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Facilitating effects of social support in the treatment of problem gambling.

Kevin Gomes
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Facilitating Effects of Social Support in the Treatment of Problem Gambling

**By
Kevin Gomes**

**A Thesis
Submitted to the Faculty of Graduate Studies
through the Department of Psychology
in Partial Fulfillment of the Requirements for
the Degree of Master of Arts at the
University of Windsor**

Windsor, Ontario, Canada

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ABSTRACT

The current study explored the change facilitating effects of certain aspects of the individual, these being his or her emotional support, instrumental support, abstinence-specific support, emotional awareness, GA involvement, and depressed affect. In considering change facilitation, three change resources were examined: abstinence self-efficacy, motivation for change, and readiness for change. A model positing emotional awareness as a mediator between emotional support and the change resources was also explored. Participants were 60 outpatient problem gamblers recruited from different treatment centres throughout Ontario, Canada. Results from this study suggest that depressed affect and emotional support seem to influence self-efficacy for abstinence. Emotional support alone appears to influence motivation for change. And, GA involvement, depressed affect, and emotional awareness, together, seem to influence readiness for change. No support was found for the mediating effect of emotional awareness, or for the facilitating effect of abstinence specific support. Implications for treatment are discussed.

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CHAPTER I

Introduction

Pathological gambling (PG) is an affliction which continues to deal out substantial loss to those involved and their families. With the expanding casino industry in many of the provinces in Canada and the current popularity of poker in the casinos and on television, PG is an issue which is likely to persist. A wide scale survey conducted in the province of Ontario in 2005 (Wiebe, Mun, & Kauffman, 2006) found that 2.6% of the population suffered from moderate problem gambling and 0.6% suffered from severe problem gambling. Overall gambling by all citizens had declined from the rates observed in 2001, but participation by those individuals who do gamble had increased. For example, the amount of participation in casino table games in 2005 was four times greater than the amount in 2001. Despite efforts to curb problem gambling, this survey found virtually no change in the percentage of individuals with moderate and severe gambling problems between 2001 and 2005.

Research examining the effectiveness of treatment for PG is limited. One reason for this is that PG has long been overshadowed in the research literature by the consumption-based addictions, such as alcoholism. From this limited research, two general findings have emerged: one positive, one negative. The positive is that professional treatment for PG does appear to have some effectiveness. A meta-analysis (Pallesen, Mitsem, Kvale, Johnson, & Molde, 2005) examining the effectiveness of psychological treatment across 22 different studies found an effect size of 2.08, indicating quite a large level of post-treatment improvement. As well, rates of abstinence were generally higher for those with treatment as compared to those without. The negative is

that despite this apparent effectiveness, PG treatment suffers from alarmingly high rates of attrition and for those who remain in treatment, relapse. One study (Echeburua, Baez, & Fernandez-Montalva, 1996), comparing two different treatment approaches among 64 problem gamblers, saw 14 (22%) drop out from treatment and 15 (23%) relapse during follow-up. In a recent study by Petry and colleagues (2006), only 60.7% of those randomly assigned to individual cognitive therapy attended more than 6 sessions. As well, very few of the participants in any condition remained abstinent for the duration of the 12 month study, with only 16.5% of the cognitive therapy group remaining abstinent for the month prior to each assessment. In another study (Ladouceur et al., 2001), almost half of the 66 participants undergoing treatment dropped out before completing it. A fourth study, specifically examining predictors of drop-out in PG treatment (Leblond, Ladouceur, & Blaszczynski, 2003), was able to naturally obtain their treatment drop-out group of 43 (out of 112 participants) without any sort of manipulation. Thus, although treatment does seem to be effective for those who complete it, attrition and relapse are common problems that threaten the overall effectiveness of professionals to reduce problematic gambling behaviour.

Behaviour Change

Despite its dysfunctional nature, gambling does serve a function to the problem gambler, otherwise this behaviour would not lead to such great personal difficulty. Because of this deep entrenchment, changing the compulsive behaviour is always a challenging endeavor. Indeed, most attempts to change this behaviour are met with discouraging results. For this reason, social scientists have been focusing their attention

on the change process to identify variables that differentiate those who successfully change (i.e., good treatment outcomes) from those who are unable to change or complete treatment. Of particular interest are change resources that facilitate the recovery process and which can be augmented within the individual. These cognitive mechanisms involve beliefs about the self (i.e., "I have a problem which I can fix") and about the future (i.e., "My life will be better without this problem"). The general premise is that individuals with more adaptive cognitive beliefs should be better equipped to cope with this difficult change process. Three such change resources that have received much attention in the behaviour change literature are self-efficacy (Bandura, 1977), readiness for change (Prochaska & DiClemente, 1985), and motivation for change (Deci & Ryan, 1985). Each of these constructs is now discussed with respect to the addiction and gambling literature.

Abstinence Self-Efficacy

As a concept, self-efficacy has been implemented in many studies which examine behaviour change, especially those that focus on quitting the use of problematic substances such as cigarettes (Baer, Holt, & Lichtenstein, 1986) and alcohol (Majer, Jason, & Olsen, 2004). Self-efficacy can be defined as an individual's belief that she is capable of successfully performing a specific behaviour which is required to achieve a desired outcome. If we apply this concept to abstinence from gambling behaviour, we have a person who believes that she is capable of avoiding gambling in situations where gambling is likely to occur, and in this way experiences herself as being capable of remaining abstinent (May, Whelan, Steenbergh, & Meyers, 2003). According to Bandura (1977), the importance of self-efficacy stems from the confidence that it provides to the individual. Indeed, any person can see that a certain course of action will lead to a

specific outcome, but if people have doubts about their ability to successfully complete the required behaviours, then this information about the course of action will not have a strong influence on their behaviour. As well, the strength of these individuals' belief in themselves is likely to affect the amount of effort they exert toward these change motivated activities and also whether or not they remain on the pathway to change when obstacles are encountered (i.e., whether they drop-out or relapse). Thus it is this perceived ability that one can do what is necessary, rather than the information about what needs to be done, which is important for changing behaviour.

The addiction literature generally does support this mediating role of self-efficacy in the recovery process. An early study on cigarette smoking found that individuals with higher self-efficacy were more likely than other cohorts to initiate and maintain smoking cessation (DiClemente, Prochaska, & Gibertini, 1985). One study on alcohol abusers found that having full confidence in one's ability to remain abstinent at discharge was the best predictor of abstinence one year later, even above baseline levels of drinking and substance use (Ilgen, McKellar, & Tiet, 2005). Another study found that substance abusers who had remained abstinent for 180 days tended to have higher levels of abstinence self-efficacy (Majer et al., 2004). Additionally, McKay and colleagues (2005) found that self-efficacy was predictive of better treatment outcomes for both alcoholics and crack cocaine users, even at the 30-month follow-up. Thus, self-efficacy for abstinence appears to be a change resource that is important for the recovery process since without it, individuals seem to be more likely to relapse.

Few studies have examined the mediating role of self-efficacy in the recovery process for problem gamblers. Indeed, only recently did a reliable and valid measure

exist to assess this construct in gamblers (May et al., 2003). Generally what has been found is that problem gamblers undergoing cognitive treatment experience increases in their perceived self-efficacy (Ladouceur et al., 2001). Moreover, self-efficacy scores are capable of reliably distinguishing between problem gamblers and non-problem gamblers (May et al., 2003). Despite a lack of knowledge about how self-efficacy operates in individuals with problem gambling in particular, the role of self-efficacy in behaviour change in general is well established in the literature. Thus, by extrapolating from other findings in the addiction literature, there is reason to believe that self-efficacy will play a similar mediating role for problem gamblers during their recovery process.

Motivation for Change

Motivation theory fits perfectly with treatment as it suggests that people's behaviour can be changed if their motivation is shifted to doing the desired behaviour instead of the undesired one. Indeed, many treatments with the primary aim of motivating people to change have been developed for such stubborn afflictions as cigarette smoking (Wakefield, Olver, Whitford, & Rosenfeld, 2004), alcohol abuse (Nick, 2005), over-eating (DiLillo, Siegfried, & West, 2003), and even problem gambling (Hodgins, Currie, el-Guebaly, & Peden, 2004), among many others. Motivation describes the psychological component that drives a person toward action. It is that which gives purpose and direction to an individual's behaviour. Applied to problem gambling, an individual may be motivated to change by his need to get out of debt, or to win back the respect of his family and friends. As such, motivation provides the person with a desire to change and a mindset that is focused on the goal of actually making the change happen. Usually, when an individual is not motivated to change, he either does

not believe that a problem exists, or then does not believe that the behaviour is problematic enough to warrant change. Either way, without this cognitive and behavioural motivation, any effort made toward change will most likely be half-hearted, making success unlikely.

Generally, motivation involves some sort of perceived consequence: some reward that is obtained when the goal is reached. Motivation theory (Decy & Ryan, 1985) further suggests that motivation comes in two varieties: intrinsic, representing a desire toward an internal or self reward, and extrinsic, representing a desire toward an external reward. Both of these types of motivation can drive a person to action, but their power to do so is not equal. Indeed, researchers studying achievement have found that intrinsic motivation often has longer lasting effects whereas extrinsic motivation has short lived effects and, in some cases, even has detrimental effects (Decy & Ryan, 1985). The theory suggests that with extrinsic motivation, the behaviour is a means to an end, whereas with intrinsic behaviour, the behaviour is an end in itself. As such, it should only be intrinsic motivation that results in an increased desire to perform the behaviour since it is this kind of motivation that results in the behaviour itself becoming a reward.

This distinction between intrinsic and extrinsic motivation however, is less clear in the addiction literature. Supporting the theory, Curry, Wagner, and Grothaus (1990) found that those with a combination of high intrinsic motivation and low extrinsic motivation were most likely to achieve smoking cessation. Yet, McBride and colleagues (1994) were unable to replicate this finding, not only with smoking cessation, but with marijuana and cocaine cessation as well. In addition, substance-abuse treatment that involves Contingency Management interventions, which extrinsically reward individuals

for abstinence related behaviour, has been associated with greater abstinence, as well as remaining in treatment longer (Petry et al., 2006). Indeed, the entire process of gambling, by its very nature, is designed to motivate individuals through an extrinsic reward system. This is not to say that gambling has no intrinsic reward, only that the chance for extrinsic reward is a vital element of the behaviour, for it is what is being sought. Indeed, extrinsic motivation has been shown to be more influential on pathological gambling behaviour than intrinsic motivation (Carruthers, Platz, & Busser, 2006). This suggests that gamblers, as a group, are individuals who can be highly motivated by extrinsic reward. In regards to achieving abstinence, both kinds of motivation, intrinsic and extrinsic, are likely to be influential with these individuals and should therefore both be utilized in the treatment process.

Readiness for Change

The concept of readiness for change has been applied to many problematic behaviours, including substance abuse (Pollini, O'Toole, Ford, & Bigelow, 2006), eating disorders (Gellar, Zaitsoff, & Srikameswaran, 2005), and crime (Cohen, Glaser, Calhoun, Bradshaw, & Petrocelli, 2005), among other problematic behaviours. The basic premise underlying this concept is that in order for an individual to get to a point where behavior change is possible (and therefore is ready for treatment), he must go through a decisional process, resulting in a belief that change is necessary and a mindset that is open to the possibility of change and what it involves. If the individual remains closed off, or does not fully appreciate how challenging the change process will be, then he is unlikely to continue along the path to abstinence and will instead relapse back to old ways.

The concept of readiness for change was first introduced through the transtheoretical model (Prochaska & DiClemente, 1985; Prochaska & DiClemente, 1992). This model proposes that readiness for change occurs along a continuum with individuals passing through various stages as they achieve a greater inclination to change their behaviour. Although more stages have been added, individuals typically begin in the precontemplation stage, where the problem is not yet acknowledged, and then move to the contemplation stage where the pros and cons of changing the behaviour are weighed. This is followed by the action stage where individuals put forth effort to modify their problematic behaviour. Last is the maintenance stage, which has a focus on sustaining the improvements that have been made.

Although these stages are thought to be sequential, the recovery process often does not follow such an orderly pattern, and instead individuals tend to regress, relapse, and recycle through the stages (DiClemente, 1999). Individuals may enter treatment during any stage; however it is those that are in the higher stages that have better long term outcomes. For example, in alcohol abusers, the Project MATCH Research Group (1997) found that, out of all of the attributes assessed at baseline, readiness for change was most predictive of reduced drinking behaviour at one year follow-up. Even after three years, baseline levels of readiness for change continued to predict drinking behaviour (Project MATCH Research Group, 1998). As well, alcohol abusers in the higher stages (i.e., most ready to change), as compared to those in the lower stages (i.e., least ready to change), are more likely to complete treatment (Edens & Willoughby, 2000). Examining problem gamblers, Petry (2005) found that those in the higher levels, mainly the action stage, were more likely than those in the lower levels to become

involved in the treatment program by having better attendance and using self-help workbooks. Although gambling behaviour decreased on average over the whole sample, those in the higher stages of readiness to change had significantly larger decreases in gambling behaviour. Thus, readiness for change does appear to be linked to lower relapse, greater involvement in treatment, and overall better behavioural outcomes.

Promoting Change Resources

Armed with these resources, individuals are motivated and ready to change and believe that they possess the ability to successfully change. Clearly this is a desirable mindset for individuals in treatment as these change resources appear to facilitate the treatment process, bringing about better outcomes. From an applied perspective, knowledge of factors that promote these three change resources would be invaluable to treatment providers. Indeed, elements could be introduced into treatment programs that would help to promote these change resources in clients, preparing them for the recovery process. Three such potentially promoting factors are now reviewed: social support, emotional awareness, and involvement in Gamblers Anonymous.

The Role of Social Support

Social support is essentially one of the rare panaceas that exist within the field of psychology. It has been found to be beneficial in the treatment and recovery processes of many different physical and psychological afflictions, including breast cancer (Bloom, Stewart, Johnston, Banks, & Fobair, 2001), diabetes, (Van Dam et al., 2005), coronary artery bypass grafting (Barry, Kasl, Lichtman, Vaccarino, & Kromholz, 2006), and depression (George, Blazer, Hughes, & Fowler, 1989), just to name a few. When placed

in a social context, support serves the purpose of helping an individual endure a difficult time, and in doing so, prevent them from collapsing or breaking down under the strain of circumstances. Social support is a general term that can encompass many different types of behaviours aimed at aiding the person through an emotionally and/or mentally trying situation. It usually involves some sort of exchange of resources between parties, and the receiving party may or may not reciprocate depending on the type of relationship. Social support is thought to act like a buffer during the recovery process, protecting the individual from risk factors that may impede his or her progress (Dobkin, De Civita, Paraherakis, & Gill, 2002). Important to the concept of social support is the role of the “other” since social support stems from individuals within a person’s social network, such as family, friends, work colleagues, treatment providers, or others in treatment.

One of the more important ways to examine social support in addiction treatment is to consider the function of the support that is perceived, or actually received, by the individual (Beattie & Longabaugh, 1997). There are two types of functional social support that are commonly identified in the literature and each appears to serve a different purpose. *Emotional support*, defined as verbal and non-verbal communication that conveys concern and respect, has the benefit of increasing the individual’s self-esteem and self worth (Hogan, Linden, & Najarian, 2002). An example of emotional support would be a friend telling the person “I believe in you, I think you can do it.” *Instrumental support*, defined as the provision of material goods which can be used to obtain one’s goal, may help the individual to regain a sense of control over the situation (Hogan et al., 2002). This type of support can either be general, or without a specific

purpose, as in a family member helping you buy groceries, or abstinence-specific, as in a family member driving the person to his or her treatment sessions.

Functional support, encompassing both of these types of support, has been found to be beneficial in the recovery process of addicts. One study that examined functional support in substance abusers (Dobkin et al., 2002) found that those with high levels of support experienced greater levels of abstinence at 6 month follow-up and less psychological distress at both intake and follow-up. As well, those with higher levels of support displayed less treatment attrition than did those with lower levels of support. Booth and colleagues (1992) found that, for alcoholics, higher levels of reassurance of worth from family and friends (a form of emotional support) significantly lengthened their time to readmission, even after prior treatment failure was accounted for. Moreover, the literature has highlighted a distinction between general support and abstinence-specific support. For instance, Beattie and Longabaugh (1999) found that abstinence-specific functional support was more predictive of outcome in alcoholics than was general, non-specific functional support. Another study (Havassy, Hall, & Wasserman, 1991) found that the presence of abstinence-specific functional support was related to a lesser tendency to relapse in alcoholics, opiate users, and cigarette smokers. Thus, the benefits of functional support, especially that which is abstinence-specific, are well documented.

Despite this overwhelming verification of the benefits of social support in the addiction recovery process, very little is known about the role that social support plays in the recovery process of individuals who problem gamble. To the best of my knowledge, no research exists that considers social support in regard to problem gambling treatment.

However, it seems acceptable to propose that social support may have a similar effect on individuals who problem gamble as it does on other individuals who suffer from an addiction. Additionally, little is known about the effect that social support may have on abstinence self-efficacy, motivation for change, and readiness for change. Indeed, the addiction literature tends to link social support directly to relapse-based outcomes but neglects to examine other potentially beneficial outcomes that social support may influence. One study examining smoking cessation found that those with greater social support were more likely to progress to higher stages of readiness for change (Wagner, Burg, & Sirois, 2004). Another study looking at the promotion of physical activity found that social support was a precursor to both self-efficacy and self-regulation (Anderson, Wojcik, Winett, & Williams, 2006). Additionally, Williams and Bond (2002), in examining self-care behaviour in individuals with diabetes, found that the relationship between social support and better self-care behaviour was mediated by self-efficacy. As well, Hanna (1996) suggests that social support is one of a select few components that underlies an individual's involvement, motivation, and success in psychotherapy. Thus it does appear that social support may exert some of its beneficial influence by impacting the change resources that facilitate the change process.

Emotional Awareness

The recovery process from any addiction is always an emotionally charged process for everyone involved. In order for the problem gambler to be able to process all of this emotional information, he must be able to accept emotional experiences and deal with them in an adaptive manner. This requires that there is at least some complexity to the person's understanding of emotional processes, otherwise the processing will only

take place at the surface level, leaving the deeper issues unaddressed. Indeed, the importance of emotional awareness for the therapy process is well documented for many different disorders, including depression and anxiety (for a review of this literature see Greenberg & Pascual-Leone, 2006). A correlation has been found between emotional awareness and greater restraint and impulse control (Salovey, Mayer, Golman, Turvey, & Palfai, 1995), but little else, if anything, is known about the role that emotional awareness plays in the addiction treatment process, especially in regard to abstinence self-efficacy, motivation for change, and readiness for change. It may however be possible that emotional awareness, through its facilitation of the emotional aspects of the treatment process, may instill some confidence in gamblers and prepare them for the change process.

Emotional awareness for one's own emotional processes allows for a better awareness of the emotional processes of others. In this way, emotional awareness may have an influence on the effectiveness of social support by providing the person with a greater ability to receive the emotional information that gets transmitted between individuals. For example, imagine a problem gambler's friend drives him to his therapy session. During the trip, the friend talks to the gambler about how treatment is going, and even comments about his belief that the person can indeed change. In processing this situation, the gambler will easily identify the benefit obtained from the actual transportation since it is quite concrete. In this situation, the provided car ride constitutes instrumental support. However, the friend also expressed confidence in the person's ability to change, which also constitutes a form of support. Emotional support of this kind requires that the gambler have some awareness of the emotions that underlie what

was said by the friend during the conversation. Without this awareness, the impact of the comment is lost as it will not reach the person. Thus, it may be that the effectiveness of emotional support relies, at least partially, on the receiver having some level of emotional awareness; with respect to his own needs and insecurities and with respect to the support being made available. This suggested link between emotional support and emotional awareness has not of yet been empirically examined despite being worthy of some exploration.

Involvement in Gamblers Anonymous

Non-professional 12-step based programs such as Gamblers Anonymous (GA) are currently the most popular and widespread “treatments” for PG due to their community based and free-of-cost nature. This peer-support approach is based on the model set forth by Alcoholics Anonymous. Individuals in GA overcome their problem through fellowship with other gamblers, believing that a higher power will aid their recovery, making an inventory of personal shortcomings, and making amends with those who have been harmed by their gambling problem (Ledgerwood & Petry, 2005). Along with actively helping the individual directly through the recovery process, GA also serves as a support group. Participants both provide and receive emotional support and this reciprocity is believed to help build lasting social networks (Hogan et al., 2002). This is beneficial since PG often comes at considerable cost to the individual, not only financially, but also socially. As a result of the deceit that often accompanies a gambling problem, it is difficult for these individuals to obtain support from their natural support system as many of these individuals, through their actions, have damaged the relationships with their friends and family. In such a state of social dissociation, it is

even more difficult to successfully break this overpowering habit. This seems to be one of the major benefits that GA provides to problem gamblers: it is essentially a group of individuals with whom there is no past and from whom both emotional and instrumental support can be sought out freely, without guilt.

Since the PG literature is not as advanced as that of the other addictions, few studies have been conducted to examine GA, and thus little is known about its efficacy. One early study (Stewart & Brown, 1988) found that only 8% of those attending GA remained abstinent one year later. Almost 22% dropped out after the first meeting and only 30% attended more than ten meetings. Based on these results, GA does not seem to be all that effective for gamblers. However, a more recent study by Petry (2003) found support for the use of GA as a supplement to professional treatment. In this study, it was found that pathological gamblers entering professional treatment with a history of GA attendance fared better than those without a history of GA attendance, even though the prior were found to have more severe problems. As well, individuals with prior GA involvement were more likely to become actively involved in the professional treatment. Although this study does not speak to the efficacy of GA specifically, it does suggest that individuals who are actively involved in GA while in professional treatment are in some way better equipped than those only in professional treatment to make it through the recovery process. It may very well be that GA provides individuals with abstinence self-efficacy and readies and motivates them for the change process.

Study Rational

The main purpose of this study is to apply current knowledge about treatment process facilitation to interventions for problem gambling. Specifically, this study aims to suggest several different variables, particularly social support, emotional awareness, and 12-step involvement, which may enhance an individual's motivation and commitment to the change process and her self-efficacy to remain abstinent. Indeed, the literature on the substance-based addictions generally advocates the beneficial role of social support and 12-step support group involvement for the recovery process. The extension of this advocacy to treatment for gamblers will not only provide the field with a greater understanding of the treatment process for gamblers, but it will also provide some suggestions for how to make treatment more effective for those who are struggling to change their behaviour. The inclusion of emotional awareness in this study further adds to the knowledge about the recovery process, especially in regard to the role of emotional processes. Taken as a whole, this study aspires to provide at least part of the solution to the staggeringly low success rates of interventions for problem gambling.

Hypotheses

Generally, it is hypothesized that social support, emotional awareness, and involvement in GA will each provide the individual with change resources conducive to the recovery process. Each of these proposed predictors has been found to be associated with greater success in the treatment processes of several different afflictions, including many of the addictions. As such, they appear to supply the individual with some amount of treatment facilitating benefit, believed here to be, at least in part, three different change

resource variables: abstinence self-efficacy, motivation for change, and readiness for change. More specifically, it is hypothesized that:

1. The five variables, emotional support, general instrumental support, abstinence-specific instrumental support, emotional awareness, and GA involvement, will each predict abstinence self-efficacy.
2. The five variables, emotional support, general instrumental support, abstinence-specific instrumental support, emotional awareness, and GA involvement will each predict motivation for change.
3. The five variables, emotional support, general instrumental support, abstinence-specific instrumental support, emotional awareness, and GA involvement will each predict readiness for change.
4. Abstinence-specific instrumental support will be more predictive each of the change resources than will general instrumental support. This is believed to be the case because abstinence-specific instrumental support focuses specifically on the goal of abstinence and should, therefore, have a greater change facilitating effect.

This study will also examine a second set of hypotheses which look to further explain the role that emotional awareness plays in facilitating the treatment process. Specifically, I believe that emotional support, because of its inherent emotional nature, requires different cognitive processing abilities than does instrumental support, which is more concrete. As a result, an individual with good emotional awareness should be able to identify and use emotional support in a more effective manner than an individual with poor emotional awareness. Thus it is hypothesized that:

5. Emotional awareness will mediate the relationship between emotional support and the change resources, abstinence self-efficacy, motivation for change, and readiness for change, taken together.
6. Emotional awareness will not mediate the relationship between general instrumental support and the change resources, abstinence self-efficacy, motivations for change and readiness for change, taken together. Although it is not common practice to hypothesize the null, by doing so here, I aim to show that emotional awareness has a unique mediating role with emotional support that it does not share with instrumental support.

Empirical support for all six hypotheses would provide evidence that abstinence self-efficacy, motivation for change, and readiness for change, three change resources which are conducive to a successful recovery process, are enhanced by social support, emotional awareness, and involvement in 12-step support groups.

CHAPTER II

Methodology

Participants

Sample

Participants were 64 outpatient problem gamblers who were currently receiving professional treatment for problem gambling. The majority of participants (93.8%) attended treatment centres located in Ontario ($n = 60$) whereas the remainder attended treatment centres in British Columbia ($n = 4$). Ontario has a larger general population than British Columbia, and therefore has a lot more treatment centres from which to draw participants from. However, this 15 to 1 ratio between participants is drastically unrepresentative of the actual differences between the two provinces. This made generalizing these results to the BC population inappropriate as four participants can hardly be thought of as accurately representing the population of BC gamblers. As such, the four BC participants were excluded from all analyses in order to make a more clearly defined sample of Ontario problem gamblers. This exclusion resulted in a sample size of 60 participants.

The age of the participants ranged from 18-70 years and had a mean of 46.7 years. Just over half of the participants were male (54.2%) and most considered themselves to be Caucasian (87.9%), with a small number of participants being Asian (5.0%) and the rest belonging to various other ethnicities. Most participants (80.0%) indicated that English was their first language.

The average length of time participants had been in their current treatment program was 18.2 weeks with a range of 0 to 130 weeks (mode = 3 weeks). Half of the

participants (49.2%) indicated that they had received treatment for gambling prior to their current treatment program, and the amount of prior treatment received by these participants averaged 19.43 weeks and ranged from 2 to 104 weeks. Over a third of the participants (40.0%) currently consider themselves to be members of GA and have attended GA for an average of 52.41 weeks (ranging between 1 and 350 weeks).

Regarding current mental health, 26 of these participants (43.3%) reported having been diagnosed with a mental disorder at some point in their life, with most of them (20 individuals and 76.9% of the diagnoses) being diagnosed with depression. Other diagnoses included four individuals with an anxiety disorder (15.4% of the diagnoses), four individuals with borderline personality disorder (15.4%), three with bipolar disorder (11.5%), and one with psychotic episodes (3.8%). As well, nine of these individuals have been diagnosed with more than one disorder, and this does not include their gambling behaviour. Fortunately, the vast majority of these individuals (25 out of the 26) have received help for their diagnosed disorder.

In regards to other current addiction-based pathology, 41.4% of participants reported abusing at least one substance, with 28.3% abusing nicotine, 18.9% abusing alcohol, and 5.1% abusing an illegal drug. As well, eight of these individuals (13.6%) are currently receiving treatment for at least one addiction like behaviour, with five of them being treated for alcohol, three treated for drugs, one for sex, one for bulimia, and one for shopping.

Recruitment

The initial sample was recruited from nine different problem gambling treatment centres, seven in Ontario and two in British Columbia. Each institute was contacted prior

to the commencement of the study and provided with information about the study. Since a number of institutes were used in the study, cross-institute comparisons were possible. This information was offered to each institute as an incentive for providing their clients as participants in this study. Once consent was obtained from each institute, each participant was asked to consent to participating in a research study examining the role of social networks on problem gambling. Gift certificates to Tim Horton's valuing \$20 were provided to each participant as an incentive to participate. Those who chose to participate were then asked to complete a questionnaire package which was mailed to and administered by the professional treatment institutes. As such, the researcher had no contact with the actual participants themselves and their participation was strictly anonymous. Although the participants were allowed to complete the questionnaire packages at home, they were asked to take care while filling them out (e.g., not watching TV while completing it).

Approximately 200 questionnaires were sent to the nine treatment institutes. The number of questionnaires that each facility received was based on an optimistic estimate of need that was provided by each facility, and ranged from 4 to 50. Of the 200, 64 questionnaires were completed and returned to the researcher, yielding a 32% return rate across all facilities. The number of completed questionnaires received from each facility ranged from 1 to 19, resulting in the clients from certain treatment centres being more represented in the results than others.

Inclusion Criteria

In order to be included in the sample, participants had to currently be involved in treatment for PG, where PG is the main affliction. When the facilities were contacted,

they were asked to provide only individuals who were in treatment for problem gambling. In addition, since most, if not all, of these centres deal with different types of addiction, they were also asked that gambling be the main treatment concern of these individuals. Since there is no reason to believe that the counselors at the centres did not obey these instructions, all participants in this study have been deemed to meet this criterion.

Measures

Gambling Severity

The Problem Gambling Severity Index (PGSI; see Appendix A), a 9-item subscale of the Canadian Problem Gambling Index (CPGI; Wynne, 2003), was used primarily to assess the extent of an individual's problem gambling behaviour. Each item was rated on a 4-point Likert scale which ranges from "never" (scored 0) to "almost always" (scored 3). Thus, scores in the range of 0 to 27 were obtained, and scores of 8 or more were considered in the problem gambler range. The PGSI was used as it is relatively brief and has good concurrent validity with both the South Oaks Gambling Screen (SOGS; Lesieur & Blume, 1987) and the Diagnostic and Statistics Manual of Mental Disorders-Fourth Edition (DSM-IV-TR; APA, 2000) criteria.

Social Support

Social support was measured using two instruments that are administered in parallel: the Social Support Questionnaire for Transactions (SSQT; see Appendix B) and the Social Support Questionnaire for Satisfaction (SSQS; see Appendix B) with the supportive transactions (Suurmeijer et al., 1996). Together, these two measures consist of 23 item-pairs in which the SSQT asks about the frequency of social support

transactions, and the SSQS asks about satisfaction with the frequency of each of these types of transaction. The 23 item-pairs can be broken down into 5 sub-scales: Daily Emotional Support (DES; 5 items; $\alpha = .76$), Problem-Oriented Emotional Support (PES; 6 items; $\alpha = .73$), Social Companionship (SC; 5 items; $\alpha = .68$), Daily Instrumental Support (DIS; 4 items; $\alpha = .39$), and Problem-Oriented Instrumental Support (PIS; 3 items; $\alpha = .64$).

An additional 5 item-pairs was added which examined abstinence-specific support since it was hypothesized that abstinence-specific support may be of more importance for recovery than the more general instrumental support. These 5 items, developed by the author, followed the same format as the items on the SSQT and SSQS (see Appendix B for a complete list of these items).

Items on each of these two measures are rated on a 4-point Likert scale with “seldom or never” (score = 0), “now and then” (score = 1), “regularly” (score = 2), and “often” (score = 3) as values for the SSQT, and “much less than I like” (score = -2), “less than I like” (score = -1), “just as much as I like” (score = 0), and “more than I like” (score = 1) as values for the SSQS. As such, a higher score is desired for the SSQT and a score close to zero is desired for the SSQS as this is indicative of total satisfaction (neither too much nor too little) with the amount of social support transactions received. Scores for each sub-scale were obtained by averaging the ratings for all of the items within the sub-scale. Since a few participants left items blank, averages were preferred over totals since they are less influenced by missing items. For use in this study, an overall emotional support score was obtained by averaging the scores on the three emotional support sub-

scales, a general instrumental support score was obtained by averaging the scores on the DIS and PIS, and the abstinence-specific support scale was treated independently.

The SSQT and SSQS, with the additional abstinence-specific sub-scale, were chosen because they adequately assess both emotional support and instrumental support by considering not only the participants' perception of the amount of support, but also their satisfaction with the support received, thereby taking further individual differences into account.

Emotional Awareness

The Levels of Emotional Awareness Scale (LEAS-B) was used to assess emotional awareness (Lane, Quinlan, Schwartz, Walker, & Zeitlin, 1990). This measure consists of ten short descriptions of emotionally-laden imaginary vignettes that involve the participant and another person in a given situation. Following each vignette, participants are asked two questions: "How would you feel?" and "How would the other person feel?" For the purposes of this study, the LEAS-B was shortened to eight vignettes, by removing the last two, in order to reduce the likelihood of fatigue in the participants.

Participants received a score for their responses to each vignette separately. As well separate scores are given to the emotions provided for the self and the other. The lowest score (Level 0) is given to responses that are either void of emotional content or describe a cognition instead of an emotion (e.g., "I felt we should keep walking"). Level 1 responses were those that either reflected awareness of physiological responses (e.g., "I'd feel tired") or indicated uncertainty about the emotion experienced (e.g., "I don't know how he would feel"). Level 2 responses consisted of words that are used to express

relatively undifferentiated emotions (e.g., “I would feel good”) or the use of the word “feel” to express a desire toward action (e.g., “I would feel like punching a wall”). Level 3 responses entailed the use of a differentiated emotion word, such as happy, sad, or angry. Level 4, the highest score awarded, is given when two or more Level 3 responses are provided that reflect different emotional categories. Ekman’s (1973) theory of primary emotions was used to guide the decision as to whether or not a Level 4 response was present. For instance, words such as “happy”, “excited”, and “proud” are all Level 3 responses on their own, but together would not constitute a Level 4 response since they all represent the same core emotion: joy. For each vignette, a total score is also provided where the largest of the scores for self and other becomes the total score, except when there are two Level 4 responses which then constitutes a total score of 5. Through this scoring procedure, the qualitative data is transformed into a quantitative score which reflects the person’s level of emotional awareness.

Although the LEAS has a very strict scoring procedure, it does involve some subjectivity. To control for this, certain procedures were carried out by the raters. Before scoring began, the LEAS was removed from the completed questionnaires and was hence scored separately. This was done to prevent any of the information present in the other measures, such as demographics, from influencing the scores given by the raters. As well, protocols were scored in random order by both raters so that any rater drift that occurred would negatively affect the inter-rater reliability.

The LEAS was chosen since it focuses on the structural organization of emotional experiences as opposed to how emotion is experienced. As such, this measure is capable of assessing people’s ability to monitor their internal states, as well as the organizational

complexity of their emotional experience, and it is these aspects of emotional processing that are of interest for therapeutic settings. As well, the LEAS has good internal consistency ($\alpha = .81$) and good concurrent and discriminant validity.

Involvement in Gamblers Anonymous

GA involvement was measured using an adapted version of the Alcoholics Anonymous Inventory (AAI; Tonigan, Miller, & Connors, 1996; see Appendix C). Since the 12 steps and the general structure of AA and GA are the same, this measure was adopted for use with GA by substituting the term “GA” for “AA” and the term “gambling” for “alcohol” throughout the measure. The resulting 13-item measure assesses GA participation in terms of the degree that the individual is “working” the steps as well as his or her commitment to the GA fellowship (see Appendix B for a list of these items). This measure consists of nine yes/no questions, two open ended questions asking about the number of GA meetings attended in the past year/ever, and two questions asking to circle which steps have been completed. The AAI has good internal consistency (Cronbach alpha = .85), and it is presumed that this modification to measure GA, rather than AA, involvement will not alter the reliability and validity of this measure.

Abstinence Self-Efficacy

The Gambler’s Self-Efficacy Questionnaire (GSEQ; see Appendix D) was used to assess abstinence self-efficacy (May et al., 2003). This is a 16-item measure that assesses perceived self-efficacy to regulate one’s own ability to resist gambling in high-risk gambling situations. An example item is, “I would be able to control my gambling if . . . I had an argument with a friend and was upset.” Statements were rated by participants on

a 6-point Likert scale that ranges from 0% confidence to 100% confidence in their ability to resist gambling. An average score of confidence, taken across all items, was created for the analyses. The GSEQ was chosen since it has high internal consistency ($\alpha = .96$) and because it is commonly used to assess abstinence self-efficacy in problem gamblers.

Motivation for Change

To assess participants' motivation levels, the Reasons for Quitting (RFQ) scale, modified for use with marijuana and cocaine users, (McBride et al., 1994) was further modified so that it was suitable for use with problem gamblers. This gambling measure consists of 16 items that assess both an individual's intrinsic motivation and extrinsic motivation for change. Within each of these types of motivation there are two factors: emotional well-being concerns and self-control constituting intrinsic motivation, and social influence and financial concerns constituting extrinsic motivation. Items for each of the factors have high face validity and ask specifically about issues that are pertinent to the factor (see Appendix E for a list of these items). Each factor consisted of four statements which participants rate their agreement with on a 5-point Likert scale that ranges from "not at all true" (score = 0) to "extremely true" (score = 4). An overall motivation for abstinence score that encompasses all four factors was calculated by averaging the ratings for all items on the measure. The RFQ was chosen as it is the only scale that measures abstinence motivating factors for addictive behaviours. This modified version has good overall internal consistency ($\alpha = .84$), and good internal consistency for each factor, including emotional concern ($\alpha = .71$), self-control ($\alpha = .70$), social influence ($\alpha = .83$), and financial concern ($\alpha = .67$). These internal consistencies

are generally higher than those found on the other RFQ measures (Tobacco $\alpha = .53-.77$; Marijuana $\alpha = .33-.75$; Cocaine $\alpha = .48-.76$).

Readiness for Change

The University of Rhode Island Change Assessment (URICA) scale (McConaughy, Prochaska, & Velicer, 1983) as adopted for gambling by Petry (2005) was used to assess readiness to change (see Appendix F). This 32-item measure asks participants to indicate their level of agreement with each of the statements on a 5-point Likert scale ranging from “strongly agree” (score = 5) to “strongly disagree” (score = 1). The URICA is based on Prochaska and DiClemente’s (1992) transtheoretical model of change and assesses four stages of change (pre-contemplation, contemplation, action, and maintenance). An overall readiness to change score was created by adding together the averages of the items for the contemplation, action, and maintenance stages and subtracting this by the average of the items for the pre-contemplation stage. The four stage factors have good internal consistency (α ’s ranging from .74 to .88). The URICA was chosen since it is commonly used and has been validated with a number of different populations, including cigarette smokers (Prochaska & DiClemente, 1985), alcohol abusers (Carbonari & DiClemente, 2000), illicit drug users (Siegal, Li, Rapp, & Saha, 2001), and incarcerated adolescents (Cohen et al., 2005).

Depressed Affect

Depressive affect was assessed using the Beck Depression Inventory - II (BDI-II; Beck, Steer, & Brown, 1996). The BDI consists of 21 groups of statements, where each group relates to a different depressive symptom. Participants choose which statement in each group best represented them. This measure was originally included primarily to be

used for demographic purposes. However, since the BDI was found to correlate with all of the main variables being assessed, the BDI scores have been included in the analyses.

Demographics

Along with demographic variables such as age, gender, and ethnicity, additional questions were asked about treatment history, GA involvement, spirituality, substance abuse, and mental health history (see Appendix G for a list of these items).

CHAPTER III

Results

Reliability

Using the LEAS scoring manual (Lane et al., 1990), two raters were trained at scoring participant responses. The primary rater scored all 64 of the protocols and it is this rater's scores that were used for the analyses. The secondary rater scored 32 protocols which provided a 50% overlap for establishing inter-rater reliability with the primary rater. Inter-rater reliability was good with a Cohen's Kappa of .80, which is comparable to that obtained in the original study.

Initial Analyses

Treatment of Missing Data

Generally, scores for each measure (except the PGSI) were created by averaging the scores for items, as this reduces the influence of missing items. A decision was made to exclude any score which was based on less than 80% of the items on the scale. An exception to this rule was made for the LEAS where 75% item response was the minimum allowed. As such, any LEAS protocol that contained more than two blank or uncodeable responses (i.e., 25% of the measure) was considered missing data. Applying these rules, one case had responses to only two LEAS vignettes and was therefore excluded from analyses that involved the LEAS, including all of the main analyses. In addition, two participants did not complete the GSEQ and have been excluded from analyses that utilize the GSEQ. And lastly, one participant did not complete the URICA and was therefore excluded from analyses that involve this measure.

Descriptive Statistics

First to be considered is gambling severity. Using the PGSI, participants scored on average in the problem gambling range with a mean of 16.18 ($SD = 7.282$). As already mentioned, a score of 8 or more places a person in the problem gambling range (Wynne, 2003). Of this sample, 85.0% scored in the problem gambling range, 5.0% scored in the moderate risk gambler range, and 10.0% scored in the low risk gambler stage. Thus, according to the PGSI, six of these participants did not have a gambling problem, and another three were only a moderate risk for a gambling problem. As such, there is a concern that these individuals may not actually be problem gamblers. However, despite the fact that these individuals were reporting very little current gambling behaviour, they were still in treatment for problem gambling and thus meet the criteria for the sample (see Methods, inclusion criteria). In addition, these nine individuals have spent, on average, 61.2 weeks in their current treatment program. This is over one year and the PGSI specifically asks for respondents to consider their gambling behaviour over the past year. Thus, these participants are reporting on a time period for which they were in treatment, leaving their low gambling severity scores not at all unexpected. Indeed, it is quite likely that these individuals had a more severe gambling problem before they entered treatment, for why else would they be there? As well, it is unlikely that an individual without a severe gambling problem would remain in treatment for close to a year or more. Thus, to exclude these individuals would only be to exclude those who are doing well in treatment and not dropping out.

For social support, participants scored on average in the lower-moderate range for all three types of social support measured, including emotional support with a mean of

1.575 out of a possible 4, instrumental support with a mean of 1.412, and abstinence-specific support with a mean of 1.666 (see Table 1). As the SSQT and SSQS include a number of different sub-scales, each type of social support can be broken down in order to further disentangle these results. Although there was not a huge amount of difference between the means of the different support transactions scales, daily emotional support had the highest average with 2.549 and daily instrumental support had the lowest average with 1.815. Generally, the emotional support scales, in regards to transactions, were scored higher than the instrumental support scales. Regarding satisfaction with the amount of support, participants had the least amount of satisfaction with social companionship, scoring an average of -.833 out of -2. Problem-oriented instrumental support had the greatest amount of satisfaction with a mean of -.433. The general trend here is that participants were more satisfied with the amount of instrumental support received than they were with the amount of emotional support received. Thus, these individuals have reported receiving more emotional support than instrumental support, but are still not satisfied with this received amount of emotional support.

The main score that is provided by the LEAS is an overall emotional awareness score out of 5. However, scores out of 4 for an individual's awareness toward the self and toward the other can also be obtained. The average score for overall emotional awareness is 2.975 ($SD = .628$), indicating a moderate level of emotional awareness. Regarding awareness toward the self and other, average scores were 2.656 ($SD = .603$) for the self and 2.254 ($SD = .749$) for the other, indicating a slightly higher awareness for the self over the other, which is to be expected of most individuals.

Table 1
Mean Scores for the SSQT and SSQS

Social support sub-scales	Mean	SD
Emotional support	1.575	.841
Daily emotional support (transactions)	2.549	.496
Daily emotional support (satisfaction)	-.540	.453
Problem-oriented emotional support (transactions)	2.214	.578
Problem-oriented emotional support (satisfaction)	-.648	.509
Social companionship (transactions)	1.983	.610
Social companionship (satisfaction)	-.833	.580
Instrumental support	1.412	.823
Daily instrumental support (transactions)	1.815	.434
Daily instrumental support (satisfaction)	-.529	.511
Problem-oriented instrumental support (transactions)	1.970	.651
Problem-oriented instrumental support (satisfaction)	-.433	.605
Abstinence-specific support	1.666	.767
Abstinence-specific support (transactions)	2.184	.487
Abstinence-specific support (satisfaction)	-.518	.528

The GA involvement scale provides an overall involvement score, but also asks additional information that is not included in this overall score. The average overall score for these participants is 2.82 out of a possible 9 (see Table 2), indicating a general low level of involvement in GA. As well, the average number of steps completed is quite low at 2.33 out of the 12, and the average number of attended meetings is 37.12. However, 23.3% of participants indicated that they did not have any involvement in GA and, as already mentioned, only 39.1% considered themselves to currently be a GA member. When considering just those who consider themselves to be GA members, the average score jumps up to 4.96 (see Table 2), indicating a moderate level of involvement in GA. As well, the average number of steps increases to 4.13, and the average number of meetings increases to 88.17. Thus, for those who currently consider themselves to be GA members, involvement is generally quite moderate. As an additional comment, note the high variance for number of meetings attended as this is indicative of the fact that a handful of these individuals have been long time members whereas the vast majority have gone to a few meetings at best.

Abstinence self-efficacy, as conceptualized through the GSEQ, is a relatively unitary construct (May et al., 2003) and thus does not have sub-scales to examine. Participants scored in the moderate range with a mean total confidence score of 59.47% ($SD = 28.833$).

In measuring participants' reasons for quitting, the RFQ provides a total score as well as several other scores, each for a different area of concern that individuals have regarding their gambling behaviour (see Table 3). Participants in this study received, on average, a total score of 2.67 out of 4, indicating that many of the items on the RFQ

Table 2

Mean Scores for GA Involvement

	Mean	SD
All participants		
Overall GA involvement	2.82	2.340
Number of GA steps completed	2.33	3.433
Number of meetings attended	37.12	105.802
GA members		
Overall GA involvement	4.96	1.628
Number of GA steps completed	4.13	3.893
Number of meetings attended	88.17	157.658

Table 3
Mean Scores for Reasons for Quitting

	Mean	SD
Intrinsic reasons	2.981	.805
Emotional concerns	3.19	.836
Self-control	2.78	.973
Extrinsic reasons	2.36	.927
Financial concerns	3.18	.894
Social influences	1.55	1.346
Reasons for quitting total	2.67	.758

represent concerns that these individuals have about their gambling behaviour.

Participants also received, on average, a score of 3.19 for emotional concerns, 2.78 for concerns about self-control, 3.18 for financial concerns, and 1.55 for social influences.

Thus these participants are mostly concerned about their emotional state, their finances, and their level of self-control. Social influences, such as the influence from friends and family, scored the lowest, and is therefore least likely to motivate these individuals.

Together, the more intrinsically based concerns, as represented in emotional concerns and self-control, were deemed more important than the more extrinsically based one's, represented by financial concerns and social influences.

Regarding readiness for change, the URICA provided scores for each of the different stages of change, as well as an overall readiness score. On average, participants in this study had a total readiness score of 3.75 out of a possible 5 ($SD = .681$), indicating that these individuals have a moderately high readiness to change their behaviour, as would be expected of individuals in treatment. For the various stages, participants had an average score of 1.51 ($SD = .539$) for the precontemplation stage, an average score of 4.42 ($SD = .755$) for the contemplation stage, an average score of 4.41 ($SD = .550$) for the action stage, and an average of 3.92 ($SD = .795$) for the maintenance stage. As such, most of these participants were scoring very high on both the contemplation and action stages indicating that these individuals do indeed perceive their gambling as a problem and are taking action to change this behaviour. Some are even taking steps to ensure that they do not relapse, as indicated by the moderately high average score for the maintenance stage. Again, this is all what is to be expected from a sample of individuals in voluntary treatment programs.

Regarding depressed affect, participants scored relatively low on the BDI-II, which assesses depressive affect, with a mean score of .98 out of a possible 3 ($SD = .739$). Thus, these individuals, on average, are not experiencing depressive affect to the level of a diagnosable disorder. However, as already mentioned, 20 of the participants (33.3%) have at some point in their lives been diagnosed with depression.

Correlations

Pearson product moment correlations were conducted between all of the variables, including the demographic and descriptive variables assessed. This was done to provide some indication of the extent of the relationship between each variable and all of the other variables. Generally, all relationships between the variables were in the expected direction. The more interesting trends and relationships have been highlighted below, as well as all of the unexpected results. A significance level of $p < .05$ was chosen for all correlational analyses.

The different types of social support examined in this study all appear to be related, suggesting a somewhat unitary construct (see Table 4). Emotional and instrumental support are highly correlated ($r = .637$), and both emotional and instrumental support are moderately correlated with abstinence-specific support ($r = .397$ and $r = .367$, respectively). As well, both emotional and instrumental support are positively correlated with two of the three change variables: abstinence self-efficacy ($r = .358$ and $r = .304$, respectively) and motivation for change ($r = .403$ and $r = .316$, respectively). However, neither was correlated with readiness for change. Thus, those with more emotional and instrumental support are also those with greater confidence in their ability to remain abstinent and those with more reasons for quitting their gambling

Table 4
Correlations between the Main Variables

	1	2	3	4	5	6	7
1. Emotional support	-						
2. Instrumental support	.637*	-					
3. Abstinence-specific support	.397*	.367*	-				
4. Emotional awareness	-.241	.084	-.035	-			
5. GA involvement	-.014	-.039	.229	.253	-		
6. Abstinence self-efficacy	.358*	.304*	.050	.089	.150	-	
7. Motivation for change	.403*	.316*	-.032	-.117	-.169	.155	-
8. Readiness for change	-.168	.046	.085	.287*	.318*	-.032	.154

* $p < .05$.

behaviour. Abstinence-specific support was not significantly correlated with any of the change resources and will therefore not be included in any of the further analyses. These null relationships indicate a lack of support for the fourth hypothesis which predicts that abstinence-specific support will be more predictive of the change resources than will be instrumental support.

Also of interest to the hypothesized models are the variables emotional awareness and GA involvement. Interestingly, neither of these two individual difference variables is significantly related to any of the three social support variables, nor with each other, indicating that social support, emotional awareness and GA involvement are all distinct concepts (see Table 4). This is surprising since GA is often thought of as essentially being a support group. In relation to the change variables, both emotional awareness and GA involvement are positively correlated with readiness for change ($r = .287$ and $r = .318$, respectively), but neither is correlated with the other two change variables: abstinence self-efficacy and motivation for change. This indicates that those who better understand their own and other's emotional experiences and who are more involved in GA tend to be more ready to change their gambling behaviour. This is a key finding as it has not been examined previously in the literature.

As the change resources are all expected to be related to better treatment outcomes, some degree of relationship was expected between these variables. However, abstinence self-efficacy, motivation for change, and readiness for change were not significantly correlated with each other (see Table 4). As well, two general trends have appeared: 1) emotional and instrumental support being related to abstinence self-efficacy and motivation for change and 2) GA involvement and emotional awareness being related

to the readiness for change. As such, the change resources seem to be different constructs, warranting their use as separate outcome variables.

A number of demographics were measured in order to assess their degree of relatedness to the different variables in the hypothesized models. Participants' age was negatively correlated with both level of depression ($r = -.249$) and gambling severity ($r = -.279$). Thus, as these individuals get older, the severity of their gambling problem decreases, as does their depressed affect. Participants' gender was not significantly correlated with any of the measured variables. Since there were very few participants who do not identify themselves as Caucasian/White (12.1%), it is difficult to look for differences between participants from different ethnicities. However, when participants are grouped as either Caucasian or other, differences were found. For instance, being Caucasian is positively correlated with age ($r = .356$) and instrumental support ($r = .284$). But more importantly, English being the participants' first language was positively correlated with both abstinence self-efficacy ($r = .379$) and readiness for change ($r = .317$). Thus, there appears to be some level of disadvantage for those with a minority status.

As individuals at various stages of the treatment process were included in the sample, the number of weeks in the current treatment program might have had some degree of influence on the hypothesized models. However, the number of weeks in treatment was not significantly correlated with any of the change variables, nor was it correlated with any of the predictor variables from the model, ruling it out as a possible third variable. The number of weeks in the program however was negatively correlated with gambling severity ($r = -.579$), currently being a GA member ($r = -.336$), and

depression ($r = -.295$). This finding is encouraging as it indicates a relationship between progression through a treatment program and decreased levels of gambling severity and depression.

As seen in Table 5, the severity of one's gambling problem is negatively correlated with emotional support ($r = -.333$), suggesting a link between higher levels of perceived emotional social support and decreased gambling problem severity.

Additionally, gambling severity is positively correlated with readiness for change ($r = .327$). This seems to indicate that those who are reporting a more severe gambling problem are also those who are most ready to change their problematic behaviour.

Gambling severity is also highly correlated with depressed affect ($r = .531$), suggesting a strong link between these two variables. In relation to GA, gambling severity is not significantly related to GA involvement, or to currently identifying as a GA member.

This finding is surprising as it suggests that involvement in GA has no relation with one's level of gambling severity.

Depression scores, as measured with the BDI-II (Beck et al., 1996), are significantly correlated with many of the different variables measured in this study (see Table 5). Already mentioned is the positive correlation with gambling severity, and the negative correlations with age and number of weeks in treatment. In addition, depressed affect is negatively correlated with both emotional support ($r = -.491$) and instrumental support ($r = -.335$). Thus, as one's levels of support increase, their levels of depression decrease. Depression is also related to one of the three change variables with a negative relationship with abstinence self-efficacy ($r = -.377$), indicating that depression is linked with a decreased confidence that one can change. Since depressed affect seems to be

Table 5
Gambling Severity and Depression in Relation to the Main Variables

	Gambling severity	Depression
1. Emotional support	-.333*	-.491*
2. Instrumental support	-.099	-.335*
3. Emotional awareness	.233	.115
4. GA involvement	.111	.027
5. Abstinence self-efficacy	-.250	-.377*
6. Motivation for change	-.026	-.199
7. Readiness for change	.317*	.231

* $p < .05$.

highly interconnected with many of the other variables, it will be included as a predictor in all of the further analyses.

Hypothesis Testing

To assess the first three hypotheses, that emotional support, instrumental support, emotional awareness, and GA involvement are all predictive of abstinence self-efficacy, motivation for change, and readiness for change, three multiple regression analyses (MRA) were conducted, one for each of the change resources. Depression was entered as a fifth predictor into each of these three models. Since none of the other demographic or descriptive variables appeared to be highly influential on these models, none of them were included in the analyses. Again, since abstinence-specific support was not significantly correlated with any of the change resources, it was excluded from all three MRA analyses.

Since these individuals came from seven different treatment centres, it is possible that the scores from participants who all went to the same treatment centre may be related, and therefore not independent. As a result, the assumption of independence of observations, which is required for MRA, was of key concern for this study because of the sample recruitment method. If participants were indeed nested, meaning that their scores were influenced by the treatment centre they came from, then the alpha level for the MRA analyses may likely have been inflated, creating the potential for a Type I error (Tabachnick & Fidell, 2006). To address this problem, each model was also assessed using multilevel modeling (MLM). This procedure is uniquely designed to deal with nested data as it addresses variance between the individuals as well as between the

centres (Tabachnick & Fidell, 2006). MLM allows for potential sample nesting to be taken into consideration when assessing the models. However, when analyses were completed, the results for MRA and MLM were very similar (see MLM sections below), suggesting that there is little, if any, influence from the treatment centres. As such, the simpler MRA analyses is the focus of this section, with the results for MLM being presented in a condensed form.

Assumptions

Since MLM shares the same assumptions as MRA (Tabachnick & Fidell, 2006), only one round of assumptions testing was required. First to be addressed is the ratio of cases to independent variables (IV). Green (1991) offers a rule of thumb that calculates the number of participants required for an MRA with a certain number of IVs and a certain expected effect size. With five IVs and a medium effect size, as is desired for these analyses, the formula suggests that 57.3 participants are required. With 60 participants, this study has a sufficient number of participants.

The assumption of independence of errors was analyzed using the Durbin-Watson statistic, providing a value of 1.86 for the regression equation predicting abstinence self-efficacy, 1.71 for motivation for change, and 1.883 for readiness for change. All of these values are close to 2, indicating that the assumption of independence of errors was not violated for any of the regression analyses (Tabachnick & Fidell, 2006). The assumption of multicollinearity was assessed with the tolerance statistic. None of the five predictors had tolerance values less than 0.1 in any of the models, indicating that the assumption of multicollinearity was not violated (Field, 2005). To assess the assumption of linearity, bivariate scatterplots were conducted between the predictor and outcome variables. None

of these scatterplots indicated any clearly non-linear relationships and thus this assumption appears to be met. The assumption of homoscedasticity was explored using standardized residual plots for all three regression analyses. These scatterplots indicated that the assumption of homoscedasticity was not violated for any of these regression analyses.

The assumption of normality was addressed by examining frequency distributions, as well as skewness and kurtosis. Emotional support scores and emotional awareness scores appear normally distributed, however instrumental support scores display significant negative skewness. Depressed affect distribution was significantly platykurtic. However, a large frequency of extremely low observations, representing those who have no depressive symptoms, may be influencing the kurtosis for this distribution. Of the dependent variables, abstinence self-efficacy and motivation for change both appear to be normally distributed, however scores for readiness for change show a significant negative skewness since these individuals, as a group, tend to be in a higher stage of readiness for change. Generally, the skewness and kurtosis on these deviating distributions is not extreme and are likely to be representative of this population of in treatment problem gamblers. In addition, Tabachnick and Fidell (2006) explain that normality is desired, but not necessary, for these analyses. As such, no transformations were made on the data.

To identify outliers, standardized residuals, leverage statistics, DFITS, and Mahalanobis distance were all examined for each model. Two potential outliers were identified with these various statistics. However, further examination of the protocols

and scores of these two participants leaves no reason to believe that these two cases are in fact outliers. As such, both of these cases were included in the analyses.

Hypothesis #1: Emotional Support, Instrumental Support, Emotional Awareness, and GA Involvement, Will Each Predict Abstinence Self-Efficacy.

Multiple regression analysis. All predictors were entered into the model at once and a backward stepwise method was used to obtain the most efficient model by removing those predictors that make little contribution to the regression. (See Table 6 for a full summary of these results.) The full regression model, which includes all five predictors, was found to significantly predict abstinence self-efficacy ($F(5, 51) = 2.803, p < .05$) and accounted for 21.6% of the variance in abstinence self-efficacy scores.

Through the stepwise procedure, this model was reduced to just depressed affect ($F(1, 55) = 8.252, p < .05$), as it accounted for 13.0% of the variance in abstinence self-efficacy scores on its own. An examination of the beta weights indicates that none of the predictors were significant with the full model. It is not until depressed affect is the only predictor left in the model that it becomes significant ($\beta = -14.849, p < .05$).

However, both depressed affect and emotional support did approach significance at Step 2 ($\beta = 3.009, p = .069$, and $\beta = -10.663, p = .066$, respectively), but emotional support was not influential enough to remain in the final model. Thus, none of the hypothesized variables were found to be significantly predictive of abstinence self-efficacy, indicating a lack of support for hypothesis 1. Instead, it appears that depressed affect is the key variable since lower depressed affect scores were found to predict higher levels of abstinence self-efficacy.

Table 6

Summary of Results from Multiple Regression Analysis for Predicting Abstinence Self-Efficacy

	<i>B</i>	<i>SE B</i>	<i>Sig.</i>	<i>R</i> ²	ΔR^2
Step 1				.216	-
Emotional support	2.613	2.113	.222		
Instrumental support	.909	3.079	.769		
Emotional awareness	6.707	6.539	.310		
GA involvement	1.452	1.584	.364		
Depressed affect	-10.548	5.744	.072		
Step 2				.214	.002
Emotional support	3.009	1.620	.069		
Emotional awareness	7.333	6.131	.237		
GA Involvement	1.370	1.546	.379		
Depressed affect	-10.665	5.680	.066		
Step 3				.202	.012
Emotional support	3.077	1.615	.062		
Emotional awareness	8.583	5.955	.155		
Depressed affect	-10.665	5.669	.065		
Step 4				.171	.031
Emotional support	2.595	1.595	.110		
Depressed affect	-10.599	5.725	.070		
Step 5				.130	.041
Depressed affect	-14.849	5.169	.006		

Multilevel modeling. To ensure that the natural grouping within the data was not influencing the results, multilevel modeling was also conducted. In testing this model, the participants ($n = 60$) were placed as the units for the first level, while the facilities ($n = 7$) were the units for the second level. All five variables were entered as predictors for the first level of modeling. In MLM, an intraclass correlation (ICC) is the ratio of variance between groups at the second level to the variance within these groups (Tabachnick & Fidell, 2006). An ICC of $\rho = .024$ was found, indicating the possibility of minor influence from the facilities. As such, the full model was tested with MLM to ensure the reliability of these results. A comparison between the MLM results and MRA results indicates that there is indeed very little difference between these results. Like MRA, MLM found that the full model, with all five variables, was significantly better than chance at predicting abstinence self-efficacy ($\chi^2(5, N = 57) = 553.374 - 530.286 = 23.088, p < .05$). Also like MRA, when the full model was tested, none of the predictors were found to be significant and depressed affect did approach significance again with a parameter estimate of -10.548 ($p = .062$). In comparing the parameter estimates (MLM) to the beta weights (MRA), the largest difference found was $.262$ ($6.707 - 6.975 = .262$), which occurred with emotional awareness (see Table 7). As such, it was concluded that consideration of the group level was not necessary for testing this model and that further interpretation of the MLM results would be redundant.

Hypothesis #2: Emotional Support, Instrumental Support, Emotional Awareness, and GA Involvement, Will Each Predict Motivation for Change.

Multiple regression analyses. This regression model was also tested using a backward stepwise method of regression analysis. (See Table 8 for a full summary of

Table 7

Comparison of Beta Weights for Multiple Regression Analysis and Multilevel Modeling for Abstinence Self-Efficacy

	MRA			MLM		
	<i>B</i>	<i>SE B</i>	<i>Sig.</i>	<i>B</i>	<i>SE B</i>	<i>Sig.</i>
Emotional support	2.613	2.113	.222	2.661	1.990	.187
Instrumental support	.909	3.079	.769	.896	2.903	.759
Emotional awareness	6.707	6.539	.310	6.975	6.171	.263
GA involvement	1.452	1.584	.364	1.360	1.508	.371
Depressed affect	-10.548	5.744	.072	-10.323	5.417	.062

Table 8

Summary of Results from Multiple Regression Analysis for Predicting Motivation for Change

	<i>B</i>	<i>SE B</i>	<i>Sig.</i>	<i>R</i> ²	ΔR^2
Step 1				.215	-
Emotional support	.100	.055	.076		
Instrumental support	.063	.079	.428		
Emotional awareness	-.011	.167	.949		
GA involvement	-.048	.041	.247		
Depressed affect	-.024	.145	.868		
Step 2				.215	.000
Emotional support	.101	.051	.052		
Instrumental support	.061	.073	.409		
GA Involvement	-.049	.039	.216		
Depressed affect	-.024	.144	.867		
Step 3				.215	.000
Emotional support	.104	.046	.029		
Instrumental support	.061	.073	.405		
GA involvement	-.049	.039	.210		
Step 4				.205	.010
Emotional support	.129	.036	.001		
GA involvement	-.051	.039	.193		
Step 5				.180	.025
Emotional support	.130	.037	.001		

these results.) The full regression model, with all five predictors, was found to significantly predict motivation for change ($F(5, 53) = 2.911, p < .05$) and accounted for 21.5% of the variance in motivation for change scores. Using the stepwise procedure, this model was reduced to just emotional support ($F(1, 57) = 12.537, p < .05$), which on its own accounted for 18.0% of the variance in motivation for change scores. An examination of the beta weights indicates that none of the variables are significant predictors in the first step. However, emotional support is close to being significant ($\beta = .100, p = .076$), and would most likely have been significant at this step with a larger sample size. In the third step, emotional support does become a significant positive predictor of motivation for abstinence ($\beta = .104, p < .05$), and remains significant during each additional step. No other variable is significant during any of the steps. In fact, the r^2 does not even change until step 4, indicating that emotional awareness and depressed affect, the first variables to be removed, have very little influence in this model. As such, these results partially support hypothesis 2 as they provide support for one of the hypothesized variables being a predictor for motivation for change. Indeed, higher levels of emotional support appear to predict higher levels of motivation for change.

Multilevel modeling. This model was also assessed using MLM to account for the natural grouping within the data. The same two-level hierarchical model that was used for hypothesis 1 was also used here to assess motivation for change. An ICC of $\rho = .109$ was found, indicating the possibility of moderate influence stemming from the facilities. Thus, the full model was tested with MLM to ensure the reliability of these results. A comparison between the MLM results and MRA results however indicates that these results are again very similar. MLM, just like MRA, found the full model to be

significantly better than chance at predicting motivation for change ($\chi^2(5, N = 57) = 135.277 - 119.619 = 15.658, p < .05$). Unlike MRA though, MLM found emotional support to be a significant predictor in the full model with a parameter estimate of .101 ($p < .05$). Emotional support however, was very close to being significant in the MRA (see Table 9). Neither procedure found any other predictor to be significant. In comparing the parameter estimates (MLM) to the beta weights (MRA), the largest difference was quite marginal and occurred with GA involvement (.048 - .017 = .031). As such, it was concluded that consideration of the group level was not necessary for testing this model and that further interpretation of the MLM results would be redundant.

Hypothesis #3: Emotional Support, Instrumental Support, Emotional Awareness, and GA Involvement, Will Each Predict Readiness for Change.

Multiple regression analysis. This regression model was again tested using a backward stepwise regression analysis. (See Table 10 for a full summary of these results.) The full regression model was found to significantly predict readiness for change ($F(5, 52) = 3.209, p < .05$) and accounted for 23.6% of the variance in readiness for change scores. Using the stepwise procedure, this model was reduced to three variables: emotional awareness, GA involvement, and depressed affect ($F(3, 54) = 4.681, p < .05$). This three variable model accounts for 20.6% of the variance in readiness for change scores. An examination of the beta weights indicates that only GA involvement is a significant positive predictor during the first step ($\beta = .086, p < .05$), and remains significant through subsequent steps. In the second step, depressed affect also became a significant positive predictor ($\beta = .254, p < .05$), but just did not remain significant for the final model ($\beta = .224, p = .058$). No other variable is significant during any of the

Table 9

Comparison of Beta Weights for Multiple Regression Analysis and Multilevel Modeling for Motivation for Abstinence

	MRA			MLM		
	<i>B</i>	<i>SE B</i>	<i>Sig.</i>	<i>B</i>	<i>SE B</i>	<i>Sig.</i>
Emotional support	.100	.055	.076	.101	.050	.048
Instrumental support	.063	.079	.428	.064	.072	.375
Emotional awareness	-.011	.167	.949	-.006	.153	.968
GA involvement	-.048	.041	.247	-.017	.040	.662
Depressed affect	-.024	.145	.868	-.023	.134	.860

Table 10

Summary of Results from Multiple Regression Analysis for Predicting Readiness for Change

	<i>B</i>	<i>SE B</i>	<i>Sig.</i>	<i>R</i> ²	ΔR^2
Step 1				.236	-
Emotional support	-.057	.049	.253		
Instrumental support	.095	.070	.180		
Emotional awareness	.185	.155	.240		
GA involvement	.086	.037	.023		
Depressed affect	.202	.129	.124		
Step 2				.216	.020
Instrumental support	.044	.055	.420		
Emotional awareness	.242	.148	.108		
GA Involvement	.080	.036	.032		
Depressed affect	.254	.122	.042		
Step 3				.206	.010
Emotional awareness	.258	.146	.083		
GA involvement	.078	.036	.035		
Depressed affect	.224	.116	.058		

steps, however emotional awareness still had enough influence that it did not get removed from the model. As such, a model containing two of the hypothesized variables, along with depressed affect, was found to predict readiness for change, partially supporting hypothesis 3. Indeed, higher levels of GA involvement, depressed affect, and emotional awareness appear to be predictive of higher levels of readiness for change.

Multilevel modeling. Again, MLM was used to test the model on readiness for change by using the same two-level hierarchical MLM model that was used for hypothesis 1. Unfortunately, SPSS had difficulty testing this model on readiness for change and was unable to calculate an ICC. Despite this difficulty, the full model was tested with MLM anyway and yielded similar results to MRA again. For instance, MLM found the full model to be significantly better than chance at predicting readiness for change ($\chi^2(5, N = 61) = 121.062 - 104.259 = 16.803, p < .05$), just as MRA did. MLM also found GA involvement to be a significant positive predictor in the full model with a parameter estimate of .083 ($p < .05$). Neither procedure found any other predictor to be significant. In comparing the parameter estimates (MLM) to the beta weights (MRA), Table 11 indicates that there is little to no difference between the results of these two procedures. As such, it was concluded that consideration of the group level was not necessary for testing this model and that further interpretation of the MLM results would be redundant.

Mediation Analyses

The second set of hypotheses, that emotional awareness plays a mediating role between emotional support and the change resources, but not between instrumental

Table 11

Comparison of Beta Weights for Multiple Regression Analysis and Multilevel Modeling for Readiness for Change

	MRA			MLM		
	<i>B</i>	<i>SE B</i>	<i>Sig.</i>	<i>B</i>	<i>SE B</i>	<i>Sig.</i>
Emotional support	-.057	.049	.253	-.057	.047	.227
Instrumental support	.095	.070	.180	.095	.066	.157
Emotional awareness	.185	.155	.240	.185	.147	.214
GA involvement	.086	.037	.023	.086	.035	.016
Depressed affect	.202	.129	.124	.202	.122	.104

support and the change resources, was tested using the mediation method set out by Baron and Kenny (1986). In order to reduce the number of mediation models needed, the three change resources were combined to create one grouped change resource pool to be used as the dependent variable. This was done by first transforming these three resource variables to standard scores and then averaging them together. As such, two models were tested, one with emotional support as the predictor (IV; hypothesis 5) and one with instrumental support as the predictor (IV; hypothesis 6). Both models had emotional awareness as the mediator and the grouped change resource as the dependent variable (DV).

Hypothesis 5: Emotional Awareness Will Mediate the Relationship between Emotional Support and the Combined Change Resource

The Baron and Kenny (1986) method involves conducting three MRA analyses to identify if the IV (emotional or instrumental support) predicts both the mediator (emotional awareness) and the DV (grouped change resource), and if the mediator predicts the DV when the IV has been accounted for. In assessing the first mediation model, it was found that emotional support significantly predicts the grouped change resource ($F(1, 54) = 7.158, p < .05$), but that emotional support does not significantly predict emotional awareness and emotional awareness does not significantly predict the grouped change resource. Without significant MRA results for all relationships described, the mediation model could not be supported. As such, these results do not support hypothesis 5, that emotional awareness mediates the relationship between emotional support and the change resources.

Hypothesis 6: Emotional Awareness Will Not Mediate the Relationship between Instrumental Support and the Combined Change Resource

In assessing the second mediation model involving hypothesis 6, it was found that instrumental support significantly predicts the grouped change resource ($F(1, 54) = 7.602, p < .05$), but that instrumental support does not significantly predict emotional awareness and emotional awareness does not significantly predict the grouped change resource. Again, these results do not indicate a mediation effect, but they do support hypothesis 6, that emotional awareness does not mediate the relationship between instrumental support and the change resources. However, the null was hypothesized here to supply contrast to hypothesis 5, which was not supported. Thus this second set of hypotheses, involving emotional awareness as a mediator between social support and the change resources, was generally not supported.

CHAPTER IV

Discussion

Main Findings

Some support was found for the first set of hypotheses (#1, #2, and #3).

Generally, a model including two types of social support, emotional awareness, GA involvement, and depressed affect were able to explain a good portion of the variance in all three change resources (i.e., abstinence self-efficacy, motivation for change, and readiness for change). In regards to the individual variables, emotional support was shown to be highly predictive of one's motivation to change their gambling behaviour. As well, involvement in GA, along with emotional awareness and depressed affect, were found to be highly predictive of one's readiness to abstain from gambling behaviour. Moreover, depressed affect, on its own without any of the hypothesized variables, was highly predictive of one's confidence to remain abstinent. The hypothesis #4, relating to a greater influence from abstinence-specific support over instrumental support, was not supported.

The second set of hypotheses (#5 and #6) generally lacked support in that emotional awareness does not appear to mediate the relationship between emotional support and the change resources. Thus, there is no distinction between emotional support and instrumental support in regards to the emotional abilities required to benefit from each. The findings of this study are now discussed in relation to the variables of interest.

The Change Resources

To assess the psychological state of the participants during the change process, three different constructs were utilized: abstinence self-efficacy, motivation for change, and readiness for change. By including all three of these psychological constructs, comparisons between these variables, especially in regards to what predicts them, could be made. The findings of the current study do suggest that these three variables are distinct constructs, in that they are unrelated to each other and each has its own set of predictors. This was somewhat surprising especially since readiness for change is often discussed in motivational terms in the literature (i.e., see DiClemente, 1999). However, these findings suggest that there is a distinction between having reasons for changing one's behaviour and actually deciding that change is required. It is likely that the prior involves specific motivators whereas the latter involves more general attitudinal processes. An examination of the predictors provides further distinction between these three constructs.

One issue that must be considered in regards to these change resources is the fact that participants with differing amounts of treatment experience were included in this study, since this leaves open the possibility that treatment length could account for part of the variance in the change resources. This relationship would be expected if clinical treatment itself facilitated these three resources, resulting in higher amounts self-efficacy, motivation, and readiness in those who have been in treatment the longest. However, this study did not find a relationship between the change resources and the number of weeks in treatment. This finding suggests that these resources may not come from treatment itself, but rather from the situation external to treatment, as partially accounted for by the

predictors in this study. Indeed, social support, emotional awareness, GA involvement, and depressed affect appear to have more influence on these change resources than does any of the treatment related variables.

Abstinence self-efficacy. Self-efficacy for remaining abstinent was best predicted by depressed affect, or a lack thereof. In testing the full model, only depressed affect was influential enough to remain in the model. Thus, those with the least amount of depressed affect are those with the most confidence and self-efficacy. This follows well with the concept of self-efficacy since depressed affect, which involves negative views of the self or one's situation, would be expected to dampen one's confidence to take on a great feat like changing problematic gambling behaviour. The addiction literature generally supports this found relationship. For instance, Grothues and colleagues (2005) found that comorbid depression in alcohol abusers was related to lower levels of self-efficacy to abstain from drinking. Moss, Kirisci, and Mezzich (1994) also found lower levels of situational confidence to abstain from drinking in adolescents with a psychiatric disorder, especially depression. An additional study found that depressed affect limited one's self-efficacy toward smoking cessation (John, Meyer, Rumpf, & Hapke, 2004). Thus, depressive symptomatology does appear to be associated with some level of disadvantage, by way of lowered self-efficacy, for those who could benefit from behaviour change.

Beyond depressed affect, both emotional and instrumental support had strong positive correlations with abstinence self-efficacy. Emotional support was not a significant predictor in the model, but it was the last variable to be removed from the model and it approached significance on many of the steps. In fact, the full model, minus

instrumental support, accounted for much more of the variance than depressed affect alone. Thus these variables, especially emotional support, accounted for some of the variance in self-efficacy, even though much of this variance was better accounted for by depressed affect. Indeed, the behaviour change literature supports a relationship between social support and self-efficacy (Anderson et al., 2006). However, the addiction literature has not examined this relationship itself since studies usually examine social support and self-efficacy both as predictors of outcome instead of as predictors of each other (Pohl, Martinelli, & Antonakos, 1998; Warren, Stein, & Grella, 2007). Thus, it is likely that some degree of relationship exists between emotional support and abstinence self-efficacy, but further research is required before conclusions can be made.

Motivations for change. Motivation for change was predicted by, and most related to, social support. Although both emotional and instrumental support were positively related to motivation, instrumental support did not hold much influence beyond emotional support in predicting motivation. In fact, emotional support on its own accounted for a similar amount of variance in motivation to that accounted for by the full model. Thus, these results suggest that increased emotional support is associated with increased motivation to abstain from gambling. However, this finding appears to contrast a previous study that reported no relationship between emotional support and motivation in dually-diagnosed substance abusers (Magura et al., 2003). The obvious difference in the populations of the two studies may account for these differing results since the addition of a second diagnosis may create a fundamental difference between the participants of the two studies. Many of the participants in the current study have been diagnosed with another disorder at some point in their life, but being dually diagnosed

was not a criterion for the study. Thus, there are more differences between these populations than just the object of their compulsive behaviour. Even beyond these population differences, the prior study examined motivation for treatment as opposed to motivation for change, which was used in the current study. As such, findings from the current study suggest that greater amounts of emotional support are related to greater motivation to change one's gambling behaviour, when gambling is the primary treatment target.

Readiness for change. In regards to readiness for change, three variables appeared to be influential: GA involvement, depressed affect, and emotional awareness. Positive relationships were found between readiness for change and all three of these variables, suggesting that those who are most ready to change are those who have the most experience with GA, have the most depressed affect, and have the best understanding of emotional processes. Indeed, 12-step groups have been praised for their active encouragement of one's readiness for change (Weinstein, 1992) since they generally focus on creating awareness for the problematic nature of the group's affliction. As well, prior research has found that those in the higher stages of change tend to report the most depressive symptoms (Willoughby & Edens, 1996; Grothues et al., 2005). Emotional awareness has not previously been examined in regards to readiness for change, but it does seem conducive to understanding the impact that one's gambling behaviour has on his life and the lives of others around him. An additional finding from the current study indicated that readiness for change was highest in those with the most severe gambling problem. This is a relationship also found with respect to some other addictions, for example in a German sample of alcohol abusers (Freyer et al., 2005). In

this way, readiness for change appears to stem from increased pathology and the means to appreciate the effect of this pathology. Blume and colleagues (2001) even suggest that increased awareness of negative outcomes in alcohol abusers may result in greater depressive symptomatology, which further increases one's readiness to progress through the stages of change. Indeed, involvement in a 12-step group such as GA would help an individual to become more aware of the negative consequences of the problematic behaviour. Thus, it seems that readiness for change, as a resource, is most available to those with the greatest awareness of the problematic nature of their gambling behaviour.

Social Support

In the alcohol literature, two different aspects of social support are often assessed in order to obtain a more complete picture of the facilitating effects of social support (Beattie & Longabaugh, 1997). In the current study, emotional and instrumental support were both related with positive change. For instance, both emotional and instrumental support were positively related to both self-efficacy and motivation, and both were negatively related to depressed affect. Emotional support, on its own, was even found to be negatively related with gambling severity. Thus, higher amounts of both kinds of support seem associated with what is desired: greater motivation and confidence, and reduced negative affect and gambling behaviour. The literature generally supports the positive influence of social support on self-efficacy (Williams & Bond, 2002) and motivation (Hanna, 1996). As well, Dobkin and colleagues (2001) found a relationship between higher levels of functional support and lower levels of psychological distress and addiction severity. Therefore, social support does appear to facilitate the change process for those who problem gamble.

There does appear, however, to be considerable overlap between emotional and instrumental support, in that both were related to most of the same variables. Nevertheless, some overlap between these two constructs is expected in that some supportive acts can be both instrumental and emotional. For instance, even a ride to the store or the lending of some money can become an emotionally supportive act if a positive message is passed along in the process. Additionally, those with a more supportive network are likely to have increased levels of both types. Yet despite this overlap, emotional support was found to be more influential in this study. For instance, emotional support was the best predictor of participants' motivation toward abstinence, and it approached significance in predicting abstinence self-efficacy but was trumped by the more powerful depressed affect variable. Instrumental support on the other hand was positively correlated with both abstinence self-efficacy and motivation for abstinence, but did not have enough influence beyond the other variables to remain in any of the predictor models. Thus instrumental support could account for some of the variance in these change resources, but what it could explain was better accounted for by the other variables, particularly emotional support. Hence, it seems as if much of the influence instrumental support has with the change resources is shared with emotional support.

With its greater influence, emotional support seems to have some added effect that goes beyond the supportive action. Instrumental support focuses mainly on the practical needs of the person whereas emotional support seems to get at something more personal. Indeed, May and West (2000) suggest that in smokers, specific actions are less important than the more general kinds of support that help the person to feel valued and respected. As well, in the present study, participants indicated that they experienced

more emotional support than instrumental support, but still expressed less satisfaction with the amount of emotional support received as opposed to instrumental support. Shaw (2006) confirms this greater desire for emotional support with an alcoholic sample and even suggests that it may stem from a lack of emotional support provided by caregivers during childhood. An extended lack of emotional support could leave an individual with a deep, unfulfilled need for love and respect. People suffering from addiction often describe their compulsive behaviour as filling an emptiness inside through consumption (Crozier & Lane, 2001). It is possible that this more personal aspect of emotional support helps to reduce this emptiness by making the person feel cared for and respected, even beyond that of just a regular supportive action.

One quantitative study suggests that much of the influence of emotional support stems from the tremendous power of being believed in (King, Willoughby, Specht, & Brown, 2006). Indeed, much of how we view ourselves comes from those around us. If a person is constantly looked down upon and devalued by others, his or her self-concept is likely to be negative, leaving a sense of hopelessness and depression. However, people who experiences positive interactions and encouragement are likely to view themselves in a lot more positive terms. The individual, through this positive view, begins to feel worthy of a better life and change becomes desired. As well, the individual starts to believe in himself since all those around him seem to think he can do it too. Thus, through the positive impact it has on the self-concept, emotional support helps the individual to develop the motivation to change and the self-confidence that change can be accomplished.

Based on the literature, social support was expected to be predictive of all three change resources. Emotional support was found to be predictive of two, but neither emotional support nor instrumental support was related to readiness for change. This was surprising since Wagner and colleagues (2004) did find that smokers with greater social support tended to be in higher stages of change. However, this prior study involved a different conceptualization of readiness for change than the one that was used in the current study. For instance, the prior study's conceptualization involved three stages that focus on the decisional process that occurs before change occurs. The current study on the other hand, used four stages that follow the individual throughout the entire change process. Thus, readiness for change in the current study may represent a somewhat different construct than what was used in the prior study, making comparisons between the two studies rather difficult. As well, it may just be that social support has less of an influence on readiness for change in gamblers than it does on smokers. Additional research is required to further assess this relationship.

In regards to the focus of the support, abstinence-specific support was expected to predict the change resources and was even hypothesized to be more predictive than instrumental support. However, abstinence-specific support was not related to any other variable beyond the two other types of social support and was actually dropped from all of the main analyses. Hence this variable does appear to be related to support, but seems to have little, if any, involvement in the change process. This was surprising since the alcohol literature has generally supported the role of abstinence-specific support in facilitating change. For instance, Beattie and Longabaugh (1999) found that although emotional, instrumental, and abstinence-specific support were all related to short-term (3

month) drinking outcomes in alcoholics, only abstinence-specific support predicted long-term (15 month) outcomes. Havassy and colleagues (1991) also support the superiority of abstinence-specific support. This generally makes intuitive sense as support aimed specifically at promoting one's abstinence should result in better outcomes. One potential explanation for the null results in this study may be the possibility that abstinence-specific support has a more direct route to abstinence related outcomes. For instance, abstinence-specific support may not affect one's frame of mind, but it may result in less opportunities to gamble and thereby has an impact on abstinence.

Another explanation may be differences between the two measures. For instance, the measure used in this study included items that relate to encouragement for treatment, whereas the other measure focused entirely on encouragement for abstinence. Treatment focused items were included in this measure for comprehensiveness, but they may have actually reduced the internal reliability of the measure since an assumption is being made that this type of encouragement is perceived as positive. Indeed, having one's family and friends constantly encouraging treatment could be perceived as nagging and may leave the person feeling unsupported, or even attacked. Thus a distinction may exist between support for abstinence and support for treatment, resulting in this study's measure being confounded. An additional possibility relates to population differences in that it may be possible that abstinence-specific support, for whatever reason, just simply has no effect on the change process for problem gambling. For instance, one study (Wasserman, Stewart, & Delucchi, 2001) found that abstinence-specific support predicted positive outcomes in cocaine users, but not in opiate users. Thus there may be subtle differences

between addicted populations that result in a differing impact of support aimed at abstinence. Additional research is needed before any solid conclusions can be made.

Emotional Awareness

The inclusion of emotional awareness in this study was somewhat exploratory. Since emotional awareness has not yet been examined in regards to the addiction change process, little was known about what sort of influence it might have. Although it was not significantly predictive of any of the change variables (at the .05 level), it did have enough influence with readiness for change to remain in the model. Thus, emotional awareness appears to have some relationship with readiness, but none with self-efficacy and motivation. This limited role suggests that emotional awareness may not have much impact on the change process for problem gambling. However, since its influence in the current study focuses primarily on the decisional process, it is possible that emotional awareness may play a larger role in the initial help seeking process as it may influence one's decision to get help. Additional research is required to investigate such a role.

Emotional awareness was expected to be related to social support, especially emotional support because of its emotional nature and content. As such, it was hypothesized that emotional awareness would mediate the relationship between emotional support and the change resources, but would not have the same mediating effect with instrumental support. However, emotional awareness was completely unrelated to social support in this study, and was actually related to different change resources than social support as well. This suggests that these emotional awareness and social support are involved in different cognitive aspects of the change process. Confirming the absence of this relationship, a study examining cardiac patients also did

not find a relationship between emotional support and emotional awareness (Fuller, 1997). Thus, it seems that one does not require a deep understanding of emotional processes in order to successfully receive and benefit from emotional support.

In the current study, a positive relationship was found between emotional awareness and gambling severity, suggesting that individuals with more severe gambling problems also have greater emotional awareness. This finding seems somewhat curious since one's problematic gambling behaviour can be quite socially destructive, suggesting an individual who is less emotionally aware. However, if the self-report nature of these measures is considered, it seems more likely that this finding suggests that greater emotional awareness is associated with a greater realization of the extent of one's gambling problem. This explanation fits well with the role that emotional awareness has in the model predicting readiness for change. Indeed, understanding the impact of one's gambling problem seems as if it would require some understanding of the emotional processes in the self and others.

GA Involvement

The addiction literature has generally found some benefit to involvement in 12-step programs, especially when accompanied by professional treatment. For instance, Montgomery, Miller, and Tonigan (1995) examined individuals in an inpatient alcohol treatment program and found that those with greater involvement in Alcoholics Anonymous had better consumption related outcomes and greater meaning in life. One study on problem gambling found better six month outcomes in outpatients with greater GA attendance as opposed to those without (Taber, McCormick, Russo, Adkins, & Raminer, 1987). Along these lines, the current study did find some positive influence

from GA involvement in that it was associated with greater readiness for change.

Already attributed to this effect is the possibility that GA involvement may help to create a greater awareness of the problematic nature of gambling behaviour. However, GA involvement was not associated with either abstinence self-efficacy or motivation for change. This was unexpected since Morgenstern and colleagues (1997) found that AA affiliation after treatment was associated with greater self-efficacy and motivation. However, their study focused on the use of AA as an aftercare program whereas the current study measured prior GA involvement. It may be that 12-step involvement has self-efficacious and motivating effects only while one is currently involved in the program, hence its beneficial use in aftercare. It is reasonable to suggest that the treatment effect may fade once one has left the fellowship, leaving the individual with only a greater readiness for change, accounting for the findings in the current study. It is also possible that 12-step involvement has less of an impact on those in gambling treatment as opposed to those in alcohol treatment. Additional research is needed to examine just how 12-step involvement affects those in treatment for problem gambling.

Twelve-step involvement is often linked to social support as some have described 12-step programs as nothing more than peer support groups (i.e., Miller, Ninonuevo, Hoffman, & Astrachan, 1999). Indeed, the individuals in 12-step groups are often very supportive of each other as sponsorship is a critical aspect of the 12-step approach. Research has suggested that part of the beneficial effect of these groups stems from shifting one's social network to individuals who are more supportive of abstinence (Kaskutas, Bond, & Humphreys, 2002). As such, a positive relationship was expected between GA involvement and social support. However the current study did not find this

expected relationship. In fact, GA involvement and social support were so different that they were even related to different change resources. Thus the findings of the current study suggest that GA is less associated with support systems, and more associated with raised awareness and further advancement through the decisional process for change. Although these results suggest a possible difference between gamblers and alcoholics, additional research examining the processes and mechanisms of action of GA is required before any conclusions can be made.

Depression

Gambling and other addictive behaviours are often comorbid with mood disorders, especially depression (Kim, Grant, Eckert, Faris, & Hartman, 2006). Thus, the BDI-II, along with a few other mental health related questions, was included in this study for the purpose of obtaining a more complete picture of the participants. Although it was expected that depressed affect would have some relation to some of the key variables, the results reveal a much more dramatic influence than initially anticipated. Already mentioned is the relationship with social support that suggests that greater depressive symptomatology is associated with less social support. Depressed affect was also highly related to gambling severity suggesting a parallel trajectory for these two disorders. Indeed, a link between depression and gambling behaviour has long been discussed in the literature. McElroy and colleagues (1992) provide evidence that problem gambling, like other impulse control disorders, is related to mood disorders. In examining the literature, Kim and colleagues (2006) found that comorbid depression was found in up to half of the problem gambling participants used in a series of inpatient treatment studies. Thus, depression seems to be well associated with problematic compulsive behaviour.

Blaszczynski and McConaghy (1989) even suggest that pathological gambling may be a behavioural stress reaction whereby individuals attempt to cope with their depression by gambling as a form of mood altering behaviour. In the current study, depressed affect was also negatively related to the number of weeks that participants have spent in treatment, suggesting that those who have been in treatment longer are also those who have the least amount of depressive symptoms. This finding may be suggestive of the success of the treatment programs, or it may suggest that those with less depressed affect stay in treatment longer. Further research is required to examine this relationship. Either way, it does appear that depressed affect plays some deleterious role in the recovery process for problem gambling.

Due to this interconnectedness, depressed affect was included in the predictive models that were tested and was found to be influential with two of the three change resources: abstinence self-efficacy and readiness for change. The negative relationship between depressed affect and self-efficacy was quite strong in that out of the five variables entered, it was the only significant predictor, accounting for the lion's share of the variability in self-efficacy. This replicates a finding from a German population of smokers where depression was also found to be a significant negative predictor of self-efficacy (John et al., 2004). Regarding readiness for change, depressed affect had a positive effect in the model and approached significance as a predictor, indicating that gamblers who experience depressive symptomatology are more likely to believe that change is necessary. Indeed, the positive relationship between readiness for change and depressed affect is well supported in the literature (Willoughby & Edens, 1996; Grothues et al., 2005). The effect that depressed affect has on these two change resources is

intriguing since having fewer depressive symptoms was associated with increased self-efficacy but decreased readiness. Thus, the involvement of depressed affect in the change process seems to be complex. When the individual is in the decisional process, increased negative affect may serve the purpose of being an indicator that problems exist. However, for individuals who are actually trying to make change happen, the negativity that stems from depressive symptoms may reduce their self-confidence. In this way, depression seems to play two different roles in the change process, one supporting and one harmful. Whether the experience of depressed affect has a positive or negative effect on the change process is most likely determined by the mix of the other change related variables in the person's life. It is thereby likely that depressive symptoms influence the change process for different people in different ways.

Despite this overall influence, depressed affect was not related to motivation for change, suggesting that one's depressive symptoms do not serve to motivate the individual toward abstinence. This was surprising since depressed affect has been associated with motivation for treatment in substance abusing individuals (Cahill, Adinoff, Hosig, Muller, & Pulliam, 2003). However, there may be important differences between motivation for treatment, as used in their study, and motivation toward the goal of abstinence, which was used in this study. For instance, depression is likely to have a greater motivational influence for treatment since individuals may desire for their negative affect itself to be treated. In fact, depressed affect is likely to be a major treatment motivating factor for many individuals. On the other hand, it is possible that individuals who problem gamble do not associate their depression with their gambling behaviour; leaving depression to have a diminished motivational influence on abstinence.

Indeed, other concerns, such as a lack of self-control and financial ruin, may be more influential on one's motivation for abstinence. Hence, the reduction of depressed affect may not be a large motivating factor for one's abstinence from problem gambling behaviour.

Implications for Treatment

We can draw from the findings in this study some implications for how to promote certain change related cognitions within individuals who problem gamble. For clients who lack confidence in their ability to successfully change, therapists should generally work on creating a more positive self-concept within these individuals. The goal is to make these people believe in themselves as this will foster that needed self-efficacy. Support that conveys respect and takes on a more emotional focus appears to be beneficial for this task. As well, it may be advantageous to address any depressed affect that the individual may have as this negativity may be preventing the person from feeling capable of making change happen. Indeed, depression can leave a person feeling as if they are trapped in a hole with no means to climb out. The efficacy of treating one's depressive symptoms was demonstrated in one study that examined different cognitive behavioural treatment (CBT) options for alcoholic clients with comorbid depression (Ramsey, Brown, Stuart, Burgess, & Miller, 2002). The findings of this study indicate that CBT with depression-focused sessions resulted in better alcohol-related outcomes than did CBT with a relaxation training placebo. Thus, it does seem that treating one's depression can have a positive impact on the addictive behaviour change process.

For clients who lack motivation for remaining abstinent, an insufficient amount of support may be part of the issue. A person without motivation is a person without enough reasons to quit. Social support, especially that which is emotionally focused, seems to have influence over these motivating factors. A likely possibility is that one's reasons for quitting become more apparent when the individual is well supported by significant others. A meaningful relationship in itself can even be a motivating factor. This beneficial influence that stems from emotional support must be appreciated in the therapeutic setting. For instance, when therapists and treatment administrators are providing support, it is not enough to just provide the basic instrumental support through assistance with practical tasks; one must establish meaningful relationships with these individuals. The goal is to make the client feel genuinely cared about and respected, rather than simply foster goal directed behaviour with respect to treatment. As well, treatment providers should look to others within the person's social network and encourage them to get involved with the person. As ushers of change, we should make use of what natural supports are available in the person's life. If well supported, the individual is likely to have a larger motivating force fuelling the change process, making it more likely that change will actually occur. As treatment providers, we should be looking to increase social support and/or capitalize on the levels of support that already exist.

Those who are not ready to change are those who lack awareness about the problematic nature of their gambling behaviour. These are individuals who do not appreciate the impact that their behaviour is having on themselves and on those around them. Thus the goal with these individuals should be to raise their awareness so that they

realize the full extent of their problem. This task may be slightly easier with clients who have greater emotional awareness, however the primary influence here seems to be getting them involved in GA. Indeed, GA involvement, with its story sharing and awareness raising activities, does appear to have some relationship with higher levels of readiness for change. As well, the therapist herself can even attempt to promote this awareness by exploring the negative effect that gambling is having on the client's life. It is likely that such an exploration may result in some depressed affect as the person begins to appreciate the harm his behaviour has caused. However, this negative affect is likely to promote the decisional process for change and should thus be allowed to fester within the individual, as long as the person is not overwhelmed by these feelings. Indeed, extreme depressive symptomatology is likely to stifle the individual's progression through the change process. Thus the therapist must be conscious of the effect that this depressed affect is having on the client and try to find a balance between greater awareness and enough positivity in the self-concept to allow change to happen. Consequently, options are available to the therapist for promoting the client's readiness for change, but care must be taken in how these options are utilized as some have potentially harmful effects.

It is also important to consider other distinguishing aspects of the client such as ethnicity or minority status, particularly if English is not the first language. Due to verbal barriers and possible prejudice, it is likely that these individuals will be less integrated into the community, resulting in fewer supports and resources being available. Accordingly, even greater care must be taken when treating these individuals to ensure that culturally relevant support is being provided.

Strengths and Limitations of the Study

The current study does have some strengths, especially in regards to the sample. For instance, participants were recruited from seven different treatment centres in seven different cities in Ontario, resulting in some level of geographic dispersion within the sample. As well, the demographics of this sample generally indicated that a wide array of individuals was included, but that no extreme scorers were present. This suggests that an appropriate amount of variance was obtained in the sample, but that some level of homogeneity was also present. Thus, this sample does appear to be an adequate sample for making generalizations to the population of outpatient problem gamblers in the province of Ontario.

One limitation of this study was the small sample size of 60 participants. Although many effects were found significant, some of the smaller effects just failed to pass the significance threshold. For instance, emotional awareness was not significantly predictive of any of the change resource variables. However, emotional awareness, along with depressed affect, did come very close to significance when predicting readiness for change, suggesting some level of predictive ability. Additionally, emotional support only approached significance when predicting abstinence self-efficacy. With a sample size of even 80 participants, these effects may have become significant. As such, these effects were discussed anyway, and caution was used when making implications.

Another sample related problem involves the exclusive use of participants from Ontario. An attempt was made in this study to include participants from British Columbia so that these results could generalize to more than just the population of Ontario. However, since the turn out of participants from BC was extremely low,

possibly because the study was run out of Ontario, only participants from Ontario were included in the study as this made for a cleaner sample. Unfortunately, this inclusion of only Ontario participants prevents these results from making implications about outpatient problem gamblers outside of Ontario since there are possible differences between provinces in such areas as culture, population diversity, and health care programs.

Future Research Directions

The current study was able to find many significant relationships with the obtained sample size. Yet, there were still some relationships that only approached significance, possibly indicating a lack of power to find these smaller effects. As such, a study using a larger sample size is required to more adequately assess these smaller relationships. In addition, a more inclusive sample, one that contains a large number of participants from outside of Ontario, is required so that the results can be generalized to the larger Canadian population. Certainly, a study using a sample with these two characteristics would be in a better position to make more conclusive statements about these found and inferred relationships.

Despite its small sample size, the current study succeeded in highlighting the relationships between the personal change resources and the supports and awareness facilitators that surround these individuals. However, its single instance measurement leaves much to be said about how this effect may change over time. Since the influence of these variables is most likely not static, research examining these effects throughout the problem gambling change process is required. A longitudinal study that measures

these variables at various points throughout the change process could provide insight as to when the influence from these different variables is most critical. For instance, it may be that readiness for change is most beneficial early in the process since it involves awareness that encourages individuals toward treatment. Motivation, on the other hand, may be most important for those who are further in the process and require some extra fuel to keep going. If this were so, then therapists would want to promote awareness of the pathological nature of gambling in new clients and be most emotionally supportive of clients who are in the depths of the behavioural change process. Indeed, a longitudinal study such as this would provide a number of important implications for how to better treat individuals who problem gamble.

Conclusion

The current study explored the change facilitating effects of certain aspects of the individual, these being his or her emotional support, instrumental support, emotional awareness, GA involvement, and depressed affect. The results of this study suggest that these variables do in fact have some level of involvement in the change process. More specifically, depressed affect and emotional support seem to influence one's self-efficacy for abstinence, emotional support alone appears to influence one's motivation for change, and GA involvement, depressed affect, and emotional awareness, together, seem to influence one's readiness for change. Thus, these individual variables should be considered when treating clients who are undergoing the great battle of abstaining from their problem gambling behaviour.

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APPENDIX A

The Problem Gambling Severity Index (PGSI; Wynne, 2003):

Directions: Please circle the number that corresponds with the response that best characterizes your gambling behaviour.

1. Thinking about the past 12 months, how often have you bet more than you could really afford to lose? Would you say:

1	2	3	4
Never	Sometimes	Most of the time	Almost always

2. Thinking about the past 12 months, how often have you needed to gamble larger amounts of money to get the same feeling of excitement?

1	2	3	4
Never	Sometimes	Most of the time	Almost always

3. Thinking about the past 12 months, how often have you gone back another day to try to win back the money you lost?

1	2	3	4
Never	Sometimes	Most of the time	Almost always

4. Thinking about the past 12 months, how often have you borrowed money or sold anything to get money to gamble?

1	2	3	4
Never	Sometimes	Most of the time	Almost always

5. Thinking about the past 12 months, how often have you felt that you might have a problem with gambling?

1	2	3	4
Never	Sometimes	Most of the time	Almost always

6. Thinking about the past 12 months, how often have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?

1	2	3	4
Never	Sometimes	Most of the time	Almost always

7. Thinking about the past 12 months, how often have you felt guilty about the way you gamble, or what happens when you gamble?

1	2	3	4
Never	Sometimes	Most of the time	Almost always

8. Thinking about the past 12 months, how often has your gambling caused you any health problems, including stress or anxiety?

1	2	3	4
Never	Sometimes	Most of the time	Almost always

9. Thinking about the past 12 months, how often has your gambling caused any financial problems for you or your household?

1	2	3	4
Never	Sometimes	Most of the time	Almost always

APPENDIX B

The Social Support Questionnaire for Transactions (SSQT) and the Social Support Questionnaire for Satisfaction (SSQS) with the supportive transactions (Suurmeijer et al., 1996), as well as the additional 5 item pairs for Abstinence-Specific Support:

Directions: Please circle the responses which most closely match how you feel about your interactions with others.

Daily Emotional Support

- 1a. Does it ever happen to you that people are warm and affectionate towards you?
 1 2 3 4
 seldom or never now and then regularly often
- 1b. Is this just as much as you like?
 1 2 3 4
 much less than I like less than I like just as much as I like more than I like
- 2a. Does it ever happen to you that people are friendly to you?
 1 2 3 4
 seldom or never now and then regularly often
- 2b. Is this just as much as you like?
 1 2 3 4
 much less than I like less than I like just as much as I like more than I like
- 3a. Does it ever happen that people sympathize with you?
 1 2 3 4
 seldom or never now and then regularly often
- 3b. Is this just as much as you like?
 1 2 3 4
 much less than I like less than I like just as much as I like more than I like
- 4a. Does it ever happen that you feel understood by people?
 1 2 3 4
 seldom or never now and then regularly often
- 4b. Is this just as much as you like?
 1 2 3 4
 much less than I like less than I like just as much as I like more than I like

5a. Does it ever happen to you that people are willing to lend you a friendly ear?
 1 2 3 4
 seldom or never now and then regularly often

5b. Is this just as much as you like?
 1 2 3 4
 much less than I like less than I like just as much as I like more than I like

Problem-Oriented Emotional Support

6a. Does it ever happen to you that people make you feel at ease?
 1 2 3 4
 seldom or never now and then regularly often

6b. Is this just as much as you like?
 1 2 3 4
 much less than I like less than I like just as much as I like more than I like

7a. Does it ever happen to you that people give you a nudge in the right direction, as it were?
 1 2 3 4
 seldom or never now and then regularly often

7b. Is this just as much as you like?
 1 2 3 4
 much less than I like less than I like just as much as I like more than I like

8a. Does it ever happen to you that people perk you up or cheer you up?
 1 2 3 4
 seldom or never now and then regularly often

8b. Is this just as much as you like?
 1 2 3 4
 much less than I like less than I like just as much as I like more than I like

9a. Does it ever happen to you that people reassure you?
 1 2 3 4
 seldom or never now and then regularly often

9b. Is this just as much as you like?
 1 2 3 4
 much less than I like less than I like just as much as I like more than I like

- 10a. Does it ever happen to you that people tell you not to lose courage?
 1 2 3 4
 seldom or never now and then regularly often
- 10b. Is this just as much as you like?
 1 2 3 4
 much less than I like less than I like just as much as I like more than I like
- 11a. Does it ever happen to you that you can rely on other people?
 1 2 3 4
 seldom or never now and then regularly often
- 11b. Is this just as much as you like?
 1 2 3 4
 much less than I like less than I like just as much as I like more than I like

Social Companionship

- 12a. Does it ever happen to you that people drop in for a (pleasant) visit?
 1 2 3 4
 seldom or never now and then regularly often
- 12b. Is this just as much as you like?
 1 2 3 4
 much less than I like less than I like just as much as I like more than I like
- 13a. Does it ever happen to you that people just call you up or just chat with you?
 1 2 3 4
 seldom or never now and then regularly often
- 13b. Is this just as much as you like?
 1 2 3 4
 much less than I like less than I like just as much as I like more than I like
- 14a. Does it ever happen to you that you do things like shopping, walking, going to the movies, or sports, etc., together with other people?
 1 2 3 4
 seldom or never now and then regularly often
- 14b. Is this just as much as you like?
 1 2 3 4
 much less than I like less than I like just as much as I like more than I like

- 15a. Does it ever happen to you that people ask you to join in?
 1 2 3 4
 seldom or never now and then regularly often
- 15b. Is this just as much as you like?
 1 2 3 4
 much less than I like less than I like just as much as I like more than I like
- 16a. Does it ever happen to you that you go out for the day with other people just for the enjoyment of it?
 1 2 3 4
 seldom or never now and then regularly often
- 16b. Is this just as much as you like?
 1 2 3 4
 much less than I like less than I like just as much as I like more than I like

Daily Instrumental Support

- 17a. Does it ever happen to you that people help you to do odd jobs?
 1 2 3 4
 seldom or never now and then regularly often
- 17b. Is this just as much as you like?
 1 2 3 4
 much less than I like less than I like just as much as I like more than I like
- 18a. Does it ever happen to you that people lend you small things like, for example, sugar or a screwdriver or something like that?
 1 2 3 4
 seldom or never now and then regularly often
- 18b. Is this just as much as you like?
 1 2 3 4
 much less than I like less than I like just as much as I like more than I like
- 19a. Does it ever happen to you that people lend you small amounts of money?
 1 2 3 4
 seldom or never now and then regularly often
- 19b. Is this just as much frequency as you like?
 1 2 3 4
 much less than I like less than I like just as much as I like more than I like

- 20a. Does it ever happen that people give you information or advice?
 1 2 3 4
 seldom or never now and then regularly often
- 20b. Is this just as much as you like?
 1 2 3 4
 much less than I like less than I like just as much as I like more than I like

Problem-Oriented Instrumental Support

- 21a. If necessary, do people help you if you call upon them to do so unexpectedly?
 1 2 3 4
 seldom or never now and then regularly often
- 21b. Is this just as much as you like?
 1 2 3 4
 much less than I like less than I like just as much as I like more than I like
- 22a. If necessary, do people lend you valuable things?
 1 2 3 4
 seldom or never now and then regularly often
- 22b. Is this just as much as you like?
 1 2 3 4
 much less than I like less than I like just as much as I like more than I like
- 23a. If necessary, do people help you, for example, when you are sick, when you have transport problems, or when you need them to accompany you somewhere?
 1 2 3 4
 seldom or never now and then regularly often
- 23b. Is this just as much as you like?
 1 2 3 4
 much less than I like less than I like just as much as I like more than I like

Abstinence-Specific Instrumental Support

- 24a. Does it ever happen that people will drive you to your treatment sessions or your Gamblers Anonymous (GA) meetings?
 1 2 3 4
 seldom or never now and then regularly often

- 24b. Is this just as much as you like?
 1 2 3 4
 much less than I like less than I like just as much as I like more than I like
- 25a. Does it ever happen that people will encourage you to get involved in treatment or work the 12 steps of GA?
 1 2 3 4
 seldom or never now and then regularly often
- 25b. Is this just as much as you like?
 1 2 3 4
 much less than I like less than I like just as much as I like more than I like
- 26a. Does it ever happen that people will encourage you to continue gambling?
 1 2 3 4
 seldom or never now and then regularly often
- 26b. Is this just as much as you like?
 1 2 3 4
 much less than I like less than I like just as much as I like more than I like
- 27a. Does it ever happen that people will attempt to prevent you from gambling?
 1 2 3 4
 seldom or never now and then regularly often
- 27b. Is this just as much as you like?
 1 2 3 4
 much less than I like less than I like just as much as I like more than I like
- 28a. Does it ever happen that people will talk to you about your gambling problem?
 1 2 3 4
 seldom or never now and then regularly often
- 28b. Is this just as much as you like?
 1 2 3 4
 much less than I like less than I like just as much as I like more than I like

APPENDIX C

The Alcoholics Anonymous Inventory (AAI; Tonigan et al., 1996), as adopted for use with Gamblers Anonymous:

Directions: Please indicate your answer to the following questions about your involvement in Gamblers Anonymous (GA).

1. Have you ever attended a GA meeting? No Yes
2. Have you attended a GA meeting in the last year? No Yes
3. Have you ever considered yourself to be a member of GA? No Yes
4. Have you ever gone to 90 GA meetings in 90 days? No Yes
5. Have you ever celebrated a GA sobriety birthday? No Yes
6. Have you ever had a GA sponsor? No Yes
7. Have you ever been a GA sponsor? No Yes
8. If you have been in a gambling treatment program (inpatient or outpatient), did they require that you "work" any of the GA steps? No Yes
9. What steps did you complete when you were in gambling treatment?

1	2	3	4	5	6	7	8	9	10	11	12
---	---	---	---	---	---	---	---	---	----	----	----
10. Regardless of whether you have or have not been to gambling treatment, which of the 12 steps of GA have you "worked"?

1	2	3	4	5	6	7	8	9	10	11	12
---	---	---	---	---	---	---	---	---	----	----	----
11. How many GA meetings have you attended in the last year?
 (Please enter your best estimate in the space provided. If you did not attend any GA meetings in the last year enter zero.) _____
12. What is the total number of GA meetings that you have ever attended?
 (Please enter your best estimate in the space provided. If you have never attended any GA meetings enter zero.) _____
13. Have you ever had a spiritual awakening or conversion experience since your involvement in GA? No Yes

APPENDIX D

The Gambling Self-Efficacy Questionnaire (GSEQ; May, et al., 2003):

Directions: Please circle the percentage that corresponds with how confident you feel that you could resist gambling in each of these situations. 0% means no confidence in yourself and 100% means total confidence in yourself.

	<u>Level of Confidence to Resist</u>					
<u>Gambling</u>						
1. If I felt I had let myself down	0%	20%	40%	60%	80%	100%
2. If there were fights at home	0%	20%	40%	60%	80%	100%
3. If I had trouble sleeping	0%	20%	40%	60%	80%	100%
4. If I had an argument with a friend	0%	20%	40%	60%	80%	100%
5. If I felt confident and relaxed	0%	20%	40%	60%	80%	100%
6. If I was enjoying myself and wanted to feel even better	0%	20%	40%	60%	80%	100%
7. If I had lost money gambling one day and felt the urge to go win it back the next day .	0%	20%	40%	60%	80%	100%
8. If I were at a place where other people were gambling	0%	20%	40%	60%	80%	100%
9. If I wondered about my self-control over gambling and felt like testing it	0%	20%	40%	60%	80%	100%
10. If I were angry at the way things had turned out	0%	20%	40%	60%	80%	100%
11. If I were relaxing with a good friend and wanted to have a good time gambling	0%	20%	40%	60%	80%	100%
12. If my stomach felt like it was tied in knots .	0%	20%	40%	60%	80%	100%
13. If I were with friends "out on the town" and wanted to increase my enjoyment	0%	20%	40%	60%	80%	100%

	<u>Level of Confidence to Resist</u>					
14. If I met a friend and he/she suggested we go gambling together	0%	20%	40%	60%	80%	100%
15. If I suddenly had an urge to gamble	0%	20%	40%	60%	80%	100%
16. If I wanted to prove to my self that I could bet a few more times without losing control	0%	20%	40%	60%	80%	100%

APPENDIX E

The Reasons for Quitting (RFQ; McBride, et al., 1994) scale, as adopted for use with individuals with problem gambling:

Directions: Please circle the number that corresponds with your level of belief in the following statements.

	Not at all true		Extremely true		
<i>Emotional Concern</i>					
So that I can stop worrying about my gambling problem	0	1	2	3	4
Because excessive gambling does not fit into my self-image.	0	1	2	3	4
Because my mood will be much more positive.	0	1	2	3	4
Because I don't like the way I feel after losing	0	1	2	3	4
<i>Self Control</i>					
To show myself that I can quit if I really want to	0	1	2	3	4
To prove to myself that I am not addicted to gambling.	0	1	2	3	4
Because I will like myself better if I quit	0	1	2	3	4
So I can feel in control of my life	0	1	2	3	4
<i>Social Influences</i>					
Because my spouse, children, or other person I am close to will stop nagging me if I quit	0	1	2	3	4
So that I can get a lot of praise from people I am close to	0	1	2	3	4
Because someone has given me an ultimatum	0	1	2	3	4
Because people I am close to will be upset with me if I don't quit.	0	1	2	3	4

	Not at all true		Extremely true		
<i>Financial Concern</i>					
Because I can't afford to lose anymore money	0	1	2	3	4
Because I would prefer to spend my money on something other than gambling	0	1	2	3	4
Because deep down I know I will not win the money back	0	1	2	3	4
Because I have known or heard of other people who have suffered serious financial loss from their gambling	0	1	2	3	4

APPENDIX F

The University of Rhode Island Change Assessment (URICA) scale
 (McConaughy, Prochaska, & Velicer, 1983) as adopted for gambling by Petry (2005):

Directions: Please circle the number that corresponds with your level of agreement or disagreement with each of the following statements.

	Strongly Disagree				Strongly Agree
1. As far as I'm concerned, I don't have any problems with gambling that need changing	1	2	3	4	5
2. I think I might be ready for some self-improvement regarding my gambling	1	2	3	4	5
3. I am doing something about my gambling problems .	1	2	3	4	5
4. It might be worthwhile to work on my problem with gambling	1	2	3	4	5
5. I'm not the one with a problem with gambling. It doesn't make much sense for me to be in this program	1	2	3	4	5
6. It worries me that I might slip back on a problem with gambling I have already changed, so I am here to seek help	1	2	3	4	5
7. I am finally doing some work on my problem with gambling	1	2	3	4	5
8. I've been thinking that I might want to change something about my gambling	1	2	3	4	5
9. At times my problem with gambling is difficult, but I'm working on it	1	2	3	4	5
10. Being here is pretty much of a waste of time for me because I don't really have a problem with gambling .	1	2	3	4	5
11. I guess I have faults, but there's nothing that I really need to change about my gambling	1	2	3	4	5

	Strongly Disagree				Strongly Agree
12. I am really working hard to change my gambling . . .	1	2	3	4	5
13. I have a problem with gambling and I really think I should work on it	1	2	3	4	5
14. I'm not following through with what I had already changed as well as I had hoped, and I'm here to prevent a relapse of a problem with gambling	1	2	3	4	5
15. Even though I'm not always successful in changing, I am at least working on my problem with gambling . . .	1	2	3	4	5
16. I thought once I had resolved the problem with gambling I would be free of it, but sometimes I still find myself struggling with it	1	2	3	4	5
17. I have started working on my problem with gambling, but I would like help	1	2	3	4	5
18. Maybe this program will be able to help me with my gambling problem	1	2	3	4	5
19. I may need a boost right now to help me maintain the changes I've already made regarding my gambling . . .	1	2	3	4	5
20. I may be part of the problem, but I don't really think I am	1	2	3	4	5
21. I hope that someone here will have some good advice for me regarding gambling	1	2	3	4	5
22. Anyone can talk about changing their gambling; I'm actually doing something about it	1	2	3	4	5
23. All this talk about psychology is boring. Why can't people just forget about their problems?	1	2	3	4	5
24. I'm here to prevent myself from having a relapse of my problem with gambling	1	2	3	4	5
25. It is frustrating, but I feel I might be having a recurrence of a gambling problem I thought I had resolved	1	2	3	4	5

	Strongly Disagree				Strongly Agree
26. I have worries but so does the next guy. Why spend time thinking about them?	1	2	3	4	5
27. I am actively working on my problem with gambling	1	2	3	4	5
28. I would rather cope with my faults than try to change them	1	2	3	4	5
29. After all I had done to try and change my problems with gambling, every now and again it comes back to haunt me	1	2	3	4	5

APPENDIX G

Demographic questions:

1. Age: _____

2. Gender: M F

3. Please circle the ethnicity that best describes you:

European/White African/Black Asian Middle Eastern Aboriginal

Latin American Mixed

4. How many weeks have you spent in the problem gambling treatment program that you are currently involved in?

5. How many weeks have you spent in treatment for problem gambling prior to the treatment program you are currently involved in?

6. Do you currently attend Gamblers Anonymous (GA) meetings?

yes no

7. If you answered yes to question 6, for how many weeks have you been attending GA?

8. If you answered yes to question 6, did you consider yourself a spiritual or religious person before you began attending GA meetings?

yes no

9. Regardless of your GA participation, do you currently consider yourself to be a spiritual or religious person?

yes no

10. Please list any other substances that you abuse/use problematically, such as alcohol, nicotine, or any illegal drug:

11. Are you currently receiving treatment for any other addiction like behaviours (e.g., alcoholism, etc.)?

yes no

12. If you answered yes to question 11, please list which behaviours:

13. Have you experienced any mental health problems in the past year?

yes no

14. If you answered yes to question 13, please describe these problems:

15. If you answered yes to question 13, did you seek help for any of these problems?

yes no

VITA AUCTORIS

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