Internet-based treatment for pathological gambling.

7.2 Method

7.2.1 Participants and Procedure

Participants for the study were seventy two pathological gamblers who dropped out from the Improving the Odds Internet-based treatment program. Participants dropped out after allocation to an active treatment condition: 23 dropped out after completing session 1, 19 dropped out after completing session 2, 15 dropped out after completing session 3, 11 dropped out after completing session four and 4 dropped out after completing session 5. The mean age of participants was 44 years (SD = 9.16; range 26 – 67 years). Table 7.1 outlines their demographic characteristics. Pathological gamblers who dropped out from the Improving the Odds treatment were randomly assigned by computer to the intervention group (n= 38) or comparison group (n= 34). Participants assigned to the intervention group received an email confirming that they did not wish to continue with the program and inviting them to access the return to treatment intervention (Appendix 7.1). Participants assigned to the comparison condition received an email confirming that they did not wish to continue with the program and wishing them good luck in the future (Appendix 5.10). A detailed description of recruitment of clients,

Table 7.1. Demographic Characteristics of Participants

Variable	%
Gender	
Male	38
Female	62
Relationship Status	
Single	40
In a relationship	60
Annual Income	
<$10000AU	2
$10000-29000	16
$30000-49000	30
>$50000	48
Education (highest level)	
Primary	1
Junior secondary	14
Senior Secondary	34
Certificate /Diploma	34
Bachelor /Higher Degree	17
Employment	
Full time	68
Part time	19
Full time students	2
Other	11
Race/Ethnicity	
Caucasian	83
Asian	2
Other	15
Religion	
Catholic	33
No religion	42
Protestant	7
Other	18

allocation of to the treatment program and determining dropout is described in Chapter Five.

◀

7.2.2 Measures

South Oaks gambling Screen (SOGS) (Lesieur & Blume, 1987). Gambling behaviour over the previous month was assessed using the SOGS. A detailed description of this measure, including psychometric properties, is reported in Chapter Five. Internal consistency in the current study was acceptable (Cronbach's alpha = 0.69).

Treatment Motivation Questionnaire (TMQ)(Ryan, et al., 1995). Client treatment motivation was assessed using the TMQ. Items assessing internalised and externalised motivation were administered. A detailed description of this measure, including psychometric properties, is reported in Chapter Five. Internal consistency in the current study was acceptable (Cronbach's alpha = 0.73).

Working Alliance Inventory (WAI, client version) (Horvath & Greenberg, 1986). The therapeutic alliance was assessed using the WAI. A detailed description of this measure, including psychometric properties, is reported in Chapter Three. Internal consistency in the current study was good with Cronbach's alpha at 0.90.

Treatment Expectations Questionnaire (TEQ). The TEQ is a version of the Credibility /Expectancy Questionnaire (Devilly & Borkovec, 2000) that was modified for this study. A detailed description of this measure, including psychometric properties, is reported in Chapter Three. Internal consistency in the current study was good (Cronbach's alpha = 0.95).

Reasons for Discontinuing Treatment Checklist. The Reasons for Discontinuing Treatment Checklist is a 20-item self-report measure that was developed for this project to assess client's reasons for dropping out of Internet-based treatment. The checklist contains 20 items (contained in Table 7.2) that covered a range of client (7 items, e.g., "I don't have enough time for sessions", "I'm not ready to make a change in my behaviour"), program (8 items, e.g., "I forgot how to log on", "I'm not comfortable using a computer") and external (5 items, e.g., "Family /relationship difficulties made it hard for me to complete treatment") factors that were identified in Chapters Two and Four and may relate to dropout from pathological gambling and Internet-based treatment programs. Respondents are asked to rate whether or not they encountered variables by indicating yes or no to each item. In addition, to allow participants to provide alternative reasons for dropping out, an open-ended question preceded the checklist items. The Reasons for Discontinuing Treatment Checklist is contained in Appendix 5.5.

All respondents were asked questions on age, gender, income, education, relationship status, employment, religion, ethnic background, previous professional help-seeking and frequency of computer and Internet use.

▼

7.2.3 The Treatment Program

A detailed description of the Improving the Odds treatment program and therapists is provided in Chapter Five.

7.2.4 Development of the Intervention to Reduce Dropout

Drawing upon the suggestions outlined in Chapter Six an intervention to return dropped out participants to Internet-based treatment for pathological gambling was

developed. The intervention targeted pathological gamblers who had dropped whilst completing the Internet-based treatment program and was designed to assist them in returning to the treatment program. The findings of this thesis and the results of previous research suggest that a range of factors may influence dropout from psychological treatment for pathological gamblers. The initial aim of the return to treatment intervention was to identify the distinct difficulties that pathological gamblers may be experiencing in deciding whether or not to continue treatment. This was achieved by asking participants to complete the Reasons for Discontinuing Treatment Checklist. This checklist contains 20 yes-no items that cover client (e.g., "I don't have enough time for sessions", "I'm not ready to make a change in my behaviour"), program (e.g., "I'm not comfortable using a computer") and external factors (e.g., "Family /relationship difficulties made it hard for me to complete treatment") that have shown an association with dropout, or have been identified by clients as reasons for dropout, from pathological gambling and Internet-based treatment programs. A synthesis of dropout-reducing strategies was used to address these variables with the aim of encouraging pathological gamblers who prematurely terminated the Improving the Odds Internet-based treatment program to return to treatment. As motivational enhancement and clinical case management have been shown to be effective in reducing the extent of dropout from face-to-face treatment for psychological disorders (Miranda et al., 2003; Milton, et al., 2002; Wulfert, et al., 2006) strategies were drawn from these approaches when developing the intervention. The following motivational strategies were provided to help participants resolve their ambivalence about Internet-based treatment: correcting clients' misconceptions about psychological treatment; creating incentives for change; eliciting

self-motivational statements; acknowledging and praising client's serious consideration of change; and reframing problem behaviours so that they appear less intimidating. Elements of the clinical case management approach that were incorporated into the intervention included: planning, budgeting, connection with resources, obtaining social support and psycho-education. Consistent with the minimal therapist contact notion of the Internet-based treatment program strategies from motivational enhancement and clinical case management, rather than therapist collaboration and communication, were provided within the return to treatment intervention.

To enhance the salience of the intervention to each participant's individual circumstances, strategies were provided only for those difficulties /items the participant selected on the Reasons for Discontinuing Treatment Checklist. Thus, participants were only provided access to selected portions (or "pages") of the intervention content depending on their responses on the Checklist. The intervention was completed online and required approximately fifteen minutes to one hour depending upon the number of difficulties /items the participant selected on the Reasons for Discontinuing Treatment Checklist. After completing the return to treatment intervention participants chose whether or not they would like to recommence the treatment program.

7.3 Results

7.3.1 Return to Treatment

Analyses were conducted to explore whether participants in the intervention group (n=38) more likely to return to treatment after dropping out than those in the comparison group (n=34). This question was examined by comparing participants

assigned to the intervention group with those assigned to the comparison group. A

statistically significant difference was found: participants in the intervention group were

significantly more likely to return to treatment after dropping out than those in the

comparison group (χ^2 (1, 70) = 9.72, p <.001; intervention group return rate, 32%, n = 12,

vs. comparison group return rate, 9%, n = 3).

Data on those in the intervention group was also examined to determine the extent

of further participation in the treatment program. Thirty four percent of participants

(n=13) in the intervention group logged on to complete the return to treatment

intervention. Of these participants 96% (n=12) returned to treatment: 42% (n=5) of these

participants returned to complete the treatment program; 50% (n=6) returned to complete

one additional session; and 8% (n=1) returned to complete two additional sessions.

7.3.2 Difficulties Identified by Participants

Data on those who accessed the intervention (n=13) was examined to determine

the difficulties identified by clients using the Reasons for Discontinuing Treatment

Checklist (Table 7.2). As participants were only provided access to selected portions of

the intervention content depending on their responses on the Checklist, the identified

difficulties also provides an indication of program content viewed by clients. Of the

twenty items, "emotional difficulties make it hard for me to complete treatment" (46%)

was endorsed by the highest proportion of participants, followed by "I tried to stop

gambling before and I couldn't do it" (38%), "I am having computer /Internet problems",

"I forgot how to log on" and "The location of my computer makes it hard for me to

complete treatment (e.g., noise and activities, lack of privacy)" (23%). Analyses were

Table 7.2. Difficulties Identified by Participants Completing the Intervention.

Item	Clients Endorsing
Client Factors	
I don't have enough time for weekly sessions	8% (n=1)
I do not expect the severity of my gambling to change after this treatment	8% (n=1)
I tried to stop gambling before and I couldn't do it	38% (n=5)
I'm not ready to make a change in my gambling behaviour	15% (n=2)
My gambling is not severe enough to need treatment	8% (n=1)
As I know that it is best for me to not gamble I have stopped and don't need treatment	0% (n=0)
I don't know whether I should make a change in my gambling behaviour	8% (n=1)
Treatment Factors	
I'm not comfortable using a computer	0% (n=0)
This treatment does not seem useful	15% (n=2)
I am having computer /Internet problems	23% (n=3)
I don't know how to log on	8% (n=1)
I forgot how to log on	23% (n=3)
I don't think that this is the best program for me and am seeking treatment elsewhere	8% (n=1)
I worry if my answers will be kept confidential	0% (n=0)
The location of my computer makes it hard for me to complete treatment (e.g., noise and activities, lack of privacy)	23% (n=3)
External Factors	
Emotional difficulties (i.e., sadness and anxiety) make it hard for me to complete Treatment	46% (n=6)
Employment /financial difficulties make it hard for me to complete treatment	15% (n=2)
Legal difficulties make it hard for me to complete treatment	8% (n=1)
Accommodation difficulties make it hard for me to complete treatment	8% (n=1)
Family /relationship difficulties make it hard for me to complete treatment	15% (n=2)

also conducted to explore the proportion of participants endorsing multiple difficulties. Few participants endorsed only one difficulty subscale. Only 8% (n=1) endorsed one difficulty whereas 46% (n=6) endorsed two difficulties, 31% (n=4) endorsed 3 difficulties and 15% (n=2) endorsed four or six difficulties.

7.3.3 Prediction of Return to Treatment

Univariate analyses (i.e., one-way univariate analyses or Chi-squared analyses) were conducted on demographic (i.e., age, gender and relationship status), gambling (pre-treatment gambling severity) and treatment (i.e., treatment motivation, working alliance, expectations of treatment success, perceived treatment credibility, number of sessions completed prior to dropping out, treatment response: i.e., change in SOGS score prior to dropout) variables to explore their association with return to treatment. Of these possible predictor variables only number of sessions completed prior to dropping out yielded a significant association with return to treatment. Those who returned to treatment were more likely to have completed a greater number of sessions (M = 3.00, SD = 1.15) prior to dropping out than those who did not return to treatment (M = 1.93; SD = 1.54) ($F_{(1, 70)}$ = 6.56, $p < 0.01$). No significant differences were found between participants that returned to treatment and that did not with regard to age, $F_{(1, 70)}$ =0.32, $p = 0.73$, gender, $\chi^2_{(1, 104)}$ = 3.55, $p = .17$, relationship status, $\chi^2_{(1, 70)}$ = 4.01, $p = .14$), gambling severity, $F_{(1, 104)}$ =0.27, $p = 0.77$, treatment motivation, $F_{(1, 70)} \geq 1.44$, $p \geq 0.24$, working alliance, $F_{(1, 70)}$ = 0.29, $p = 0.59$, expectations of treatment success, $F_{(1, 70)}$ =1.12, $p = 0.33$, perceived treatment credibility $F_{(1, 70)}$ = 1.50, $p = 0.28$ and treatment response $F_{(1, 70)}$ = 3.19, $p = 0.08$.

A multivariate analysis was then conducted in order to model factors including assignment to the intervention or comparison group which were related to return to treatment. The factors entered into the multiple logistic model were: group assignment (comparison or intervention) and number of sessions completed prior to dropping out. Both variables significantly discriminated those who returned to treatment from those who did not return to treatment, χ^2 (4, N=72) = 16.68, p < .001, when entered into the binary logistic regression analysis simultaneously. Overall, 78% of the sample was correctly classified as a treatment returner or treatment non-returner. Both group assignment (OR=2.37, Wald x^2=20.16, df =1, p < .001, CI=1.63 to 3.46), and number of sessions completed prior to dropping out (OR=0.16, Wald x^2=6.33, df =1, p < .05, CI=0.04 to 0.67), were significant in the model.

7.4 Discussion

This study was the first to evaluate an intervention designed to reduce the extent of dropout from Internet-based treatment for psychological disorders. This study was also the first to explore an intervention designed to recover dropouts to active participation in psychological treatment programs. The results suggest that the intervention assisted in reducing the extent of dropout by encouraging pathological gamblers who prematurely terminated the Improving the Odds Internet-based treatment program to return to treatment. There was a significant improvement in return to treatment for participants in intervention group compared with participants in the comparison group: 32% percent of dropouts in the intervention group returned to treatment compared with 9% in the comparison condition. Furthermore, a substantial proportion of participants who returned to treatment after accessing the intervention

completed the treatment program (42%). This study supports the results of research within the substance-use treatment literature demonstrating that it is possible to return dropouts to active participation in methadone maintenance treatment (Goldstein et al., 2002). Overall, these findings suggest that intervening with participants after they have dropped out may provide a viable option to reducing the extent of treatment session dropout from Internet-based treatment for pathological gamblers.

Another important finding of this study was that targeting a number of variables that have shown an association with dropout or have been identified by clients as reasons for dropout, and utilising a synthesis of motivational enhancement and clinical case management approaches to address these variables, was a promising approach to reducing dropout. Clients who accessed the intervention identified a range of reasons for discontinuing treatment. Reasons related to client (e.g., "I have tried to stop gambling before and couldn't do it"), treatment (e.g., "I am having computer /Internet problem") and external (e.g., "emotional difficulties make it hard for me to complete treatment") factors. Few gamblers who dropped out appeared to do so for only one particular reason: over ninety percent of participants reported that their decision to drop out was influenced by the presence of two or more difficulties. This finding supports the notion that because of the many factors that may be involved in a gambler's decision to drop out of treatment, a synthesis of strategies may be optimally effective for reducing dropout within pathological gambling treatment programs.

Whilst the intervention was effective in returning participants to treatment (96% who accessed the intervention returned to treatment), a significant proportion (66%) of individuals in the intervention group failed to access the intervention. This suggests that

alternative approaches may be required to effectively prevent pathological gamblers from dropping out of Internet-based treatment and to effectively recover dropouts to active participation in Internet-based treatment programs for psychological disorders. In Chapter Five, participants who dropped out from treatment sessions were found to use the computer or Internet less often than completers. This finding suggests that effective approaches to engagement should attempt contact through a variety of modes. For instance, for participants who are unresponsive to emails inviting them to access the intervention, mobile phone text messages or posted letters could be offered. Increased therapist contact through weekly telephone calls has been shown to promote adherence within Internet-based treatment for social phobia (Carlbring, Gunnarsdottir, Hedensjo, Andersson, Ekselius & Furmark, 2007). For those participants who remain unresponsive, increased therapist contact through a brief telephone call could be provided to inform them about the intervention, assist in resolving issues that may keep the client from participating and encourage continued involvement in the program.

This study also explored associations between demographic (age, gender and relationship status), gambling (pre-treatment gambling severity) and treatment (treatment motivation, working alliance, expectations of treatment success, perceived treatment credibility, number of sessions completed prior to dropping out, treatment response) variables and return to treatment. Of these possible predictor variables only assignment to the intervention group and number of sessions completed prior to dropping out discriminated between those who returned to treatment and those who did not. Dropouts who returned to treatment were more likely to have completed a greater number of sessions prior to dropping out than those who did not return to treatment. Clients who

drop out after completing a greater number of treatment sessions may be more likely to return because of the loss of invested time and effort that they will incur if they do not complete the program (i.e., sunk-cost effect) (Arkes & Blumer, 1985). It is also possible that these clients are more likely to notice a positive change in their gambling behaviour compared with clients who drop out earlier in the program. These positive changes may increase the likelihood that they return to treatment after dropping out. However, an analysis exploring treatment response as a predictor of return to treatment did not find a significant association between treatment response and return to treatment. Clients who attend a greater number of sessions prior to dropping out may also possess more motivation for treatment compared with clients completing fewer sessions. Such increased motivation may have made it more likely that they would return to treatment after dropping out. However, pre-treatment motivation scores did not predict return to treatment. This result may have been influenced by the timing of motivation assessment. As it is likely that motivational fluctuations occur throughout treatment, repeated assessment of motivation might have provided further insight into why some clients returned to treatment after dropping out and other clients did not.

A number of limitations must be noted. Firstly, the results of this study can only be generalized to pathological gamblers receiving Internet-based psychological treatment. Other types of psychological treatment are routinely used with pathological gamblers (Pallanti, et al., 2006) and it would be of interest to examine the success of this approach in reducing the extent of dropout within other types of treatment. Secondly, as this sample consisted only of pathological gamblers who had dropped out whilst completing treatment sessions, it is not known whether it is effective for use with dropout at different

stages of participation in treatment (i.e., pre-treatment dropout). Further research is needed to explore approaches to reducing dropout at different points throughout psychological treatment for pathological gambling. Finally, the design of this study did not allow for examination of the relative effectiveness of each individual dropout reducing strategy used within the return to treatment intervention. Research is needed to determine whether the individual dropout reducing strategies used within this intervention are comparatively effective in encouraging pathological gamblers to return to Internet-based treatment.

7.5 Summary of Chapter Seven

This chapter presented the results of an intervention to return dropouts to Internet-based treatment for pathological gambling. Pathological gamblers who received the intervention were significantly more likely to return to the Internet-based treatment after dropping out than those who did not receive the intervention. Furthermore, almost all pathological gamblers who accessed the intervention returned to treatment, with a substantial proportion returning to complete the treatment program. Of the examined predictors of return to treatment, only assignment to the intervention group and number of sessions completed prior to dropping out yielded a significant association with return to treatment. The following chapter summarises and reviews the thesis, and reports the major findings of the research.

CHAPTER 8

SUMMARY AND CONCLUSIONS

8.1 Findings of this Thesis

In the introduction of this thesis, it was noted that the dropout from psychological treatment programs for pathological gambling is a serious problem that remains poorly understood. This is a cause for concern, given the availability of effective treatments for many pathological gamblers. To address this issue, the current thesis conducted an in-depth investigation of dropout from two psychological treatment programs for pathological gamblers: face-to-face cognitive- behavioural therapy and Internet-based treatment with minimal therapist contact. Dropout was broadly defined as leaving treatment before the completion of a treatment program (Davis, et al., 2006). However, as dropout from a research program may occur at one of a number of points (i.e., pre-treatment dropout, treatment phase dropout and follow-up dropout), this thesis examined dropout at a number of different points throughout treatment. It was argued that exploring dropout at different stages of treatment is critical in enhancing understanding of the specific "risk" points at which clients are most likely to be lost.

Chapter Two presented the results of a systematic review of current research on dropout from face-to-face treatment for pathological gambling. It was identified that dropout occurs with high frequency amongst pathological gamblers (weighted average of 31% dropout across 14 studies). Few studies distinguished between dropouts at different

stages of participation, however the available evidence suggested that majority of dropout occurs prior to commencing treatment. Unfortunately, limited research has been directed towards identifying key variables that may predict pathological gamblers dropping out. The literature review noted that the evidence on specific variables that predict dropout is limited or inconsistent, and is characterised by a lack of a coherent, gambling-specific model and by methodological problems such as a failing to separate variables associated with dropout at different points throughout the treatment process.

To address these issues, Chapter Three explored dropout within a sample of 157 pathological gamblers who volunteered to take part in a face-to-face cognitive-behavioural treatment program. The extent of dropout was examined at two different points throughout treatment: pre-treatment dropout (i.e., dropout occurring after recruitment, selection and providing informed consent, and prior to randomisation to a treatment condition), and treatment phase dropout (i.e., dropout occurring after randomisation to a treatment condition and prior to completing that condition). Furthermore, using Liese and Beck's (1997) cognitive model of dropout as a guiding theoretical model, a range of predictor variables were explored as predictors of dropout (coping style, amount spent per day on gambling, urge to gamble, self-efficacy to control gambling, gambling-related cognitions, expectations for treatment success and therapeutic alliance), and client expectations for treatment success was explored as a mediator between the predictor variables and dropout (Liese & Beck, 1997). A high rate of dropout (42%) was found with majority occurring prior to randomisation to a treatment condition. Whilst the relationship between dropout and client expectations for treatment success was not evident, analyses identified that dropping out at any time from

registration to completing treatment was associated with using cognitive coping strategies; dropping out prior to commencing treatment was associated with spending a greater amount of money per day on gambling and using cognitive coping strategies; and dropping out from treatment sessions was associated with using emotion-focused coping strategies.

These findings not only increase our understanding about which pathological gamblers are at greatest risk for dropping out of cognitive- behavioural treatment, but provide further evidence of the difficulty in retaining pathological gamblers in face-to-face treatment.   A major challenge for treatment providers is to increase the accessibility and ease with which pathological gamblers can complete psychological treatment. A novel and promising approach to providing psychological treatment is Internet-based treatment (Griffiths & Cooper, 2003). As it was not known whether dropout is also a problem within this form of treatment, Chapter Four reviewed the available literature exploring dropout from Internet-based treatment for psychological disorders. It was identified that dropout from Internet-based treatment programs also occurs with high frequency (weighted average of 31% dropout across 19 studies). Again it was noted that only a small amount of research has explored variables associated with dropping out of Internet-based treatment programs. The literature review identified that the evidence on specific variables that may make an individual more likely to drop out is limited, and also that similar to the face-to-face literature, research is limited by a lack of a coherent, theoretical model of dropout and by methodological problems such as a failing to separate variables associated with dropout at different points throughout the treatment process.

Chapter Five explored these issues within a study exploring dropout amongst 223 pathological gamblers who volunteered to take part in an Internet-based treatment program. The extent of dropout was examined at two different points throughout treatment: pre-treatment dropout (i.e., dropout occurring after recruitment, selection and providing informed consent, and prior to randomisation to a treatment condition), and treatment phase dropout (i.e., dropout occurring after randomisation to a treatment condition and prior to completing that condition). Again, using Liese and Beck's (1997) cognitive model of dropout as a guiding theoretical model, a range of predictor variables were explored as predictors (age, gender, relationship status, previous professional help-seeking, severity of gambling behaviour, impulsiveness, coping style, client motivation, attitude towards reading, frequency of computer and Internet use, expectations for treatment success and early treatment response), and client expectations for treatment success was explored as a mediator between the predictor variables and dropout (Liese & Beck, 1997). A high rate of dropout (59%) was found, with majority of dropout occurring during treatment sessions. The relationship between dropout and client expectations for treatment success was also not evident in this study. Dropping out at any time from registration to completing treatment was associated with increased impulsivity, decreased frequency of Internet use and a negative attitude towards reading; dropout prior to commencing treatment was associated with increased impulsivity, younger age, a negative attitude towards reading online and less prior professional help-seeking for gambling; and finally participants who dropped out from treatment sessions used the computer or Internet less often than completers and were less likely than completers to have noticed a positive change in their gambling behaviour prior to commencing session

two. These findings not only provide evidence that dropout is also a serious problem within Internet-based treatment for pathological gambling, but indicate which pathological gamblers may be at greatest risk of dropping out.

Overall, the above findings provided valuable information about dropout from both face-to-face and Internet-based treatment programs for pathological gambling that assists in developing interventions to reduce dropout. A literature review was conducted in Chapter Six exploring interventions to reduce dropout from psychological treatment programs. The findings documented that pre-therapy preparation techniques, motivational enhancement and clinical case management approaches have been examined for their influence on dropout from psychological treatment programs. Unfortunately, despite this research we still do not have a clear idea of what is the best strategy to use to reduce client dropout from psychological treatment programs. The discussed strategies had not been evaluated for use with clients across a range of psychological disorders and studies that compare the differential effectiveness of dropout reduction strategies have not been conducted. However, whilst the best strategy for reducing dropout from psychological treatment programs was unclear, the findings suggested that motivational enhancement and clinical case management may have a positive impact on dropout. The review also highlighted that there is a particular need for research exploring interventions to reduce dropout from Internet-based programs for psychological disorders. Furthermore, it was suggested that future research explores interventions that utilise a concise and comprehensive synthesis of strategies addressing a range of possible predictors of dropout, consider the findings of qualitative research outlining client's reasons for discontinuing treatment and attempt recovery of dropped out clients.

Utilising the conclusions of this literature review, Chapter Seven evaluated an intervention designed to encourage 72 pathological gamblers who prematurely terminated the Improving the Odds Internet-based treatment program to return to treatment. The intervention targeted a number of variables that have shown an association with dropout, or have been identified by clients as reasons for dropout, from pathological gambling and Internet-based treatment programs. Drawing primarily upon motivational enhancement and clinical case management approaches, a synthesis of dropout reducing strategies was used to address these variables. The results suggested that the intervention may assist in reducing dropout from the Internet-based program. There was a significant improvement in return to treatment for participants in intervention group compared with participants in the comparison group. Furthermore, a substantial proportion of participants who returned to treatment after accessing the intervention completed the treatment program. However, whilst the intervention was highly effective in returning participants to treatment, a significant proportion of individuals in the intervention group failed to access the intervention. It was suggested that alternative approaches incorporating a variety of modes of communication may be required to effectively engage dropped out participants in the return to treatment intervention. For instance, for participants who are unresponsive to emails inviting them to access the intervention, mobile phone text messages or posted letters could be offered. To those who remain unresponsive, brief telephone calls could be provided to inform them about the intervention, assist in resolving issues that may keep the client from participation and encourage continued involvement in the program. Of the examined predictors of return to treatment, only

assignment to the intervention group and number of sessions completed prior to dropping out yielded a significant association with return to treatment.

8.2 Limitations and Directions for Future Research

Despite the fact that this study answers many questions pertaining to dropout from face-to-face and Internet-based treatment programs for pathological gamblers, several questions remain unanswered that require additional research. Most importantly, more research is required in order to accurately predict which pathological gamblers are most at risk of dropping out of psychological treatment. Although this thesis identified some reliable predictors of dropout, the best combinations of predictors explained only moderate amounts of variance. Future investigations should explore the effect of a wider range of predictor variables within a larger sample of pathological gamblers. Researchers might benefit from exploring variables such as the presence of environmental stressors, the influence of supportive social relationships, motivation to change, impulsivity and early treatment response in predicting dropout from face-to-face treatment programs. With regard to Internet-based treatment, researchers might benefit from exploring variables such as the presence of environmental stressors, the influence of supportive social relationships, amount and type of therapist contact throughout treatment, availability of a reliable computer or Internet access and availability of a quiet and private computing environment. Increased accuracy of predicting which clients prematurely terminate treatment may provide important insights into strategies that may be used to engage and retain greater proportions of gamblers, and thereby increase the impact of psychological interventions for pathological gambling.

In addition, greater consideration and exploration of pathological gamblers qualitative reasons for dropout is required. In Chapter Three, qualitative information on dropout was obtained from treatment discharge information that was recorded by therapists or the project manager. In Chapter Five, qualitative information on client's reasons for dropping out was obtained using the Reasons for Discontinuing Treatment Checklist. The qualitative information obtained in both chapters identified that pathological gamblers have many and varied reasons for dropping out of psychological treatment. Use of additional qualitative research approaches (i.e., interviews, focus groups, case studies) may provide an opportunity for more in-depth analysis of dropout. Thus, although further quantitative analysis of data is critical in investigating predictors of dropping out, it is also important to further explore the richness of qualitative data.

Research is also needed to determine the effectiveness of psychological treatment for pathological gamblers who drop out. One potential explanation for dropout is that people overcome their psychological difficulties without requiring exposure to a full treatment intervention. Unfortunately, the evidence to date suggests this may not be the case. Research within the face-to-face treatment literature indicates that individuals who discontinue treatment early achieve fewer improvements in treatment than those who attend a greater number of treatment sessions (Crisp, et al., 2001), but it is unclear as to whether this finding can be generalized to psychological treatment for pathological gambling. Thus, further research should follow-up dropped out participants to determine the outcome after dropping out from psychological treatment for pathological gambling.

Differences between the effectiveness of the face-to-face and Internet-based treatment programs may have also influenced whether or not pathological gamblers

persisted in the program. We might expect that clients would be less likely to drop out if they are more likely to observe desired changes with the treatment that they are receiving. Results from both programs have not yet been published, however a preliminary comparisons of effect sizes obtained in face-to-face CBT and Internet-based suggests that both treatment may be similarly effective in the treatment of pathological gambling (Casey, Oei & Raylu, 2009). These findings indicated that the Internet-based CBT program and the face-to-face CBT program were equally effective in producing improvements in gambling amount, gambling frequency, gambling urge and gambling refusal self-efficacy across treatment. However, although the above results suggest that both treatments may be similarly effective in the treatment of pathological gambling, a more stringent test of this issue would require random allocation of participants to either face-to-face or Internet-based CBT.

Differences between the clients who register for the face-to-face and Internet-based treatment programs may have also influenced the extent of dropout from both treatment programs. We might expect that by increasing the accessibility and ease with which gamblers can attend psychological treatment, the Internet-based program may have engaged clients who would be reluctant to participate in face-to-face treatment. Such clients may be unsure as to whether they want to change their gambling behaviour; may be experiencing co-morbid psychological, medical, health or social difficulties which create a barrier to treatment entry; or they may be hesitant about participating in face-to-face treatment due to embarrassment, shame or unsuccessful treatment experiences in the past and may therefore be at a higher risk for terminating treatment. Research is needed that contrasts pathological gamblers who register for face-to-face and Internet-based

psychological treatment programs. It would also be useful to follow-up pathological gamblers after they drop out of treatment. As noted in Chapter Five, it is possible that Internet-based interventions create a safe 'first step' to engaging in professional psychological treatment and promotes transition into face-to-face forms of treatment (Christensen, Leach, Barney, Mackinnon, & Griffiths, 2006). It would therefore be interesting to establish whether pathological gamblers who drop out re-engage in psychological treatment at some point in the future, and if so, what form of psychological treatment they seek and whether or not they complete this treatment program.

The extended investigation of dropout undertaken in this thesis suggested different risk points for dropout from face-to-face and Internet-based treatment programs for pathological gamblers (i.e., in Study I the majority of dropout occurred prior to commencing the face-face treatment and in Study II the majority of dropout from Internet-based treatment occurred during treatment). The results also identified different predictors of dropout at different points throughout treatment for pathological gambling. Because prior research on predictors of dropout has confounded dropout at different points throughout treatment, it is difficult to compare the results of this thesis with prior research or to draw any conclusions about the types of variables that predict dropout at different points throughout treatment for pathological gambling. Further research is needed that separates variables associated with dropout at different points throughout the treatment process.

In conclusion, this thesis has documented that dropout is a significant problem facing practitioners and clinical researchers working with pathological gamblers. This understudied and underserved group of pathological gamblers is at high risk for poor

outcome. The development and evaluation of strategies to enhance retention (prevent dropout), or reengage dropouts are critically needed. The results from this thesis suggest that interventions to address attrition might meaningfully focus on returning dropouts to active treatment participation by targeting a number of possible predictors of dropout and drawing primarily upon motivational enhancement and clinical case management approaches to address these variables. Overall, the results of this thesis are encouraging and indicate that further research should be conducted on exploring predictors of dropout and the applicability of this method to reduce dropout to other groups of pathological gamblers who need assistance persisting in treatment.

References

Altman, D. G. (1996). Better reporting of randomised controlled trials: the CONSORT statement. *British Medical Journal, 313*(7057), 570-571.

American Psychiatric Association (1994). *Diagnostic and Statistical Manual of Mental Disorder* (4th edition ed.). Washington, D.C.: American Psychiatric Association.

American Psychiatric Association (2000). *Diagnostic and Statistical Manual of Mental Disorders, fourth edition, text revision.* Washington, DC: American Psychiatric Association.

Anderson, G., & Brown, R. I. (1984). Real and laboratory gambling, sensation-seeking and arousal. *British Journal of Psychology, 75*(3), 401-410.

Andersson, G., Lundstrom, P., & Strom, L. (2003). Internet-based treatment of headache: Does telephone contact add anything? *Headache, 43*, 353 –361.

Andersson, G., Strom, L., & Pettersson, R. (2002). Randomized controlled trial of Internet-based treatment of insomnia *European Psychiatry, 17*(2S), 218.

Arkes, H. & Blumer, C. (1985). The Psychology of Sunk Cost. *Organizational Behavior and Human Decision Process* 35, 124-140

Armbruster, P., & Fallon, T. (1994). Clinical, sociodemographic, and systems risk factors for attrition in a children's mental health clinic. *American Journal of Orthopsychiatry, 64*(4), 577-585.

Australian Institute for Gambling Research (2001). *Survey of the Nature and Extent of Gambling and Problem Gambling in the ACT*: Commissioned by the ACT Gambling and Racing Commission.

Baboushkin, H. R., Hardoon, K. K., Derevensky, J. L., & Gupta, R. (2001). Underlying cognitions in gambling behavior among university students. *Journal of Applied Social Psychology, 31*(7), 1409-1430.

Baekeland, F., & Lundwall, L. (1975). Dropping out of treatment: A critical review. *Psychological Bulletin, 82*, 738-783.

Barker, J. C., & Miller, M. (1968). Aversion Therapy for Compulsive Gambling. *Journal of Nervous and Mental Disease, 146*(4), 285-302.

Baron, R. M., & Kenny, D. A. (1986). The moderator^mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182.

Beckman, L. J., & Bardsley, P. E. (1986). Individual characteristics, gender differences, and dropout from alcoholism treatment. *Alcohol & Alcoholism, 21,* 213-224.

Belding, M., Iguchi, M., & Lamb, R. (1997). Stages and processes of change as predictors of drug use among methadone maintenance patients. *Experimental and Clinical Psychology, 5*, 65-73.

Belding, M. A., Iguchi, M. Y., & Lamb, R. J. (1996). Stages of change in methadone maintenance: Assessing the convergent validity of two measures. *Psychology of Addictive Behaviors, 10,* 157-166.

Bifulco, A., & Brown, G. W. (1996). Cognitive coping response to crises and onset of depression. *Social Psychiatry and Psychiatric Epidemiology, 31*, 163-172.

Blaszczynski, A. (2005). Conceptual and Methodological Issues in Treatment Outcome Research. *Journal of Gambling Studies, 21*(1), 5-11.

Blaszczynski, A., Buhrich, N., & McConaghy, N. (1985). Pathological gamblers, heroin addicts and controls compared on the EPQ Addictions Scale. *British Journal of Addictions, 80*, 315-319.

Blaszczynski, A., Huynh, S., Dumlao, V. J., & Farrell, E. (1998). Problem gambling within a Chinese speaking community. *Journal of Gambling Studies, 14*(4), 359-380.

Blaszczynski, A., Steel, Z., & McConaghy, N. (1997). Impulsivity in pathological gambling: The antisocial impulsivist. *Addiction, 92*(1), 75-87.

Bordin, E. S. (1979). The generalizability of the psychoanalytic concept of the working alliance. *Psychotherapy Theory, Research and Practice, 16*, 252-260.

Borkovec, T. D., & Nau, S. D. (1972). Credibility of analogue therapy rationales. *Journal of Behavior Therapy & Experimental Psychiatry, 3*, 257-260.

Brandt, L. W. (1965). Studies of "dropout" patients in psychotherapy: a review of findings. *Psychotherapy: Theory, Research and Practice, 12*, 6-12.

Brown, J. M., & Miller, W. R. (1993). Impact of motivational interviewing on participation and outcome in residential alcoholism treatment. *Psychology of Addictive Behaviors, 7*, 211-218.

Brown, R. I. (1987a). Dropouts and continuers in Gamblers Anonymous: II. Analysis of free-style accounts of experiences with GA. *Journal of Gambling Behavior, 3*(1), 68-79.

Brown, R. I. (1987b). Dropouts and continuers in Gamblers Anonymous: III. Some possible specific reasons for dropout. *Journal of Gambling Behavior, 3*(2), 137-151.

Brown, R. I. (1987c). Dropouts and continuers in Gamblers Anonymous: IV. Evaluation and summary. *Journal of Gambling Behavior, 3*(3), 202-210.

Brown, R. I. F. (1986). Dropouts and Continuers in Gamblers Anonymous: Life-Context and Other Factors. *Journal of Gambling Behavior, 2*(2), 130-140.

Brown, S., & Coventry, L. (1997). *Queen of hearts: The needs of women with gambling problems.* Melbourne: Financial and Consumer Rights Council.

Burns, D. D., & Nolen Hoeksema, S. (1992). Therapeutic empathy and recovery from depression in cognitive- behavioral therapy: A structural equation model. *Journal of Consulting and Clinical Psychology, 60*, 441-449.

Callaghan, R. C., Hathaway, A., Cunningham, J. A., Vettese, L. C., Wyatt, S., & Taylor, L. (2005). Does stage-of-change predict dropout in a culturally diverse sample of adolescents admitted to inpatient substance-abuse treatment? A test of the Transtheoretical Model. *Addictive Behaviors, 30*(9), 1834–1847.

Carlbring, P., Bohman, S., Brunt, S., Buhrman, M., Westling, B. E., Ekselius, L., & Andersson, G. (2006). Remote treatment of panic disorder: a randomized trial of Internet-based cognitive behaviour therapy supplemented with telephone calls. *The American Journal of Psychiatry, 163* (12), 2119-2125.

Carlbring, P., Ekselius, L., & Andersson, G. (2003). Treatment of panic disorder via the Internet: a randomized trial of CBT vs. applied relaxation. *Journal of Behavior Therapy and Experimental Psychiatry, 34*, 129-140.

Carlbring, P., Furmark, T., Steczko, J., Ekselius, L., & Andersson, G. (2006). An open study of Internet-based bibliotherapy with minimal therapist contact via email for social phobia. *Clinical Psychologist, 10*(1), 30-38.

Carlbring, P., Gunnarsdottir, M., Hedensjo, L., Andersson, G., Ekselius, L., & Furmark, T. (2007). Treatment of social phobia: randomised trial of itnernet-delivered cognitive-behavioural therapy with telephone support. *British Journal of Psychiatry, 190*, 123-128.

Carlbring, P., Nilsson-Ihrfelt, E., Waara, J., Kollenstam, C., Buhrman, M., Kaldo, V., et al. (2005). Treatment of panic disorder: Live therapy vs. self-help via the Internet. *Behaviour Research and Therapy, 43*(10), 1321-1333.

Carlbring, P., & Smit, F. (2008). Randomized trial of Internet-delivered self-help with telephone support for pathological gamblers. *Journal of Consulting & Clinical Psychology, 76*(6), 1090-1094.

Carlbring, P., Westling, B. E., Ljungstrand, P., Ekselius, L., & Andersson, G. (2001). Treatment of panic disorder via the Internet:A randomized trial of a self-help program. *Behavior Therapy, 32*, 751-764.

Carroll, K. M., Libby, B., Sheehan, J., & Hyland, N. (2001). Motivational interviewing to enhance treatment initiation in substance abusers: An effectiveness study. *American Journal on Addictions, 10*, 335–339.

Carver, C. S. (1997). You want to measure coping but your protocol's too long: Consider the Brief COPE. *International Journal of Behavioural Medicine, 4*(1), 92 - 100.

Casey, L. M., Oei, T. P., Raylu, N., & Lim, H. K. (2007). *Improving the Odds: Internet-based Treatment for Problem Gambling.* Paper presented at the World Congress of Behavior and Cognitive Therapies, Barcelona, Spain.

Casey, L. M., Oei, T. P., & Raylu, N. (2009). *Internet-based delivery of Cognitive*

Behaviour Therapy versus Monitoring, Feedback and Support for Pathological Gambling. Brisbane, Australia: Department of Employment, Economic Development and Innovation.

Casey, L. M., Oei, T. P. S., Melville, K. M., Bourke, E., & Newcombe, P. (2008). Measuring Self-efficacy in gambling: the Gambling Refusal Self-Efficacy Questionnaire. *Journal of Gambling Studies 24*(2), 229-246.

Cavanagh, K., Shapiro, D. A., Van Den Berg, S., Swain, S., Barkham, M., & Proudfoot, J. (in press). The Acceptability of Computer-Aided Cognitive Behavioural Therapy: A Pragmatic Study. *Cognitive Behaviour Therapy*.

Centre for Population Studies in Epidemiology (2001). *Gambling Patterns of South Australians and Associated Health Indicators*: Prepared for Department of Human Services – South Australia.

Christensen, H., & Griffiths, K. M. (2002). The prevention of depression using the Internet. *The Medical Journal of Australia, 177*(7), S122-S125.

Christensen, H., Leach, L. S., Barney, B., Mackinnon, A. J., & Griffiths, K. M. (2006). Effect of web-based depression literacy and cognitive-behavioural therapy interventions on stigmatising attitudes to depression. . *BMC Psychiatry, 6113-24*.

Cicchetti, D. V. (1994). Guidelines, criteria, and rules of thumb for evaluating normed and standardized assessment instruments in psychology. *Psychological Assessment, 6*, 284-290.

Cicchetti, D. V., & Sparrow, S. S. (1990). Assessment of adaptive behaviour in young children. In J. J. Johnson & J. Goldman (Eds.), *Developmental Assessment in*

Clinical Child Psychology: A Handbook (pp. 173-196). New York: Permagon Press.

Clarke, G., Eubanks, D., Reid, E., Kelleher, C., O'Connor, E., DeBar, L., et al. (2005). Overcoming depression on the Internet (ODIN) (2): A randomised trial of a self-help depression skills program with reminders. *Journal of Medical Internet Research, 7*(2), e16.

Clarke, G., Reid, E., Eubanks, D., O'Connor, E., deBar, L., Kelleher, C., et al. (2002). Overcoming depression on the Internet (ODIN): A randomised controlled trial of an Internet depression skills intervention program. *Journal of Medical Internet Research, 4*(3), e14.

Connolly Gibbons, M. B., Crits Christoph, P., de la Cruz, C., Barber, J., Siqueland, L., & Gladis, M. (2003). Pretreatment expectations, interpersonal functioning, and symptoms in the prediction of the therapeutic alliance across supportive-expressive psychotherapy and cognitive therapy. *Psychotherapy Research, 13*, 59-76.

Cook, J. E., & Doyle, C. (2002). Working alliance in online therapy as compared with face-to-face therapy: preliminary results. *Cyberpsychology and behavior the impact of the Internet, multimedia and virtual reality on behavior and society, 5*(2), 95-105.

Cox, B. J., Yu, N., Afifi, T. O., & Ladouceur, R. (2005). A National Survey of Gambling Problems in Canada. *Canadian Journal of Psychiatry, 50*(4), 213-217.

Crisp, B. R., Jackson, A. C., Thomas, S. A., Thomason, N., Smith, S., Borrell, J., et al. (2001). 'Is more better? The relationship between outcomes achieved by problem

gamblers and the number of counselling sessions attended'. *Australian Social Work, 54*(3), 83–92.

Crockford, D. N., & el Guebaly, N. (1998). Psychiatric comorbidity in pathological gambling: A critical review. *Canadian Journal of Psychiatry, 43*(1), 43-50.

Cuadrado, M. (1999). A comparison of Hispanic and Anglo calls to a gambling help hotline. *Journal of Gambling Studies, 15*(1), 71-81.

Cuijpers, P., van Straten, E., & Andersson, G. (2008). Internet-administered cognitive behavior therapy for health problems: a systematic review. *Journal of Behavioral Medicine, 31*(2), 169-177.

Curtis, J. M. (1984). Motivational techniques for individual and group psychotherapy. *Psychological Reports, 54*, 271-277.

Dakof, G. A., Tejeda, M., & Liddle, H. A. (2001). Predictors of Engagement in Adolescent Drug Abuse Treatment. *Journal of the American Academy of Child & Adolescent Psychiatry, 40*(3), 274-281.

Davis, S., Hooke, G. R., & Page, A. C. (2006). Identifying and targeting predictors of drop-out from group cognitive behaviour therapy. *Australian Journal of Psychology, 58*(1).

Dawe, S., & Loxton, N. (2004). The role of impulsivity in the development of substance use and eating disorders *Neuroscience and Biobehavioural Reviews, 28*, 343 - 351.

Dawe, S., & Loxton, N. J. (2004). The role of impulsivity in the development of substance use and eating disorders. *Neuroscience and Biobehavioural Reviews, 28*(3), 343-351.

Derogatis, L., Lipman, R., & Rickels, K. (1974). The Hopkins Symptom Checklist (HSCL) a self-report symptom inventory. *Behavioral Science, 19*, 1-15.

Derogatis, L. R., Lipman, R. S., & Covi, L. (1973). SCL-90: an outpatient psychiatric rating scale--preliminary report. *Psychopharmacological Bulletin, 9*(1), 13-28.

Devilly, G. J., & Borkovec, T. D. (2000). Psychometric properties of the credibility/expectancy questionnaire. *Journal of Behavior Therapy and Experimental Psychiatry, 31*(2), 73-86

Devineni, T., & Blanchard, E. B. (2005). A randomized controlled trial of an Internet-based treatment for chronic headache. *Behaviour Research and Therapy, 43*(3), 277-292.

Dew, S. E., & Bickman, L. (2005). Client Expectancies about Therapy. *Mental Health Services Research, 7*(1), 21-33.

Dowling, N., Smith, D., & Thomas, T. (2006). Treatment of female pathological gambling: The efficacy of a cognitive-behavioural approach *Journal of Gambling Studies, 22*(4), 355-372.

Echeburua, E., Baez, C., & Fernandez-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.

Echeburua, E., Baez, C., & Fernandez 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.

Echeburua, E., Fernandez-Montalvo, J., & Baez, C. (2001). Predictors of therapeutic failure in slot-machine pathological gamblers following behavioural treatment. *Behavioural and Cognitive Psychotherapy, 29*(3), 379-383.

Evans, L., & Delfabbro, P. H. (2005). Motivators for Change and Barriers to Help-Seeking in Australian Problem Gamblers. *Journal of Gambling Studies, 21*(2), 133-155.

Eysenbach, G. (2005). The law of attrition. *Journal of Medical Internet Research, 7*(1), e11.

France, D. G., & Dugo, J. M. (1985). Pretherapy orientation as preparation for open psychotherapy groups. *Psychotherapy, 22*(256-261).

Gaboury, A., & Ladouceur, R. (1990). Correction de perceptions inadequates entretenues au sujet de la roulette Americaine. Correction of irrational thinking during American roulette. *Canadian Journal of Behavioural Science, 22*(4), 417-423.

Garfield, S. L. (1994). Research on client variables in psychotherapy *Handbook of psychotherapy and behavior change (4th ed.). (Allen E. Bergin, Sol Louis Garfield, Eds.), pp. 190-228. John Wiley & Sons, New York, NY, US; xvi, 864 pp.SEE BOOK* (pp. 190-228). New York, NY, US: John Wiley & Sons.

Garrison, J. E. (1978). Written vs. verbal preparation of patients for group psychotherapy. *Psychotherapy 15*, 130-134.

Gavan, S., & Slowo, D. (1997). *Single Session Consultation and Problem Gambling: an Evolving Approach.* . Paper presented at the 10th International Conference on Gambling and Risk Taking.

Ghosh, A., & Marks, I. M. (1987). Self-treatment of agoraphobia by exposure. *Behavior Therapy, 18*(1), 3-16.

Goldstein, M. F., Deren, S., Kang, Y., Jarlais, D. C., & Magura, S. (2002). Evaluation of an alternative program for MMTP drop-outs: impact on treatment re-entry *Drug and Alcohol Dependence 66*(2), 181-187.

Greene, B. T., & Ryser, P. E. (1987). Impact of sex on length of time spent in treatment and treatment success. *American Journal of Drug and Alcohol Abuse, 5,* 97-105.

Grant, J. E., & Kim, S. W. (2005). Quality of life in kleptomania and pathological gambling. *Comprehensive Psychiatry, 46*, 34-37.

Griffiths, M. (2001). Online therapy: a cause for concern? . *The Psychologist, 14*(244-248).

Griffiths, M., & Cooper, G. (2003). Online therapy: Implications for problem gamblers and clinicians. *British Journal of Guidance & Counselling, 31*(1), 113-135.

Heineman, M. (1994). Compulsive gambling: Structured family intervention. *Journal of Gambling Studies, 10*(1), 67-76.

Herzog, T. A., Abrams, D. B., Emmons, K. M., Linnan, L. A., & Shadel, W. G. (1999). Do processes of change predict smoking stage movements? A prospective analysis of the transtheoretical model. *Health Psychology, 18*, 223-375.

Hilkey, J. H., Wilhelm, C. L., & Horne, A. M. (1982). Comparative effectiveness of videotape pretraining versus no pretraining on selected process and outcome variables in group therapy. *Psychological Reports, 150*, 1151-1159.

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.

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., & El Guebaly, N. (2000). Natural and treatment-assisted recovery from gambling problems: A comparison of resolved and active gamblers. *Addiction, 95*(5), 777-789.

Horvath, A. O. (1994). Empirical validation of Bordin's pantheoretical model of the alliance: The Working Alliance Inventory perspective. In A. O. Horvath & L. S. Greenberg (Eds.), *The working alliance: Theory, research, and practice* (pp. 109-128). New York: John Wiley & Sons.

Horvath, A. O., & Greenberg, L. S. (1986). The development of the Working Alliance Inventory. In L. S. Greenberg & W. M. Pinsof (Eds.), *The psychotherapeutic process: A research handbook* (pp. 529-556). New York: Guilford Press.

Horvath, A. O., & Greenberg, L. S. (1989). Development and validation of the Working Alliance Inventory. *Journal of Counseling Psychology, 36*, 223-233.

Horvath, A. O., & Luborsky, L. (1993). The role of the therapeutic alliance in psychotherapy. *Journal of Consulting and Clinical Psychology, 61*(4), 561-573.

Jacobs, D., Jacobs, E., Jacobs, T., Weinstein, H., & Mann, P. (1972). Preparation for treatment of the disadvantaged patient: effects on disposition and outcome. *American Journal of Orthopsychiatry, 42*(4), 666-674.

Jacobs, D. F., Marston, A. R., Singer, R. D., Widaman, K., & et al. (1989). Children of
problem gamblers. *Journal of Gambling Behavior, 5*(4), 261-268.

Jimenez-Murcia, S., Alvarez-Moya, E. M., Granero, R., Aymami, M. N., Gomez-Pena,
M., 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.

Joe, G. W., Simpson, D. D., & Broome, K. M. (1998). Effects of readiness for drug abuse
treatment on client retention and assessment of process. *Addiction, 93*(8).

Kavanagh, D. J. (1992). Recent developments in expressed emotion and schizophrenia.
British Journal of Psychiatry, 160, 601-620.

Kenwright, M., Marks, D. F., Graham, C., Franses, A., & Mataix Cols, D. (2005). Brief
scheduled phone support from a clinician to enhance computer-aided self-help for
obsessive-compulsive disorder: Randomized controlled trial. *Journal of Clinical
Psychology, 61*(12), 1499 - 1508.

Kenwright, M., Marks, I. M., Gega, L., & Mataix Cols, D. (2004). Computer-aided self-
help for phobia/panic via Internet at home: a pilot study. *British Journal of
Psychiatry, 184*, 448-449.

Klein, B., Richards, J. C., & Austin, D. W. (2006). Efficacy of Internet therapy for panic
disorder. *Journal of Behavior Therapy and Experimental Psychiatry, 37*, 213-
238.

Klein, B., & Richards, J. C. (2001). A brief Internet-based treatment for panic disorder.
Behavioural and Cognitive Psychotherapy, 29(1), 113-117.

Knaevelsrud, C., & Maercker, A. (2006). Does the Quality of the Working Alliance Predict Treatment Outcome in Online Psychotherapy for Traumatized Patients? *Journal of Medical Internet Research, 8*(4), e31.

Knaevelsrud, C., & Maercker, A. (2007). Internet-based treatment for PTSD reduces distress and facilitates the development of a strong therapeutic alliance: a randomised controlled clinical trial. *BMC Psychiatry, 7*(1), 13.

Korn, D. A., & Shaffer, H. J. (1999). Gambling and the health of the public: Adopting a public health perspective. *Journal of Gambling Studies, 15*(4), 289-365.

Kunz, F. M., Jr., French, M. T., & Bazargan-Hejazi, S. (2004). Cost-Effectiveness Analysis of a Brief Intervention Delivered to Problem Drinkers Presenting at an Inner-City Hospital Emergency Department. *Journal of Studies on Alcohol, 65*(3), 363-370.

Ladouceur, R., Gosselin, P., Laberge, M., & Blaszczynski, A. (2001). Dropouts in clinical research: Do results reported reflect clinical reality? *Behavior Therapist, 24*(2), 44-46.

Ladouceur, R., & Sylvain, C. (1999). Tratamiento del juego patologico: Un estudio controlado. Treatment of pathological gambling: A controlled study. *Anuario de Psicologia, 30*(4), 127-135.

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., Boutin, C., Lachance, S., Doucet, C., Leblond, J., et al. (2001). Cognitive treatment of pathological gambling. *Journal of Nervous and Mental Disease, 189*(11), 774-780.

Lamb, R. J., Belding, M. A., & Festinger, D. S. (1995). *Treatment readiness in cocaine users*. Scottsdale, AZ: Poster session presented at the annual meeting of the College on Problems of Drug Dependence.

Lambert, R. G., & Lambert, M. J. (1984). The effects of role preparation for psychotherapy on immigrant clients seeking mental health services in Hawaii. *Journal of Community Psychology, 12*, 268-275.

Lange, A., Rietdijk, D., Hudcovicova, M., van de Ven, J., Schrieken, B., & Emmelkamp, P. (2003). Interapy: A Controlled Randomized Trial of the Standardized Treatment of Posttraumatic Stress Through the Internet. *Journal of Consulting and Clinical Psychology, 71*(5), 901-909.

Lange, A., Schrieken, B., Van de Ven, J. P., Bredeweg, B., Emmelkamp, P. M. G., van der Kolk, J., et al. (2000). "INTERAPY": The effects of a short protocolled treatment of post-traumatic stress and pathological grief through the Internet. *Behavioural and Cognitive Psychotherapy, 28*(2), 175–192.

Lange, A., van de Ven, J. P., Schrieken, B., & Emmelkamp, P. (2001). Interapy. Treatment of posttraumatic stress through the Internet: A controlled trial. *Journal of Behavior Therapy & Experimental Psychiatry, 32*(2), 73-90.

Lange, M. A. (2001). "If you do not gamble, check this box": Perceptions of gambling behaviors. *Journal of Gambling Studies, 17*(3), 247-254.

Larsen, D. L., Attkinson, C. C., Hargreaves, W. A., & Nguyen, T. D. (1979). Assessment of client/ patient satisfaction: Development of a general scale. *Evaluation and Program Planning, 2*, 196-207.

Latour, D., & Cappeliez, P. (1994). Pretherapy training for group cognitive therapy with depressed older adults. *Canadian Journal of Aging, 13*, 221-235.

Lazarus, R. S., & Folkman, S. (1998). *Stress, appraisal and coping*. New York: Springer.

Leblond, J., Ladouceur, R., & Blaszczynski, A. (2003). Which pathological gamblers will complete treatment? *British Journal of Clinical Psychology, 42*(2), 205-209.

Ledgerwood, D. M., & Petry, N. M. (2006). What do we know about relapse in pathological gambling? *Clinical Psychology Review, 26*, 216-228.

Leiseur, H. R., & Rothschild, J. (1989). Children of Gamblers Anonymous members. *Journal of Gambling Behavior, 5*(4), 269-281.

Lesieur, H. R., & Blume, S. B. (1987). The South Oaks Gambling Screen (SOGS): A new instrument for the identification of pathological gamblers. *American Journal of Psychiatry, 144*(9), 1184-1188.

Lesieur, H. R., & Blume, S. B. (1993). Revising the South Oaks Gambling Screen in different settings. *Journal of Gambling Studies, 9*(3), 213-223.

Liese, B. S., & Beck, A. T. (1997). Back to basics: fundamental cognitive therapy skills for keeping drug-dependent individuals in treatment. *NIDA research monograph, 165*, 207-230

Lisspers, J., Nygren, A., & Söderman, E. (1997). The hospital anxiety and depression scale. *Acta Psychiatrica Scandinavica 67*, 361-370.

Lorenz, V. C., & Shuttlesworth, D. E. (1983). The impact of pathological gambling on the spouse of the gambler. *Journal of Community Psychology, 11*(1), 67-76.

Lorenz, V. C., & Yaffee, R. A. (1988). Pathological gambling: Psychosomatic, emotional and marital difficulties as reported by the spouse. *Journal of Gambling Behavior, 4*(1), 13-26.

MacKinnon, D. P., & Dwyer, J. H. (1993). Estimating mediated effects in prevention studies. *Evaluation Review, 17*, 144-158.

Marks, I. M., Cavanagh, K., & Gega, L. (2007). *Hands-on-Help: Computer-Aided Psychotherapy* Gega Hove: Psychology Press.

McConaghy, N. (1991). A pathological or a compulsive gambler? *Journal of Gambling Studies, 7*(1), 55-64.

McConaghy, N., Armstrong, M. S., Blaszczynski, A., & Allcock, C. C. (1988). Behavior completion versus stimulus control in compulsive gambling: Implications for behavioral assessment. *Behavior Modification, 12*(3), 371-384.

McCormick, R. A. (1994). The importance of coping skill enhancement in the treatment of the pathological gambler. *Journal of Gambling Studies, 10*(1), 77-86.

McCorriston, T., & Laidlaw, J. (2000). *Logging on to G-mail… an online support service for Victorians with gambling concerns.* Paper presented at the 10th National Association of Gambling Studies Conference, Mildura.

Meier, P. S., Donmall, M. C., Barrowclough, C., McElduff, P., & Heller, R. F. (2005). Predicting the early therapeutic alliance in the treatment of drug misuse. *Addiction, 100*(4), 500-511.

Melville, K. M., Casey, L. M., & Kavanagh, D. J. (2007). Psychological treatment dropout among pathological gamblers. *Clinical Psychology Review, 27*(8), 944-958.

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.

Miranda, J., Azocar, F., Organista, K. C., Dwyer, E., & Areane, P. (2003). Treatment of depression among impoverished primary care patients from ethnic minority groups. *Psychiatric Services, 54*, 219-225.

Moher, D., Schultz, K. F., & Altman, D., for the CONSORT Group (2001). The CONSORT statement: revised recommendations for improving the quality of reports of parallel-group randomized trials. *The Journal of the American Medical Association, 285*(15), 1987-1991.

Nathan, P. E. (2005). Methodological Problems in Research on Treatments for Pathological Gambling. *Journal of Gambling Studies, 21*(1), 111-116.

Nevonen, L., Mark, M., Levin, B., Lindstrom, M., & Paulson-Karlsson, G. (2006). Evaluation of a new Internet-based self-help guide for patients with bulimic symptoms in Sweden. *Nordic Journal of Psychiatry, 60*(6), 463-468.

Newman, C. F. (1994). Understanding client resistance: methods for enhancing motivation to change. *Cognitive Behavioral Practice, 1*, 47-69.

Nock, M. K., & Kazdin, A. E. (2001). Parent expectancies for child therapy: assessment and relation to participation in treatment. *Journal of Child and Family Studies, 10*, 155-189.

Oei, T. P., Raylu, N., & Casey, L. M. (2008). Group versus Individual Cognitive Behavioral Treatment for Problem Gambling: A Random Controlled Trial.

Oei, T. P. S., Raylu, N., & Casey, L. M. (submitted). Group versus Individual Cognitive Behavioral Treatment for Problem Gambling: A Randomized Controlled Trial

Ogrodniczuk, J. S., Joyce, A. S., & Piper, W. E. (2005). Strategies for reducing patient-initiated premature termination of psychotherapy. *Harvard Review of Psychiatry, 13*(2), 57-70.

Pallanti, S., Rossi, N. B., & Hollander, E. (2006). Pathological Gambling. Hollander, E. (Ed); Stein, D. J. (Eds). (2006). *Clinical manual of impulse-control disorders.* (pp. 251-289). DC, US: American Psychiatric Publishing, Inc.

Pallesen, S., Mitsen, M., Kvale, G., Johnson, B., & Molde, H. (2005). Outcome of psychological treatments of pathological gambling: a review and meta-analysis. *Addiction, 100*(10), 1412-1422.

Palmqvist, B., Carlbring, P., & Andersson, G. (2007). Internet-delivered treatments with or without therapist input: does the therapist factor have implications for efficacy and cost? *Expert Review of Pharmacoeconomics & Outcomes Research, 7*(3), 291-297.

Patten, S. B. (2003). Prevention of depression symptoms through the use of distance technologies. *Psychiatric Services, 54*(3), 396.

Patton, J. H., Stanford, M. S., & Barratt, E. S. (1995). Factor structure of the Barratt impulsiveness scale. *Journal of Clinical Psychology, 51*, 768 –774.

Pekarik, G. (1985). The effects of employing different termination classification criteria in dropout research. *Psychotherapy, 22*, 86-91.

Persons, J. B., Burns, D. D., & Perloff, J. M. (1988). Predictors of dropout and outcome in cognitive therapy for depression in a private practice setting. *Cognitive Therapy and Research, 12*(6), 557-575.

Petry, N. M. (2001). Substance abuse, pathological gambling, and impulsiveness. *Drug and Alcohol Dependence, 63*(1), 29-38.

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 & Clinical Psychology, 76*(2), 318-328

Piper, W. E., Debbane, E. G., Bienvenu, J. P., & Garant, J. (1982). A study of group pretraining for group psychotherapy. *International Journal of Group Psychotherapy, 32*, 309-325.

Piper, W. E., Debbane, E. G., Garant, J., & Bienvenu, J. P. (1979). Pretraining for group psychotherapy: a cognitive-experiential approach. *Archives of General Psychiatry, 36*(1250-1258).

Prochaska, J., DiClemente, C., & Norcross, J. (1992). In search of how people change: Applications to addictive behaviors. *American Psychologist, 47*, 1102-1114.

Prochaska, J. O., & DiClemente, C. C. (1992). The transtheoretical approach. In J. C. Norcross, M. R. Goldfried & et al. (Eds.), *Handbook of psychotherapy integration* (pp. 300-334). New York, NY, USA: Basicbooks, Inc.

Productivity Commission (1999). *Australia's Gambling Industries, Report No. 10*. Canberra: AusInfo.

Queensland Government (2008). *Queensland Household Gambling Survey 2006-2007*.

Quilty, L. C., & Oakman, J. M. (2004). The assessment of behavioural activation - the relationship between impulsivity and behavioural activation. *Personality and Individual Differences, 37*(2), 429-442.

Raue, P. J., & Goldfried, M. R. (1994). The therapeutic alliance in cognitive-behavior therapy. In A. O. Horvath & L. S. Greenberg (Eds.), *The working alliance: Theory, research, and practice.* (pp. 131-152). New York: John Wiley & Sons.

Raylu, N., & Oei, T. P. S. (2002a). *A cognitive behavioral therapy program for problem gambling: Group therapy manual*. Brisbane, Australia: University of Queensland.

Raylu, N., & Oei, T. P. S. (2002b). Pathological gambling: A comprehensive review. *Clinical Psychology Review, 22*(7), 1009-1061.

Raylu, N., & Oei, T. P. S. (2004a). The Gambling-related Cognitions Scale (GRCS): Development, confirmatory factor validation and psychometric properties. *Addiction, 99*(6), 757-769.

Raylu, N., & Oei, T. P. S. (2004b). The Gambling Urge Scale: Development, Confirmatory Factor Validation, and Psychometric Properties. *Psychology of Addictive Behaviors, 18*(2), 100-105.

Reis, B. F., & Brown, L. G. (2006). Preventing therapy dropout in the real world: The clinical utility of videotape preparation and client estimate of treatment duration. *Professional Psychology: Research and Practice, 37*, 311-316.

Robson, E., & Edwards, J. (2003). Gambling decisions: An early intervention program for problem gamblers. *Journal of Gambling Studies, 18*(3), 235-255.

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.

Rockloff, M., & Schofield, G. (2004). Factor Analysis of Barriers to Treatment for Problem Gambling. *Journal of Gambling Studies, 20*(2), 121-126.

Rogers, E. M. (2003). *Diffusion of Innovations (5th Ed.)*. New York: Free Press.

Rowland, N., & Goss, S. (Eds.). (2000). *Evidence Based Counselling and Psychological Therapies: Research and Applications* London: Routledge.

Ryan, R. M., Plant, R. W., & O'Malley, S. (1995). Initial motivations for alcohol treatment: Relations with patient characteristics, treatment involvement, and dropout. *Addictive Behaviors, 20*(3), 279-297.

Safren, S. A., Heimburg, R. G., & Juster, H. R. (1997). Clients' expectancies and their relationship to pretreatment symptomatology and outcome of cognitive-behavioural group treatment for social phobia. *Journal of Consulting and Clinical Psychology, 65*, 694-698.

Samstag, L. W., Batchelder, S. T., Muran, J. C., Safran, J. D., & Winston, A. (1998). Early identification of treatment failures in short-term psychotherapy. An assessment of therapeutic alliance and interpersonal behavior. *Journal of psychotherapy practice and research, 7*(2), 126-143.

Sayre, S. L., Schmitz, J. M., Stotts, A. L., Averill, P. M., Rhoades, H. M., & Grabowski, J. J. (2002). Determining predictors of attrition in an outpatient substance abuse program. *American Journal of Drug and Alcohol Abuse, 28*(1), 55-72.

Schneider, D. J., Mataix Cols, D., Marks, I. M., & Bachofen, M. (2005). Internet-guided self-help with or without exposure therapy for phobic and panic disorders. *Psychotherapy and Psychosomatics, 74*(3), 154-164.

Shakeshaft, A. P., Bowman, J. A., Burrows, S., Doran, C. M., & Sanson-Fisher, R. W. (2002). Community-based alcohol counselling: A randomized clinical trial. *Addiction, 97*(11), 1449-1463.

Sharpe, L., & Tarrier, N. (1993). Towards a cognitive-behavioural theory of problem gambling. *British Journal of Psychiatry, 162*, 407-412.

Sloane, B. R., Cristol, A. H., Pepernik, M. C., & Staples, F. R. (1970). Role preparation and expectation of improvement in psychotherapy *Journal of Nervous & Mental Disease, 150*, 18-26.

Smeaton, M., & Griffiths, M. (2004). Internet Gambling and Social Responsibility: An Exploratory Study. *CyberPsychology Behavior, 7*(1), 49-57.

Smith, G., & Wynne, H. (2002). *Measuring gambling and problem gambling in Alberta using the Canadian Problem Gambling Index*. Edmonton, AB: Alberta Gaming Research Institute.

Smith, M. C. (1991). *An investigation of the construct validity of the adult survey of reading attitude*. Paper presented at the Annual Meeting of the College Reading Association.

Stark, M. J. (1992). Dropping out of substance abuse treatment: a clinically oriented review. *Clinical Psychology Review, 12*, 93-116.

Stark, M. J., & Kane, B. J. (1985). General and specific psychotherapy role induction with substance-abusing clients. *International Journal of Additions, 20*, 1135–1141.

Steel, Z., & Blaszczynski, A. (1998). Impulsivity, personality disorders and pathological gambling severity. *Addiction, 93*(6), 895-905.

Stein, L. I., & Santos, A. B. (1998). *Assertive community treatment of persons with severe mental illness*. New York: Norton.

Stewart, R. M., & Brown, R. I. F. (1988). An outcome study of Gamblers Anonymous. *British Journal of Psychiatry, 152*, 284-288.

Stinchfield, R. (2002). Reliability, validity, and classification accuracy of the South Oaks Gambling Screen (SOGS). *Addictive Behaviors, 27*(1), 1-19.

Strom, L. (2003). *Self-Help via the Internet: A New Approach to Psychological Treatment.* . Uppsala: Acta Universitatis Upsaliensis.

Strom, L., Pettersson, R., & Andersson, G. (2004). Internet-Based Treatment for Insomnia: A Controlled Evaluation. *Journal of Consulting and Clinical Psychology, 72*(1), 113-120.

Strupp, H. H., & Bloxom, B. M. (1973). Preparing lower-class patients for group psychotherapy: development and evaluation of a role-induction film. *Journal of Consulting & Clinical Psychology, 32*, 373-384.

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.

Tabachnik, B. G., & Fidell, L. S. (1996). *Using Multivariate Statistics* (3 ed.). New York: Harper Collins.

Tarrier, N., Sommerfield, C., & Pilgrim, H. (1999). Relatives' expressed emotion (EE) and PTSD treatment outcome. *Psychological Medicine, 29*, 801-8111.

Toneatto, T. (2005). A Perspective on Problem Gambling Treatment: Issues and Challenges. *Journal of Gambling Studies, 21*(1), 75-80.

Toneatto, T., & Millar, G. (2004). Assessing and Treating Problem Gambling: Empirical Status and Promising Trends. *Canadian Journal of Psychiatry, 49*(8), 517-525.

Torrubia, R., Avila, C., Molto, J., & Caseras, X. (2001). The Sensitivity to Punishment and Sensitivity to Reward Questionnaire (SPSRQ) as a measure of Gray's anxiety and impulsivity dimensions. *Personality and Individual Differences, 31*(6), 837-862.

Tullock-Rhody, R., & Alexander, J. E. (1980). A scale for assessing attitudes toward reading in secondary schools. *Journal of Reading, 23*, 609-614.

Verheul, R., van den Brink, W., & Geerlings, P. J. (1999). A three-pathway psychobiological model of craving for alcohol. *Alcohol & Alcoholism, 34*, 197-222.

Victor, R. G., & Krug, C. M. (1967). "Paradoxical intention" in the treatment of compulsive gambling. *American Journal of Psychotherapy, 21*, 808-814.

Wagner, B., Knaevelsrud, C., & Maercker, A. (2006). Internet-based cognitive behavioral therapy for complicated grief: a randomised controlled trial. *Death Studies, 30*, 429-453.

Walitzer, K. S., Dermen, K. H., & Connors, G. J. (1999). Strategies for preparing clients for treatment. *Behavior Modification, 23*, 129-151.

Walker, M. B. (2005a). Problems in Measuring the Effectiveness of Cognitive Therapy for Pathological Gambling. [Original]. *Journal of Gambling Studies, 21*(1), 81-92.

Waller, G. (1997). Drop-Out and Failure to Engage in Individual Outpatient Cognitive Behavior Therapy for Bulimic Disorders. *International Journal of Eating Disorders, 22*(1), 35-41.

Warren, N. C., & Rice, L. N. (1972). Structuring and stabilizing of psychotherapy for low-prognosis patients. *Journal of Consulting & Clinical Psychology, 39*, 173-181.

Wasserman, I. M., & Richmond-Abbott, M. (2005). Gender and the Internet: Causes of Variation in Access, Level, and Scope of Use. *Social Science Quarterly, 86*(1), 252-270.

Welte, J. W., Barnes, G. M., Wieczorek, W. F., Tidwell, M. C., & Parker, J. (2002). Gambling participation in the U.S.--Results from a national survey. *Journal of Gambling Studies, 18*(4), 313-337.

Winters, K. C., Specker, S. M., & Stinchfield, R. (2002). Measuring Pathological Gambling with the Diagnostic Interview for Gambling Severity (DIGS). In J. J. Marotta, J. A. Cornelius & W. R. Eadington (Eds.), *The downside: Problem and pathological gambling* (pp. 143-148). Reno: Institute for the Study of Gambling and Commercial Gaming, University of Nevada.

World Health Organisation (1992). *ICD-10 Classification of Mental and Behavioral Disorders: Clinical Descriptions and Diagnostic Guidelines*. Geneva: World Health Organisation.

Wulfert, E., Blanchard, E. B., Freidenberg, B. M., & Martell, R. S. (2006). Retaining Pathological Gamblers in Cognitive Behavior Therapy Through Motivational Enhancement. *Behavior Modification, 30*(3), 315-340.

Zwick, R., & Attkisson, C. C. (1985). Effectiveness of a client pretherapy orientation video. *Journal of Counseling Psychology, 32*, 514-524.

These items deal with ways people cope with problems in their lives. Different people deal with problems in different ways. We are interested in how YOU'VE tried to deal/cope with problems. Please indicate how much doing the various forms of coping by circling a single number along each line between "I haven't been doing this at all" & "I've been doing this a lot".

1. Active Coping: Planning to take or taking active steps to deal with the problem (e.g., I concentrate my efforts on doing something about it")

1	2	3	4	5	6	7

I haven't been doing this at all   I have been doing this a lot

2. Cognitive coping: Accepting the reality of the problem or viewing the problem in a positive manner (e.g., I accept the reality of the fact that it happened)

1	2	3	4	5	6	7

I haven't been doing this at all   I have been doing this a lot

3. Emotion coping: Seeking social support to for instrumental reasons (seeking advice or assistance) or emotional reasons (getting moral support, venting emotions or understanding) (e.g., I feel a lot of emotional distress and I find myself expressing those feelings a lot).

1	2	3	4	5	6	7

I haven't been doing this at all   I have been doing this a lot

4. Avoidance coping: Avoid dealing with the problem by engaging in other behaviours (such as alcohol and drugs, praying, substitute activities to take mind off the problem), denying a problem exists or by giving up (e.g., I use alcohol and drugs to deal with it)

1	2	3	4	5	6	7

I haven't been doing this at all   I have been doing this a lot

Appendix 3.2. Gambling Urge Scale

Listed below are questions that ask about your feelings about gambling. Please indicate how much you agree or disagree with each of the following statements by ticking a number between *strongly disagree* and *strongly agree* along each line. The closer you place your mark to one end or the other indicates the strength of your disagreement or agreement. We are interested in how you are thinking or feeling RIGHT NOW as you are filling out the questionnaire.

1.   All I want to do now is to gamble

1	2	3	4	5	6	7

Strongly Disagree   Strongly Agree

2.   It would be difficult to turn down a gamble this minute

1	2	3	4	5	6	7

Strongly Disagree   Strongly Agree

3.   Having a gamble now would make things seem just perfect

1	2	3	4	5	6	7

Strongly Disagree   Strongly Agree

4.   I want to gamble so bad I can almost feel it

1	2	3	4	5	6	7

Strongly Disagree   Strongly Agree

5.   Nothing would be better than having a gamble right now

1	2	3	4	5	6	7

Strongly Disagree   Strongly Agree

6.   I crave a gamble right now

1	2	3	4	5	6	7

Strongly Disagree   Strongly Agree

Appendix 3.3. Gambling Refusal Self Efficacy Questionnaire

The following items ask you to rate your level of confidence in refusing to gamble. Your answers will be completely confidential so please try to answer as honestly as you can.

The following pages contain a list of situations, thoughts, emotions and states that are associated with gambling. Most people find it is easier to refuse gambling in some instances and more difficult in others. Please tick the number beside each statement to rate how confident you are that you could refuse to gamble in each case. **If there are situations listed below that you have not experienced, please estimate how confident you would be if you were to encounter them.**

0	10	20	30	40	50	60	70	80	90	100
No Confidence, Cannot refuse	Low Confidence, Very uncertain can refuse				Moderate Confidence, Moderately certain can refuse				High Confidence, Very certain can refuse	Extreme Confidence, Certain can refuse

How sure are you that you could refuse to gamble?

1. When someone offered me the chance to gamble	0 10 20 30 40 50 60 70 80 90 100
2. When I was having money problems	0 10 20 30 40 50 60 70 80 90 100
3. When my friends were gambling	0 10 20 30 40 50 60 70 80 90 100
4. When I was in places where I usually gamble	0 10 20 30 40 50 60 70 80 90 100
5. When I was by myself and had the chance to gamble	0 10 20 30 40 50 60 70 80 90 100
6. When I saw other people gambling	0 10 20 30 40 50 60 70 80 90 100
7. When I was thinking of ways to solve my money problems	0 10 20 30 40 50 60 70 80 90 100
8. When I was remembering wins I have had in the past	0 10 20 30 40 50 60 70 80 90 100

9. When I was thinking that it is likely that I would win	0	10	20	30	40	50	60	70	80	90	100
10. When I was thinking of how much money I have lost	0	10	20	30	40	50	60	70	80	90	100
11. When I was thinking of things I could do to help me win	0	10	20	30	40	50	60	70	80	90	100
12. When I was thinking of how I have good luck when I gamble	0	10	20	30	40	50	60	70	80	90	100
13. When I had consumed alcohol	0	10	20	30	40	50	60	70	80	90	100
14. When I had been smoking tobacco	0	10	20	30	40	50	60	70	80	90	100
15. When I had been taking antidepressants	0	10	20	30	40	50	60	70	80	90	100
16. When I had been taking anti-anxiety drugs	0	10	20	30	40	50	60	70	80	90	100
17. When I had been drinking coffee	0	10	20	30	40	50	60	70	80	90	100
18. When I had been taking speed	0	10	20	30	40	50	60	70	80	90	100
19. When I had been smoking marijuana	0	10	20	30	40	50	60	70	80	90	100
20. When I was feeling disgusted	0	10	20	30	40	50	60	70	80	90	100
21. When I was feeling fearful	0	10	20	30	40	50	60	70	80	90	100
22. When I was feeling sad or distressed	0	10	20	30	40	50	60	70	80	90	100
23. When I was feeling ashamed	0	10	20	30	40	50	60	70	80	90	100

24. When I was feeling guilty	0 10 20 30 40 50 60 70 80 90 100
25. When I was feeling angry	0 10 20 30 40 50 60 70 80 90 100
26. When I was feeling satisfied	0 10 20 30 40 50 60 70 80 90 100
27. When I was feeling excited	0 10 20 30 40 50 60 70 80 90 100
28. When I was feeling interested	0 10 20 30 40 50 60 70 80 90 100
29. When I was feeling contented	0 10 20 30 40 50 60 70 80 90 100
30. When I was feeling relieved	0 10 20 30 40 50 60 70 80 90 100
31. When I was feeling happy	0 10 20 30 40 50 60 70 80 90 100

Appendix 3.4. Gambling Related Cognitions Scale

Use the scale below to indicate (by ticking) the extent to which you agree with each statement

1	2	3	4	5	6	7
Strongly Disagree	Moderately Disagree	Mildly Disagree	Neither Agree or Disagree	Mildly Agree	Moderately Agree	Strongly Agree

1. Gambling makes me happier	1 2 3 4 5 6 7
2. I can't function without gambling	1 2 3 4 5 6 7
3. Praying helps me win	1 2 3 4 5 6 7
4. Losses when gambling, are bound to be followed by a series of wins	1 2 3 4 5 6 7
5. Relating my winnings to my skill and ability makes me continue gambling	1 2 3 4 5 6 7
6. Gambling makes things seem better	1 2 3 4 5 6 7
7. It is difficult to stop gambling as I feel so out of control	1 2 3 4 5 6 7
8. Specific numbers and colours can help increase my chances of winning	1 2 3 4 5 6 7
9. A series of losses will provide me with a learning experience that will help me win later	1 2 3 4 5 6 7
10. Relating my losses to bad luck and bad circumstances makes me continue gambling	1 2 3 4 5 6 7
11. Gambling makes the future brighter	1 2 3 4 5 6 7
12. My desire to gamble is so overpowering	1 2 3 4 5 6 7
13. I collect specific objects that help increase my chances of winning	1 2 3 4 5 6 7

14. When I have a win once, I will definitely win again	1 2 3 4 5 6 7
15. Relating my losses to probability makes me continue gambling	1 2 3 4 5 6 7
16. Having a gamble helps reduce tension and stress	1 2 3 4 5 6 7
17. I'm not strong enough to stop gambling	1 2 3 4 5 6 7
18. I have specific rituals and behaviours that increase my chances of winning	1 2 3 4 5 6 7
19. There are times that I feel lucky and thus, gamble those times only	1 2 3 4 5 6 7
20. Remembering how much money I won last time makes me continue gambling	1 2 3 4 5 6 7
21. I will never be able to stop gambling	1 2 3 4 5 6 7
22. I have some control over predicting my gambling wins	1 2 3 4 5 6 7
23. If I keep changing my numbers, I have less chances of winning than if I keep the same numbers every time.	1 2 3 4 5 6 7

Appendix 3.5. Treatment Expectations Questionnaire

Please answer the following questions regarding the treatment that has just been described to you. (Remember, this form will not be shown to your therapist or influence the treatment you receive in any way).

1. How logical does this treatment seem to you?

1	2	3	4	5	6	7
Not at all logical						Very logical

2. How useful does the treatment seem to you?

1	2	3	4	5	6	7
Not at all useful						Very useful

3. How confident are you that this treatment will be successful?

1	2	3	4	5	6	7
Not at all confident						Very confident

4. How confident would you be in recommending this treatment to a friend with similar difficulties?

1	2	3	4	5	6	7
Not at all confident						Very confident

Now we would like to ask you about what you expect will happen as a result of this treatment. For this question, close your eyes for a few moments, and try to identify what you really *feel* about the treatment and its likely success.

5. To what extent do you expect the frequency of your gambling to change over the next six weeks?

-4	-3	-2	-1	0	1	2	3	4
Decrease dramatically				Remain unchanged				Increase dramatically

6. To what extent do you expect the severity of your gambling to change over the next six weeks?

-4	-3	-2	-1	0	1	2	3	4
Decrease dramatically				Remain unchanged				Increase dramatically
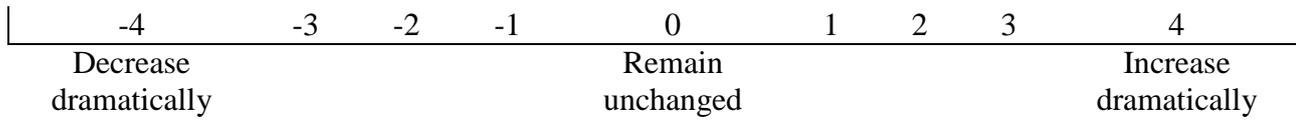
7. To what extent do you expect your thoughts that contribute to your gambling to change over the next six weeks?

-4	-3	-2	-1	0	1	2	3	4
Decrease dramatically				Remain unchanged				Increase dramatically
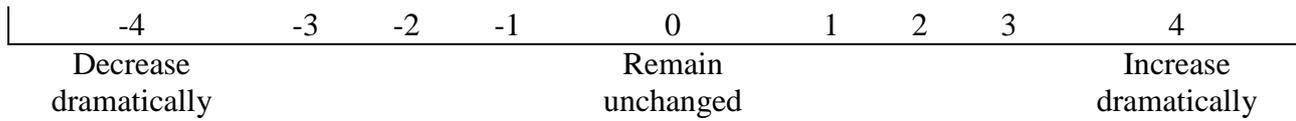
8. To what extent do you expect the amount you enter situations associated with gambling to change over the next six weeks?

-4	-3	-2	-1	0	1	2	3	4
Decrease dramatically				Remain unchanged				Increase dramatically
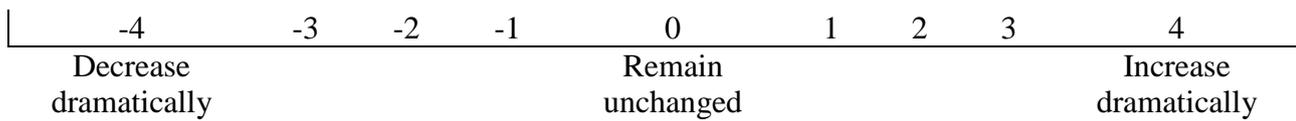
Appendix 3.6. Working Alliance Inventory

The following sentences describe some of the different ways a person might think or feel about his or her therapist. Beside each statement there is a seven point scale. If the statement describes the way you always felt (or thought) during today's session, click on 'always'; if it never applied to you, click on 'never'. Use descriptions in between to describe the variations between these extremes. Work fast; your first impressions are the one we would like to see. PLEASE DON'T FORGET TO RESPOND TO EVERY ITEM.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

1. _____ and I agree about things I will need to do to improve my situation	1 2 3 4 5 6 7
2. What I am doing in therapy with _____ gives me new ways of looking at my problems	1 2 3 4 5 6 7
3. I believe _____ likes me.	1 2 3 4 5 6 7
4. _____ does not understand what I am trying to accomplish in therapy.	1 2 3 4 5 6 7
5. I am confident in _____'s ability to help me.	1 2 3 4 5 6 7
6. _____ and I are working towards mutually agreed upon goals.	1 2 3 4 5 6 7
7. I feel that _____ appreciates me.	1 2 3 4 5 6 7
8. _____ and I agree on what is important for me to work on.	1 2 3 4 5 6 7
9. _____ and I trust one another.	1 2 3 4 5 6 7
10. _____ and I have different ideas on what my problems are.	1 2 3 4 5 6 7
11. _____ and I have established a good understanding of the kind of changes that would be good for me.	1 2 3 4 5 6 7

	1	2	3	4	5	6	7
12. I believe the way _____ and I are working with my problem is correct.	1	2	3	4	5	6	7

Appendix 3.7 Participant Information and Consent Form (Study I)

Problem Gambling Project Information sheet for participants of the Cognitive Behavioural Treatment

This questionnaire and treatment project is a part of a large program being conducted by researchers at the University of Queensland (School of Psychology) investigating the nature and treatment of problem gambling. We believe this study is very important in helping to refine treatment programs for those who are having problems controlling their gambling.

As explained to you during our telephone contact, this project has a number of research requirements. Participation in the study is voluntary and you are free to withdraw at any time without penalty. You must be willing to be randomly allocated to either individual or group treatment, or to what is known as a waiting list group. People in the waiting list group will have to wait approximately six weeks before commencing treatment in either the individual or group treatment. You must also be prepared to complete a number of questionnaires before, during & after treatment, as well as attend an interview before being accepted into the program.

Participation in the study will involve completion of an initial questionnaire and initial interview and undergoing a cognitive behavioural treatment program designed to help you deal with your gambling problems. During and after the treatment program you will be required to complete the set of questionnaires again to evaluate the success of the program. Questionnaires take approximately 10-15 minutes to complete. The treatment program is approximately 6 sessions (once a week for 6 weeks). If you do not complete the set of questionnaires normally administered by your therapist at the final session, you will be contacted by the independent university researchers and reminded to do so. You will be required to complete the questions again at 3, 6 and 12 months after the treatment so that we can evaluate your progress.

You will be asked for honest answers to all the questions. The information you give us will remain completely confidential. You will be asked to provide contact details so that we could follow your progress at the three follow up periods (3, 6 and 12 month period). However, we assure you that only your therapist and the research team who will conduct the follow ups will be able to access your name and contact details. Follow up will generally be conducted using mail outs. To maintain your confidentiality, these mail outs will only have the University logo (there won't be anything written on the envelope to identify the contents of the mail). If a follow up questionnaire is not returned on time, the research team will first contact you via email. If we call you using one of the numbers you provide us, once again we will not reveal to anyone besides you what the call is about or why she is calling.

Again, if you need to contact us about this questionnaire or the Problem Gambling Project currently run by The University of Queensland (School of Psychology), please contact Ms Andrea O'Brien.
Address: School of Psychology, University of Queensland, St Lucia, Brisbane, Qld 4072.
Email: obrien@psy.uq.edu.au, Phone: (07) 3346 9417, Fax: (07) 3365 4466; or
Email: gambling@psy.uq.edu.au   Phone: (07) 3346 9417 Fax: (07) 3365 4466

Or Professor Tian Oei. Email: oei@psy.uq.edu.au, Phone: (07) 3365 6449, Fax: (07) 3365 4466

This study has been cleared by one of the human ethics committees of the University of Queensland in accordance with the National Health and Medical Research Council's guidelines. You are of course free to discuss your participation in this study with Ms O'Brien on the above contact. If you would like to speak to an officer of the University not involved in the study, you may contact the Ethics Officer on (07) 3365 3924

Problem Gambling Project Information sheet for participants of the Cognitive Behavioural Treatment

This questionnaire and treatment project is a part of a study examining treatment approaches to treat problem gambling. We believe this information is very important for designing gambling preventative education programs to meet the present needs of Australians as well as treatment programs for those who are having problems controlling their gambling.

I understand that participation in the study is voluntary. My participation in the study will involve completion of questionnaires before and during undergoing a cognitive behavioural treatment program designed to help me deal with my gambling problems. At the completion of the treatment program and at three follow up periods (3, 6 and 12 months after treatment completion), I would be required to complete another set of questionnaires to evaluate the success of the program.

I have read the information sheet and I have clearly understood what is stated on it.

I am providing my contact details so the UQ researcher who will conduct the follow up at 3, 6, 12 months can contact me. I am aware that besides my therapist, only the UQ researcher will be able to access my contact details. Furthermore, if I am contacted total discretion will be used in calls or other correspondence so that no one else will know my participation in this project.

Name : _____

Address : _____

_____

_____

 Home phone: _____ Mobile: _____ Work No. _____

Email: _____

I understand that all information I provide towards the project will remain strictly confidential.

I understand the conditions of the treatment and hereby consent to taking part in the project.

Your name (please print): _____

Signature: _____ Date: _____

Appendix 3.8 Reminder Letter (Study I)

7 December 2011

Mr. Client

ADDRESS LINE 1

ADDRESS LINE 2

Dear Client,

Thank you for your interest in the Problem Gambling Treatment Project at the University of Queensland. As you know, we provide free cognitive-behavioural treatment to problem gamblers. We have been attempting to contact you by telephone for some time since your initial expression of interest in participating in the Project. If you are still interested in free treatment for problem gambling, please contact us on the number or e-mail address below. Contact within two weeks of the date of this letter would be appreciated. Otherwise, we will assume you are no longer interested in participating in the Project.

Once again, thank you for your interest in the Project, and we hope to hear from you soon.

Kind regards,

Hui Lim
Psychologist/Research Officer
Problem Gambling Treatment Project
School of Psychology
University of Queensland
QLD 4072
Telephone: 3346 9417
E-mail: gambling@psy.uq.edu.au

Appendix 5.1 South Oaks Gambling Screen

1. In the past one month when you gamble, how often do you go back another day to win back money you lost?
   - 0) Never
   - 1) Some of the time (less than half the time) I lost
   - 2) Most of the time I lost
   - 3) Every time I lost

2. In the past one month, have you ever claimed to be winning money gambling but weren't really. In fact, you lost?
   - 0) Never (or never gamble)
   - 1) Yes, less than half the time I lost
   - 2) Yes, most of the time

3. In the past one month, do you feel you have ever had a problem with gambling?
   - 0) No
   - 1) Yes, in the past, but not now
   - 2) Yes

4. In the past one month, did you ever gamble more than you intended to?
   - 0) No
   - 1) Yes

5. Have people in the past one month criticised your gambling?
   - 0) No
   - 1) Yes

6. Have you in the past one month felt guilty about the way you gamble or what happens when you gamble?
   - 0) No
   - 1) Yes

7. Have you in the past one month felt like you would like to stop gambling but didn't think you could?
   - 0) No
   - 1) Yes

8. Have you in the past one month hidden betting slips, lottery tickets, gambling money, or other signs of gambling from your spouse, children, and/or other important people in your life?
   - 0) No
   - 1) Yes

9. Have you in the past one month ever argued with people you live with over how you handle money?
   - 0) No
   - 1) Yes

10. ***If you have answered yes to question 9***, have money arguments ever centered on your gambling?
    - 0) No
    - 1) Yes

11. Have you in the past one month borrowed from someone and not paid them back as a result of your gambling?

12. In the past one month, have your ever lost time from work (or school) due to gambling?

      0)   No   1)   Yes

13. In the past one month, if you borrowed money to gamble or to pay gambling debts, who or where did your borrow from? (Check "yes" OR "no" for each)

		(0) No	(1) Yes
a.	from household money		
b.	from your spouse/partner		
c.	from other relatives or in laws		
d.	from banks, loan companies, or credit unions		
e.	from credit cards		
f.	from loan sharks		
g.	you cashed in stocks, bonds, or other securities		
h.	you sold personal or family property		
i.	you borrowed on your checking account (passed bad checks)		

Appendix 5.2 Barrett Impulsiveness Scale

Please answer all questions by ticking your response:

0	1	2	3
Rarely/Never	Occasionally	Often	Almost Always/Always

1. I plan tasks carefully	0	1	2	3
2. I do things without thinking	0	1	2	3
3. I make up my mind quickly	0	1	2	3
4. I am happy-go-lucky	0	1	2	3
5. I don't "pay attention"	0	1	2	3
6. I have "racing" thoughts	0	1	2	3
7. I plan trips well ahead of time	0	1	2	3
8. I am self-controlled	0	1	2	3
9. I concentrate easily	0	1	2	3
10. I save regularly	0	1	2	3
11. I "squirm" at plays or lectures	0	1	2	3
12. I am a careful thinker	0	1	2	3
13. I plan for job security	0	1	2	3
14. I say things without thinking	0	1	2	3
15. I like to think about complex problems	0	1	2	3
16. I change jobs	0	1	2	3
17. I act "on impulse"	0	1	2	3
18. I get easily bored when solving thought problems	0	1	2	3
19. I act on spur of the moment	0	1	2	3
20. I am a steady thinker	0	1	2	3
21. I change residences	0	1	2	3

22. I buy things on impulse	0	1	2	3
23. I can only think about one problem at a time	0	1	2	3
24. I change hobbies	0	1	2	3
25. I spend or charge more than I earn	0	1	2	3
26. I often have extraneous thoughts when thinking	0	1	2	3
27. I am more interested in the present than the future	0	1	2	3
28. I am restless at theatres or lectures	0	1	2	3
29. I like puzzles	0	1	2	3
30. I am future oriented	0	1	2	3

Appendix 5.3 Treatment Motivation Questionnaire

This questionnaire concerns factors that motivate people to seek help for their gambling problems. Different people have different reasons for seeking help, and we want to know which factors were important for you. Please consider only the factors you experienced. Indicate the importance of each factor for you, using the following scale:

0	1	2	3	4
Not at all important /not experienced	A little important	Neither important nor unimportant	Important	Very important

1. A family member or friend threatened to cease contact with me unless I stopped gambling	0	1	2	3	4
2. I had a non-gambling family member or close friend willing to help with my gambling rehabilitation	0	1	2	3	4
3. A family friend or close friend helped me to stop gambling	0	1	2	3	4
4. My partner threatened to break up with me if I continued to gamble	0	1	2	3	4
5. My parents pressured me to stop gambling	0	1	2	3	4
6. My children pressured me to stop gambling	0	1	2	3	4
7. I was no longer able to look after my family's interests	0	1	2	3	4
8. My gambling broke up an important relationship in my life	0	1	2	3	4
9. I nearly lost or did lose my house to pay my gambling debts	0	1	2	3	4
10. My partner told me to move out if I kept gambling	0	1	2	3	4
11. My employer told me I could lose job if I kept gambling	0	1	2	3	4
12. I had lost a job because of gambling	0	1	2	3	4
13. I obtained money illegally to fund my gambling	0	1	2	3	4
14. I had got into trouble with the police because of gambling	0	1	2	3	4
15. I had appeared or been summoned to court for charges relating to gambling	0	1	2	3	4
16. I had received a jail or suspended sentence because of gambling	0	1	2	3	4

17. I had borrowed money that I couldn't repay because of gambling	0	1	2	3	4
18. I could no longer afford to pay household bills because of gambling	0	1	2	3	4
19. I had pawned personal items to keep gambling	0	1	2	3	4
20. I had borrowed from a lender to gamble	0	1	2	3	4
21. I had been declared self bankrupt because of gambling	0	1	2	3	4
22. My physical health had been suffering because of gambling	0	1	2	3	4
23. I was often feeling depressed as a result of losing money from gambling	0	1	2	3	4
24. Gambling had led me to thoughts of suicide	0	1	2	3	4
25. I had attempted suicide because of gambling	0	1	2	3	4

Appendix 5.4 The Rhody Secondary Reading Assessment Scale

Use the scale below to indicate (by ticking) the extent to which you agree with each statement

1	**2**	**3**	**4**	**5**
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

1.	You feel that you have better things to do than read	1	2	3	4	5
2.	You seldom buy a book	1	2	3	4	5
3.	You are willing to tell people that you do not like to read	1	2	3	4	5
4.	You have a lot of books in your room at home	1	2	3	4	5
5.	You like to read a book whenever you have free time	1	2	3	4	5
6.	You really get excited about books you have read	1	2	3	4	5
7.	You love to read	1	2	3	4	5
8.	You like to read books by well-known authors	1	2	3	4	5
9.	You never check out a book from the library	1	2	3	4	5
10.	You like to stay at home and read	1	2	3	4	5
11.	You seldom read except when you have to	1	2	3	4	5
12.	You think reading is a waste of time	1	2	3	4	5
13.	You think reading is boring	1	2	3	4	5
14.	You think people are strange when they read a lot	1	2	3	4	5
15.	You like to read to escape from problems	1	2	3	4	5
16.	You make fun of people who read a lot	1	2	3	4	5
17.	You like to share books with your friends	1	2	3	4	5
18.	You would rather someone just tell you information so you won't have to read to get it	1	2	3	4	5
19.	You hate reading	1	2	3	4	5

20.	You generally check out a book when you go to the library	1	2	3	4	5
21.	It takes you a long time to read a book	1	2	3	4	5
22.	You like to broaden your interests through reading	1	2	3	4	5
23.	You read a lot	1	2	3	4	5
24.	You like to improve you vocabulary so you can use more words	1	2	3	4	5
25.	You like to get books for gifts	1	2	3	4	5
26.	You like to read online	1	2	3	4	5
27.	You think that reading online is boring	1	2	3	4	5
28.	You often read online	1	2	3	4	5
29.	You would rather read information in print format so you won't have to read it online	1	2	3	4	5

Appendix 5.5 Reasons for Discontinuing Treatment Checklist

The next exercise involves identifying difficulties which may make it hard for *you* to decide whether or not to start treatment.

The next three sections list difficulties under the following headings:
- Problems with the program
- Why bother with treatment?
- Other problems making it hard to finish treatment

Tick the items that apply to you.

PROBLEMS WITH THE PROGRAM

☐ "I am having computer /internet problems (e.g., pages not loading properly)."

☐ "I don't know how to log on"

☐ "I forgot to log on"

☐ "I'm not comfortable using a computer"

☐ "This treatment does not seem useful"

☐ "I don't think that this is the best program for me and am seeking treatment elsewhere"

☐ "I don't have enough time for weekly sessions"

☐ "I worry if my answers will be kept confidential"

WHY BOTHER WITH TREATMENT?

☐ "I do not expect the severity of my gambling to change after this treatment"

☐ "I tried to stop gambling before and I couldn't do it."

☐ "I'm not ready to make a change in my gambling behaviour"

☐ "My gambling is not severe enough to need treatment."

☐ "As I know that it is best for me to not gamble I have stopped and don't need treatment."

☐ "I don't know whether I should make a change in my gambling behaviour"

OTHER PROBLEMS MAKING IT HARD TO FINISH TREATMENT:

☐ "The location of my computer (e.g., noise and activities, lack of privacy)"

☐ "Emotional difficulties (i.e., sadness and anxiety)"

☐ "Employment /financial difficulties"

☐ "Legal difficulties"

☐ "Accommodation difficulties"

☐ "Family /relationship difficulties"

Appendix 5.6 Gambling Symptom Assessment Scale

The following questionnaire is aimed at evaluating gambling symptoms. Please *read* the questions *carefully* before you answer.

1. If you had urges to gamble during the past WEEK, on average, how strong were your urges?

0	1	2	3	4
None	Mild	Moderate	Severe	Extreme

2. During the past WEEK, how many times did you experience urges to gamble?

0	1	2	3	4
None	Once	Two to three times	Several to many times	Constant or near constant

3. During the past WEEK, how many hours (add up hours) were you preoccupied with your urges to gamble?

0	1	2	3	4
None	1 hr or less	1 to 7 hr	7 to 21 hr	over 21 hr

4. During the past WEEK, how much were you able to control your urges?

0	1	2	3	4
Complete	Much	Moderate	Minimal	No control

5. During the past WEEK, how often did thoughts about gambling and placing bets come up?

0	1	2	3	4
None	Once	Two to three times	Several to many times	Constantly or nearly constantly

6. During the past WEEK, approximately how many hours (add up hours) did you spend thinking about gambling and thinking about placing bets?

0	1	2	3	4
None	1 hr or less	1 to 7 hr	7 to 21 hr	over 21 hr

7. During the past WEEK, how much were you able to control your thoughts about gambling?

0	1	2	3	4
Complete	Much	Moderate	Minimal	No control

8. During the past WEEK, approximately how much total time did you spend gambling or on gambling related activities?

0	1	2	3	4
None	2 hr or less	2 to 7 hr	7 to 21 hr	over 21 hr

9. During the past WEEK, on average, how much anticipatory tension and/or excitement did you have shortly before you engaged in gambling? If you did not actually gamble, please estimate how much tension and/or excitement you believe you would have experienced, if you had gambled.

0	1	2	3	4
None	Minimal	Moderate	Much	Extreme

10. During the past WEEK, on average, how much excitement and pleasure did you feel when you won on your bet. If you did not actually win at gambling, please estimate how much excitement and pleasure you would have experienced, if you had won.

0	1	2	3	4
None	Minimal	Moderate	Much	Extreme

11. During the past WEEK, how much emotional distress (mental pain or anguish, shame, guilt, embarrassment) has your gambling caused you?

0	1	2	3	4
None	Mild	Moderate	Severe	Extreme

12. During the past WEEK, how much personal trouble (relationship, financial, legal, job, medical or health) has your gambling caused you?

0	1	2	3	4
None	Mild	Moderate	Severe	Extreme

Improving the Odds

INFORMATION SHEET

Who is conducting the research?

Names:	Dr Leanne Casey[1] ,	Professor Tian Oei[2] and	Dr Namrata Raylu[2]
	BA(Hons), MClinPsych, PhD	BA, MPsych, PhD	BSc, MSc, PhD(Clinical Psych)
	MAPS	FAPS	MAPS
	QLD reg. no. 873883	QLD reg. no. 843 664	NSW reg. no. PS0072730

Schools: [1]School of Psychology, Griffith University; [2]School of Psychology, University of Queensland

Contact Phone: (07) 3735 3383

Contact Email: info@improvingtheodds.com.au

Why is the research being conducted?

This project is investigating the use of internet-based treatment for problem gambling in order to increase the available treatment options for people who experience difficulty in controlling their gambling. The project is being run from Griffith University.

What does the program involve?

This program is only available for people who are currently residing in Australia. This program, which runs from Griffith University, involves going through six weekly sessions online. The aim of this program is to help you to take charge of your gambling behaviours and urges.

What you will be asked to do

This project has a number of research requirements. Participation in the study is voluntary and you are free to withdraw at any time without penalty. You must be willing to be randomly allocated to either Internet Cognitive Behavioural Treatment (I-CBT); Internet Monitoring, Feedback and Support (I-MFS); or to what is known as a waiting list group. Both I-CBT and I-MFT will involve you completing an online session each week for a period of six weeks. People in the waiting list group will need to wait six weeks before commencing in either the I-CBT or I-MFS treatment.

You must also be prepared to complete a number of questionnaires before, during and after treatment, as well as a telephone interview before being accepted into the program. You will be required to complete the questionnaires again at 3, 6 and 12 months after the treatment so that we can evaluate your progress. Follow-up will generally be conducted using mail outs. To maintain your confidentiality, these mail outs will only have the University logo (there will not be anything written on the envelope to identify the content of the mail). Let us know if you

prefer to receive the follow-up questionnaires via the email. If the follow-up questionnaires are not returned on time, we will first contact you via email. If we have to contact you using one of the numbers you provide us, discretion will be used to ensure your participation in this program is not revealed without your consent.

What does it cost?

Participation in the program is free. You will be asked to complete confidential questionnaires before, during and after treatment, to help us in the ongoing assessment of our program.

The basis by which participants will be selected or screened

Participants will be accepted into the project if they are judged as either at risk of or currently experiencing problem gambling according to standardized clinical assessment measures. **Online programs are not suitable for individuals who are experiencing acute psychological distress and/or who are currently suicidal.** Instead, such individuals will be advised to contact public mental health agencies who are equipped to deal with such emergencies.

The expected benefits of the research

It is anticipated that this project will provide important information regarding the potential benefits of online treatment for problem gambling and increase the availability and access of such treatment.

Risks to you

There are no foreseeable risks to clients. Each client will be provided with phone and email contact details of the research team. In addition, each client will be asked to provide the name and contact details of their local service provider (which in the majority of cases will be their GP) for the research team to contact in the event of an emergency.

Your confidentiality

Confidentiality will be ensured by a) storing participant records in a locked cabinet & room within university facilities b) ensuring ongoing access to the site is through user names and passwords only, issued by the administrator in the project c) de-identifying data before data entry d)hosting the site on a secure server.

Please note that this site uses a digital certificate to secure all sensitive information you send us (e.g., personal details and responses to questionnaires). When you see a small padlock in the status bar at the bottom of the browser window, you will know that information you send on that page is secured.

Your participation is voluntary

Your participation is voluntary and you are free to withdraw from the study at any time. If you decide to withdraw at any time, you will be contacted by one of the members of the research team and will be offered some other brief intervention.

Questions / further information

For further information, please contact:

Improving the Odds, School of Psychology, Griffith University.

 Ph: (07) 3735 3383

Email: info@improvingtheodds.com.au

The ethical conduct of this research

Griffith University conducts research in accordance with the *National Statement on Ethical Conduct in Research Involving Humans*. If potential participants have any concerns or complaints about the ethical conduct of the research project they should contact the Manager, Research Ethics on 3875 5585 or research-ethics@griffith.edu.au .

Feedback to you

Feedback regarding your individual progress will provided as part of treatment procedures. A summary of the overall findings of the project will be available on request.

Privacy Statement

The conduct of this research involves the collection, access and / or use of your identified personal information. The information collected is confidential and will not be disclosed to third parties without your consent, except to meet government, legal or other regulatory authority requirements. A de-identified copy of this data may be used for other research purposes. However, your anonymity will at all times be safeguarded. For further information consult the University's Privacy Plan at www.griffith.edu.au/ua/aa/vc/pp or telephone (07) 3875 5585.

Improving the Odds

CONSENT FORM

Research Team

Names: Dr Leanne Casey[1], Professor Tian Oei[2] and Dr Namrata Raylu[2]

Schools: [1]School of Psychology, Griffith University; [2]School of Psychology, University of Queensland

Contact Phone: (07) 3735 3383

Contact Email: info@improvingtheodds.com.au

I confirm that I have read and understood the information package and in particular have noted that:

- I understand that my involvement in this research will include attending a pre-treatment interview, completing a series of six online sessions, and completing questionnaires before, during and after treatment.
- I have had any questions answered to my satisfaction;
- I understand the risks involved;
- I understand that while there may not be direct benefit to me from my participation in this research, it will provide important information regard the use of online treatment for problem gambling
- I understand that my participation in this research is voluntary;
- I understand that if I have any additional questions I can contact the research team;
- I understand that I am free to withdraw at any time, without comment or penalty;
- I understand that I will be asked by the research team to provide the name and contact details of my local G.P./service provider so that the research team can contact them in the event of an emergency
- I understand that I can contact the Manager, Research Ethics, at Griffith University Human Research Ethics Committee on 3735 5585 (or research-ethics@griffith.edu.au) if I have any concerns about the ethical conduct of the project; and
- I agree to participate in the project.

- o I have read the above information and hereby consent to taking part in this program.
- o I have read the above information. I have chosen not to take part in this program.
- o I have not made up my mind and I will like some more information

Dear <Participant's name> [System: To insert client's first name here],

Thank you for your participation in the Improving the Odds program. From our records, we notice that we have not received the pre-treatment questionnaires from you.

With this email, we have attached another set of pre-treatment questionnaires and a consent form for contacting your other service providers in the case of emergency. We would appreciate it if you can either fill out the forms on screen and email them to us, or print out the forms, complete them and then return them to:

Project Manager
Improving the Odds
School of Psychology
Mt. Gravatt campus
Griffith University
170 Kessels Road
Nathan
Queensland 4111
AUSTRALIA

If you decide to post the completed forms to us, please make sure that you write your client number (which is _____) somewhere on the first page of the forms.

If you have requested to receive the pre-treatment questionnaires via post during registration, and you would like to receive another set via post, please contact us to let us know.

Every effort has been made to prevent reminders being sent to those who have already responded or are in the process of arranging a telephone interview with one of our therapists. However, due to time lags in the post, it is quite possible that your questionnaires were received after the cut off date for reminder letters. If this applies to you, please disregard this reminder letter.

Please contact us at info@improvingtheodds.com.au if you have any questions.

Kind regards,
Project Manager
Improving the Odds
Website: http://www.improvingtheodds.com.au
Email: info@improvingtheodds.com.au
Telephone: (07) 3735 3383

Appendix 5.9 Treatment Reminder Letter /Email (Study II)

Dear <Participant's name>,

Thank you for your participation in the Improving the Odds program. From our records, we notice that you have not accessed the program for over one week.

You can access the program by clicking on the link below.

http://www.improvingtheodds.com.au

Please contact us at info@improvingtheodds.com.au if you have any questions.

Many thanks,

Kind regards,
Project Manager
Improving the Odds
Website: http://www.improvingtheodds.com.au
Email: info@improvingtheodds.com.au
Telephone: (07) 3735 3383

Appendix 5.10 Dropout Email without Invitation to Access Dropout Intervention (Studies II and III)

Dear <Participant's name>,

We notice from our records that you have not accessed the Improving the Odds program for over two weeks. As we have not heard from you, we will assume that either you do not wish to proceed with the program at present or you have sought assistance elsewhere.

As you may recall, you have agreed to complete questionnaires during and after the program so as to assist us in evaluating the effectiveness of the program. Thus in the near future you will be contacted to complete subsequent follow-up questionnaires. We understand that there are many demands on your time. However, as it is important for us to evaluate this research project and your progress, the information we obtain by you completing these questionnaires will be greatly appreciated.

Thank you for your participation in our program – Improving the Odds. Please remember that you are welcome to contact the Improving the Odds Project at info@improvingtheodds.com.au should your needs change in the future.

We wish you all the best for the future.

Kind regards,
Project Manager
Improving the Odds
Website: http://www.improvingtheodds.com.au
Email: info@improvingtheodds.com.au
Telephone: (07) 3735 3383

Appendix 7.1 Dropout Email with Invitation to Access Dropout Intervention (Study III)

Dear <Participant's name>,

We notice from our records that you have not accessed the Improving the Odds program for over two weeks.

We understand that it can be quite challenging to start this kind of program. However our experience suggests that many people who, like you, experience initial uncertainty go on to find the program helpful and very worthwhile. So we'd like to invite you complete a session designed to help you to look at and overcome some of the problems that people have when deciding to start the Improving the Odds program. This session can take up to 30 minutes to complete.

You can access this session by clicking on the link below.

http://www.improvingtheodds.com.au

Please contact us at info@improvingtheodds.com.au if you have any questions.

Kind regards,
Project Manager
Improving the Odds
Website: http://www.improvingtheodds.com.au
Email: info@improvingtheodds.com.au
Telephone: (07) 3735 3383