Critical Factors Predicting Willingness to Seek Professional Treatment and Informal Support among Frequent Gamblers

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Critical Factors Predicting Willingness to Seek Professional Treatment and Informal Support among Frequent Gamblers

By

David Han Zhang Liang

A Dissertation
Submitted to the Faculty of Graduate Studies through the Department of Psychology in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy in Clinical Psychology at the University of Windsor

Windsor, Ontario, Canada
2012

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Critical Factors Predicting Willingness to Seek Professional Treatment and Informal Support among Frequent Gamblers

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ABSTRACT

Professional treatment services for problem gambling are vastly underutilized, while help-seeking through informal support networks has been understudied. The key determinants of help-seeking in problem gamblers are not well understood, in large part because of the lack of a theoretical framework to elucidate the help-seeking process in this population. The present study tested a revised version of the Andersen Behavioural Model using structural equation modeling in a heterogeneous sample of at-risk gamblers. Variables that were included fell into the Andersen Behavioural Model's framework of Predisposing Factors (attitudes toward professional and informal help-seeking), Enabling Factors (perceived barriers to treatment and social support), and Need Factors (gambling severity, gambling frequency, and adverse financial consequences). Readiness for change was also included in the model. A total of 319 total participants were recruited from a university student population, gamblers undergoing treatment, and the general population. The Revised Andersen Model received partial support in the analyses. It was found that attitudes toward seeking help for problem gambling was the strongest predictor of help-seeking willingness. In addition, factors associated with a need for treatment (i.e., gambling severity, gambling frequency, and financial consequences) led to an increase in Readiness to Change. Contrary to previous research, Need Factors were not predictive of increased willingness to seek help. However, Need Factors negatively predicted social support, perceived barriers to treatment, and attitudes toward help-seeking, and these relationships may have impeded help-seeking behaviour for the participants. An alternative model of help-seeking, which separated predictors and outcomes of help-seeking for professional and informal sources, also received partial
support. The findings suggest that there may be differential predictors and pathways to seeking help from professional and informal sources. Research and clinical implications of the present findings are discussed.
DEDICATION

This dissertation is dedicated to my mother, Rosa Zu Qi Wang. It was her boundless love, her awe-inspiring self-sacrifice, her uncompromising promotion of education, and her limitless commitment to being the best mother she could be that afforded me the opportunity and privilege to pursue my dreams and complete my dissertation. Thanks mom – in numerous ways, this is as much my achievement as it is yours.
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CHAPTER I

INTRODUCTION

In the past two decades, the impact of gambling in North America has grown more significant. During this time, gambling has become widely legalized, access to gambling activity has increased, and gambling behaviour has become a more accepted, even popularized part of modern culture. Canada's gambling industry has grown to the extent that $13.8 billion was generated in the fiscal year of 2009, compared to $2.7 billion in 1992 (Marshall, 2011). One consequence of these changes is that problem gambling has also become a greater societal concern. Various studies and literature reviews in the past two decades have found relatively consistent prevalence estimates of pathological gambling (Ferris, Wynne, & Single, 1999; Shaffer, Hall, & Vander Bilt, 1999; Welte, Barnes, Tidwell, & Hoffman, 2011). For instance, Stucki and Rihs-Middel (2007) reviewed prevalence data in gambling research published between 2000 and 2005 in English and other European languages, and found that the weighted mean prevalence rates for excessive gambling (problem and pathological) were 3.0% based on the South Oaks Gambling Survey, 3.3% based on the Canadian Problem Gambling Index, and 3.1% based on DSM-IV criteria. Similarly, data from two national U.S. telephone surveys of gambling on adults \( (N = 2631) \) and youth \( (N = 2274) \) found a combined prevalence rate for problem gambling of 2.9% (Welte et al., 2011). A review of studies conducted in eight provinces across Canada indicated that between 2.7% and 5.4% of Canadian adults were problem gamblers (National Council of Welfare, 1996). A 2005 Ontario population survey found an annual prevalence of 2.6% for having moderate gambling problems and
0.8% for having severe gambling problems according to the Canadian Problem Gambling Index (Wiebe, Mun, & Kauffman, 2006).

Despite the serious financial and interpersonal consequences often impacting problem gamblers, formal treatment services continue to be seriously underutilized. Studies have consistently demonstrated that only a small minority of pathological gamblers actually seek formal help for their problem. In Ontario, individuals entering the province's specialized gambling treatment system has steadily increased, from an annual caseload of 596 in 1998-1999 to 2518 in 2001-2002 (Urbanoski & Rush, 2006). However, this is still a small proportion of the estimated 340,000 problem gamblers in Ontario (Weibe et al., 2006). The National Gambling Impact Study (1999) conducted in the U.S. found only 1-3% of problem gamblers sought professional help in any given year (Gerstein et al., 1999). While this pattern of underutilizing treatment services parallels other addiction disorders (e.g., alcoholism, illicit substance abuse), some researchers have argued that problem gamblers may encounter unique obstacles that make it especially challenging for them to seek treatment. For instance, there is a lack of referral mechanisms for problem gambling counselling as compared to chemical addiction counselling (Pavalko, 2001). Furthermore, the widespread accessibility and relative lack of legal regulation of gambling activity, as compared to other addictive behaviours, make it far easier for pathological gamblers to conceal their addiction, and keep themselves and their loved ones in denial of acknowledging their gambling problems (Tepperman, 2009).

One significant gap in the problem gambling literature is that help-seeking research, up to this point, has focused almost exclusively on formal services such as the
utilization of addiction treatment programs. However, a substantial proportion of problem gamblers recover from their addiction without the help of formal treatment (Slutske, 2006). Many of these gamblers may seek informal help from such sources as their social support network in lieu of professional treatment. In this sense, informal help-seeking represents a meaningful pathway towards recovery for problem gamblers that is worthy of investigation. However, the research area of informal support is new and unexplored, with almost no studies that have examined help-seeking for an addiction from informal sources. The present study investigated both informal and formal help-seeking behaviour in problem gamblers with the aim of making a meaningful contribution to the understudied informal help-seeking literature.

Despite the consistent findings on underutilization of problem gambling treatment resources across different countries and populations in the world, we know relatively little about why so few problem gamblers seek help. The underutilization of problem gambling treatment services remains one of the central concerns in bridging the treatment gap. In a recent study on the help-seeking behaviour of problem gamblers, the investigators identified only two previous studies in which reasons for seeking help for a gambling problem was a primary research focus (Pulford, Bellringer, Abbott, Clarke, Hodgins, & Williams, 2009a). One of the consistent findings in the problem gambling literature is that problem gamblers tend to enter treatment after a significant delay from when they first recognized that their gambling was a significant problem (Evans & Delfabbro, 2005). In addition, gamblers who seek treatment tend to be advanced in the course of their gambling addiction, and have typically suffered adverse consequences from their problem behaviour. Why is there such a delay to seeking help, given the clear
emotional, interpersonal, and financial costs of chronic problem gambling behaviour? What are the most pivotal motivating factors that persuade problem gamblers to seek treatment? These are key questions that the present study aimed to address.

One of the challenges of answering these questions is the lack of a theoretical foundation to aid the understanding of the help-seeking process for problem gamblers. To the knowledge of the author, there have been no studies that have taken an existing theory of help-seeking and empirically examined it in a problem gambling population. Because of the scarcity of help-seeking literature specific to problem gambling, the theoretical foundation of the present study is drawn from the general help-seeking literature. One of the most widely used and empirically tested theories of help seeking is the Andersen Behavioural Model (ABM; Andersen, 1968). The model was initially developed to help elucidate why families do or do not utilize health services. The ABM articulates the relationships among Predisposing, Enabling, and Need Factors, which predict the utilization of health services. These factors are discussed in depth in the next chapter. Because of the broad conceptual framework of the ABM and the generality of the constructs within the model, the model is open to various interpretations and applications. The application of the ABM to the help-seeking process of problem gamblers has intuitive appeal because it takes into account the fact that the help-seeking process is complex and determined by many factors. The ABM has been applied to and empirically validated on diverse populations, from the use of medical, mental health, alcohol, and drug treatment services by homeless persons (Padgett, Struening, & Andrews, 1990) to the medical help-seeking practices among women for infertility (White, McQuillan, Greil, & Johnson, 2006). The ABM was originally conceived to explain general help-
seeking for medical services, and as a result, it does not take into account specific factors that are important to the help-seeking process of problem gamblers. Furthermore, the ABM only accounts for extrinsic factors that may predict help-seeking behaviour, such as problem severity, barriers to treatment, and demographic variables, but does not consider intrinsic factors, such as internally driven motivation for change (Clarke, 2007).

In addition to the ABM, the present study incorporated Prochaska and DiClemente's (1983) Transtheoretical Model (TM) to help understand help-seeking among problem gamblers. According to the TM, individuals attempting to modify a behaviour undergo a series of stages through which they become increasingly ready to take action and commit to long-lasting changes. Central to this process is Readiness to Change, a multidimensional construct which refers to the willingness or openness to engage in the change process, as well as motivation, preparedness, and commitment to take action (DiClemente, Schlundt, & Gemmell, 2004). The construct of Readiness to Change captures the intrinsic motivation that may be pivotal in the decision to seek treatment (Clarke, 2007). Readiness to Change has been investigated in various addiction populations, and has been found to be a crucial determinant to the treatment outcome for problem gamblers (Petry, 2005a) and problem drinkers (Project MATCH, 1998). However, there has yet to be research to empirically validate the usefulness of the stages of change model in predicting the help-seeking behaviour of problem gamblers. Nevertheless, the model has intuitive appeal, as it outlines the various processes that occur before a decision to make lasting change is made. For many problem gamblers, seeking help could be a pivotal step in committing to behavioural change.
The current study investigated the help-seeking process of problem gamblers based on a heterogeneous sample of gamblers, including problem gamblers recruited from various forms of treatment, gamblers from the general population, and gamblers from the psychology participant pool at a university in southwestern Ontario. This design provides the unique opportunity to investigate a population of at-risk frequent gamblers that is varied in terms of their level of gambling severity, Readiness to Change, and help-seeking history. Two help-seeking outcome variables were assessed – willingness to seek professional services for gambling problems and willingness to seek informal support for gambling problems. The inclusion of the variables investigated in this study was guided by the theoretical frameworks of the Andersen Behavioural Model and the Transtheoretical Model. Thus, Readiness to Change, along with key Predisposing, Enabling, and Need Factors were investigated to determine the extent to which these variables predicted willingness to seek help from professional and informal sources in a sample of gamblers. The primary research question for the present investigation is as follows: *Will the Revised Andersen Behavioural Model be supported in a heterogeneous sample of frequent and problem gamblers?*

Empirical support for these variables in predicting willingness to seek help may contribute to a comprehensive theoretical model to elucidate the help-seeking process of problem gamblers. The following chapter provides the empirical and theoretical context for the variables of interest in the present study. It reviews the current literature related to help-seeking for problem gambling. Because of the relative lack of research on the specific topic of interest, research from related fields such as addiction, general help-seeking behaviour, social support, and the process of behavioural change is also
presented. The ABM and the TM, which provide the theoretical framework for conceptualizing the help-seeking process of problem gamblers, are also discussed.
CHAPTER II
REVIEW OF THE LITERATURE

This chapter reviews the current literature on help-seeking, problem gambling, and the process of behavioural change. It begins with a general overview of gambling and problem gambling behaviour. The chapter then presents the theories of help-seeking and the behavioural change process that provide the theoretical framework for the present study. Next, a review of the relevant problem gambling literature is conducted, with an emphasis on empirical findings of the variables that were included in the present study. These variables include Predisposing Factors (i.e., age, gender, attitudes on help-seeking), Enabling Factors (i.e., perceived barriers to treatment, social support), Need Factors (i.e., adverse financial consequences, gambling severity), and Readiness to Change.

The Context
A Brief History of Gambling

It has been argued that humans have been involved in gambling behaviour since recorded history. Archaeologists have found six-sided animal bones resembling modern dice in ancient Egyptian tombs dating back to 3500 B.C. Ancient Egyptian murals of the same time period depict the playing of board games (Walker, Schellink, & Anjoul, 2008). Such discoveries have been argued to suggest an extensive history of gambling in human civilization. The history of gambling is also rich in North America, with the laws governing gambling behaviour having historically cycled between prohibition and promotion. In pre-colonial times, the English monarchy authorized lotteries, with which
proceeds were used to subsidize explorations and settlements in the New World. During the American Civil War, lotteries were employed as a form of voluntary taxation to rebuild areas of America that have been ravaged by the war. Between the years of 1860-1930, however, official legislation abolished gambling in the New World (Abt, Smith, & Christiansen, 1985). Moreover, gambling was deemed to be morally impure, and ideologically inconsistent with the values of faith, thrift and industry. Currently, we are in the third era of widespread legalized gambling, which began in 1931 when the state of Nevada re-legalized casino gaming (Rose, 1995). As legislation made it legal to gamble, North American society gradually shifted its views of gambling from being a vice to being something acceptable in modern society. In the past 20 years, there has been a trend in North America toward pro-gambling legislation, pro-gambling attitudes, and pro-gambling economic policies (Roehl, 1999). Today, only 10% of the general population in modern Western countries will not gamble in any way throughout their lives (Australian Government Productivity Commission, 1999). Given the current legislative and societal trends, one would expect gambling activity to become increasingly widespread in the near future. As gambling activity has increased, so too have the problems associated with gambling. Considering the recent economic downturn, the social costs of problem gambling could be more devastating than ever. Given current social, legal, and economic trends, now may be the ideal time to focus on strategies to address pathological gambling, as it appears that this is a problem that is likely to become more detrimental to our society in the future.
History of Gambling in Ontario

To provide a context to the principle geographical location in which the proposed study is focused, a brief history of legalized gambling in Ontario is needed. Lotteries were one of the first forms of legalized gambling in Ontario, having been available since 1975. In 1985, legislative responsibility for gambling was transferred from the federal government to the provincial governments (Thompson, 2001). For some time, gambling was a highly regulated and stringent industry; only charities were permitted to sell raffle tickets and conduct bingos until the mid-1990’s. Since that time, both charity and commercial casinos were opened in various communities throughout the province. In 2006, there were 12 lottery games available at over 10,600 retailers, hundreds of bingo halls, four commercial casinos, six charity casinos, and 15 slot machine facilities at racetracks in Ontario (Urbanoski & Rush, 2006).

Currently, the gambling industry in Ontario is regulated by two primary government organizations. The Ontario Lottery and Gaming Corporation (OLG) is responsible for operating the gambling venues, while the Alcohol and Gaming Commission of Ontario (AGCO) regulates casino gaming and administers gaming licenses to charitable and religious organizations for bingos and raffles (Urbanoski & Rush, 2006).

Defining Pathological Gambling

Our understanding and conceptualization of pathological gambling has undergone significant change over time. For most of history, individuals who suffered from adverse consequences from gambling were viewed as immoral and ridden with vice (Abt et al.,
The gambling problem was perceived as being synonymous with the person, just as a person suffering from alcoholism was perceived simply as an alcoholic. Today, we consider individuals suffering from problem gambling as having psychological problems. This shift of conceptualization was precipitated by the first inclusion of pathological gambling into the Diagnostic and Statistical Manual of Mental Disorders (DSM-III) in 1980, and was further developed with subsequent editions of the manual. According to the current version of the DSM (DSM-IV-TR; American Psychiatric Association, 2000), a diagnosis of pathological gambling requires meeting five or more of the following criteria: preoccupation with gambling, needing to gamble with increasing amounts of money in order to achieve the desired excitement, repeated unsuccessful efforts to control, cut back, or stop gambling, feeling restless or irritable when attempting to cut down or stop gambling, gambling as a way of escaping from problems or relieving a dysphoric mood, returning to get even after losing money ("chasing" one's losses), lying to family members, therapists, or others to conceal the extent of involvement with gambling, jeopardizing or losing significant relationships, job, or education/career opportunities because of gambling, and relying on others to provide money to relieve a desperate financial situation caused by gambling.

In the current version of the DSM, pathological gambling is classified under one of five impulse disorders under a category called “Impulse-Control Disorders Not Elsewhere Classified” (APA, 2000). According to the DSM, the essential feature of an impulse disorder is “the failure to resist an impulse, drive, or temptation to perform an act that is harmful to the person or to others” (APA, 2000). Researchers have used various terms related to impulse-control problems to describe pathological gamblers, including
“sensation-seeking”, “behavioural disinhibition”, and “risk-taking”, and such tendencies have been found to be associated with gambling involvement (Ciarrochi, Kirschner, & Fallik, 1991). In a study of cocaine addiction treatment-seekers, the only measure that differentiated those with comorbid gambling problems from those without gambling problems was the presence of disinhibition among the former (Steinberg, Kosten, & Rounsaville, 1992).

While pathological gambling is classified as an impulse control disorder under the DSM-IV, criteria for the disorder such as preoccupation, tolerance, and repeated unsuccessful efforts to stop gambling are indicative of physiological dependence, and thus many researchers have conceptualized pathological gambling as an addictive disorder (Rosenthal & Lesieur, 1992). The work group responsible for the development of the forthcoming DSM-V has proposed that Gambling Disorder should be re-classified from Impulse-Control Disorders Not Elsewhere Classified to Addiction and Related Disorders (APA, 2012). This position is in line with the general consensus identified in the research and clinical community. Self-help communities generally view problem gambling as an uncontrollable emotional illness (Gamblers Anonymous, 1994). The efficacy of groups such as Gamblers Anonymous, a self-help treatment approach modelled after Alcoholics Anonymous, further speaks to the validity of conceptualizing pathological gambling as an addiction (Petry, 2003). Consistent with these views, pathological gambling will be conceptualized principally as an addiction disorder in the present investigation.
Why do People Gamble?

Gambling is one of the mysteries in human behaviour. In all forms of legalized gambling in our present society, the gambling is controlled such that the house expects to have an edge over the gambler. Thus, it can be difficult to understand why people are willing to bet money on an unpredictable outcome when the expected return is, in more cases than not, less than the initial bet (Walker et al., 2008). The following are some reasons that theorists and researchers have proposed for why people gamble.

**Gambling as Escape and Coping**

Perhaps more prevalent than any other reason, problem gamblers gamble in order to escape the difficulties that they face in their everyday lives. Avoidant coping strategies have often been tied to pathological gamblers (Gupta & Derevensky, 2001; Ricketts & Macaskill, 2003). Wood and Griffiths (2007) utilized a qualitative approach to investigate the coping strategies of 50 problem gamblers. For the overall sample, escape served as the central reason for continuing to gamble despite the realization (by all but four of the participants) that gambling would not solve their long-term problems. For this sample of pathological gamblers, gambling was sought out for the experience that it provided, and the ability it gave the gamblers to keep their problems temporarily at bay while they were engaged in the behaviour. All participants in the study referred to escape either directly or indirectly, while many offered the term escape explicitly to explain their gambling behaviour.

Many of the participants in this study reported they would gamble most heavily when they were experiencing some kind of problem, conflict, or stress in their lives (Wood & Griffiths, 2007). However, increased gambling created even more problems to
deal with, such as financial debt and interpersonal conflict. Many problem gamblers were thus caught in the vicious cycle whereby gambling created problems, but at the same time, provided a solution of allowing them to escape from these problems through dissociation.

*Social Reasons for Gambling*

For many gamblers, gambling is not only attractive because of the possibility of winning, but other experiences associated with the gambling behaviour. For instance, it has been argued that the social factor associated with many gambling activities is one of its most attractive features. The opportunity to socialize with others has been cited as a key attraction of such gambling activities as horse-race betting, bingo, and various casino games (Rosenthal & Rugle, 1994). Pathological gamblers often report that gambling is their only available social outlet, even though other gamblers were seen as superficial acquaintances rather than friends. It is also not uncommon for problem gamblers to lose many of their existing friends due to unpaid loans (Wood & Griffiths, 2007). Longing for an interpersonal closeness while lacking the skills to achieve it, individuals may be drawn towards addictive, quasi-social behaviours such as gambling (Porter, Ungar, Frisch, & Chopra, 2004). Indeed, gamblers commonly have various interpersonal difficulties; families of problem gamblers have often been described as chaotic and emotionally turbulent (Porter et al., 2004). Many indicate significant dissatisfaction with their family environment, and excessive gamblers may experience a sense of isolation and disconnect with others (Ciarrocchi & Hohmann, 1989).
The Underutilization of Help-Seeking for Problem Gamblers

Research worldwide has consistently found that problem gamblers severely underutilize mental health and addiction services and other resources that might potentially help in resolving issues associated with problem gambling (Gerstein et al., 1999; Kessler & Merikangas, 2004; Urbanoski & Rush, 2006). It appears that this underutilization of services goes above and beyond the willingness to seek help for other mental health issues. For instance, none of the participants in the National Comorbidity Survey Replication (Kessler & Merikangas, 2004) with a pathological gambling diagnosis ever received treatment for a gambling problem, while 49% of these individuals sought treatment for other mental disorders (Kessler et al., 2008).

Furthermore, professional help-seeking for gambling problems appears to be predominantly crisis-driven rather than motivated by recognition of problematic behaviour (Evans & Delfabbro, 2005).

The vast majority of pathological gamblers resolve their problem without the use of formal services. Slutske (2006) reviewed U.S. data from the Gambling Impact and Behavior Study (N = 2417; Gerstein et al., 1999) and the National Epidemiologic Survey on Alcohol and Related Conditions (N = 43,093; NESARC, 2002). Only 7-12% of problem gamblers in these samples had ever sought formal treatment or attended meetings of Gamblers Anonymous (GA). A population survey in Ontario found that only 10% of problem gamblers and 29% of pathological gamblers had ever accessed formal treatment services or attended GA (Suurvali, Hodgins, Toneatto, & Cunningham, 2008). In a large scale investigation into Australia's gambling industry involving 3498 respondents, it was found that 23% of gamblers with severe problems and only 7% of
gamblers with less severe problems reported seeking counselling for their gambling problems (Australian Government Productivity Commission, 1999).

In an attempt to understand why so few problem gamblers seek formal help, Suurvali, Cordingley, Hodgins, and Cunningham (2009) conducted a literature review on empirical research that focused on obstacles preventing problem gamblers from seeking treatment for their problem. Nineteen such studies were identified, and while they varied in methodology (different populations, open-ended versus close-ended response options), the researchers found many commonalities in the barriers to treatment that were reported across studies. Criteria were established to define "very common", "moderately common" and "rare" incidences of barriers reported. There were three types of barriers that were most frequently reported: 1) the desire among gamblers to handle their problem on their own, and/or the belief that they are able to do so; 2) shame, secrecy, embarrassment, pride, and fear of stigma; and 3) an unwillingness to admit or a minimization of the problems associated with gambling. Other barriers that were identified in more than half of the studies in the literature review included concerns about treatment content and quality, lack of knowledge about treatment availability, and practical issues around attending treatment. These findings indicate that the perceived barriers to treatment seeking may have a significant influence on the decision to seek help for many problem gamblers.

Informal Help

Before seeking professional help, problem gamblers and their family members will often first utilize alternative ways to support themselves, often with success (McMillen, Marshall, Murphy, Lorenzen, & Waugh, 2004). Family, friends, employers,
and mutual help groups are often mentioned as initial sources of help, while formal treatment services are often viewed as a last resort (Australian Government Productivity Commission, 1999).

While pathological gamblers underutilize formal services to help them with their problem, a substantial proportion of gamblers do recover from their problem without the help of formal treatment, a process known as natural recovery. Individuals who recover via this process are usually thought to do so by means of social support, self-motivated and self-induced change, or spontaneous remission. The proportion of problem gamblers that may undergo natural recovery is notable; Slutske (2006) found that approximately one-third of individuals in a large U.S. epidemiological sample with pathological gambling disorder were characterized by natural recovery. A large epidemiological study in Australia found that 75% of problem gamblers reported their "own efforts" was the most effective method to overcome their gambling problems. The only other "most effective" method (endorsed by 10% of respondents) was seeking help from alcohol and drug treatment centres. These findings suggest that the current formal treatment services available for problem gambling are not adequately meeting the needs of this population (Australian Government Productivity Commission, 1999). Many gamblers state that one of the most significant barriers is the fact that there is a lack of treatment services specifically designed to treat problem gamblers; many feel that the problems they face are different from the challenges of individuals who are battling a substance-related addiction (Saunders, Zygowicz, & D’Angelo, 2006). That being said, it is noteworthy that there are a relatively high number of professional supports for treatment of problem gambling in the province of Ontario, the primary geographic location of the present
study. Ontario currently has 56 designated problem gambling treatment agencies that provide a combination of treatment, education, and prevention (Problem Gambling Institute of Ontario, 2012).

The fact that a large proportion of problem gamblers seek help from non-professional sources indicates that it is important that both professional and informal help-seeking behaviours of problem gamblers are considered. This present study examined both forms of help-seeking in the target sample.

The present study included features that attempted to address the limitations of previous investigations. The study recruited a relatively large and heterogeneous sample of frequent and problem gamblers. Both gamblers who have sought help for their problem as well as gamblers who have never sought help for their problem were recruited in the present sample. The study also included several open-ended questions that allowed participants greater freedom to express themselves on various questions related to help-seeking for their gambling problem.

**Theoretical Background**

The current problem gambling literature is dominated by research on treatment, and particularly treatment outcome. However, we know less about the process through which problem gamblers come to seek treatment in the first place. While much of the literature reviewed comes from treatment outcome studies, an emphasis is placed on the implications pertaining to help-seeking. Before a review of the problem gambling literature, however, it is necessary to introduce the theoretical help-seeking framework for the present study.
The Anderson Behavioural Model (Andersen, 1968)

The Anderson Behavioural Model (1968) was initially developed to assist the understanding of why families use or do not use health services. It attempts to integrate a number of ideas about the "hows" and "whys" of health service use. In subsequent work, the unit of analysis shifted from the family to the individual, due to the difficulty of developing measures at the family level that could take into account the potential heterogeneity of family members (Andersen, 1995). As there are no previous models of help-seeking that have been empirically validated on a problem gambling population, the ABM presents as a favourable working model due to its applicability to a wide range of help-seeking populations, as evidenced by empirical support of the model on divergent help-seeking populations (e.g., Padgett et al., 1990; White et al., 2005).

According to the model, an individual's use of services is considered to be a function of three characteristics: Predisposing, Enabling, and Need Factors (Andersen, 1968, 1995). Predisposing Factors are individual characteristics that existed prior to the development of the problem, and include three dimensions: demographic characteristics such as age, gender, and marital status; social structure characteristics such as education, ethnicity and occupation; and health beliefs, such as personal attitudes regarding medical care and toward seeking help from health professionals. For the current study, the latter dimension can be conceptualized as attitudes toward seeking professional and informal help for problem gambling. This takes into account the target population of problem gamblers rather than the medical help-seeking population for which the model was originally developed.
Enabling Factors refer to the community and personal/family resources which facilitate the individual's use of services. Personal/family resources include instrumental resources such as income, as well as emotional resources such as perceived social support. Community resources refer to the accessibility of services, which include factors such as cost, insurance coverage, proximity of treatment location, and wait list times. They may also include perceived barriers experienced by individuals as they contemplate seeking treatment. Finally, Need Factors represent either a subjective acknowledgement from the individual of a need for treatment or objective indicators of need. In the present study, Need Factors are conceptualized principally by objective indicators, such as the frequency of gambling behaviour, monetary amount spent on gambling activity, adverse financial consequences due to gambling, and self-reported gambling severity.

While the ABM has been expanded to account for "macro" influences of health care utilization in subsequent work (e.g., Andersen, Davidson, & Ganz, 1994), the vast majority of research on the behaviour model has continued to focus on the individual factors that contribute to service utilization, and these factors have received the most empirical support (Bradley et al., 2002). In the scope of the present study, focus was placed on the individual factors discussed in the behavioural model.

Because of the comprehensiveness and adaptability of the framework, the ABM has been researched and validated on diverse populations. For instance, Lynch, Harrington, and Newcomer (1999) examined the predictive ability of the ABM in the use of chronic care services by 1,868 physically impaired individuals enrolled in managed care programs. The researchers operationalized Predisposing Factors as demographic variables and Enabling Factors as patient income and the site which provided the service
(sites varied in terms of funding offered per patient, as well as service accessibility/availability). The focus of their investigation were Need Factors, conceptualized as the nature of the medical condition, reported health status, prior service utilization, and the number of instrumental daily living activity limitations. The study found positive support for the behavioural model, with Need Factors being the most significant predictors of service utilization. Enabling Factors, particularly the type of site, were also found to be significant predictors of subsequent service utilization.

A study by Stein, Andersen, and Gelberg (2007) applied an adapted ABM to predict the health services utilization of 875 homeless women. Using structural equation modelling, the researchers assessed the impact of Predisposing, Enabling, and Need Factors on health services utilization of the sample. Predisposing Factors were operationalized as demographic variables, psychological distress, severity of homelessness, and alcohol and/or drug problems. Enabling Factors were operationalized as the availability of health insurance, the source of care, and the barriers to treatment. Finally, Need Factors were operationalized as the presence of illness and its severity. The model received support for this population, with significant direct effects in all three dimensions. It was found that increased barriers to health care significantly predicted less preventive care and outpatient services utilization, while availability of health insurance predicted greater preventive care and outpatient service utilization. In addition, illness (defined as a Need Factor) predicted more outpatient use and hospitalizations.

While the majority of research studies investigating the ABM have found empirical support for the model, studies have varied in their conclusions about the degree of predictive ability offered by the model. A meta-analysis of investigations using the
ABM found a wide range of variance in chronic care service use as predicted by the model, ranging from 3% to as high as 43% (Lynch et al., 1999). Investigations have typically found that Need Factors, particularly functional measures, are the most important predictors of service use, while Enabling and Predisposing Factors play less significant roles (Coulton & Frost, 1982; Evashwick, Rowe, Diehr, & Branch, 1984; Soldo, 1985; Wolinsky & Johnson, 1991). One of the key reasons for the variability in the ability of the ABM to predict help-seeking behaviour is due to the differences in population characteristics in each investigation. The problem gambling sample in the present study may have unique characteristics that influence their help-seeking process that the original model may not account for. The consideration of an additional model would complement the ABM and make it more applicable to the problem gambling population.

The Transtheoretical Model (Prochaska & DiClemente, 1983)

The process of seeking help for problem gambling can be conceptualized as an important step in attempting to change the maladaptive behaviour for some problem gamblers. One theoretical model that would add to the ABM in elucidating the help seeking process is Prochaska and DiClemente's (1983) Transtheoretical Model, otherwise known as the Stages of Behavioural Change. According to this theory, individuals who are modifying a maladaptive addictive behaviour move through a series of stages, during which they become increasingly ready to commit to long-lasting behavioural change. There are five main stages of change suggested in this model, each of which is defined principally by the cognitions and actions of individuals in that particular stage. Research
has suggested that progression through the stages is a gradual process, and individuals may fluctuate between advancing and regressing through the stages over a number of years before they may be ready to commit to lasting behavioural change (DiClemente, 2003).

Precontemplation

The first stage in this model is precontemplation; this is the stage at which there is no intention or even consideration from the individual to change his/her behaviour in the foreseeable future, typically defined in the literature as being a minimum of six months (DiClemente, 2003). Individuals in precontemplation may have attempted or considered changing their behaviour in the past, but are not currently doing so now. This stage is marked by a relative unawareness or even an active denial that a problem exists concerning the addictive behaviour. Although the individual who is at the precontemplation stage may not realize that there is a problem, the problem is often severe enough that family and friends are well aware of the maladaptive nature of the addictive behaviour.

This stage tends to be quite stable, and individuals often remain in a stage of precontemplation for many years (DiClemente, 2003). The reason for this stability is that it is failure-proof. One does not have to worry about the prospect of failing at behavioural change if there is no problem to begin with. People in this stage are very defensive regarding their addictive behaviour, and tend to project the blame of any negative consequences as a result of the behaviour onto other individuals or outside circumstances (Ciarrocchi, 2002). Precontemplators deeply entrenched in an addictive behaviour may shape their belief systems, relationships, social systems, and even personality
characteristics in such a way that allows them to promote the addiction while minimizing their awareness of the problem (DiClemente, 2003). One example of this pattern is a problem gambler who gradually decreases the amount of interaction with individuals who object to their gambling in order to protect and maintain their behaviour. These adaptations allow the precontemplator to maintain a decisional balance that continues to support engagement in the addictive behaviour. Research has also found that individuals in this stage endorse high levels of temptation to engage in the addictive behaviour while endorsing lower levels of self-efficacy to abstain from the behaviour (DiClemente et al., 2001).

One of the factors that may influence an individual to move from precontemplation to contemplation is the impact of negative consequences as a result of the addictive behaviour. Through steady losses and financial difficulties as a result of gambling, a problem gambler may modify their behaviour enough to at least avoid some of these consequences. However, changes motivated by external pressures alone often produce only short term results, unless the individual is invested in the change process (Higgins, 1997). DiClemente (2003) argues that it is the internal processes that are critical in moving an individual forward. The addicted individual must recognize that a problem exists, perceive the risks involved with continuing the behaviour, fully digest the negative consequences that have resulted, and see a potential for change.

Contemplation

At the contemplation stage, individuals are aware that a problem exists and are seriously thinking about possible solutions to address the problem. However, they have not yet made any serious commitment to take action. Empirical evidence indicates that
many individuals with addictive behaviours may remain stuck in this stage for many years without progressing to a point where they are motivated to take formal action. For instance, 200 smokers who were considering quitting smoking were initially assessed at the contemplation stage, and followed for the next two years. The majority of individuals from this group remained in the contemplation stage for the entire two-year period without moving toward significant action (DiClemente & Prochaska, 1985; Prochaska & DiClemente, 1984).

A reason why addicted individuals often stay in contemplation is because many tend to be impulsive in seeking immediate gratification. There is a tendency to rush into an activity without fully considering the costs and benefits. The addicted individual often finds it difficult to consider change long enough in order to make a good decision (DiClemente, 2003). Furthermore, many addicted individuals find the decision-making process of changing their addictive behaviour to be ambiguous and frustrating. Janis and Mann (1977) argue that when met with a difficult decision, people have a tendency to procrastinate or delay the decision. If that is not possible, the individual may invent rationalizations for ignoring the worries associated with the decisional conflict. A key activity during this stage is the weighing of pros and cons of the maladaptive behaviour versus those of the solution or treatment. Contemplators will often continue to hold positive evaluations regarding the benefits of maintaining the maladaptive behaviour, while struggling with the amount of effort or cost required in overcoming the problem (Prochaska & DiClemente, 1992).

Moving from contemplation to preparation and action is associated with various cognitive and experiential processes (Hodgins & Pedin, 2005). As individuals progress
through the contemplation stage, they will discover the negatives of the addictive behaviour while finding more positive reasons for change. The individual gets in touch with some of the core values that promote change, while reflecting on the negative consequences to themselves and significant others that are created by the addiction. There is a gradual shifting of views, such as changing the value one had formerly bestowed upon an addictive behaviour. The person begins to see how others in society, and their loved ones in particular, would support and encourage change in their behaviour (DiClemente, 2003). The primary task of the contemplation stage is the gathering of considerations that may influence the decision, and examining each of these critically before finally making a decision.

**Preparation**

The preparation stage of change follows the decision-making process that was completed during the contemplation stage, and precedes the significant change that takes place in the action stage. The main task of the preparation stage is to form and strengthen a commitment to change, as well as develop a plan of action that is sound, realistic, and feasible for the individual to implement (DiClemente, 2003). Commitment represents the individual’s willingness to put changing the addictive behaviour at the top of their priority list. It translates to the individual’s readiness to allocate personal time, energy, and resources to do the work necessary to bring about change. Mounting the necessary amount of commitment is a central task of the preparation stage of change. The second central task is to develop a plan that is achievable, acceptable to the individual, and effective. A successful plan is typically tailored to the individual’s knowledge about
his/herself, taking into account the strengths and weaknesses of the person (DiClemente, 2003).

During this transitional stage, the cognitive and evaluative processes of decision-making begin to diminish in significance, while there is more of a focus on the behavioural processes of change (DiClemente, 2003). Individuals begin to plan a strategy for conquering the addiction, including consideration for how they will deal with other issues in their lives in the context of changing the addictive behaviour. As individuals progress through this stage, the decisional balance increasingly tips in favour of making a change. At this time, self-efficacy begins to play an increasingly prominent role. For individuals to successfully transition into the action phase, they have to have confidence in themselves that they can deal with the temptations towards relapse.

Action

At the action stage, individuals implement the plan devised to modify their behaviour, experiences, and/or environment in an effort to overcome their problems. These overt behavioural changes require considerable commitment, time, and energy. In essence, the individual has thoroughly considered the benefits and costs of continuing the addictive behaviour and has made the decision to commit to behavioural change (DiClemente, 2003). In Prochaska and DiClemente’s model, individuals are classified in the action stage if they have successfully altered the problem behaviour anywhere between one day to six months.

Maintenance

If the individual has continued the behavioural change past six months, he/she is classified in the final stage, maintenance, where the individual works to prevent relapse.
while consolidating the gains attained during the action stage. For some, the stage of maintenance can last a lifetime, as the individual always has to be mindful of potential relapses over the course of one’s life.

There is a significant discontinuity between the first three stages as compared to the stages of action and maintenance. While the earlier stages are focused on changing cognitions, attitudes, and experiences, the action and maintenance stages involve direct behavioural change. The preparation to change an addictive behaviour is quite a different thing from the intense experience of loss and withdrawal symptoms resulting from actually changing an addictive behaviour (DiClemente, 2003). In addition, individuals may often need to revise their plan in the face of unforeseen difficulties, such as strong temptations to slip into old patterns of behaviour. Self-efficacy is argued to be the most critical marker for success at this stage of change (DiClemente). As individuals successfully cope with temptations, self-confidence in the ability to abstain and maintain one’s change increases.

Research has indicated that most attempts at action do not end in successfully maintained change (DiClemente, 2003). A relapse brings a person back to earlier stages of change, wherein the tasks in these earlier stages must be completed once again, but more fully, before the person can once again move back into the action stage. DiClemente stresses that relapse is an integral part of intentional behaviour change, as the process of behavioural change typically does not occur without trial and error. An individual recovering from an addiction gradually gains confidence with small successes in their first attempts to change their behaviour. Those who successfully recover from addiction tend to learn from the mistakes of previous relapses. The most frequent road to
recovery of most addicted individuals involves several cycles through the stages of change before long-term maintenance of behavioural change can be achieved (DiClemente).

The stages of change, as well as the overall Readiness to Change construct, are hypothesized to be useful additions to a revised Andersen Behavioural Model predicting the help-seeking behaviour of problem gamblers. The detailed descriptions of each stage of change provided by the Transtheoretical Model could be used to help inform hypotheses about various factors potentially related to the help-seeking process of this addiction population.

While the Transtheoretical Model has often been applied to addictions, there is a relative scarcity of research findings on its applications for problem gambling in particular (Petry, 2005a). Furthermore, the model has been used primarily as a predictor of treatment outcome, but has rarely been used to help elucidate the process in which gamblers become motivated to seek help. Thus, the empirical investigation of the usefulness of the Transtheoretical Model in relation to help-seeking would be a meaningful contribution to the problem gambling literature.

**A Revised Model on Help-Seeking**

For the present investigation, a revised version of the Andersen Behavioural Model of help-seeking was adopted and tested with a heterogeneous sample of at-risk gamblers, ranging from in-treatment pathological gamblers to frequent recreational gamblers. Specifically, the revised model incorporates the Transtheoretical Model as a key component in the framework. Whereby the original ABM only considers extrinsic
motivation captured by Predisposing, Enabling, and Need Factors associated with help-seeking behaviour, the revised ABM model of the current study additionally includes intrinsic motivation to seek help (Clarke, 2007).

The role of intrinsic motivation in influencing help-seeking behaviour is not considered in the original Andersen Behavioural Model, but may be an alternate pathway that mobilizes pathological gamblers to seek help. It refers to self-recognition that one’s gambling behaviour is problematic, which consequently leads to an internally driven desire to seek treatment. The most widely cited model among researchers and practitioners in the health field that is related to intrinsic factors predicting change is the Transtheoretical Model (Clarke, 2007). In the present investigation, Readiness to Change is construed to represent the intrinsic pathway to help-seeking for problem gamblers.

In the revised help-seeking model, it was hypothesized that Need Factors such as gambling severity and adverse financial consequences would affect problem gamblers’ Readiness to Change. Readiness to Change, in turn, was hypothesized to predict willingness to seek help. Consistent with the original Andersen Behavioural Model, Enabling Factors were conceptualized as factors that either facilitate or impede an individual’s access to both professional services and informal help. In the present investigation, the Enabling Factors of perceived barriers to treatment and perceived social support were hypothesized to predict informal and formal help-seeking willingness. Predisposing Factors of attitudes toward professional and informal help-seeking were hypothesized to predict willingness to seek help from professional and informal sources. A diagram of the full hypothesized help-seeking model is shown in Figure 2.1. The
Figure 2.1: Revised Andersen Behavioural Model

- Predisposing Factors
  - ATSPPH Need
  - ATSPPH Stigma
  - ATSPPH Openness
  - ATSPPH Confidence
  - ATSIH Total

- Enabling Factors
  - MOS Affectionate
  - MOS Tangible
  - MOS Emotional Info
  - MOS Pos. Interaction
  - BTS Total (reversed)

- Need Factors
  - CPGI
  - Money Gambled
  - Weekly Gambled
  - Log10 AFCM

- Readiness to Change

- Help-Seeking Outcome
  - WSH Professional
  - WSH Informal

- URICA Precontemp. (R)
  - URICA Contemplation
  - URICA Action
  - URICA Maintenance
following sections provide a literature review of the various factors in the hypothesized model of the present investigation.

**Predisposing Factors**

Problem gamblers are a very heterogeneous group due to the widespread practice of gambling behaviour and the wide array of activities on which one can gamble. Thus, a large assortment of Predisposing Factors have been found to be related to pathological gambling, as well as help-seeking behaviour for this problem.

**Attitudes Toward Help-Seeking**

Predisposing Factors could be split into two broad classes – the first being psychological variables such as pre-existing attitudes toward help-seeking. A surprisingly small number of studies have investigated the relationship between attitudes toward treatment and help-seeking behaviour in addictions populations. Research in this area is particularly scarce in the problem gambling literature. As a result, this review will draw from related fields, such as the general mental health help-seeking literature and help-seeking research from other addictions.

In the mental health help-seeking literature, help-seeking attitudes have been considered as one of the most consistent and strongest predictors of intentions and willingness to seek psychological help (Cepeda-Benito & Short, 1998; Kelly & Achter, 1995; Morgan, Ness, & Robinson, 2003; Vogel & Wester, 2003). However, previous studies have focused almost exclusively on examining willingness to seek help from
professional treatment providers – namely, primary care physicians and mental health professionals.

Attitudes toward help-seeking is typically considered to be a multi-dimensional construct consisting of various cognitive and affective domains believed to influence the likelihood of help-seeking behaviour. Previous investigations of attitudes toward help-seeking have conceptualized attitudes to consist of psychological variables such as emotional openness (Komiya, Good, & Sherrod, 2000), self-concealment (Cepeda-Benito & Short, 1998; Kelly & Achter, 1995), expectancies of treatment (Ballon, Smith, & Kirst, 2004), stigma associated with seeking help, and problem recognition (Cellucci, Krogh, & Vik, 2006).

Research has generally found that individuals with more positive attitudes toward help-seeking are more likely to engage in help-seeking behaviour. For instance, Cellucci et al. (2006) investigated various attitudinal predictors of help-seeking for alcohol problems in a college population. The researchers found that problem recognition was the most significant predictor of help-seeking, with those acknowledging a problem with alcohol also reporting a greater willingness to seek help. In contrast, increased perception of stigma associated with alcohol dependence negatively predicted help-seeking willingness. A review of the problem gambling literature yielded similar findings; the experience of shame and stigma associated with help-seeking, as well as the unwillingness to admit a problem with gambling were attitudinal variables identified as negative predictors of help-seeking in multiple investigations (Suurvali et al., 2009). Ballon et al. (2004) utilized qualitative data derived from focus groups of youths in Toronto to understand the help-seeking behaviours for substance use problems. The
researchers concluded that more positive expectancies of treatment, such as confidence in the treatment providers and the perceived suitability of available treatment options were positively related to help-seeking behaviour. In a re-analysis of two large college samples (Cepeda-Benito & Short, 1998; Kelly & Achter, 1995), Cramer (1999) found that self-concealment had an indirect negative effect on help-seeking willingness through a direct negative effect on attitudes toward help-seeking.

In summary, the consensus of research literature on attitudes toward help-seeking indicates that positive attitudes associated with help-seeking, such as confidence in treatment providers and recognition of a need for treatment are positively predictive of help-seeking outcome. On the other hand, negative attitudes associated with help-seeking, such as high self-concealment and the experience of stigma associated with either the problem behaviour or seeking help from others, are negatively predictive of help-seeking outcome.

Age

The second broad class of predisposing factors are demographic variables. The following is a review of demographic variables that have been found to be associated with help-seeking behaviour for problem gambling and other addictions. Throughout the world, people are exposed to gambling at an increasingly young age. In a retrospective study, it was found that the vast majority of adult pathological gamblers remembered their gambling addiction to have started between the ages of 10-19 (Dell, Ruzika, & Palisi, 1981). In a survey of 892 11th and 12th graders in New Jersey, 91% of these teenagers reported having gambled during their lifetime, while 5.7% met criteria for pathological gambling using DSM-III criteria (Lesieur & Klein, 1987). However, it has
consistently been found that by the time individuals decide to seek help for their gambling problem, they are typically much older. An analysis of calls to a problem gambling helpline peaked between the ages of 35 – 44 (Cox, 1998). Only 13% of callers aged 18 and younger were calling about their own gambling problems. It appears that the average problem gambler has literally had a lifetime of adverse consequences as a result of their gambling behaviour before they finally decide to seek help. Similarly in other addictions, service utilization for substance and alcohol abuse is found to be lowest for young adults, particularly those in college populations (Caldeira et al., 2009; Wu, Pilowsky, Schlenger, & Hasin, 2007). These findings indicate that age may be a significant predisposing factor associated with treatment utilization for problem gamblers, with younger populations less likely to seek help despite the significant consequences they may face as a result of their gambling behaviour.

**Gender**

The American Psychiatric Association reports in three successive editions of the DSM that the rate of pathological gambling is twice as high among men as it is among women (National Research Council, 1999). Studies have consistently found that men gamble more than women and have higher rates of pathological gambling, even if not at twice the rate (Volberg & Abbott, 1997). In terms of treatment seeking, however, women may be more likely to seek treatment for their gambling problem compared to men. This is indicated by consistent research showing less gender discrepancy in the proportion of women in gambling treatment relative to the proportion of women who are pathological gamblers. In an analysis of individuals who sought help within Ontario’s specialized problem gambling treatment system between 1998 and 2002, the gender percentage
remained relatively constant, fluctuating between 56.4%-58.6% male (Urbanoski & Rush, 2006).

Females have been found to constitute the majority of service users at most health services (Green & Pope, 1999), as well as mental health services (Crawford & Unger, 2000). This should not necessarily be interpreted that females have a greater need for such services, as it is more likely to simply reflect gender differences in the willingness to seek help. Men have consistently been shown to have less positive attitudes toward seeking mental health services than women (Vogel & Wester, 2003). Help-seeking may be inconsistent with how men are socialized in our society. Masculinity has come to be associated with restrained expression of emotions, and this is in direct contrast with the interpersonal openness that is a prerequisite to positive help-seeking attitudes (Fischer & Turner, 1970). Previous research suggests that gender may be a key predisposing factor that may be correlated with help-seeking behaviour, and indicates that females may have a greater likelihood to seek help for their gambling problem than males, despite a lower prevalence rate of pathological gambling behaviour.

**Enabling Factors**

Enabling Factors refer to resources that either promote or impede the individual from using services. In the context of the present investigation, the two Enabling Factors that were investigated are perceived barriers to treatment and social support.

**Barriers to Treatment**

For problem gamblers, perceived barriers to treatment may be the most significant Enabling Factor that may influence the decision to seek help. Treatment initiatives in
problem gambling tend to be relatively well-funded compared to other health care sectors, with $21.7 million dedicated to fund treatment, prevention, and research for problem gambling in Ontario in 2001-2002 (Urbanoski & Rush, 2006). Despite the availability of treatment services, the underutilization of these services suggests that barriers to treatment might be a key factor impeding prospective problem gamblers from seeking treatment. In fact, perceived barriers to treatment has been one of the more well-researched areas in the problem gambling help-seeking literature, with 19 published studies on the topic since 1998 (Suurvali et al., 2009). Barriers to treatment have also been found to be a key Enabling Factor by researchers that have examined the Andersen Behavioural Model in the past (Lewis, Andersen, & Gelberg, 2003; Stein, Andersen, Robertson, & Gelberg, 2012).

Barriers to treatment can be broadly divided into two categories: a) person-related barriers, which include cognitive, emotional, and pragmatic factors experienced by the individual that may hinder the decision to seek help; and b) systemic barriers, which include aspects of the treatment or the treatment system that hinder treatment seeking (Saunders et al., 2006).

*Person-Related Barriers of Treatment-Seeking*

The poignant experience of shame and stigma is one of the defining features of problem gamblers (Pavalko, 2001), and has been found to be a significant barrier to treatment for this population (Evans & Delfabbro, 2005). Many problem gamblers are often embarrassed to admit that they have a problem. Problem gamblers have been found to have personality characteristics such as arrogance, narcissism, extroversion, and the grandiose belief that they can “beat the odds”. These characteristics and beliefs are
inconsistent with the realization that one needs help. Problem gamblers often feel the need to continually project the image of bravado and of being a winner. To seek help may be admitting defeat, and this may be a very difficult realization for a problem gambler (Pavalko, 2001).

The experience of negative emotions during the help-seeking process is similar in other addictions. Ballon et al. (2004) employed a qualitative approach to study a sample of youths with self-reported substance use. Participants consistently endorsed negative feelings and perceptions about the self with respect to substance use, and this prevented many of them from seeking help for their problem. Many participants said they felt ashamed of their addiction, while others cited feeling embarrassed or worried that others may judge them. Once participants were in a stage of seriously considering seeking treatment, another major barrier was the lack of support that many of them experienced from family, friends, treatment providers, or society in general.

Cognitive barriers to treatment may also be a significant impediment to treatment-seeking. Addicts have often cited that an underestimate or misunderstanding of the extent of the addictive problem are among the key reasons for not seeking help (Sheehan, 1991). In a study where 77 problem gamblers were interviewed over the telephone, the most significant barrier to seeking help related to personal attitudes. The denial that a problem existed, belief that the problem could be solved without external assistance, and the unwillingness to accept advice or stop gambling were listed as the most significant barriers to seeking professional help (Evans & Delfabbro, 2005).
Systemic Barriers of Treatment-Seeking

Researchers have suggested several systemic factors that may make it particularly difficult for problem gamblers to seek help as compared to individuals suffering from other addictive disorders. One such factor is the absence of referral mechanisms. Compared to addictions involving chemical substances, the referral systems in place for problem gambling are much less developed (Pavalko, 2001). One of the reasons for this is that problem gambling is not a crime, unlike illegal drug use, public drunkenness, or driving under the influence of a substance. For those who violate drug or alcohol laws, the legal and criminal justice system may mandate treatment. No degree of gambling behaviour, however maladaptive, is deemed illegal. Thus, there are no legally mandated counselling programs for problem gambling. While mental health professionals routinely refer individuals for specialized treatment for alcoholism and other substance addictions, referrals are less often made for problem gambling treatment. Furthermore, treatments for problem gambling may not be well-understood by the general population. Moodie (2008) studied a student and staff university population ($N = 1975$), and found that less than a quarter of the sample was aware of where to go to receive help for problem gambling. A similar proportion of the sample reported that they had ever seen advertisements, posters, or awareness campaigns targeted specifically for those with gambling problems.

The perception that available treatment options are ill-suited to fit the needs of the specific population has been cited as a systemic barrier to treatment. In the aforementioned qualitative investigation by Ballon et al. (2004), a key theme that emerged from the focus groups was criticism of the inadequacies of current treatment options. For instance, many participants felt that the de-individualized, one-size-fits-all
approach to treatment would be ineffective, because everybody has individual needs that might not be met by such an approach. Other participants felt that existing treatment programs lacked an emphasis on addressing patients’ problems besides the addiction, such as mental health problems and ongoing relationship issues. The inaccessibility of services was also cited as a barrier to treatment. A long waiting list and/or assessment period was cited by some participants to undermine motivation for change. For many addicts, working up the courage and motivation to seek treatment may take a long time; having to wait for treatment once the decision has been made to seek it can be a very deflating experience.

Social Support

Another enabling factor that is likely to influence a problem gambler's help-seeking behaviour is their level of social support. Social support refers to the perceived strength and availability of one’s social network in helping an individual cope both with everyday stressors as well as major crises (Sarason, Levine, Basham, & Sarason, 1983). There are two broad ways to conceptualize social support: the structural dimension, which refers to the extent of actual available social support resources, and the functional dimension, which refers to actual or perceived emotional and instrumental support (Beattie & Longabaugh, 1997). Although help-seeking is essentially a social process, poor social support networks have consistently been found in problem gambling populations. For instance, Ciarrocchi and Reinert (1993) investigated the family environments of 86 problem gamblers currently involved in Gamblers Anonymous. It was found that problem gamblers experienced significantly greater family dissatisfaction than a control sample. Problems with interpersonal functioning, such as poor
interpersonal relationships, strained spousal relationships, and loneliness have often been endorsed by pathological gamblers (Ciarrocchi, 2002).

Social support, or lack thereof, could be construed as a precipitating factor that motivates individuals to seek help. Cramer's (1999) model of the psychological antecedents to help-seeking proposed that a lack of social support leads to increased distress, which subsequently predicts an increased likelihood of seeking professional help. The model was empirically validated via path analysis on two large university samples, and has also been validated in subsequent investigations (Leech, 2007; Liao, Rounds, & Klein, 2005).

Research in the problem gambling and addictions literature suggests that social support could also play a significant role in the help-seeking process of this population. Pulford et al.'s (2009) investigation of problem gambling treatment seekers found that gamblers were more likely to report problems with a spouse as a primary rather than a secondary motivator for seeking help. Disruptions in an individual’s social network, particularly marital conflict, were also found to be a frequent presenting reason for treatment in a recent qualitative study of problem gambling treatment seekers (Tepperman, 2009).

These findings are consistent with research in other addictions. In a review of the reasons why alcohol and substance abusers sought help, Sheehan (1991) found that factors which focused on threatening key relationships were listed as being among the most powerful motivators of help-seeking by those who experienced them. Marriage dysfunction and the threat of losing a child were reported as particularly poignant motivators.
While there has been some research on the role of social support in the help-seeking process, the addictions literature has predominantly focused on social support in relation to treatment outcome. Social support has been argued to be a buffer, protecting an individual from risk factors that may potentially impede the progress of treatment (Dobkin, Civita, Paraherakis, & Gill, 2002). Oei and Gordon (2008) investigated various predictors of gambling abstinence and relapse in a sample of 75 individuals who have attended Gamblers Anonymous meetings for a minimum of 12 months. The researchers found that a measure of social support significantly distinguished abstinent and relapsed groups of problem gamblers within the sample. Social support was also associated with longer abstinence phases for problem gamblers in this sample.

Gomes and Pascual-Leone (2009) explored various change-facilitating factors for 60 pathological gamblers currently in treatment. One of the focus variables in this study was social support. Two subtypes of social support were investigated in this study; emotional support was defined as verbal and non-verbal communication that conveys concern and respect, while instrumental support was defined as the provision of material goods that could be used to help the individual regain a sense of control over a given situation. Results from a regression analysis indicated that emotional support predicted one’s motivation to change their gambling behaviour. Both emotional and instrumental social support were strong positive correlates of abstinence self-efficacy, suggesting a positive influence of social support in improving problem gamblers’ confidence in their own ability to control their behaviour.

There has been consistent evidence supporting the beneficial role of supportive relationships in other addictions, such as in the long-term recovery from alcoholism and
drug addiction (Humphreys, Moos, & Cohen, 1997). For instance, Havassy, Wasserman, and Hall (1995) demonstrated the benefits of functional social support in cocaine-abusing patients. Patients who reported higher levels of emotional support were more likely to remain abstinent during a 3-month post-treatment period. Moos and Moos (1984) found that family support is predictive of fewer depression symptoms and lower alcohol consumption two years post-treatment.

While there have been numerous studies pointing to the positive influence of social support on the treatment outcome of problem gambling and other addictions, there have been no studies to date which have investigated the influence of social support on the help-seeking behaviour of problem gamblers. This presents as a significant gap in the current gambling literature. The positive correlation of social support with treatment outcome does not necessarily indicate that the presence of social support is a positive predictor of treatment seeking. Currently, there is no consensus in the empirical literature as to the effect of social support on help-seeking outcome for problem gamblers.

Furthermore, social support may have differential effects on formal and informal help-seeking processes. For instance, problem gamblers with a strong social support system may be more likely to seek help from these informal sources of support to help them with their problem. These gamblers, in turn, may be less likely to seek support from formal sources of help. Contrastingly, it could also be argued that problem gamblers with greater support from their informal networks will receive greater encouragement to seek formal help for their problem. The present investigation aimed to answer such questions in the process of elucidating social support’s role in both formal and informal help-seeking for problem gambling.
Need Factors

Need Factors are objective indicators that there is a need for treatment. For a problem gambling population, the most relevant Need Factors are adverse financial consequences and gambling severity (Pulford et al., 2009a, Tremayne, Masterman-Smith, & McMillen, 2001). While adverse financial consequences is one sequela of gambling severity, it also encapsulates other adverse consequences associated with pathological gambling, including health issues and family discord. The majority of studies that have investigated the ABM in various populations have found that Need Factors play a central role in predicting help-seeking behaviour (Lynch et al., 1999; Soldo, 1985; Wolinsky & Johnson, 1991). The few studies that have investigated help-seeking in problem gamblers parallel these findings (Pulford et al., 2009a).

Adverse Financial Consequences

The most frequently cited reason for help-seeking by problem gamblers is to address the adverse financial consequences that have resulted from their gambling behaviour. For problem gamblers, financial consequences are best conceptualized as a Need Factor, as it is an objective variable that is directly linked to the necessity for intervention.

Pulford et al. (2009a) asked a group of problem gamblers about the factors that motivated their help-seeking behaviour. Participants in this study were divided into two groups: those who had sought help for their gambling problem \( n = 125 \) and those who had never sought help for their problem \( n = 104 \). There were 15 possible reasons from which to choose, and out of these, the participants in both groups endorsed financial problems more than any other reason, and were also most likely to identify it as the
primary reason for seeking help. However, individuals in the help-seeking group on average identified 7 of the 15 options as being influential to their decision, suggesting that the decision to seek help is typically influenced by multiple factors.

Evans and Delfabbro (2005) studied a sample of 77 pathological gamblers, and found that only five out of a list of twenty-four possible motivators for seeking help had a rating indicative of being at least “a little bit important” – three of these related to financial concerns. Furthermore, results indicated that professional help-seeking is predominantly crisis-driven rather than motivated by recognition of problematic behaviour. There was a pattern of delaying help-seeking until times of dire need, typically associated with serious financial consequences.

McMillen et al. (2004) studied a group of 16 pathological gamblers and their friends and family. Interview data from this study also revealed that financial consequences were the primary reason for help-seeking. Other studies have consistently indicated that financial loss or difficulty was the pivotal motivating factor for help-seeking, regardless of whether the study utilized a structured survey or an open-ended interview approach (Abbott, Williams, & Volberg, 1999; Hodgins & el-Guebaly, 2000; Hodgins, Makarchuk, el-Guebaly, & Peden, 2002). These investigations speak to the influential weight of adverse financial consequences in motivating problem gamblers to seek help. In fact, researchers have used this rationale to utilize financial counselling services as an effective problem gambler case finding venue, and to conceptualize it as a common entry point into the treatment system (Govoni, Chipman, Lilley, & Frisch).
**Problem Gambling Severity**

As may be intuitively expected, the research literature also suggests that there is a relationship between the severity of the gambling behaviour and the likelihood of seeking formal treatment. In a large epidemiological study conducted in Australia, Tremayne et al. (2001) found that in gamblers who scored between 5-9 on the South Oaks Gambling Screen (Lesieur & Blume, 1987), only 12.3% sought help, compared to a significant increase of 54.3% of gamblers who scored 10 or higher. Various other studies have found a relationship between gambling severity and quality of life, functional status, and impairment; these factors in turn subsequently influenced the likelihood of help-seeking in problem gamblers (Mechanic, 2002; O'Conner, 2004; Ustun & Rehm, 1998).

Problem gamblers with lower problem severity may be more likely to seek alternative forms of help outside of professional services. Hodgins and el-Guebaly (2000) found that gamblers with less severe problems (as indicated by the number of DSM-IV criteria met) were more likely to resolve their gambling behaviour without formal treatment than gamblers with more severe problems. Based on these findings, the authors suggested that the continuum of gambling severity affected a multitude of responses. With less severe gambling problems, individuals are more likely to self-initiate behavioural change, and less likely to seek formal treatment or self-help groups. Over 80% of non-treated participants in the Hodgins and el-Guebaly (2000) study stated that they did not seek treatment because they wanted to “do it on their own”. As gambling problems grew more severe, however, a significantly greater proportion of gamblers reported that they had sought treatment or participated in Gamblers Anonymous. This
suggests that gambling severity will likely influence help-seeking from both formal and informal sources.

Adverse financial consequences and gambling severity have been shown to be highly influential in motivating problem gamblers to seek help. These variables vary as a direct consequence of the gambling behaviour; the literature has indicated that prolonged maladaptive gambling behaviour affects each of these variables negatively (Petry, 2005b). In the revised help-seeking model, these variables are conceptualized as *extrinsic factors* because problem gamblers who enter treatment due to these factors are typically motivated only to resolve the adverse consequences that result from their problem gambling, rather than a resolution of the gambling behaviour itself (Pulford et al., 2009a). Such factors are often cited as the primary reasons that bring problem gamblers into treatment, and thus they must be taken into account.

While extrinsic factors are important to take into consideration, the utility of these factors alone in predicting help-seeking behaviour is limited. In the addictions literature, there is a consistent finding that significant adverse consequences are usually experienced by the individual for a significant period of time *before* the decision to seek help. For instance, Simpson and Tucker (2002) studied 101 problem drinkers who varied in help-seeking histories (some sought various forms of treatment, others never sought treatment) and current drinking status (resolved or unresolved). The participants were asked retrospectively about the development of their alcohol-related problems, self-recognition of problems, and their help-seeking from professional and informal sources. For most participants, problem recognition occurred shortly after the onset of pathological drinking practices. This was followed by a wide range of adverse consequences that were broadly
experienced by the vast majority of participants, including financial difficulty, strained interpersonal relationships, legal troubles, and emotional problems. However, the appearance of all problems tended to precede the initial instance of formal help-seeking, which occurred on average a decade after problem recognition. From these findings, the researchers concluded that there are typically multiple opportunities for problem identification and early intervention in social, occupational, and legal domains before problem drinkers finally surfaced in the health care system.

Research has suggested that these significant delays in treatment seeking exist for problem gamblers as well (Cox, 1998; Evans & Delfabbro, 2005). It is safe to assume that during these delays, many problem gamblers suffer serious financial consequences and other detrimental effects without seeking help. Thus, while extrinsic factors may be important motivators for help-seeking behaviour, their utility as meaningful predictors for treatment seeking in and of themselves is doubtful. The question still remains, why do some problem gamblers with adverse consequences seek help, while many others with similar problems do not? The present study hypothesizes that a certain level of intrinsic motivation is a key predictive factor that may help explain why gamblers seek help for their problem.

Readiness to Change

In the revised version of the Andersen Behavioural Model used in the present study, intrinsic motivation will be considered to compliment the extrinsic factors that the original Andersen model already accounts for. Intrinsic motivation can be captured by the construct of Readiness to Change. The process of advancing through the various stages of
change is typified by a self-recognition that the gambling behaviour is problematic, internal motivation to change the problem behaviour, and a commitment to take action. While the Readiness to Change construct has been widely researched in a variety of different addictions, literature on the applicability of the stages of change model on a problem gambling population is still in its infancy. Few investigations have evaluated the stages of change in pathological gamblers (e.g., Gomes & Pascual-Leone, 2009; Petry, 2005a), and these studies have focused on treatment efficacy rather than help-seeking behaviour. The majority of research on the influence of the stages of change on addiction outcomes has focused predominantly on cigarette smoking, alcohol abuse, and illicit substance abuse.

In a unique prospective design (Freyer et al., 2007), 312 individuals with diverse alcohol problems were assessed on various measures, including prior utilization of help, adverse consequences from their drinking behaviour, and intention to utilize help at time 1. At time 2, actual help-seeking behaviour was assessed one year later. Stage of change at time 1 was found to be predictive of help-seeking behaviour at time 2; individuals in the Preparation stage were five times more likely than those in the Precontemplation stage to seek help during the one year period.

Readiness to Change has also been shown to predict addiction treatment outcomes. For instance, Readiness to Change has been found to be a strong predictor of later drinking reduction (Project MATCH Research Group, 1998). The research group studied a large sample of problem drinkers who underwent a 12-week treatment for their problem ($n = 1,726$), and tracked their progress longitudinally. At a one-year follow up, a measure of Readiness to Change was the strongest predictor of drinking behaviour.
Remarkably, Readiness to Change continued to predict drinking behaviour three years after the completion of treatment. Similarly, other studies have found that substance abuse treatment seekers in more advanced stages of change remained in treatment longer (Edens & Willoughby, 2000) and reduced substance use to a greater degree than those who initiated treatment in earlier stages of change (Belding, Iguchi, & Lamb, 1996).

Research studies that did not directly investigate the Transtheoretical Model have also found support for the importance of factors resembling Readiness to Change in predicting treatment seeking for addictions. Ballon et al. (2004) employed a qualitative approach to studying a sample of youths with self-reported substance use (N = 24). The researchers utilized content analysis to review transcripts from four focus groups that were conducted on subjects’ expectancies with respect to help-seeking for substance use problems. The concept of self-motivation was a prominent theme in the groups; the consensus was that those who were truly self-motivated would seek help, while those who were not motivated cannot be forced to do so. Other subjects went further to say that those who were coerced into treatment usually do not realize for themselves that they have a problem.

Prochaska and DiClemente's theoretical conceptualization of Readiness to Change is ideal for capturing the concept of intrinsic motivation that drives behavioural change. Readiness to Change involves experiences, motivations, and changes residing within the individual. This process is not deterministic in the sense that it is not dictated solely by objective, measurable variables, such as the degree of adverse consequences resulting from pathological gambling behaviour. Rather, it corresponds to intrinsic motivation to directly address the problem, and this is subjective to the individual gambler. Research
suggests that while extrinsic motivators such as adverse financial consequences are best at explaining the behaviour of problem gamblers who are seeking or have sought help, intrinsic motivators may best explain the behaviour of problem gamblers who have not sought help (Freyer et al., 2007). In other words, if a problem gambler lacks a readiness for change, this may prevent them from seeking professional help, despite serious adverse consequences associated with their problem behaviour.

*Relationship between Need Factors and Readiness to Change*

In the addictions literature, there is evidence of a positive relationship between extrinsic factors (i.e., Need Factors) and Readiness to Change. For instance, Petry (2005a) found that a continuous measure of Readiness to Change was positively correlated with gambling severity. In Freyer et al.'s (2007) investigation of individuals with alcohol dependence, participants with greater alcohol dependence severity were found to have higher scores on a self-report Readiness to Change measure. Thus, findings from problem gambling and substance abuse literature have shown that the severity of an addiction is positively correlated with one’s readiness to alter their maladaptive behaviour. This suggests a relationship between extrinsic motivation, operationalized by adverse financial consequences, gambling severity, and gambling frequency, and intrinsic motivation, operationalized by Readiness to Change. In the present investigation, it was hypothesized that extrinsic Need Factors will predict an increase in Readiness to Change, which in turn will positively influence help-seeking outcome.
The Current Study

The current study empirically tested the Revised Andersen Behavioural Model using structural equation modelling and investigated key variables that influence Help-Seeking Outcome for a heterogeneous sample of at-risk frequent gamblers. Specifically, participants were individuals currently undergoing treatment for their gambling problem, as well as frequent gamblers who have never sought help for their behaviour recruited from the general population and from the University of Windsor psychology participant pool. This recruitment strategy yielded a sample of gamblers who have had markedly different help-seeking histories.

In the current study, Help-Seeking Outcome was examined within the context of the Revised Andersen Behavioural Model with the incorporation of the Transtheoretical Model of behavioural change. Predisposing Factors investigated in this study included attitudes toward help-seeking from both professional and informal sources. Enabling Factors included perceived barriers to treatment and perceived social support. Need Factors included adverse financial consequences, problem gambling severity, and gambling frequency. Intrinsic motivation was investigated by assessing participants' Readiness to Change. Finally, the Help-Seeking Outcome for the present investigation was operationalized as participants' self-reported willingness to seek professional services and informal help, respectively. It is important to note that help-seeking willingness does not necessarily imply subsequent help-seeking action or behaviour. However, given that in this study help-seeking willingness was assessed and tested as the outcome variable in the hypothesized model, the terms 'help-seeking willingness' and 'Help-Seeking Outcome' are used interchangeably for the remainder of this document.
The research on pathological gambling has significantly increased in the past two decades, in correspondence with the rise in the prevalence of pathological gambling over this time period. However, the process by which problem gamblers seek professional help for their problem is still not well understood. Very few published gambling studies have investigated help-seeking for problem gambling as the core research focus (Pulford et al., 2009a). The present study attempted to address this gap in the literature with a theoretically grounded approach to empirically examine variables which may be influential in motivating problem gamblers to seek help. Specifically, a revised version of the Andersen Behavioural Model was tested using structural equation modelling to determine if there was statistical support for the model in predicting the help-seeking behaviour of problem gamblers. Ultimately, the goal was to develop a comprehensive, theoretically-grounded framework of help-seeking for gamblers that considers Predisposing, Enabling, and Need Factors, along with Readiness to Change.

**Research Hypotheses**

The principle analysis of the current study tested the Revised Andersen Behavioural Model using structural equation modelling. Twenty measured variables were included in the model, corresponding to four latent variables which were hypothesized to influence Help-Seeking Outcome. The hypothesized model is illustrated in Figure 2.1.
Hypotheses

Expected Outcome - The Revised Andersen Help Seeking Model will be supported via Structural Equation Modeling

The overall hypothesized outcome of the current investigation is consistent with previous research, which has verified the Andersen Behaviour Model in explaining the help-seeking behaviour of various different populations (Padgett et al., 1990; White et al., 2005). The main hypothesized outcome can be divided into several specific hypotheses within the revised help-seeking model.

**Hypothesis 1:** *Predisposing Factors*, operationalized as attitudes toward seeking help from professionals and informal support networks, and measured by the four subscales of the *Attitudes Toward Seeking Professional Psychological Help For Problem Gambling Scale (ATSPPH Stigma, Confidence, Openness, and Need)* and the *Attitudes Toward Seeking Informal Help for Problem Gambling Scale (ATSIH)*, will positively predict *Help-Seeking Outcome*, operationalized as willingness to seek both professional and informal help, and measured by the *Willingness to Seek Professional Help Subscale (WSH-Professional)* and *Willingness to Seek Informal Help Subscale (WSH-Informal)*.

This hypothesis is based on help-seeking literature which has indicated that individuals with positive attitudes towards seeking professional help will be more likely to exhibit actual help-seeking behaviour (Cellucci et al., 2006; Liao et al., 2005; Suurvali, Hodgins, & Cunningham, 2010). While there has been no previous research investigating the relationship between informal help-seeking and willingness to seek informal help, it was hypothesized that it would parallel the previous findings of the relationship between
attitudes toward seeking professional help and professional help-seeking behaviour.

*Figure 2.2: Hypothesis 1 - Predisposing Factors*

<table>
<thead>
<tr>
<th>ATSPPH-Need</th>
<th>WSH-Professional</th>
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<tbody>
<tr>
<td>ATSPPH-Stigma</td>
<td></td>
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<tr>
<td>ATSPPH-Openness</td>
<td></td>
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<tr>
<td>ATSPPH-Confidence</td>
<td></td>
</tr>
<tr>
<td>ATSIH-Total</td>
<td>WSH-Informal</td>
</tr>
</tbody>
</table>

**Hypothesis 2:** *Enabling Factors, operationalized and measured by the Barriers to Treatment Scale, and the four subscales of the Medical Outcome Study Social Support Survey – Short Form (MOS Emotional-Informational, Affectionate, Tangible, and Positive Social Interaction) will positively predict Help-Seeking Outcome.*

2a) *Higher BTS scores will predict lower Help-Seeking Outcome.*

This hypothesis is based on the findings of Saunders et al. (2006) using the Barriers to Treatment measure on a sample of treatment-seeking and non-treatment seeking problem drinkers. It is also consistent with qualitative investigations confirming the negative impact of various barriers for addicts contemplating seeking treatment (Ballon et al., 2004).

2b) *Higher scores on all four MOS subscales will predict higher Help-Seeking Outcome.*

This hypothesis is informed by research that has indicated the influential role of social networks in both supporting and coercing problem gamblers into treatment.
In the problem gambling literature, social support has generally been indicated as a predictor of positive treatment outcome (Gomes & Pascual-Leone, 2009; Oei & Gordon, 2008). However, treatment outcome and treatment-seeking behaviour may be relatively independent constructs.

**Figure 2.3: Hypothesis 2 - Enabling Factors**

**Hypothesis 3:** *Need Factors*, operationalized as severity of financial consequences, gambling severity, and gambling frequency, and measured by the Adverse Financial Consequences Measure (AFCM), the Canadian Problem Gambling Index (CPGI), money gambled in the last 12 months, and frequency of gambling behaviour per week, respectively, will positively predict Help-Seeking Outcome.

This hypothesis is based on previous findings indicating that problem gamblers are often motivated to seek help as a result of adverse financial consequences (Evans & Delfabbro, 2005; Pulford et al., 2009a) and increased gambling severity (Tremayne et al., 2001).
Hypothesis 4: Need Factors will positively predict Readiness to Change, operationalized by the four main stages of precontemplation, contemplation, action and maintenance of the Transtheoretical Model, and measured by the four corresponding subscales of the University of Rhode Island Change Assessment (URICA).

This hypothesis is based on a previous finding that gambling severity has been positively correlated with a continuous measure of Readiness to Change (Petry, 2005a).
Hypothesis 5: Readiness to Change, will positively predict Help-Seeking Outcome.

This hypothesis is based on research indicating the importance of Readiness to Change in the behavioural change process for problem gamblers (Petry, 2005a), as well as other addictions (Freyer et al., 2007; Hodgins, 2001; Project MATCH Research Group, 1998). However, Readiness to Change has been investigated predominantly with respect to treatment outcome, and thus less is currently known about the impact of Readiness to Change on the help-seeking process. Nevertheless, the Transtheoretical Model suggests that achieving a certain level of Readiness to Change is pivotal to the decision of seeking help.

Figure 2.6: Hypothesis 5 - Readiness to Change
CHAPTER III: DESIGN AND METHODOLOGY

Recruitment Procedure

Participants for the present research study were a heterogeneous sample of gamblers, recruited from various problem gambling treatment sites, the general population, and the University of Windsor psychology participant pool. The total combined sample size for the present investigation was 319 participants: 39 participants from in-treatment, 42 participants from the general population, and 238 participants from the University of Windsor psychology participant pool.

Participants who sought treatment for problem gambling were recruited from outpatient gambling treatment programs in Ontario and British Columbia, Gamblers Anonymous Chapters in Windsor and Edmonton, and the website www.GamblingTherapy.org. The list of outpatient treatment centres included the Addiction Services at St. Leonard’s Community Services in Brantford, Ontario, the Tri-County Addiction Services in Smith Falls, Ontario, the Four Counties Addiction Services Team in Peterborough, Ontario, the Richmond Addiction Services in Richmond, British Columbia, and the Alcohol, Drug, and Gambling Services in Hamilton, Ontario.

Problem gambling treatment centres and Gamblers Anonymous Chapters were contacted via email and telephone regarding the nature of the study and the researcher's interest in recruiting clients seeking help from their treatment service to participate in a 30-minute self-report questionnaire. An advertisement was also posted in various online gambling self-help websites, including GamblingTherapy.org (the online recruitment protocol will be discussed later in the methodology section).
A paper-and-pencil as well as an online version of the questionnaire was available for participants to complete. For in-treatment participants, a non-cashable gift certificate valued at $20 was offered to those who met the gambling severity criteria of the study and subsequently participated in the research study. Upon receiving the approval from the Ethics Review Board of the University of Windsor, as well as the governing ethics boards of the various treatment centres, anonymous questionnaire packages were sent to each participating treatment centre. A contact person was established for each centre. The researcher informed each contact person about the details and target population of the study. Each contact person was asked to inform problem gamblers at the treatment centre about the research study, and those who were interested were given the opportunity to fill out the questionnaire. For Gamblers Anonymous of Edmonton, the Alcohol, Drug, and Gambling Services in Hamilton, and individuals seeking support from GamblingTherapy.org, the participants accessed the online version of the questionnaire. For the remaining five treatment facilities, paper-and-pencil questionnaires were used. These questionnaires were collected by the contact person and mailed to the researcher. The researcher kept monthly correspondence with each contact person throughout the data collection period, and open communication was maintained between the researcher and the contact person to ensure that any concerns would be quickly addressed. Information regarding the participating treatment centres used to collect data for the in-treatment group in the present study is presented in Table 3.1.

Participants that have not sought treatment for their gambling problem were recruited through the University of Windsor psychology participant pool as well as from the community population across North America. To make it more convenient for this
group to participate in the study, as well as to widen the geographical scope of this difficult-to-recruit sample, participants from this source were asked to complete an online version of the questionnaire.

Table 3.1: Recruitment from Treatment Centres

<table>
<thead>
<tr>
<th>Name of Treatment Site</th>
<th>Location</th>
<th>Survey Method</th>
<th>Number of Participants Recruited</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addiction Services at St. Leonard’s Community Services</td>
<td>Brantford, Ontario</td>
<td>Paper and Pencil</td>
<td>5</td>
</tr>
<tr>
<td>Four Counties Addiction Services Team</td>
<td>Peterborough, Ontario</td>
<td>Paper and Pencil</td>
<td>6</td>
</tr>
<tr>
<td>Richmond Addiction Services</td>
<td>Richmond, British Columbia</td>
<td>Paper and Pencil</td>
<td>4</td>
</tr>
<tr>
<td>Tri-County Addiction Services</td>
<td>Smith Falls, Ontario</td>
<td>Paper and Pencil</td>
<td>4</td>
</tr>
<tr>
<td>Gamblers Anonymous of Windsor</td>
<td>Windsor, Ontario</td>
<td>Paper and Pencil</td>
<td>5</td>
</tr>
<tr>
<td>Gamblers Anonymous of Edmonton</td>
<td>Edmonton, Alberta</td>
<td>Online Questionnaire</td>
<td>4</td>
</tr>
<tr>
<td>Alcohol, Drug, and Gambling services</td>
<td>Hamilton, Ontario</td>
<td>Online Questionnaire</td>
<td>5</td>
</tr>
<tr>
<td><a href="http://www.GamblingTherapy.org">www.GamblingTherapy.org</a></td>
<td>Online Gambling Help Website</td>
<td>Online Questionnaire</td>
<td>6</td>
</tr>
</tbody>
</table>

For participants recruited through the community, advertisements were posted in various online media, such as online classifieds websites (e.g., Kijiji and Craig’s List) and the social networking website Facebook. These advertisements stated that individuals who participate in this 30-minute questionnaire about problem gambling would receive a $10 online voucher that can be redeemed at Amazon.com or Amazon.ca. Previous studies have indicated the effectiveness of using media advertisement in recruiting individuals with problem addictive behaviours who have not yet sought formal treatment (Saunders et al., 2006).

For participants recruited through the University of Windsor psychology participant pool, an announcement about a study titled "Investigation of the Help-Seeking
Attitudes of Gamblers" was posted on the psychology participant pool website. Individuals in the participant pool interested in the study were given access to a link to an online consent form, which stated that individuals would receive a 0.5 bonus point toward their final course grade for completion of the questionnaire. After completion, participants provided their student ID to the researcher so that they may be granted course credit for participation.

To ensure that individuals recruited from the general population and psychology participant pool met the inclusion criteria for gambling severity, they first participated in an online screening procedure using the Canadian Problem Gambling Index (CPGI; Ferris & Wynne, 2001). The CPGI is a brief 9-item, empirically validated self-report measure of gambling severity that can be easily administered for screening purposes. The online questionnaire was programmed to instantly calculate the CPGI scores, and only individuals who scored 3 or above on the CPGI were granted access to continue on with the rest of the online study. This score corresponds to the “moderate risk” classification of the measure in terms of gambling severity. As informed by the instrument developers, this range may be associated with heavy gambling, other correlates of gambling problems, and may or may not yet be accompanied by the adverse consequences of problem gambling (Ferris & Wynne). The CPGI will be discussed in greater detail later in the chapter.

After the participants recruited from the general population completed the study, they were asked to provide their email addresses as the contact source through which they can be emailed a $10 Amazon gift certificate. Individuals were emailed their online gift certificates within 48 hours of completing the questionnaire. In the delivery of the gift
certificates, participants were also encouraged to forward the study's online questionnaire link to other individuals in their social network who are problem gamblers and who may also be interested in participating in the study. This was an attempt to recruit additional participants through the snowball technique. It has been suggested that frequent gamblers typically associate with other frequent gamblers due to the amount of time they spend at gambling venues (Pavalko, 2001). Participants recruited from the psychology participant pool were granted course credit in lieu of the $10 gift certificate as compensation for completion of the study.

During the course of recruitment, the online questionnaire was compromised with an influx of 199 new entries within a 72-hr period. The rapid rate of online recruitment was highly suspicious given the rate of recruitment both before and after this window. It was believed that many of these entries were entered by fraudulent sources, such as internet spambots in an attempt to gain additional gift certificates in compensation for completion of the study. The online questionnaire was immediately shut down. When the online questionnaire was reopened, prospective participants were required to first contact the researcher via email to express interest in the study. They were then given a password which allowed them to access the online questionnaire. Only email addresses with a verified record of correspondence with the researcher were granted the compensation when the participants completed the study. The treatment of the suspect entries recorded during the 72-hr period will be discussed further in the results section.
Demographics

Background demographic variables are presented in Table 3.2. As presented in the table, significant differences were found in a number of demographic variables between the general population, in-treatment group and the psychology participant pool group. Participants from the general population and in-treatment were more similar on demographic variables as well as other measured predictors of Help-Seeking Outcome (discussed in the following chapter) compared to individuals recruited from the psychology participant pool. On average, the former group was significantly older, had a more lengthy gambling history, gambled more frequently, and spent more on gambling activities in the past 12 months. While the gender ratio was equal in the general population/in-treatment sample, over three-quarters of participants from the psychology pool were female. This was reflective of the greater female representation observed in the total pool.

Table 3.2: Demographic Information of the Sample

<table>
<thead>
<tr>
<th></th>
<th>General Population and In-Treatment (N = 81)</th>
<th>General Population Only (N = 42)</th>
<th>In-Treatment Only (N = 39)</th>
<th>Psychology Participant Pool (N = 238)</th>
<th>Total Sample (N = 319)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>44.00</td>
<td>34.05</td>
<td>53.92</td>
<td>20.90</td>
<td>26.54</td>
</tr>
<tr>
<td>Years Gambled</td>
<td>10.71</td>
<td>8.89</td>
<td>11.91</td>
<td>3.15</td>
<td>4.91</td>
</tr>
<tr>
<td>Frequency of gambling per week</td>
<td>2.99</td>
<td>3.74</td>
<td>2.31</td>
<td>1.52</td>
<td>1.85</td>
</tr>
<tr>
<td>Money Gambled Last 12 Months</td>
<td>$11,551</td>
<td>$16,087</td>
<td>$7137</td>
<td>$1253</td>
<td>$3717</td>
</tr>
<tr>
<td>Gender</td>
<td>49.33% Female</td>
<td>37.84% Female</td>
<td>60.53% Female</td>
<td>78.26% Female</td>
<td>71.15% Female</td>
</tr>
<tr>
<td>Years of Education</td>
<td>13.99</td>
<td>15.03</td>
<td>13.12</td>
<td>14.32</td>
<td>14.24</td>
</tr>
</tbody>
</table>
It is notable that in the general population sample, the reported money gambled in the last twelve months ($16,087) is quite high compared to the psychology participant pool and even the in-treatment participants. Given that the study was advertised in such avenues as gambling treatment websites, online forums for gamblers, and to Facebook users with self-identified interests in gambling activity, it is likely that this recruitment strategy for the general population sample attracted individuals with heavy gambling involvement. Unfortunately, few published gambling studies provide the actual statistics of the monetary spending on gambling activity of their participants, and thus comparisons of this amount with other gambling research studies are difficult. One study that did provide these statistics looked at data from callers to a West Virginian Problem Gambling Helpline from 2000-2007 (Weinstock et al., 2011). Out of 1125 callers that accepted a referral for an in-person assessment, 72.5% of these individuals reported gambling on a daily basis. Out of the 335 callers that declined the referral, 61.1% reported gambling on a daily basis. Of those who accepted the referral, 6.5% reported gambling related debt of $50,000 or more, while the most frequently endorsed gambling-related debt range was $5000-$25,000 (25.4% of the sample). While the study did not provide direct figures related to annual monetary spending on gambling activities, one can infer from the statistics provided that gambling-related expenditure for participants in this study were substantial.

Another study looked at social desirability biases on self-reported gambling severity of a college sample and a sample of in-treatment problem gamblers (Kuentzel, Henderson, & Melville, 2008). While the published article did not provide statistics on gambling expenditure, personal correspondence with the primary research indicated that
the mean gambling expenditure of their in-treatment sample was “well over $1000”, while the highest gambler endorsed spending over $6000 in the last 30 days (Kuentzel, 2012). In a single case-study of the efficacy of Motivational Interviewing in the treatment of pathological gambling, the participant in question spent $200-$300 per week prior to treatment entry (Kuentzel, Henderson, Zambo, Stine, & Schuster, 2003). These figures are consistent with what has been reported for the current sample.

Group differences were also seen in the participants’ household income, which are presented in Table 3.3. Most notably, approximately a quarter of participants from the psychology pool reported an income of $0-$10,000, while only 6.3% of the general population/in-treatment population reported this income level. The larger proportion of individuals reporting low income in the psychology participant pool is believed to be largely due to the student status of individuals in this group.

<table>
<thead>
<tr>
<th>Table 3.3: Household annual income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household income per year</td>
</tr>
<tr>
<td>-----------------------------</td>
</tr>
<tr>
<td>$0 - $10,000</td>
</tr>
<tr>
<td>$10,000 - $25,000</td>
</tr>
<tr>
<td>$25,000 - $50,000</td>
</tr>
<tr>
<td>$50,000 - $75,000</td>
</tr>
<tr>
<td>$75,000 - $100,000</td>
</tr>
<tr>
<td>$100,000 and above</td>
</tr>
</tbody>
</table>

The ethnic makeup for both groups was similar and is presented in Table 3.4; in sum, the majority of the total sample was Caucasian (79.5%), and Asian and Middle Eastern minorities were the two largest minorities represented at 5.8% and 4.8%, respectively.
Table 3.4: Ethnicity

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>General Population and In-Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>European origin/White</td>
<td>79.5%</td>
</tr>
<tr>
<td>Asian/Asian Pacific Island</td>
<td>5.8%</td>
</tr>
<tr>
<td>Middle Eastern</td>
<td>4.8%</td>
</tr>
<tr>
<td>African origin</td>
<td>2.9%</td>
</tr>
<tr>
<td>Bi-Racial/Multiracial</td>
<td>2.9%</td>
</tr>
<tr>
<td>First-Nations</td>
<td>1.9%</td>
</tr>
<tr>
<td>Latino-a/Hispanic</td>
<td>1.0%</td>
</tr>
<tr>
<td>Other</td>
<td>1.3%</td>
</tr>
</tbody>
</table>

In the in-treatment/general population group, 38% were married, 35% were divorced, separated, or widowed, and 26% had never been married. In the psychology participant pool group, only 3% had been married, 3.5% had been divorced, separated, or widowed, while the vast majority of participants (93.5%) had never been married.

Sixty-five percent of the general population/in-treatment group reported that they had sought treatment for their gambling problem, while only two percent of the psychology participant pool group had ever sought treatment for their gambling behaviour. Similarly, fifty-eight percent of the general population/in-treatment group stated that they had sought formal psychological treatment, while only four percent of the psychology participant pool group reported they had ever sought psychological help.

Measurement Scales

Measures of Predisposing Factors

Demographics Questionnaire

Participants were asked to fill out a demographics sheet providing information on age, gender, years of education, marital status, and annual household income. Participants also filled out information regarding their gambling history, such as the length of time they have gambled, the types of gambling activities they engaged in, the frequency of
their gambling, and the estimated amount of money they spent in gambling activity in the past year. The demographics questionnaire is shown in Appendix A.

At the end of the demographics questionnaire, participants were asked to respond to one of the following two open-ended questions: "What are the primary reason(s) that 1) led you to seek treatment for your gambling problem? 2) kept you from seeking help for your gambling problem?" These responses were analyzed qualitatively with respect to reasons participants may have for seeking treatment, and reasons participants may have for refraining from seeking treatment. Responses were grouped into emergent themes, and are presented in the results and the discussion sections.

*The Attitudes Toward Seeking Professional Psychological Help for Problem Gambling Scale (ATSPPH; Fischer & Turner, 1970; Hart & Frisch, 2006)*

A modified version of the Attitudes Toward Seeking Professional Psychological Help Scale (ATSPPH) was used to assess participants’ attitudes toward seeking professional mental health services for their gambling problems. The original subscale created by Fischer and Turner (1970) contained 29 items on a 4-point Likert scale. This original scale assessed four core domains regarding attitudes toward professional psychological help-seeking: “Recognition of Need for Psychotherapeutic Help” (Need), “Stigma”, “Openness”, and “Confidence in Mental Health Practitioners” (Confidence). The Need subscale assessed the self-recognition of the need for professional psychological help. The Stigma subscale assessed the tolerance of an individual with respect to the stigma associated with seeking psychological help. The Openness subscale assessed the interpersonal openness, trust, and self-disclosure in discussing one’s problems. Finally, the Confidence subscale assessed the confidence in the mental health
profession in general. These subscales captured the main attitudinal domains that appeared to be important in influencing the help-seeking behaviour of problem gamblers (Suurvali et al., 2009). The total scale demonstrated good internal consistency in its original validation study (Cronbach’s $\alpha = .83$).

Hart and Frisch (2006) adapted a modified version of the ATSPPH specifically for problems with gambling. This adapted scale kept the original 29 questions of the original scale, but modified the questions such that the items are pertinent specifically to problems related to gambling, rather than help-seeking for psychological problems in general. The modified ATSPPH-PG evidenced excellent levels of internal consistency ($\alpha = .91$) as well as acceptable 2-week test-retest reliability ($r = .71, p < .001$; Hart & Frisch, 2006). The modified version of the ATSPPH is shown in Appendix B. In the present sample, the total scale demonstrated very good internal consistency, with $\alpha = .89$.

The Attitudes Toward Seeking Informal Social Support for Problem Gambling Scale (ATSISI)

The Attitudes Toward Seeking Informal Help for Problem Gambling Scale (ATSISI) was used to assess participants' attitudes toward seeking help for their gambling problem from their informal support network. The measure was developed for the researcher's Master's thesis project, which investigated the help-seeking attitudes of a sample of adult Asian-Canadian gamblers from a university population as well as from the general population.

Items on the ATSISI were drawn principally from the ATSPPH-PG (Hart & Frisch, 2006), which in turn was originally developed based on Fischer and Turner’s (1970) ATSPPH for general psychological problems. Validation data was reviewed from
the original study by Fischer and Turner (1970), and the items with the highest correlational loadings reported in that study were chosen. This list was further narrowed by selecting only those items in which the content was relevant to seeking help from informal sources for gambling problems. The wording of these items was modified such that the items specifically reflected attitudes towards seeking help from various sources within one’s social network. The scale has a detailed instructions section, which explained to the participant the definition of a social support network, while providing examples of typical social support network members, such as one’s spouse, parent, friends, and work associates. To further prime participants’ thoughts about their social support networks, the first item on the ATSIH inquired about the respondents’ readiness to seek help from a list of possible social support network members. See Appendix C for the ATSIH.

Similar to the ATSPPH-PG, the ATSIH allows participants to respond according to a 4-point Likert scale, from 0 = “disagree” to 3 = “agree”. Some items required minor modification from the original item in the ATSPPH-PG. An example of an item with minor modification is item 12 on the ATSPPH-PG: “If I believed I had a serious gambling problem, my first inclination would be to get professional attention.” The modified version of the corresponding item in the ATSIH is: “If I believed I had a serious gambling problem, my first inclination would be to get help from a member of my social support network.” Other items underwent more extensive modification in an attempt to best assess attitudes towards seeking informal social support. For example, item 8 on the ATSPPH-PG reads: “I would rather live with certain gambling problems than go through the ordeals of getting treatment.” The corresponding adapted item on the ATSIH is: “I
would rather live with certain gambling problems than go through the trouble and/or shame of confiding in a member of my social support network.” In total, 12 of the 29 items from the ATSPPH-PG were utilized to help construct corresponding items on the ATSIH.

In addition, seven new items were constructed based on a review of the literature on informal help-seeking (Grinstein-Weiss, Fishman, & Eiskovits, 2005; Davey et al., 2005) and social support (Sarason et al., 1983). For instance, item 19 on the ATSIH reads “If I have a gambling problem, I would seek help from whoever is most qualified to help me deal with my problem, not who cares about me the most.” This item is based on literature on social support provided by Sarason et al. (1983). As highlighted by these researchers, one of the most important factors influencing the level of perceived social support is the presence of individuals in our lives who let us know that they care about us. Thus, this item is designed to encourage respondents to choose whether they would prefer to seek help from an individual who genuinely cares (typical of close members of one’s social support network), or if they would prefer to seek help from a trained professional (in the absence of the deep caring which is typically unique to informal support). The internal consistency was fair in the original validation study, achieving a Cronbach’s α of .74. In the present study, the internal consistency of the ATSIH-PG was found to be good, with α = .80.
Measures of Enabling Factors

*Barriers to Treatment Scale (BTS; Saunders, Zygowicz, & D'Angelo, 2006)*

To study barriers to treatment, a modified 21-item measure originally constructed by Saunders et al. (2006) was used. The measure was originally constructed and administered as a structured interview to investigate the relative influence of various barriers to treatment seeking in a sample of 80 problem drinkers who sought treatment and 65 problem drinkers who did not seek treatment. Ten questions in this structured interview inquired about "person-related barriers" while 11 questions inquired about "treatment-related barriers". The test developers defined person-related barriers as cognitive and emotional factors that hinder individuals’ treatment seeking decisions. This includes the individual's negative attitudes toward treatment, or a failure to realize the seriousness of the addictive problem. Treatment-related barriers are aspects of the treatment, such as its structure, method, cost, or accessibility that may hinder treatment seeking.

Prior to the administration of the questions, the participants in the Saunders et al. (2006) study were briefly instructed: "People often encounter a variety of obstacles or barriers in making a decision to seek treatment for a drinking problem." Participants were then asked 21 questions, in which they indicated the extent to which various barriers "affected or influenced" their decision on whether or not to seek treatment. Each question was rated on a 5-point Likert scale. The instructions and subsequent questions in this structured interview were adapted into a self-report questionnaire for the present study. The items on the original measure referred to treatment for alcohol problems. For the
present study, these items were modified such that these items referred to seeking
treatment for gambling problems.

In the original validation study, it was found that the person-related barriers scale
was a significant predictor of help-seeking behaviour, while the treatment-related barriers
scale was not (Saunders et al., 2006). Furthermore, the two most frequently endorsed
barriers were person-related, including “wanting to handle the problem on your own” and
"believing you should be able to handle the problem on your own, without professional
help". This preference to solve the problem without treatment was found to be the best
predictor of treatment seeking. Other barriers that distinguished those who did and did
not seek treatment were barriers related to "lack of motivation" and "not having reasons
to stop". The least endorsed barrier was a treatment-related item relating to the clinic
location.

While test validity statistics were not provided by the researchers, the finding that
the person-related barrier subscale significantly predicted help-seeking behaviour
supported the construct validity of the scale. The differential predictive outcome also
supported the discriminant validity of the person-related and treatment-related subscales.
To the knowledge of the researcher, no studies thus far that have replicated the findings
from the original validation study for the BTS. However, validation of very similar
measures, such as the Barriers to Treatment Participation Scale (Colonna-Pydyn,
Gjesfjield, & Greeno, 2007; Kazdin, Holland, Crowley, & Breteon, 1997; Oakes, 2005)
and the Barriers to Help-Seeking Scale (Mannsfield, Addis, & Courtenay, 2005) have
provided some support for the utility and validity of using self-report measures to assess
perceived barriers to treatment and to be used as a prognostic tool to help predict help-
seeking behaviour. Ultimately, the BTS was chosen due to length considerations as well as the fact that it was the only scale of its type that was developed specifically for an addictions population. Furthermore, the distinction between person-related and treatment-related barriers to treatment seems to be a useful one for problem gamblers contemplating seeking help (Pavalko, 2001). In the present sample, the BTS demonstrated excellent internal consistency ($\alpha = .93$). The BTS is shown in Appendix D.

*Medical Outcome Study Social Support Survey – Short Form (MOS-SSS; Sherbourne & Stewart, 1991; Gjesfjeld, Greeno, & Kim, 2008)*

To obtain a measure of social support, the MOS-SSS was used. The original 18-item measure was developed by Sherbourne and Stewart (1991), and was designed to be a brief, multidimensional, self-report measure of social support that can be conveniently administered to chronically ill patients. The measure was designed to assess perceived social support, also known as functional social support. This may not necessarily indicate actual social support received. However, the perception of social support has been shown to be a stronger predictor of positive adjustment to stress than the actual support received (Bolger, Zuckerman, & Kessler, 2000). Items are short and simple, with a clear focus within each item. The scale uses a 5-point Likert scale, with responses indicating the frequency in which the respondent experiences various types of support. Responses range from 1 (none of the time) to 5 (all of the time), with high scores indicating a high level of perceived social support. The measure provides four subscales of social support: 1) Emotional/Informational (expression of positive affect, empathetic understanding, encouragement of expressing feelings, and offering of advice, information, guidance, or feedback), 2) Tangible (provision of material aid or behavioural assistance), 3)
Affectionate (expressions of love and affection), and 4) Positive Social Interaction (availability of others to do enjoyable things with). The development of the measure was informed by a review of the literature by the test developers on the essential aspects of social support – namely, the perceived availability of various components of functional support (Sherbourne & Stewart, 1991).

The MOS-SSS was validated on a sample of 2,987 patients with chronic medical conditions. It yielded a high internal consistency with Cronbach’s α values above .9 for the overall measure as well as all four subscales (Sherbourne & Stewart, 1991). As a test of construct validity, the MOS-SSS was tested against a number of measures closely related to social support. Scores on the MOS-SSS significantly correlated with measures of loneliness, family and marital functioning, and overall mental health – all constructs hypothesized to be closely related to social support.

The MOS-SSS was used in a study investigating the psychosocial factors contributing to gambling abstinence and relapse in 75 members of Gamblers Anonymous (Oei & Gordon, 2008). It was found that social support scores was an important variable in distinguishing between abstinent and relapse groups, with social support being positively associated with longer abstinence phases for the problem gamblers in this study. This finding supports the construct validity of the measure in a problem gambling population, and contributed to the decision of using this measure in the present study. In the present sample, the MOS-SSS demonstrated very good internal consistency (α = .97). This high alpha suggests that there may be some redundancy in the individual items within this measurement scale. The MOS-SSS is shown in Appendix E.
Measures of External Motivating Factors (Need Factors)

*Canadian Problem Gambling Index (CPGI; Ferris & Wynne, 2001)*

The CPGI was used as a measure of gambling and problem gambling behaviour. It is one of the few measures designed specifically for use in surveying the general population. The CPGI is a multi-component measure, accessing various behavioural measures such as type of gambling, frequency of play, monetary amount spent on gambling activities in the last year, and gambling-related harms. In addition, the CPGI includes items measuring the cognitive and emotional factors related to problem gambling, as well as environmental factors and correlates (Ferris & Wynne, 2001). The CPGI contains nine items on a 4-point Likert scale; individuals have the option of responding ‘never’, ‘sometimes’, ‘most of the time’ and ‘almost always’ to each item.

The developers of the CPGI divided scores into four categories. Scores of 0 on the CPGI indicate that gambling is a non-problem for the individual. Scores of 1-2 are classified as low-risk; these individuals engage in gambling behaviour occasionally, but problem gambling behaviour is unlikely to develop. Scores of 3-7 are classified as moderate risk, and may be associated with heavy gambling, other correlates of gambling problems, and may or may not yet be accompanied by the adverse consequences of problem gambling. Scores of 8 and above are indicative of a pathological gambler; this profile is believed to represent the most severe group of gamblers who have experienced adverse consequences from gambling and have lost control of their behaviour.

The instrument has demonstrated a relatively high level of internal consistency, deriving a Cronbach’s alpha of .91 and acceptable test-retest reliability of $r = .78$ in its original validation study (Ferris & Wynne, 2001). The CPGI has also demonstrated high
correlation with other gambling scales, including the South Oaks Gambling Screen and the DSM-IV diagnostic criteria for pathological gambling (American Psychiatric Association, 2000), with $r = .83$ for both (Ferris & Wynne, 2001). Since the construction of the scale, the CPGI has become one of the most widely used measures of gambling severity, particularly with Canadian populations, due principally to its strong test validity paired with its brevity. A recent investigation of the factor structure of the CPGI used a nationally representative sample of 36,984 Canadians. The factor analysis result from this investigation indicated that the nine CPGI items supported a unifactoral model in this sample (Brooker, Clara, & Cox, 2009).

To ensure comparable gambling severity in participants recruited from different populations, those participants recruited from the general population and the psychology participant pool were pre-screened with the CPGI to ensure that they scored 3 or higher on the CPGI, which corresponded to the moderate risk classification for this scale. The CPGI’s brief length also makes it the optimal choice to be administered as a screener. In the present sample, the CPGI demonstrated very good internal consistency, with $\alpha = .89$. The CPGI is shown in Appendix F.

**Adverse Financial Consequences Measure (AFCM)**

There are currently no empirically validated measures that have tried to quantify the severity of financial problems. While there are developed measures that have tried to assess economical well-being (Rosenstone, Hansen, & Kinder, 1986), spending habits (Wu, 2008), and credit card use (Roberts & Jones, 2001), these and other similar measures were designed to be administered to the general population. Consequently, these measures do not provide a focus on financial problems such as debt and bankruptcy
faced by a sizable proportion of problem gamblers, particularly those who are seeking treatment for their gambling problems (Hodgins et al., 2002). As a result, these measures are inadequate in assessing adverse financial consequences in the context of the present investigation.

In practice, the severity of financial problems in problem gamblers is easily quantifiable. For instance, many gambling help lines have a protocol in place to quickly assess financial problem severity over the telephone. Barry, Steinberg, Wu, and Potenza (2009) studied data from 144 individuals calling a New England gambling helpline from 2000-2003. These researchers quantified financial problems of the callers by utilizing six yes/no items that yielded a good overview of the financial consequences the gamblers faced. These questions were used in the present study as a measure of adverse financial consequences. Two questions inquired about whether individuals were currently in debt and bankrupt. Four questions inquired about various types of debt incurred, including debt to financial institutions, debt to a bookie or loan shark, credit card debt, and debt to a familiar person. Participants were also asked to estimate the approximate monetary amount for each of the four debts incurred. In the present study, these four different sources of debt were summed to create an aggregate quantitative score of monetary debt. The Adverse Financial Consequences measure is shown in Appendix G.

Gambling Frequency and Monetary Amount Spent on Gambling

The demographics questionnaire (Appendix A) contained questions that inquired about the average frequency of gambling activity per week as well as the monetary amount spent on gambling activity in the past 12 months. These items were included as part of the assessment of Need Factors for gambling treatment.
Measure of Readiness to Change

*University of Rhode Island Change Assessment (URICA; DiClemente & Hughes, 1990, Petry, 2005a)*

In the present study, the URICA was used to assess participants’ Readiness to Change in accordance with Prochaska and DiClemente’s Transtheoretical Model (1983). It is one of the most commonly used instruments for assessing Readiness to Change (Petry, 2005a). The URICA consists of 32 items which are rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The URICA provides a continuous measure of attitudes reflecting each of the four stages of change of precontemplation, contemplation, action, and maintenance as proposed by Prochaska and DiClemente (1983). The URICA was used in the current study because of its widespread use in measuring the stages of change, its good measurement properties, and its adaptation for use with a problem gambling population (Petry, 2005a). The URICA is shown in Appendix H.

This assessment measure was originally validated with a group of 224 adults entering outpatient alcoholism treatment (DiClemente & Hughes, 1990). Results indicated that the URICA yielded five distinct profiles that were theoretically consistent with the Transtheoretical Model. It has been validated in various settings with different populations undergoing a process of behavioural change, such as cigarette smokers (Prochaska & DiClemente, 1985), alcohol abusers (Carbonari & DiClemente, 2000), and substance abusers (Belding et al., 1996).

In an investigation of 377 out-of-treatment drug users (Napper, Wood, Jaffe, Fisher, Reynolds, & Klahn, 2008), convergent validity was shown by significant factor
loadings of the URICA and two other widely used stage of change measures, the Stages of Change Readiness and Treatment Eagerness Scale (Miller & Tonigan, 1996) and the Readiness to Change Questionnaire (RCQ; Rollnick, Heather, Gold, & Hall, 1992). The final model demonstrated convergent validity for precontemplation and contemplation stages of the URICA and RCQ, and all three measures loaded significantly on the action stage. Furthermore, post-hoc tests indicated that individuals scoring in the contemplation stage on the URICA had injected drugs significantly more often than individuals who scored in the action stage, supporting the construct validity of the measure (Napper et al., 2008).

The 32-item URICA scale has been modified and validated for problem gambling populations in a sample of 234 problem gamblers entering treatment (Petry, 2005a). Results found that items grouped into four main factors that corresponded with the four stages of change proposed by the Transtheoretical Model of precontemplation, contemplation, action, and maintenance.

In the present study, the four subscales of the URICA were used to create a latent variable of Readiness to Change. In order for this latent variable to be interpretable, it was necessary to use the reverse score of the Precontemplation subscale. This is because previous research has indicated that Precontemplation scores tend to be strongly negatively correlated with the remaining three subscales (Project Match Research Group, 1998). It is believed that this latent variable would represent the construct of Readiness to Change that incorporates all the information reported by participants in all four subscales of the URICA. In the present sample, the internal consistency for the four URICA
subscales ranged from good to excellent, with $\alpha = .80$ for Precontemplation, $\alpha = .93$ for Contemplation, $\alpha = .94$ for Action, and $\alpha = .93$ for Maintenance.

Measure of Outcome Variable - Willingness to Seek Help

Willingness to Seek Help Scale for Problem Gamblers (WSH)

To assess the outcome variable of willingness to seek help, the Willingness to Seek Help Scale for Problem Gamblers (WSH) was developed for the present study. A literature search was conducted on existent willingness to seek help research. This review showed that existing measures were predominantly designed to assess willingness to seek help either for generic psychological problems (Segal, Coolidge, Mincic, & O'Riley, 2005; Vogel, Wade, & Hackler, 2007) or willingness to seek help in response to a variety of specific problems, with an aim to obtain an overall score of willingness to seek help (Hartman-Hall & Haaga, 2002). Studies that had investigated willingness to seek help for more specific problems often constructed their own measures designed specifically for their study (Cohen, 1999; Hinson & Swanson, 1993; Lane & Addis, 2005), and these measures are thus not well-suited for the focus of the present study. Because of the nature of the research questions for the current investigation and the fact that there are currently no willingness to help-seek scales designed for problem gambling, a measure was specifically designed for the present study.

In designing the WSH, the objective was to develop a measure that would be able to assess the willingness of problem gamblers to seek help from both professional and informal support sources for their problem. In designing the scale, it was critical to assess potential fluctuations in help-seeking willingness for the various different problems and
symptoms commonly faced by problem gamblers. As a result, the criteria for pathological gambling as outlined in the DSM-IV-TR (American Psychological Association, 2000) heavily influenced the design of the scale. The DSM-IV criteria were used because it is the most widely agreed upon list of features exhibited by problem gamblers. The scale directly asks participants whether they would either go for professional help or seek informal support for various gambling related problems as outlined by DSM-IV criteria. This approach of inquiring about help-seeking willingness has worked well in previous studies, such as Mojabai's (2007) investigation of attitudes toward mental health treatment seeking.

The WSH consists of six paired questions, with one question of each pair inquiring about the participant's willingness to seek professional help for the problem, and the other question of the pair inquiring about the participant's willingness to seek informal support for the problem. For instance, item 7 on the WSH is "Would you go for professional help if you are in a desperate financial situation as a result of your gambling behaviour?", while item 8 on the WSH is "Would you seek help from your social support network if you are in a desperate financial situation as a result of your gambling behaviour?" (see Appendix I for the full WSH). This pair of items corresponds with one of the criteria on the DSM-IV-TR for pathological gambling. Participants responded to a 7-point Likert scale, ranging from 1 "Extremely Unlikely" to 7 "Extremely Likely". The measure yields two subscale scores of willingness to seek professional help and willingness to seek informal help, respectively. The odd-number items were summed to yield a score of willingness to seek professional help for problem gambling, while the
even-numbered items were summed to yield a score of willingness to seek help from informal support networks for problem gambling.
CHAPTER IV: ANALYSIS OF RESULTS

The core statistical analysis of the current study tested a revised version of the Andersen Behavioural Model using structural equation modeling. In a supplementary exploratory analysis, the model was modified as guided by the modification indices in order to improve model fit to the sample data. A competing model was also tested using structural equation modelling. This chapter presents the results and findings of the aforementioned analyses. Because many measurement scales were used in the current study, the names of these measurement scales and their associated acronyms are provided in Table 4.1.

Table 4.1: Names and Associated Acronyms of Measurement Scales

<table>
<thead>
<tr>
<th>Full Name of Measurement Scale</th>
<th>Associated Acronym</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adverse Financial Consequences Measure</td>
<td>AFCM</td>
</tr>
<tr>
<td>Attitudes Toward Seeking Informal Help Scale</td>
<td>ATSIH</td>
</tr>
<tr>
<td>Attitudes Toward Seeking Professional Psychological Help for Problem Gambling Scale (4 subscales: Need, Stigma, Confidence, Openness)</td>
<td>ATSPPH</td>
</tr>
<tr>
<td>Barriers to Treatment Scale (2 subscales: Personal-related Barriers, Treatment-related Barriers)</td>
<td>BTS</td>
</tr>
<tr>
<td>Canadian Problem Gambling Index</td>
<td>CPGI</td>
</tr>
<tr>
<td>Medical Outcome Study Social Support Survey – Short Form (4 subscales: Emotional-Informational, Tangible, Affectionate, Positive Social Interaction)</td>
<td>MOS</td>
</tr>
<tr>
<td>University of Rhode Island Change Assessment (4 subscales: Precontemplation, Contemplation, Action, Maintenance)</td>
<td>URICA</td>
</tr>
<tr>
<td>Willingness to Seek Help for Problem Gamblers (2 subscales: WSH Professional, WSH Informal)</td>
<td>WSH</td>
</tr>
</tbody>
</table>
Preliminary Analyses

Before the structural equation modeling procedure was conducted, the data were screened to exclude cases suspected of being fraudulent entries (e.g., multiple online entries by spambots in an attempt to gain additional compensation for completion of the study) as well as cases that had strong evidence of random or lackadaisical response patterns. Preliminary analyses were also performed to examine and treat missing data, to screen out outliers and influential observations in the dataset, and to verify if the assumptions of structural equation modeling were met.

Screening for Fraudulent Entries

Due to the fact that an inordinately high number of survey entries were registered on the online server during a 72-hour time period (refer to methodology chapter for a summary of the event), it was highly suspected that the online survey system had been compromised, and that most of the entries during this period were fraudulent. The entire dataset was screened, and suspicious entries were detected with two methods: a) by analyzing the open-ended items on the questionnaire, and b) by subjecting each case to a Consistency Index developed specifically for this study to detect random and otherwise suspect response patterns. Each will be discussed in turn.

As discussed in the methodology section, there were two open-ended questions included in the survey questionnaire. The first question asked the participant to "List the gambling activities you engage in". The other question was a follow-up inquiry of whether the participant had ever sought treatment for their gambling problem. If the participant answered "Yes", they were asked about the primary reason that led them to seek treatment for their gambling problem. If the participant answered "No", they were
asked about the primary reason that kept them from seeking help for their gambling problem. The entire dataset was screened for identical entries on these open-ended questions that appeared on more than one case. For instance, 10 cases all had the identical response of "Friends persuade" in response to the primary reason why they sought help (ID#s 136, 147, 153, 159, 202, 213, 223, 242, 246, and 251), while 10 other cases all had the identical response of "Wake up" in response to the same question (ID#s: 146, 155, 157, 168, 185, 191, 215, 219, 221, 231). In total, 134 cases were removed from the dataset as a result of having identical open-ended responses. A table of all the cases removed and their corresponding identical open-ended responses that prompted the removal is presented in Appendix J. As a comparison, genuine entries all appeared to respond to the open-ended questions with at least one full sentence (and often in full paragraphs), while almost all of the fraudulent entries consisted of 1-2 word phrases. This made the detection of suspicious entries using this method relatively clear.

*Screening for Random Response Patterns*

Due to the concern over illegitimate cases within the dataset, a second approach to detect random responding was used to bolster the aforementioned screening procedure. A Consistency Index was created based specifically for the set of questionnaires used in the present study. The researcher looked for item pairs in each measure used in the study that were maximally contradictory to one another. Individuals endorsing a high score on one item of the pair should endorse a low score on the other item of the item pair, assuming that participants are responding in a consistent manner. Item pairs were selected from the Attitudes Toward Seeking Professional Psychological Help Scale for Problem Gambling (ATSPPH-PG) and Attitudes Toward Seeking Informal Help Scale for Problem
Gambling (ATSIH-PG) due to the presence of reverse scored items on these scales. Items from the University of Rhode Island Change Assessment (URICA) were also used due to the finding in previous research that items on the Precontemplation scale have been found to be strongly negatively correlated and contradictory in content to items on the other three subscales (Project MATCH Research Group, 1998). A total of 13 item pairs were selected (26 items total). An example item pair is ATSPPH-PG #28: “If I thought I needed professional help for my gambling problem, I would get it no matter who knew about it” and #3: “I would feel uneasy seeking problem gambling treatment because of what some people would think.” Item pairs were selected in an attempt to find the most contradictory pairs of statements possible. A full list of the 13 item pairs that comprise the Consistency Index can be found in Appendix K.

The Consistency Index was interpreted by summing the difference for each item pair from the 13-pair list on the index. In this scoring strategy, lower scores on the Consistency Index indicated that there was little difference in the way a participant responded to one item as compared to a corresponding contradictory item. Low scores therefore suggested that the participant did not respond consistently, may have been responding in a random/lackadaisical fashion, or at the very least, had an inordinately strong middle response bias. In contrast, higher scores on the Consistency Index meant that there was a greater discrepancy between contradictory item pairs, and suggested that the participant was responding consistently and attending appropriately to item content. Scores on the Consistency Index ranged from 0 to 37 in the present sample. It was difficult to establish a purely statistical cut-off of acceptable Consistency Index scores (e.g. the bottom 5% of all scores), as the proportion of random responders and/or
fraudulent entries in the present dataset is unknown. Therefore, a score of 10 was chosen as the cut-off based on a review of the item pairs. A score of 10 would require a respondent to have a discrepancy of at least 1 Likert value on 10 of the 13 item pairs on the index. This cut-off value was determined a-priori to be the most sensible one to use to exclude random responders and the remaining fraudulent entries from the sample. Using this cut-off, 94 observations were removed from the psychology participant pool. The observation numbers, as well as their corresponding Consistency Index scores, are provided in Appendix L. Using the same cut-off in the general population sample, 34 observations were removed. These observations and their corresponding Consistency Index scores are provided in Appendix M.

Assumptions of Structural Equation Modelling

The final dataset of the present study comprised of 319 cases. A rough estimate of 15 observations for each measured variable is the recommended minimum (Kline, 2011). The final model included 20 measured variables (20 x 15 = 300 observations), and thus the minimum required sample size was met using this rule.

The assumption of independence of observations was investigated by considering the recruitment method of the current study. Recruitment for the general population predominantly comprised of internet advertisement in gambling self-help websites (e.g., www.GamblingTherapy.org), general online classified services (e.g., www.Kijiji.ca), and advertisements on websites with high traffic flow (e.g., www.Facebook.com). Because of the broad exposure of the internet advertisement avenues, it is likely that the general population group is sampled from a population that is sufficiently large that it is highly unlikely that any participant’s scores would be dependent on any other participant’s
scores. Recruitment for the psychology students comprised solely of individuals in the University of Windsor’s psychology participant pool. While this meant that the group was sampled from a relatively narrow university student population, the pool is large in number and it is inconceivable that scores of any of the participants in the study would be dependent on those of other participants within the same pool.

To verify the assumption of multivariate normality for all endogenous variables, univariate normality of each endogenous variable was first investigated by creating Z-scores of skewness and kurtosis statistics and dividing them by the standard error of skewness and kurtosis, respectively. In large samples (i.e. $N > 200$), standardized scores are very likely to be statistically significant even with slight departures in normality (Field, 2009; Kline, 2011). Thus, visual inspection of histograms of all values for each endogenous variable was also conducted. It is also believed that kurtosis is a greater concern than violations of skewness in terms of the robustness of SEM against assumptions of normality (Bollen, 1989). A table of skewness and kurtosis statistics is presented in Table 4.2.

As indicated in Table 4.2, MOS scores, ATSIH scores, WSH Professional and Informal subscale scores, and URICA Precontemplation scores were all negatively skewed, though significant kurtosis was not observed for any of these scores. However, URICA Action subscale scores and BTS scores displayed slight but statistically significant negative kurtosis. While it is of note that CPGI scores were positively skewed (kurtosis statistic was not significant), this variable is an exogenous variable in the present model and thus violation of normality for this variable is not as much of a concern as the violation of normality for the aforementioned endogenous variables.
(Kline, 2011). A visual inspection of the histograms for these aforementioned measures indicated that the violations against normality were not severe and did not pose a significant concern.

Perhaps the only notable violation in normality was that of the Adverse Financial Consequences Measure (AFCM) scores, which were very significantly and positively skewed. The AFCM distribution was also heavily leptokurtic (positive kurtosis). A visual interpretation of the histogram of AFCM scores confirmed the significant violation of normality as seen in its distribution. Because of the severity of the violation, the AFCM scores required transformation before it could be included in the structural equation model. Based on the recommendations of Tabachnick and Fidell (2006), two of the more common transformations of AFCM were performed - a square root transformation and a log-based transformation of $\log_{10}(x+C)$, where C is the constant added to each score such that the smallest score is 1. Analysis of the histogram of the distributions yielded by both of these transformed AFCM measures indicated that the log-based transformation provided a much more normal distribution than the square root transformation. Thus, the log-based transformation was chosen as the transformed AFCM used in the main analysis. The log-transformed AFCM had an absolute skewness of -.85 and an absolute kurtosis of -.59, which are considered to be relatively minor deviations from normality.

To investigate the presence of multivariate normality, bivariate scatterplots of the skewed endogenous variables were visually inspected. Bivariate scatterplots that appeared to consist of random scatter are indicative of multivariate normality, whereas a "fanning out" of the scatter (i.e., funnel shape) is indicative of a violation of multivariate normality (Tabachnick & Fidell, 2006). The log-transformed AFCM measure was used to
Table 4.2: *Standardized Skewness and Kurtosis Values for Main Measures*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Z Skewness</th>
<th>p Skewness</th>
<th>Z Kurtosis</th>
<th>p Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOS</td>
<td>-4.72</td>
<td>&lt;.001*</td>
<td>-0.40</td>
<td>.69</td>
</tr>
<tr>
<td>ATSPPH</td>
<td>.19</td>
<td>.85</td>
<td>-1.47</td>
<td>.14</td>
</tr>
<tr>
<td>ATSIH</td>
<td>-3.68</td>
<td>&lt;.001*</td>
<td>1.59</td>
<td>.11</td>
</tr>
<tr>
<td>CPGI</td>
<td>5.84</td>
<td>&lt;.001*</td>
<td>.92</td>
<td>.36</td>
</tr>
<tr>
<td>WSH Professional</td>
<td>-3.91</td>
<td>&lt;.001*</td>
<td>.24</td>
<td>.81</td>
</tr>
<tr>
<td>WSH Informal</td>
<td>-5.71</td>
<td>&lt;.001*</td>
<td>1.36</td>
<td>.17</td>
</tr>
<tr>
<td>URICA-Precontemplation</td>
<td>-4.17</td>
<td>&lt;.001*</td>
<td>-.24</td>
<td>.81</td>
</tr>
<tr>
<td>URICA-Contemplation</td>
<td>1.53</td>
<td>.13</td>
<td>-1.81</td>
<td>.070</td>
</tr>
<tr>
<td>URICA-Action</td>
<td>1.70</td>
<td>.090</td>
<td>-2.16</td>
<td>.031</td>
</tr>
<tr>
<td>URICA-Maintenance</td>
<td>1.93</td>
<td>.054</td>
<td>-1.94</td>
<td>.052</td>
</tr>
<tr>
<td>BTS</td>
<td>-1.21</td>
<td>.23</td>
<td>-1.97</td>
<td>.049</td>
</tr>
<tr>
<td>AFCM</td>
<td>73.74</td>
<td>&lt;.001**</td>
<td>509.80</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

* statistically significant but violations against normality not severe
** statistically significant and severe violation of normality

Acronyms: MOS = Medical Outcome Study Social Support Survey – Short Form; ATSPPH = Attitudes Toward Seeking Professional Psychological Help for Problem Gambling Scale; ATSIH = Attitudes Toward Seeking Informal Social Support for Problem Gambling Scale; CPGI = Canadian Problem Gambling Index; WSH Professional = Willingness to Seek Help for Problem Gamblers – Professional Subscale; WSH Informal = Willingness to Seek Help for Problem Gamblers – Informal Subscale; URICA = University of Rhode Island Change Assessment; BTS = Barriers to Treatment Scale; AFCM = Adverse Financial Consequences Measure
create bivariate scatterplots instead of the original AFCM measure. After visually inspecting the bivariate scatterplots of various combinations of variables, it was determined that multivariate normality did not appear to be violated.

To check for the absence of multicollinearity, a regression analysis was conducted between all predictors in the structural model and the outcome variable, and the variance inflation factor (VIF) was analyzed. VIF scores below 10 are considered acceptable indicators of the absence of multicollinearity (Tabachnick & Fidell, 2006). VIF scores were within acceptable limits for all key predictor variables in the present study, with VIF values between 1-2 for most variables. The highest VIF values were observed for the Contemplation, Action, and Maintenance subscales of the URICA, which were 4.64, 5.24, and 4.37, respectively. Thus, the assumption of the absence of multicollinearity was met. In addition, the Durbin-Watson value of the regression analysis was 1.96, which was within the acceptable limit between 1 and 3 (Tabachnick & Fidell). Thus, the assumption of independence of residuals in the model were met.

A table containing the means and standard deviations of the key variables of the present study is presented in Table 4.3. Because the data for the present study was recruited from three distinct populations, it was necessary to test whether there were significant mean differences in the key variables of this study between individuals sampled from general population, in-treatment population, and psychology participant pool population. Individuals recruited from the in-treatment population and the general population were pooled together to test mean differences against individuals recruited from the psychology pool. This was done because the in-treatment and the general population group appeared to have similar mean values on many key variables (i.e.,
problem gambling severity, financial consequence severity, Readiness to Change scores). The values on these variables, however, were quite different from participants in the psychology participant pool group. Furthermore, there were relatively low numbers of in-treatment and general population participants \( (N = 81) \) relative to those from the psychology participant pool \( (N = 238) \), and thus combining the former two groups together provided more balanced group sizes for group mean comparisons. Independent samples t-tests were conducted for each variable included in the final structural model. Cohen’s \( d \) and effect sizes \( (r) \) were also calculated. These statistics are presented in Table 4.4. Significant results for independent samples t-tests are demarked on this table - only significant results are discussed in the text. According to Cohen (1969), an effect size of .1 is considered small, .3 is considered medium, and an effect size larger than .5 is considered large.

The most notable mean discrepancies were found in CPGI scores as well as URICA Precontemplation, Contemplation, Action, and Maintenance scores. On average, the level of gambling severity was significantly lower for participants from the psychology pool compared to gamblers that were recruited from the in-treatment population and the general population, and a large effect size was observed for group membership \( (d = 1.76, r = .66) \). There were also significant discrepancies in all four subscales of the URICA between these two groups. On average, those from the participant pool scored higher on the Precontemplation scale but significantly lower on the Contemplation, Action, and Maintenance scales as compared to the in-treatment and general population group, and large effect sizes were observed for these mean differences.
Table 4.3: Means and Standard Deviations of Predictor and Outcome Variables for Total Sample

<table>
<thead>
<tr>
<th>Measure</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPGI</td>
<td>9.66</td>
<td>5.91</td>
</tr>
<tr>
<td>ATSPPH Total score</td>
<td>52.04</td>
<td>13.81</td>
</tr>
<tr>
<td>ATSIH</td>
<td>33.93</td>
<td>8.28</td>
</tr>
<tr>
<td>MOS Total score</td>
<td>75.31</td>
<td>16.31</td>
</tr>
<tr>
<td>WSH Professional</td>
<td>32.96</td>
<td>6.39</td>
</tr>
<tr>
<td>WSH Informal</td>
<td>31.27</td>
<td>8.04</td>
</tr>
<tr>
<td>URICA Precontemplation</td>
<td>23.00</td>
<td>6.33</td>
</tr>
<tr>
<td>URICA Contemplation</td>
<td>22.41</td>
<td>8.12</td>
</tr>
<tr>
<td>URICA Action</td>
<td>21.74</td>
<td>8.17</td>
</tr>
<tr>
<td>URICA Maintenance</td>
<td>20.29</td>
<td>7.79</td>
</tr>
<tr>
<td>BTS Total</td>
<td>34.72</td>
<td>18.00</td>
</tr>
<tr>
<td>AFCM</td>
<td>$11861.78</td>
<td>$32,223.97</td>
</tr>
<tr>
<td>Consistency Index</td>
<td>19.65</td>
<td>6.55</td>
</tr>
</tbody>
</table>

Although there is virtually no mean difference in the WSH Professional subscale between the two groups, the t-test for mean differences in the WSH Informal subscale was significant (t = 5.22, p < .001). Individuals from the psychology participant pool reported higher willingness to seek help from their social support network for their gambling problems compared to individuals in-treatment and in the general population. A similar pattern was observed for measures of attitudes toward seeking professional help and attitudes toward seeking informal help for problem gambling, respectively. While
Table 4.4: Means and Standard Deviations by Sample

<table>
<thead>
<tr>
<th>Measure</th>
<th>General Population/In-Treatment Mean</th>
<th>General Population/In-Treatment SD</th>
<th>Psychology Participants Mean</th>
<th>Psychology Participants SD</th>
<th>Cohen’s d</th>
<th>Effect size r</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPGI**</td>
<td>15.91</td>
<td>4.94</td>
<td>7.53</td>
<td>4.56</td>
<td>1.76</td>
<td>.66</td>
</tr>
<tr>
<td>ATSPPH Total score**</td>
<td>58.38</td>
<td>15.04</td>
<td>49.82</td>
<td>12.67</td>
<td>.62</td>
<td>.29</td>
</tr>
<tr>
<td>ATSIH**</td>
<td>30.97</td>
<td>8.73</td>
<td>34.98</td>
<td>7.87</td>
<td>.48</td>
<td>.23</td>
</tr>
<tr>
<td>MOS Total score**</td>
<td>64.92</td>
<td>17.21</td>
<td>78.84</td>
<td>14.42</td>
<td>.88</td>
<td>.40</td>
</tr>
<tr>
<td>WSH Professional</td>
<td>33.08</td>
<td>6.65</td>
<td>32.92</td>
<td>6.31</td>
<td>.025</td>
<td>.012</td>
</tr>
<tr>
<td>WSH Informal**</td>
<td>27.13</td>
<td>8.86</td>
<td>32.64</td>
<td>7.26</td>
<td>.68</td>
<td>.32</td>
</tr>
<tr>
<td>URICA P***</td>
<td>17.78</td>
<td>7.71</td>
<td>24.82</td>
<td>4.55</td>
<td>1.11</td>
<td>.49</td>
</tr>
<tr>
<td>URICA C**</td>
<td>31.97</td>
<td>5.72</td>
<td>19.34</td>
<td>6.14</td>
<td>2.13</td>
<td>.73</td>
</tr>
<tr>
<td>URICA A**</td>
<td>30.87</td>
<td>5.94</td>
<td>18.61</td>
<td>6.25</td>
<td>2.01</td>
<td>.71</td>
</tr>
<tr>
<td>URICA M**</td>
<td>28.63</td>
<td>5.85</td>
<td>17.36</td>
<td>6.09</td>
<td>1.89</td>
<td>.69</td>
</tr>
<tr>
<td>BTS</td>
<td>40.66</td>
<td>17.71</td>
<td>32.73</td>
<td>17.70</td>
<td>.45</td>
<td>.22</td>
</tr>
<tr>
<td>AFCM***</td>
<td>$26,742.33</td>
<td>$62,280.22</td>
<td>$7809.49</td>
<td>$14,203.19</td>
<td>.42</td>
<td>.21</td>
</tr>
<tr>
<td>Consistency Index**</td>
<td>22.73</td>
<td>8.28</td>
<td>18.62</td>
<td>5.52</td>
<td>.58</td>
<td>.28</td>
</tr>
</tbody>
</table>

** p < .001 for t-test of independent sample means

Individuals from the psychology participant pool reported significantly lower ATSPPH scores, they reported significantly higher ATSIH scores. This meant that individuals from the psychology pool reported more positive attitudes toward seeking problem gambling help from their social network compared to individuals from the general population and the in-treatment group. On the other hand, individuals from the general population and the in-treatment group reported more positive attitudes toward seeking help for problem...
gambling from professionals as compared to the psychology pool group. These findings may be related to group mean differences found in social support; individuals from the psychology participant pool reported higher levels of social support compared to individuals from the general population and in-treatment group. This may be due to a greater number of peer groups available for university students.

The presence of significant group differences in several key predictor and outcome variables of the structural model indicates that the total sample in this study appears to have been recruited from at least two different populations. However, the fact that there are key differences in the mean values of the individual variables of study does not necessarily mean that the pathways (i.e., relationships) between the variables specified by the hypothesized structural model would not hold for both populations. In the present sample, it was found that many relationships between key variables held for both the general population/in-treatment group and for the psychology participant pool group. In both groups, for instance, gambling severity was positively correlated with the URICA Contemplation, Action, and Maintenance scores while negatively correlated with the URICA Precontemplation scores, despite the finding that mean differences in these five measures were the most discrepant differences found between groups.

Furthermore, it was observed that the variability within the general population/in-treatment group and the psychology participant pool group was greater than the differences between groups. Table 4.5 presents the mean differences between groups as well as the range observed (after removal of outliers and extreme cases) of each group for the key variables in the present study. As this table indicates, the range for all the key variables is substantial for both groups, and there is much overlap of score values
between groups for all key variables. Given the high variance observed in both groups, it may be accurate to conceptualize the total sample as capturing a large continuum of gamblers containing a wide range of values for the key variables under investigation, including gambling severity, level of social support, and attitudes toward help-seeking. For these reasons, the populations will first be combined to test the hypothesized structural model in the present investigation. However, the final model will also be tested using only the psychology participant pool sample to see if the model holds with this sample alone.

_Treatment of Outliers_

Outliers on $y$, or the outcome variables, were identified by interpreting standardized residuals values. According to Tabachnik and Fidell (2006), standardized residuals values of 3 or above should be considered outliers on the outcome variables. This corresponds to cases that are approximately 3 standard deviations from the mean on the corresponding outcome variable. Using this cut-off, three cases from the general population and one observation from the psychology participant pool were identified as outliers on the outcome variable.

Outliers on $x$, or the predictor variables, were identified using the leverage statistic. The relatively conservative cut-off of $3(k-1)/N$ was used, where $k$ is the number of predictors and $N$ is the total sample size (Tabachnik & Fidell, 2006). This yielded a leverage cut-off value of .09615. Using this cut-off, ten observations from the general population and one observation from the psychology participant pool were identified as outliers on various predictor variables. Outliers deemed to be influential observations were detected using the DFFITs statistic. Using the conventional cut-off of $\text{DFFITs} = 2$
Table 4.5: Mean Differences and Range Between Samples

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean Diff.</th>
<th>Range – General population</th>
<th>Range – Psychology Participant Pool</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPGI</td>
<td>-8.41</td>
<td>21</td>
<td>25</td>
</tr>
<tr>
<td>ATSPPH</td>
<td>-8.60</td>
<td>60</td>
<td>63</td>
</tr>
<tr>
<td>ATSIH</td>
<td>3.96</td>
<td>41</td>
<td>42</td>
</tr>
<tr>
<td>MOS</td>
<td>14.13</td>
<td>72</td>
<td>63</td>
</tr>
<tr>
<td>WSH Professional</td>
<td>-.16</td>
<td>23</td>
<td>36</td>
</tr>
<tr>
<td>WSH Informal</td>
<td>5.24</td>
<td>36</td>
<td>36</td>
</tr>
<tr>
<td>URICA-Precontemplation</td>
<td>7.09</td>
<td>29</td>
<td>26</td>
</tr>
<tr>
<td>URICA-Contemplation</td>
<td>-12.73</td>
<td>22</td>
<td>25</td>
</tr>
<tr>
<td>URICA-Action</td>
<td>-12.34</td>
<td>24</td>
<td>26</td>
</tr>
<tr>
<td>URICA-Maintenance</td>
<td>-11.49</td>
<td>26</td>
<td>28</td>
</tr>
<tr>
<td>BTS</td>
<td>-8.14</td>
<td>77</td>
<td>72</td>
</tr>
<tr>
<td>AFCM</td>
<td>-$18,932.84</td>
<td>$472,000</td>
<td>$105,000</td>
</tr>
</tbody>
</table>

*negative mean value difference denotes greater mean values for general population/in-treatment group
(Tabachnik & Fidell), two entries from the general population and two from the psychology pool were identified as influential observations.

Each outlier identified with the aforementioned statistics was examined carefully. Those cases that were extreme outliers, believed to be unrepresentative of the sample, that contained random/lackadaisical responding, or appeared to have suspicious response patterns were removed from the analyses. In total, 19 outliers were removed before the analyses. A list of all outliers for the entire dataset, as well as the rationale for the decision to remove the variables, is provided in Appendix N.

Missing Values Analysis

A missing values analysis (MVA) was conducted for each measured variable included in the final structural model. The missing values analysis was conducted on the item level, as opposed to the subscale score or total score level. Thus, for each scale in which a MVA was conducted, every item of that scale, as well as every item of other measures believed to be related to that scale were included in the MVA. For example, the MVA for the Attitudes Toward Seeking Informal Help Scale included every item of the ATSIH, as well as every item of the ATSPPH (professional help seeking attitudes), MOS (social support), as well as demographic variables that may be related to missingness on any item on the ATSIH (e.g., ethnicity, marital status, income, and psychological treatment history). Little's Missing Completely At Random (MCAR) test was used to test the null hypothesis that the missing items were missing completely due to randomness (Little, 1988). The result of this test was non-significant ($\chi^2 = 1368.00, df = 2307, p = 1.00$). Thus, the null hypothesis that missingness on ATSIH items are missing completely at random was accepted.
Missing values analyses were also conducted in this manner for ATSPPH, MOS, BTS, URICA, AFCM, and WSH items. A table of the Little's MCAR test for each of these MVAs is presented in Table 4.6. As shown in the table, it was found that ATSPPH items, BTS items, and URICA items were all found to be missing completely at random according to Little's MCAR test. However, Little's MCAR test was significant for MOS items, AFCM items, and WSH items. Thus, MOS, AFCM, and WSH items did not appear to be missing completely at random in the present sample.

The status of MCAR allows for sophisticated imputation methods to handle missing data values that may be less biased than more traditional approaches, such as listwise deletion or mean substitution. Missing data were dealt with in two ways. In the estimation of the final structural model, the Full Information Maximum Likelihood approach found in the AMOS program (Arbuckle, 1995) was used. Briefly, this method computes a casewise likelihood function using only those variables that are observed for a given case $i$. Relevant statistical information, such as means and variances, are extracted from each subset, such that all cases (including those with missing data) are retained in the analysis. In other words, the estimation of all parameters for the data are calculated directly from the available data without deletion or imputation of missing values (Kline, 2011). It has been found that this approach tends to outperform classical imputation methods and may be less biased (Arbuckle, 1996; Enders & Bandalos, 2001). The main drawback to this method, however, is that it fails to provide modification indices for the structural model, which are necessary to guide post-hoc modifications of the model in an attempt to improve model fit.
Table 4.6: Missing Values Analysis - Little's MCAR Test

<table>
<thead>
<tr>
<th>Measure</th>
<th>$\chi^2$</th>
<th>df</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ATSIH</td>
<td>1368.00</td>
<td>2308</td>
<td>$\approx1.00$</td>
</tr>
<tr>
<td>2. ATSPPH</td>
<td>893.61</td>
<td>3389</td>
<td>$\approx1.00$</td>
</tr>
<tr>
<td>3. BTS</td>
<td>88.11</td>
<td>1888</td>
<td>$\approx1.00$</td>
</tr>
<tr>
<td>4. URICA</td>
<td>1692.92</td>
<td>2974</td>
<td>$\approx1.00$</td>
</tr>
<tr>
<td>5. WSH</td>
<td>469.33</td>
<td>375</td>
<td>.001</td>
</tr>
<tr>
<td>6. AFCM, # of times Gambled Weekly, Years gambled, and 12-month $ Gambled</td>
<td>924.57</td>
<td>227</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>7. MOS</td>
<td>1206.42</td>
<td>1008</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

Thus, the model-based imputation method of expectation maximization was utilized for the purposes of creating a complete dataset, allowing for the production of modification indices. The EM procedure has two steps: 1) Expectation, where missing observations are imputed by predicted scores in a series of regressions in which each
incomplete variable is regressed on the remaining variables for a particular case, and 2) Maximization, in which the whole imputed dataset is submitted for maximum likelihood estimation. These two steps are repeated until a stable solution is reached in the maximization step (Kline, 2011). This approach is considered by many researchers to be the most sensible imputation approach to address missing data (Tabachnick & Fidell, 2006), given that missing data is found to be random in nature. Note that the imputed missing values were only used in the present study towards the creation of modification indices, and were not used towards the creation of the final solution for the structural model. This ensures that any pattern that may exist in missingness of certain variables will have less of an impact on the final analysis of the structural model.

Reverse Scoring of Scales

The ATSPPH and the ATSIH both have reverse coded items. For these items, endorsing the item would result in lowering one’s total score. Prior to data analysis, items were reverse scored such that the highest scores were scored as the lowest and vice-versa.

Conventionally, the Barriers to Seek Treatment Scale (BTS) is scored such that high scores indicate greater perceived barriers for treatment seeking. While barriers to treatment falls under the latent variable of “Enabling Variables” in the hypothesized model, the BTS was hypothesized to be negatively correlated with Enabling Variables due to how it is scored and interpreted. Results from the present sample confirmed this hypothesis. In an attempt to allow data from the BTS to converge with other measures in the “Enabling Factors” and to form a logical latent variable, the BTS was reverse scored by inverting scores using the aforementioned method. Thus, higher scores indicated lower perceived barriers in the reverse-scored BTS.
The Precontemplation subscale of the University of Rhode Island Change Assessment was also reverse scored. This was done because past research on the URICA has indicated that Precontemplation scores tend to have a strong negative correlation with Contemplation, Action, and Maintenance subscale scores (Project MATCH Research Group, 1997). The same pattern was observed in the present dataset. For the purposes of creating a viable latent variable of Readiness to Change that included data from all four subscale scores, it was sensible to reverse score the Precontemplation subscale.

**Correlations**

A correlational table of key predictor and outcome variables is presented in Table 4.7. Consistent with previous studies on the URICA (e.g., Petry, 2005a), high intercorrelations were found in the present study between URICA Contemplation, Action, and Maintenance subscales, while the URICA Precontemplation subscale was negatively correlated with the other three URICA subscales. Also notable is the high correlation between attitudes toward seeking help from professionals (ATSPPH) and willingness to seek help from professionals (WSH-Professional), as well as the high correlation between attitudes toward seeking help from informal support (ATSIH) and willingness to seek help from informal sources (WSH-Informal). However, attitudes toward seeking help from professionals was not significantly correlated with willingness to seek help from informal support, while attitudes toward informal help-seeking was not significantly correlated with willingness to seek help from professionals. This provided preliminary evidence that the correspondence between attitudes and willingness to seek help depended on the source of help. The differential pathways of formal and informal help-
seeking for problem gambling will be analyzed in greater depth in the review of the structural equation model.

While most correlational findings held for both the general population/in-treatment group and the psychology participant pool group, there were some key differences in correlational relationships that were found between groups. These differences mainly involved measures of Readiness to Change, gambling severity, and their respective relationships with other variables in the study. In the general population/in-treatment group, the WSH Professional scores were positively correlated with URICA Contemplation \((r = .60)\), Action \((r = .56)\), and Maintenance scores \((r = .44)\), and negatively correlated with URICA Precontemplation scores \((r = -.61)\). In the psychology participant pool group, the WSH Professional scores were negatively correlated with URICA Contemplation \((r = -.20)\), Action \((r = -.17)\), and Maintenance scores \((r = -.20)\), and no significant relationship was found with URICA Precontemplation scores. These correlational findings suggested that for the psychology general population/in-treatment group, Readiness to Change was positively correlated with willingness to seek professional help for gambling problems, whereas for the psychology participant pool group, Readiness to Change was negatively correlated with willingness to seek professional help.

Similar correlational trends were seen in the relationship between attitudes toward professional help-seeking and Readiness to Change. In the general population/in-treatment group, the ATSPPH score is positively correlated with URICA Contemplation \((r = .58)\) and action \((r = .57)\) scores, and negatively correlated with URICA Precontemplation scores \((r = .88)\). Thus, measures corresponding with the contemplation
and action stages were positively correlated with positive attitudes toward seeking professional help for gambling problems, while the precontemplation measure had a strong negative relationship with professional help-seeking attitudes. In the psychology participant pool group, no significant correlational relationship was found between ATSPPH scores and the URICA Contemplation and Action scores, while the negative correlational relationship with URICA Precontemplation scores was significantly smaller ($r = -.26$). Overall, Readiness to Change measures appeared to have less correspondence to professional help-seeking attitudes in the psychology participant pool group compared to those in the general population and in-treatment.

In the general population/in-treatment group, no significant correlational relationship was found between CPGI scores and ATSPPH, ATSIH, WSH Professional, and WSH Informal scores. For the psychology participant pool group, in contrast, CPGI scores were negatively correlated with ATSPPH ($r = -.31$), ATSIH ($r = -.18$), WSH Professional ($r = -.19$), and WSH Informal scores ($r = -.20$). In sum, gambling severity was negatively correlated with attitudes and willingness to seek help from professional and informal sources for the psychology participant group, while gambling severity had no significant relationship with attitudes and willingness to seek help in the general population and in-treatment group.

**Structural Equation Model**

*Revised Andersen Behavioural Model*

The results of the structural modelling for the Revised Andersen Behavioural Model is shown in Figure 4.1. The measured variables and the latent variables are
<table>
<thead>
<tr>
<th></th>
<th>CPGI</th>
<th>ATSPPH Total</th>
<th>ATSIH Total</th>
<th>MOS Total</th>
<th>WSH Prof.</th>
<th>WSH Inf.</th>
<th>URICA Precont.</th>
<th>URICA Contemp.</th>
<th>URICA Action</th>
<th>URICA Main.</th>
<th>BTS Total</th>
<th>AFCM</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPGI</td>
<td>1</td>
<td>-.007</td>
<td>-.22*</td>
<td>-.32*</td>
<td>-.099</td>
<td>-.25*</td>
<td>-.37*</td>
<td>.67*</td>
<td>.64*</td>
<td>.62*</td>
<td>.39*</td>
<td>.28*</td>
</tr>
<tr>
<td>ATSPPH Total</td>
<td>1</td>
<td>.068</td>
<td>.11</td>
<td>.58*</td>
<td>.055</td>
<td>-.57*</td>
<td>.28*</td>
<td>.28*</td>
<td>.15x</td>
<td>-.43</td>
<td>.017</td>
<td></td>
</tr>
<tr>
<td>ATSIH</td>
<td>1</td>
<td>.46*</td>
<td>.12</td>
<td>.59*</td>
<td>.11</td>
<td>-.22*</td>
<td>-.20*</td>
<td>-.20*</td>
<td>-.30*</td>
<td>.002</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MOS Total</td>
<td>1</td>
<td>.21*</td>
<td>.49*</td>
<td>.14x</td>
<td>-.37*</td>
<td>-.27*</td>
<td>-.37*</td>
<td>-.37*</td>
<td>-.31*</td>
<td>-.042</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WSH Prof.</td>
<td>1</td>
<td>.41*</td>
<td>-.24*</td>
<td>.033</td>
<td>.016</td>
<td>-.015</td>
<td>-.29*</td>
<td>-.001</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WSH Inf.</td>
<td>1</td>
<td>.16*</td>
<td>-.30*</td>
<td>-.27</td>
<td>-.27*</td>
<td>-.29*</td>
<td>-.29*</td>
<td>-.21*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>URICA Precon.</td>
<td>1</td>
<td>-.59*</td>
<td>-.56*</td>
<td>-.46*</td>
<td>.11</td>
<td>-.21*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>URICA Contemp.</td>
<td>1</td>
<td>.91*</td>
<td>.89*</td>
<td>.29*</td>
<td>.24*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>URICA Action</td>
<td>1</td>
<td>.85*</td>
<td>.22*</td>
<td>.20*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>URICA Main.</td>
<td>1</td>
<td>.30*</td>
<td>.20*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BTS Total</td>
<td>1</td>
<td>.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AFCM</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
arranged as suggested by the Andersen Behavioural Model, with the additional inclusion of the latent variable “Readiness to Change” that consists of four URICA subscales as guided by the Transtheoretical Model.

As defined in the Revised ABM, the latent variable of Predisposing Factors consisted of pre-existing attitudes toward help-seeking services as well as background demographic variables such as socio-economic status, gender, age, and marital status. In conducting bivariate correlations and confirmatory factor analyses between the attitudinal help-seeking scores and these demographic variables, however, it appeared that the demographic variables did not converge with the attitudinal help-seeking scores into a viable latent variable. Combining background demographic variables with the attitudinal help-seeking measures also did not make theoretical sense. Furthermore, regression analyses indicated that age, gender, marital status, and years of education were all non-significant predictors of Willingness to Seek Help Scale Total scores, and thus these variables were not included in the structural model.

The latent variable of Predisposing Factors was thus defined by five observed variables – the four subscale scores of Attitudes Toward Seeking Professional Psychological Services for Problem Gambling (ATSPPH; Confidence, Need, Stigma, and Openness), and the total score of the Attitudes Toward Seeking Informal Help for Problem Gambling Scale (ATSIH).

The latent variable of Enabling Factors consisted of perceived social support as well as perceived barriers toward seeking treatment. As shown in Figure 4.1, this factor consisted of the scores of the four subscales of the Medical Outcome Study Social Support Survey (MOS; Affectionate support, Tangible support, Emotional-Informational...
support, and Positive Interaction) as well as the total score of the Barriers to Seek Treatment scale (reverse scored). The latent variable of Need Factors consisted of observed measures thought to be associated with either or both the level of gambling severity and the extent of adverse consequences that have resulted from gambling behaviour. This factor consisted of four measured variables: the score of the Canadian Problem Gambling Index (CPGI), the score of the Adverse Financial Consequences Measure (AFCM), the number of times gambled weekly, and the monetary amount spent on gambling in the last 12 months.

The latent variable of Readiness to Change consisted of the four URICA subscale scores that correspond with the four core stages of change in the Transtheoretical Model, including Precontemplation (reversed scored), Contemplation, Action, and Maintenance. Finally, the latent factor of Help-Seeking Outcome was measured with participants' self-reported willingness to seek help, as assessed by the Willingness to Seek Professional Help (WSH-Professional) subscale and the Willingness to Seek Informal Help (WSH-Informal) subscale.

The initial fit of the Revised Andersen Behavioural Model was poor. The $\chi^2$ statistic was 751.40 ($p < .001$), and thus the null hypothesis that the observed model was equivalent to the proposed model was rejected. Due to the known sensitivity of the $\chi^2$ statistic to model misspecification in large $N$, fit indices were also interpreted to assess the goodness of fit of the observed data to the hypothesized structural model.

The fit indices that were used included the Root Mean Square Error of Approximation (RMSEA) and the Comparative Fit Index (CFI). The current analysis shows that the hypothesized structural model displayed poor fit with the observed data.
Figure 4.1: Results - Revised Andersen Behavioural Model

Predisposing Factors
- ATSPPH Need
- ATSPPH Stigma
- ATSPPH Openness
- ATSPPH Confidence
- ATSIH Total

Help-Seeking Outcome

Enabling Factors
- MOS Affectionate
- MOS Tangible
- MOS Emotional Info
- MOS Pos. Interaction
- BTS Total (reversed)

Readiness to Change
- CPGI
- Money Gambled
- Weekly Gambled
- Log10 AFCM

Need Factors

WSH Professional
- WSH Informal

URICA Precontemp. (R)
- URICA Contemplation
- URICA Action
- URICA Maintenance

* p < .001  ** p = .002
\(\chi^2 = 751.40, \text{RMSEA} = .11, \text{CFI} = .84, \text{df} = 162\). The RMSEA is an absolute fit index that indicates the degree of misfit of the sample data in the hypothesized model. It is one of the most commonly reported fit statistics due to the fact that it penalizes complex models and is robust to sample size (Hu & Bentler, 1999). Conventionally, RMSEA values of .05 or less are considered to indicate good fit of the data to the specified model, values of .05 - .10 indicate marginal fit, while values of over .10 indicate poor fit to the data (Hu & Bentler).

The CFI is a relative fit index that compares the fit of the proposed model with the fit of an independence model – one that assumes that the variables within the model are uncorrelated with one another. Like the RMSEA, the CFI is not too sensitive to sample size (Fan, Thompson, and Wang, 1999). A model is considered to display good fit to the data if CFI exceeds .93 (Byrne, 2010).

Given that the originally hypothesized Revised Andersen Behavioural Model was shown to fit poorly to the data, this model was rejected. This concluded the confirmatory portion of the statistical analysis. In a subsequent exploratory analysis, the hypothesized model was re-specified and re-estimated based on the modification indices in a series of post-hoc analyses. Modification indices can be conceptualized as a \(\chi^2\) statistic with one degree of freedom, which corresponds with each fixed parameter specified in the structural model (Jöreskog & Sörbom, 1993). Specifically, it is the value which represents the expected drop in overall \(\chi^2\) value if the parameter were to be freely estimated in a subsequent run of the analysis (Byrne, 2010). It is important to acknowledge the potential dangers of re-specification of a structural model as guided by modification indices. For instance, there is a risk that the inclusion of additional
parameters may be statistically fragile in terms of representing weak effects that are not likely replicable, and may influence the primary parameters in the model (Byrne, 2010). Thus, definitive claims of findings from a re-specified model guided by modification indices are not possible without replication in a future study (Thompson, 2000). Nevertheless, re-specification is a common occurrence in SEM research (Byrne, 2010), and has been shown to aid in the explanatory ability in an attempt to search for the real best fitting model (Cheng, 2001; Kwok, Kuo, & West, 2010). Furthermore, re-specification proceeded in a theoretically and statistically responsible manner, such that modification indices included in the re-specification were supported by theoretical and empirical rationale. To this end, each modification index included in the final models of the current study will be reviewed in the discussion section. Modification indices for model paths and error covariances were interpreted in an attempt to modify the hypothesized model to improve fit.

In reviewing the modification indices (M.I.), the largest was between the error in ATSIH scores and WSH-Informal scores (M.I. = 99.26). In other words, if the error in assessing ATSIH scores and the error in assessing WSH-Informal scores were allowed to be freely estimated (i.e., allowed to covary), the $\chi^2$ value would fall by at least the value of the modification index – 99.26. With the inclusion of this error covariance, the overall $\chi^2$ yielded a value of 630.80, and the change in $\chi^2$ was statistically significant.

The next largest M.I. was 72.14, and was associated with the inclusion of a new path from the observed variable of URICA PrecontemplationR scores to the latent variable of Predisposing Factors. With the inclusion of this new path, the overall $\chi^2$ yielded a value of 541.30, and the change in $\chi^2$ was statistically significant. The next
largest M.I. was 52.00, and was associated with a path from the latent variable of Need Factors to the observed variable of the Need subscale of the ATSPPH. With the inclusion of this path, the overall $\chi^2$ yielded a value of 484.50, and the change in $\chi^2$ was statistically significant. The next largest M.I. was 32.44, and was associated with a path from the latent variable of Need Factors to the observed variable of BTS scores. With the inclusion of this path, the overall $\chi^2$ yielded a value of 449.30, and the change in $\chi^2$ was statistically significant.

The next largest M.I. was 29.31, and was associated with the inclusion of an error covariance between the measurement error of BTS scores and the measurement error of URICA Precontemplation scores. With the inclusion of this error covariance, the overall $\chi^2$ yielded a value of 420.80, and the change in $\chi^2$ was statistically significant. The next largest M.I. was 27.22, and was associated with the inclusion of an error covariance between the measurement error of BTS scores and the measurement error of the latent variable of Predisposing Factors. With the inclusion of this error covariance, the overall $\chi^2$ yielded a value of 393.10, and the change in $\chi^2$ was statistically significant. The next largest M.I. was 22.25, and was associated with the inclusion of an error covariance between the measurement error of the Confidence subscale of ATSPPH and the measurement error of the WSH Professional subscale. With the inclusion of this error covariance, the subsequent model yielded a $\chi^2$ of 364.50, $p < .001$, RMSEA = .065, CFI = .94, $df = 155$, and the change in $\chi^2$ was statistically significant. A review of the remaining modification indices suggested that there were no more modifications to the model that were both theoretically consistent and statistically meaningful. Thus, this was accepted as the final version for the Revised Andersen Behavioural Model. As indicated by the
various measures of fit, this modified model displayed marginally acceptable fit to the observed data.

The modified Revised Andersen Behavioural Model was partially supported in the present data. The path from Predisposing Factors to Help-Seeking Outcome was significant ($\beta = .62, p < .001$), and thus Hypothesis 1 was supported. Standardized regression weights of the latent and measured variables concerning Hypothesis 1 are provided in Figure 4.2.

The path from Enabling Factors to Help-Seeking Outcome was significant ($\beta = .19, p = .003$), and thus Hypothesis 2 was supported. Standardized regression weights of the latent and measured variables concerning Hypothesis 2 are provided in Figure 4.3. As can be seen in this figure, the Barriers to Treatment Scale (reverse scored) loaded poorly under the Enabling Factors latent variable, and indicated that this latent variable had been mis-specified. Given these results, it appears that the Enabling Factors latent variable was only representative of perceived social support, and not of perceived barriers.

* = $p < .001$

Figure 4.2: Regression Weights for Hypothesis 1
The path from Need Factors to Help-Seeking Outcome was not significant ($\beta = - .019, p = .86$), and thus Hypothesis 3 was not supported. Standardized regression weights of the latent and measured variables concerning Hypothesis 3 are provided in Figure 4.4.
The path from Need Factors to Readiness to Change was significant ($\beta = .72, p < .001$), and thus Hypothesis 4 was supported. Standardized regression weights of the latent and measured variables concerning Hypothesis 4 are provided in Figure 4.5.

**Figure 4.5: Regression Weights for Hypothesis 4**

![Diagram showing regression weights for Hypothesis 4]

The path from Readiness to Change to Help-Seeking Outcome was not significant ($\beta = -.051, p = .62$), and thus Hypothesis 5 was not supported. Standardized regression weights of the latent and measured variables concerning Hypothesis 5 are provided in Figure 4.6.

**Figure 4.6: Regression Weights for Hypothesis 5**

![Diagram showing regression weights for Hypothesis 5]

* = $p<.001$. URICA and Money gambled have been log-transformed.
Dual Outcome Model

Due to the substantial modifications of the Revised Andersen Behavioural Model, the presence of cross-loadings of several observed measures onto multiple latent variables, and the marginal fit of the final Revised ABM to the data, an alternative model was presented and tested. This model was guided by plausible theoretical assertions regarding the differential pathways of formal help-seeking and social network help-seeking (refer to Chapter 2), and the post-hoc observations of the sample data.

As discussed in the introduction section, individuals seek help for their gambling problems not only from professionals, but often from their social support network. The analysis of the present data suggested that there may be differential pathways for professional and informal help-seeking for gambling problems. In the analysis of the Revised ABM, it was found that misfit of the model to the observed data could be improved by grouping formal treatment seeking predictors separately from social network help-seeking predictors. Furthermore, the Enabling Factors appeared to be mis-specified, as measures of social support and perceived barriers did not converge onto a single latent variable.

In an alternative model, henceforth referred to as the Dual Outcome Model, the two outcome measured variables of WSH-Professional scores and WSH-Informal scores were not conceptualized as a single latent outcome variable representing an overall willingness to seek help. Rather, the two measured variables were considered separate outcome variables. In the Dual Outcome Model, two separate pathways to help-seeking are hypothesized: one for seeking help within one’s social network, and a separate
pathway for seeking treatment from professionals. The Dual Outcome Model is presented in Figure 4.7.

As seen in Figure 4.7, the latent factor of Social Network Predictors consisted of three measured variables: the MOS Total score, the ATSIH Total score, and the ATSIH Support score, derived from summing the self-reported willingness to seek the help from various, specific members within the respondent’s social support network (e.g., spouse, friend, parent, sibling, neighbour, or work associate). The latent factor of Formal Treatment Predictors consisted of five measured variables, the BTS Person subscale score, the BTS Treatment subscale score, the ATSPPH Need subscale, the ATSPPH Openness subscale, the ATSPPH Confidence subscale, and the ATSPPH Stigma subscale.

The latent variable of Need Factors consisted of the same four measured variables as in the Revised Andersen Behavioural Model. Similarly, the latent variable of Readiness to Change consisted of the same four measured variables as in the Revised ABM. Thus, the Dual Outcome Model only rearranged the measured variables that formed the latent variables of Predisposing Factors and Enabling Factors into two new latent variables of Formal Treatment Predictors and Social Network Predictors, respectively.

The Dual Outcome Model initially displayed marginal to poor fit with the observed data ($\chi^2 = 565.20$, RMSEA = .10, CFI = .84, $df = 127$). Subsequent attempts were made to improve model fit as guided by modification indices and estimates for the model paths. In reviewing the modification indices, the largest M.I. was associated with the inclusion of a new path from URICA Precontemplation subscale scores predicting the
Figure 4.7: Results - Dual Outcome Model

ATSPPH Need → .83*
ATSPPH Stigma → .56*
ATSPPH Openness → .76*
ATSPPH Confidence → .85*
BTS Total (reversed) → .44*

Formal Help-Seeking Predictors

ATSPPH Need → .83*
ATSPPH Stigma → .56*
ATSPPH Openness → .76*
ATSPPH Confidence → .85*
BTS Total (reversed) → .44*

Social Network Predictors

ATSPPH Need → .75*
ATSPPH Stigma → .54*
ATSPPH Openness → .62*
ATSPPH Confidence → .54*
BTS Total (reversed) → .44*

Need Factors

ATSPPH Need → .87*
ATSPPH Stigma → .62*
ATSPPH Openness → .49*
ATSPPH Confidence → .31*
BTS Total (reversed) → .44*

Readiness to Change

ATSPPH Need → .78*
ATSPPH Stigma → .62*
ATSPPH Openness → .49*
ATSPPH Confidence → .31*
BTS Total (reversed) → .44*

* p < .001

WSH Professional

ATSPPH Need → .66*
ATSPPH Stigma → .027
ATSPPH Openness → .071
ATSPPH Confidence → .071
BTS Total (reversed) → .44*

WSH Informal

ATSPPH Need → .80*
ATSPPH Stigma → .80*
ATSPPH Openness → .80*
ATSPPH Confidence → .80*
BTS Total (reversed) → .80*

URICA Precontemp. (R)

ATSPPH Need → .57*
ATSPPH Stigma → .98*
ATSPPH Openness → .93*
ATSPPH Confidence → .90*
BTS Total (reversed) → .90*

URICA Contemplation

ATSPPH Need → .57*
ATSPPH Stigma → .98*
ATSPPH Openness → .93*
ATSPPH Confidence → .90*
BTS Total (reversed) → .90*

URICA Action

ATSPPH Need → .57*
ATSPPH Stigma → .98*
ATSPPH Openness → .93*
ATSPPH Confidence → .90*
BTS Total (reversed) → .90*

URICA Maintenance

ATSPPH Need → .57*
ATSPPH Stigma → .98*
ATSPPH Openness → .93*
ATSPPH Confidence → .90*
BTS Total (reversed) → .90*
latent variable of Formal Treatment Predictors. With the inclusion of this new path, the subsequent model yielded a $\chi^2$ of 436.10, and the change in $\chi^2$ was statistically significant.

The next largest M.I. was 68.16 and was associated with the inclusion of an error covariance between the WSH-Informal subscale score and the WSH-Professional subscale score. With the addition of this error covariance to the model, the overall $\chi^2$ yielded a value of 376.40, and the change in $\chi^2$ was statistically significant. The next largest M.I. is 48.70, and was associated with the inclusion of a new path from the latent variable of Need Factors predicting the measured variable of the Need subscale of the ATSPPH. With the inclusion of this new path, the subsequent model yielded a $\chi^2$ of 267.00, $p < .001$, RMSEA = .061, CFI = .95, $df = 155$, and the change in $\chi^2$ was statistically significant.

A review of the remaining modification indices suggests that there were no further modifications to the model that were both theoretically consistent and statistically impactful. Thus, this was accepted as the final version of the Dual Outcome Model. As indicated by the various measures of fit, the Dual Outcome Model displayed marginal to fair fit to the observed data.

Validation of Model Fit with Participant Pool Sample Only

Because of the significant group differences observed in a number of key predictor and outcome variables seen between the psychology participant pool sample and individuals recruited from the in-treatment and general population, it was important to validate whether the final versions of the Revised ABM and the Dual Outcome Model held for the different samples. Due to sample size constraints, these models could only be
tested with the data from the psychology participant pool, which had a large enough number of participants \((n = 238)\) to perform SEM analyses.

When using only the participant pool data to test the final version of Revised Andersen Behavioural Model, it was found that fit to the data was actually better than when the entire sample was used, yielding a \(\chi^2\) of 254.70, \(p < .001\), RMSEA = .053, CFI = .95, \(df = 154\). In fact, the model fit to the data using only the participant pool sample is considered to be good, based on interpretation of the aforementioned fit indices.

Similarly, when using only the participant data to test the final version of the Dual Outcome Model, it was found that fit to the data was improved, yielding a \(\chi^2\) of 198.20, \(p < .001\), RMSEA = .050, CFI = .95, \(df = 123\). The Dual Outcome Model displayed good fit to the data using only the participant pool sample.

In the validation of the Revised Andersen Behavioural Model and the alternative Dual Outcome Model using structural equation modeling, it was found that the present data fit was poor for both of the initial hypothesized models. After exploratory re-specification of both models as guided by modification indices, the final Revised ABM and Dual Outcome Model achieved marginal to adequate fit using data from the total sample. It was found that less modification was needed to achieve an adequate fit of the initial Dual Outcome Model to the data, as compared to the Revised ABM. There was indication that the latent variable of enabling factors in the Revised ABM was misspecified due to low factor loadings within this latent variable and high cross-loadings with other latent variables. It was found that the fit of both the Revised ABM and the Dual Outcome Model improved when using data from the psychology participant pool only as compared to data from the total sample.
Exploratory Factor Analysis

In the present investigation, an exploratory approach was taken by using modification indices to guide alterations to the Revised Andersen Behavioural Model. Exploratory Factor Analysis (EFA) is another exploratory approach to interpreting the data, which will help confirm some conclusions drawn from the SEM analysis, and may also provide additional information about the factor structure of variables in the present study. In an ancillary analysis, an EFA was performed involving all twenty measured variables in the Revised Andersen Behavioural Model. To maximize the data that can be used for the analysis, missing values were replaced using estimation maximization (see section on SEM analysis for detailed description). As a result, the present EFA was conducted using data from all 319 cases in the dataset. All the assumptions of EFA, including the assumption of normality, absence of outliers, and the absence of multicollinearity were previously addressed in preparing the dataset for SEM. Principal Axis Factoring (PAF) was chosen as the factor extraction method (instead of Principal Component Analysis) because it considers only common factor variability (i.e., covariance), and removes the uniqueness or unexplained variance from the model. Covariation amongst factors is of particular interest to the present analysis. To aid in factor interpretation, the EFA was subjected to the oblique rotation method of Direct Oblimin, with delta ($\delta$) set at zero. This method of rotation allows the extracted factors to be correlated with one another. Because of the nature of the measured variables and the cross-loadings observed in the SEM analysis, it was expected that the extracted factors may be correlated with one another.
Four interpretable factors were extracted in the present EFA, which accounted for a total of 57.92% of the variance observed in the 20 measured variables. The pattern matrix for the EFA is presented in Table 4.8. Factor 1 accounted for 27.62% of the total variance, and appeared to capture subjective concerns and behavioural indicators related to problem gambling. The measured variables that loaded highest on Factor 1 were the Readiness to Change measures of URICA Contemplation, URICA Action, and URICA Maintenance. Gambling severity (as measured by the CPGI) and measures of gambling frequency and gambling spending also loaded onto Factor 1.

Factor 2 accounted for 17.67% of the total variance, and appeared to represent attitudes toward professional help-seeking. Measured variables that loaded highest on Factor 2 were the 4 subscale scores of the Attitudes Toward Seeking Professional Psychological Help for Problem Gambling. Other variables that loaded onto Factor 2 were the Perceived Barriers to Treatment and Willingness to Seek Professional Psychological Help scores. Interestingly, the URICA Precontemplation scores also loaded onto Factor 2, suggesting that features associated with the precontemplation stage of change may be associated with attitudes toward professional help-seeking.

Factor 3 accounted for 8.93% of the total variance, and appeared to represent perceived social support. As such, the four measured variables that loaded onto Factor 3 were the four subscale scores of the Medical Outcome Study Social Support Survey. Finally, Factor 4 accounted for 3.71% of the total variance, and appeared to represent attitudes toward informal help-seeking for gambling problems. The two measured variables that loaded onto Factor 4 were the Attitudes Towards Seeking Informal Help
Table 4.8: Pattern Matrix of Exploratory Factor Analysis

<table>
<thead>
<tr>
<th>Measured Variable</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATSPPH Need</td>
<td>.22</td>
<td>.81</td>
<td>.036</td>
<td>-.10</td>
</tr>
<tr>
<td>ATSPPH Stigma</td>
<td>.032</td>
<td>.51</td>
<td>-.059</td>
<td>.27</td>
</tr>
<tr>
<td>ATSPPH Openness</td>
<td>-.11</td>
<td>.70</td>
<td>-.027</td>
<td>.11</td>
</tr>
<tr>
<td>ATSPPH Confidence</td>
<td>-.070</td>
<td>.90</td>
<td>.018</td>
<td>-.15</td>
</tr>
<tr>
<td>ATSIH Total</td>
<td>.032</td>
<td>-.008</td>
<td>.11</td>
<td>.69</td>
</tr>
<tr>
<td>MOS Affectionate</td>
<td>.008</td>
<td>.006</td>
<td>.84</td>
<td>.017</td>
</tr>
<tr>
<td>MOS Tangible</td>
<td>-.11</td>
<td>.038</td>
<td>.78</td>
<td>-.072</td>
</tr>
<tr>
<td>MOS Emotional Information</td>
<td>.068</td>
<td>.017</td>
<td>.82</td>
<td>.21</td>
</tr>
<tr>
<td>MOS Positive Interaction</td>
<td>.014</td>
<td>-.037</td>
<td>.93</td>
<td>-.004</td>
</tr>
<tr>
<td>BTS Total (reversed)</td>
<td>-.31</td>
<td>.42</td>
<td>.051</td>
<td>.13</td>
</tr>
<tr>
<td>CPGI</td>
<td>.77</td>
<td>-.048</td>
<td>-.035</td>
<td>-.025</td>
</tr>
<tr>
<td>Log_{10}AFCM</td>
<td>.24</td>
<td>-.063</td>
<td>.025</td>
<td>-.16</td>
</tr>
<tr>
<td>Money Gambled last 12 Months</td>
<td>.48</td>
<td>-.056</td>
<td>-.027</td>
<td>-.016</td>
</tr>
<tr>
<td>Weekly Gambling Frequency</td>
<td>.43</td>
<td>-.26</td>
<td>-.026</td>
<td>-.017</td>
</tr>
<tr>
<td>URICA Precontemplation</td>
<td>.42</td>
<td>.58</td>
<td>.003</td>
<td>-.15</td>
</tr>
<tr>
<td>URICA Contemplation</td>
<td>.90</td>
<td>.19</td>
<td>-.092</td>
<td>.041</td>
</tr>
<tr>
<td>URICA Action</td>
<td>.86</td>
<td>.23</td>
<td>-.029</td>
<td>.008</td>
</tr>
<tr>
<td>URICA Maintenance</td>
<td>.84</td>
<td>.10</td>
<td>-.12</td>
<td>.055</td>
</tr>
<tr>
<td>WSH Professional</td>
<td>-.04</td>
<td>.57</td>
<td>.062</td>
<td>.14</td>
</tr>
<tr>
<td>WSH Informal</td>
<td>-.012</td>
<td>-.013</td>
<td>.13</td>
<td>.73</td>
</tr>
</tbody>
</table>
for Problem Gambling and the Willingness to Seek Informal Help for Problem Gambling scores.

The factor correlation matrix is presented in Table 4.9. Of note, Factor 1 (concerns related to gambling problems) was negatively correlated with Factor 3 (perceived social support) and Factor 4 (attitudes toward informal help-seeking). Factor 3 (perceived social support) also was positively correlated with Factor 4 (attitudes toward informal help-seeking). The correlations found amongst the 4 extracted factors are consistent with what was observed in the structural equation model.

Overall, the results of the EFA were consistent with and supported results of the SEM analyses. However, the EFA did uncover some interesting new insights. For instance, measures associated with the Contemplation, Action, and Maintenance phases of the Stages of Change loaded onto the same factor as variables associated with Need Factors. This suggests a strong correspondence between Readiness to Change and Need Factors, and is consistent with what was found in the SEM analysis. Consistent with the Dual Outcome Model, perceived barriers to help-seeking loaded onto the same factor as attitudes and willingness to seek professional help, and had low loadings with perceived social support. This suggests that perceived barriers to treatment may be best conceptualized as being part of the same overarching construct alongside attitudes and willingness to seek professional help.
Table 4.9: Factor Correlation Matrix

<table>
<thead>
<tr>
<th>Factor</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.00</td>
<td>.015</td>
<td>.37</td>
<td>.38</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>1.00</td>
<td>.061</td>
<td>.26</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td>1.00</td>
<td>.40</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>1.00</td>
</tr>
</tbody>
</table>

Themes from Open-Ended Responses

In the current study, participants were asked whether they had ever sought treatment for their gambling behaviour. Participants were then asked to provide open-ended responses to identify the reasons why they had decided to seek help for their problem, or why they have not yet sought treatment for their gambling. Approximately 88% of the total sample provided responses to these open-ended questions. There was large variability in terms of the length and thoroughness in the responses, ranging from short phrases to full paragraph responses. These responses were reviewed by the researcher, and emergent themes and subthemes were derived from the data. The following is a summary of the findings from these open-ended responses, organized by emergent themes.

Responses from Treatment Seekers

Adverse Consequences Motivating Treatment Seeking

Almost all in-treatment participants (92%) alluded to some form of adverse consequence of their gambling behaviour as a critical motivating factor for seeking treatment. Thus, this was the dominant and prevailing theme that captured the vast...
majority of responses of individuals who have sought treatment for their gambling problem. Thus, the responses from treatment seekers are interpreted through this overarching theme. From within this broad theme, several distinct sub-themes emerged from treatment-seeking participants.

**Emotional and Psychological Symptoms Motivating Treatment Seeking**

A large proportion of respondents (44%) cited at least one emotional or psychological symptom as a motivator for seeking treatment. Thus, emotional and psychological symptoms appear to be an important theme endorsed by a substantial proportion of treatment-seeking respondents.

*Feeling “Out of Control”*

One common reason for seeking treatment was the emotional experience of feeling “out of control” of their gambling behaviour, reported by 21% of respondents who have sought treatment. Some respondents also discussed the process of their struggle with being in and out of control of their gambling behaviour. For instance, one respondent stated that he first went into treatment because he didn't feel in control of his gambling, and went back for additional help due to his fear of losing control again and relapsing. Similarly, another participant wrote, “I do wish to stop. I have attended counseling for the past 6 years or so. [I] haven’t always been honest with the counselor. I still have the urge to gamble, thinking it’s under control when really it’s not.” These responses speak to the longstanding and often cyclical struggles that problem gamblers experience in terms of trying to gain control over their gambling behaviour.
Mood Symptoms

Another commonly reported class of psychological symptoms that prompted participants to seek treatment were mood-related symptoms, such as feeling depressed, feeling suicidal, or attempting to commit suicide as a result of being overwhelmed by the numerous adverse consequences of their gambling behaviour. For example, one respondent wrote that she “felt completely depressed about all the lies and leading a fake life. Once total devastation had set in I decided it was time to try one last time to beat this demon.” A few participants linked the perception of being out of control to their suicidal ideation. The following response is a good reflection of this, “[The] primary reason I sought treatment and recovery was that I could not quit gambling and thought I was headed for suicide as the only way to quit.” These responses speak to the depth of despair that some problem gamblers may experience, and the sense of hopelessness that they may experience as a result of their gambling behaviour.

Shame and Guilt

Several respondents stated that they experienced a sense of shame and/or guilt regarding how gambling had negatively impacted their gambling behaviour. For respondents that mentioned shame and guilt, these emotions were typically in reaction to the amount of money that they have spent on gambling behaviour, what the money could have been spent on otherwise, and the friends and family that have been hurt as a consequence of the choices the respondents made related to gambling.

Anxiety Symptoms

Some participants mentioned anxiety symptoms in their response, such as feeling “sick to the stomach”, “stressed out”, and “nervous”.
Financial Consequences Motivating Treatment Seeking

Another common theme reported by participants for seeking treatment was serious financial consequences, reported by 73% of participants. These included repeated and/or mounting debt to friends and financial institutions, “financial duress”, declaring bankruptcy, and “hitting rock bottom”. One respondent wrote about “losing money I don’t have”. Often, responses alluded to the fact that serious financial consequences were repeatedly experienced before the decision to seek help. One respondent wrote, “After bankruptcy due to gambling addiction... I found myself in huge debt again for [a] payday loan because of gambling”. Trouble with the law was another motivating factor; one respondent stated that the pivotal moment that led to his treatment-seeking was being caught committing fraud in order to finance his gambling behaviour. The frequent report of adverse financial consequences suggests that they played a central role in leading gamblers to seek formal treatment in the current sample.

Some participants specifically alluded to the fact that it was the adverse financial consequences of gambling, rather than the severity of the gambling behaviour itself that had motivated their treatment seeking behaviour. One participant stated, “As long as I had lots of money, I did not feel the full impact of my gambling activities. I sought treatment when I ran out of money and faced the associated lifestyle difficulties. I also faced pressure from my bankruptcy trustee and the court to get counseling.” This response epitomizes the common occurrence that tangible financial or other adverse consequences often drive gamblers to seek help rather than the severity of the gambling activity itself.
In addition, some older respondents stated that the decrease of income in retirement was a reason for their treatment-seeking, as they could no longer afford to keep gambling at the former rate of spending.

Pressure from Social Network Members Motivating Treatment Seeking

For approximately 31% of in-treatment respondents, the decision to seek help was related to social pressure from within their social support network, thus making this one of the central themes in responses from treatment seekers.

Pivotal Social Network Event

For those respondents that mentioned pressure to seek treatment from their social network, this pressure is often precipitated by a specific, pivotal event. One participant wrote:

*My wife saw our bank statement and wanted to know where I was spending my money. She found out that I had lost approximately $6000 over 6 months. If I did not stop gambling she wanted a separation. Even after my wife gave me this choice to stop gambling or leave, I still went to the casino and lost more money. This is when I realized I had a problem.*

For some individuals, it appeared that gambling binges were precipitated in part by stressful interpersonal events, and the gambling behaviour may be a form of acting out in reaction to their interpersonal problems. In this way, a vicious cycle could develop whereby gambling behaviour may both contribute to and serve as a maladaptive coping strategy for existing interpersonal problems in the home. One respondent described this type of dynamic with his spouse:

“... last November, we had a big fight and I got fed up with her attitude towards me, of her daily nagging, and couldn’t go out for drinking party with friends/colleagues. I went out gambling for 3 days, no going home, and spent $3300, as a sign of my anger. Went home and told her my loss and she told me that I have a
gambling problem and told me to seek [a] counselor before I can see or be with my family."

These vignettes demonstrate the significant impact that a single, pivotal, interpersonal event can have in motivating problem gamblers to consider changing their gambling behaviour and seeking treatment. Other respondents did not report specific events, but nevertheless indicated that they were motivated to seek treatment by the recognition of impending loss of social support (particularly immediate family members such as their spouse and children) if their gambling behaviour did not change. Some reflected on the loss of social support that had already happened as a result of their gambling. Overall, the central role interpersonal problems play in gamblers’ reasons for seeking help supports previous research, which indicates a high degree of interpersonal stressors and social dysfunction among many treatment-seeking problem gamblers (Ciarrocchi, 2002; Ciarrocchi & Reinert, 1993).

As presented earlier, quantitative results suggest that perceived social support positively predict positive attitudes toward informal help-seeking and willingness to seek help from their social networks. The findings from the open-ended responses suggest that social stressors may also be a pivotal factor that motivates gamblers into formal treatment. Thus, the open-ended responses provided complimentary insights into the role of social networks and treatment seeking behaviour; positive influence of social networks may influence greater informal help-seeking, while social stressors and/or social pressures may play a more central role in the pathway towards formal treatment entry. While interpersonal stressors were more often mentioned by treatment-seeking gamblers, a small portion of respondents did mention how social support provided a positive influence on them towards treatment entry. One respondent wrote “... my best friends told
me the negative effects of gambling activities. I feel they really care about me and want to help me.”

Overall Dissatisfaction with Present Life Circumstances

Another theme that emerged in responses of treatment-seekers was the endorsement of dissatisfaction with multiple facets of the gamblers’ lives as a result of their gambling behaviour. One participant wrote, “I was very emotionally ill before I quit gambling, and a shell of a person who only cared about gambling. I was also afraid of losing my husband, family, being homeless and mentally ill.” Other participants alluded to dissatisfaction with such aspects of their life such as “leading a fake life” and “gambling and hurting”. The devastation that could result from losses in multiple facets of one's life is captured poignantly in the following response, “Gambling ruined my life and I no longer wanted to live. I was losing everything financially, as well as my husband and children. I would function with or without that next bet.”

Self Improvement

A small number of responses indicated that gamblers sought treatment because of a desire to better themselves and their overall functioning. For instance, one participant wrote that she sought treatment “to understand the reason why I gambled, and to learn to handle the way I deal with problems and learn to solve things in a better way, and to feel confident as a person.”
Responses for reasons why treatment has not been sought

The interpretation of responses from those who have not sought treatment should be considered in view of the fact that the vast majority of these responses came from the university participant pool, and thus may not apply fully to problem gamblers in the general population.

Denial of Gambling Behaviour as a Problem

By a substantial margin, the most common response provided by participants for why they have not sought treatment is that they do not have a gambling problem. Forty-nine percent of participants who had not sought treatment provided this response, and thus it appears to be the prominent theme for participants who have not sought help for their gambling problem. Given the variability of gambling frequency and severity among the non-treatment seeking sample, and the fact that many gamblers from this sample fell under a more moderate range of severity, the high proportion of participants endorsing this response is not unexpected. At the same time, it could also be interpreted as a certain degree of denial by some gamblers regarding the severity of their gambling problems. Thus, the monetary amount of money spent in the last 12 months as well as the gambling frequency per week was considered in conjunction with these open-ended responses in order to provide a better context for their interpretation.

Feeling “In Control” of Gambling Behaviour

A subtheme of denying the existence of a gambling problem is the assertion that one’s gambling behaviour is “in control”. Just as many respondents reported that the feeling of being “out of control” prompted them to seek treatment, the feeling of being in
control of the gambling behaviour was reported by 12% of respondents who have not sought treatment for gambling, the second most commonly reported response. The finding that control was frequently mentioned by both individuals who have and have not sought treatment for their problems suggests that this is an important construct that would result in fruitful future investigation. One respondent wrote, “treatment would not be a good option because I know I can stop when I decide I want to.” Another respondent who had never sought treatment stated that “had I lost control, I would have definitely sought help from a professional.” Another participant stated, “I do not believe I have a gambling problem. I go in with a certain amount of money and IF I lose it, I walk away.” Of note, this responses came from an individual who reported that he had spent $10,000 on gambling in the past 12 months.

Financial Consequences are not a Problem

For several gamblers that have not sought treatment, the perceived absence of adverse financial consequences was used by these individuals as a primary gauge to determine whether they needed to change their gambling behaviour. One respondent wrote, “I don’t believe that the amount of money that I am spending is too great for me to handle right now.” Some respondents acknowledged that they used an assessment of their gambling performance to help gauge whether they had a problem.

“If I’m doing well and getting money from the casino then I don’t necessarily feel that it is a problem. If I need the money and I am able to attain it from the casino then I think that is okay. It’s when I start losing a lot, that’s when I think I need help because I go to [the] casino more to try and win back what I have lost”.

Some responses alluded to an earlier period of more intense gambling behaviour, suggesting that these individuals may be at a point in gambling remission at the time that they completed the questionnaire. One respondent wrote “I do not gamble nearly as much
now as I did in the past, and I do not gamble now in order to win money to pay bills.” Nevertheless, this respondent endorsed gambling twice a week and spending $2000 on gambling activities in the past 12 months.

**Concerns about Negative Social Evaluation**

Another theme that emerged from participants’ reasons for refraining from treatment related to worries about negative social evaluation. One participant stated, “I am worried of what people would think.” Another respondent admitted that she was “embarrassed to get help”, and that “one day I would stop on my own”. Another individual admitted he did not want his parents to know about his gambling behaviour, and this served as a barrier to treatment for him. Often, the endorsement of shame and embarrassment coincided with concerns about negative social evaluation. Thus, the experience of shame and embarrassment seems to be critical emotional motivators for both gamblers who have sought treatment and those who have not. For individuals who have sought treatment, the experience of shame appear to be rooted in negative self evaluation (i.e., these individuals make negative judgments about themselves because of their gambling behaviour), whereas the experience of shame for non-treatment seekers appears to be more about negative evaluations from others (i.e., these individuals do not want others to judge them negatively about their gambling behaviour).

**Enjoyment of Gambling Behaviour Outweighs Adverse Consequences**

Some participants noted that the positive benefits from gambling behaviour outweighed the adverse consequences for them. The following response reflects this
theme: “I enjoy gambling too much at the time it is happening. I do not want to lose that hobby through counseling. I’d like to enjoy it a little longer, and possibly win some money.” A number of respondents described their gambling behaviour as a “recreational hobby” that they engaged in for “enjoyment” or “entertainment”. Several responses alluded to the positive social aspect of their gambling behaviour as a way to pass time with friends and enjoy the company of others. One response stated that gambling was “therapeutic”. One respondent put it simply: “I like gambling”. Many of the responses that fell under this theme are consistent with the central features of the precontemplation stage of change. For instance, one defining feature of this stage is the weighing of the benefits of gambling behaviour as being more significant than its adverse consequences. Thus, it is likely that respondents who endorsed more positive benefits of their gambling behaviour are unlikely to be motivated to change their behaviour in the near future.

Growing Awareness of Gambling as a Problem, but Ambivalence about Seeking Help

Some responses indicated a growing awareness that they may have a gambling problem. One respondent acknowledged a fear of admitting that there is a problem after having gambled $3000 in the last 12 months and 5 times a week. Another gambler stated he was still deciding if “what I do is normal”. One individual had insight that he would engage in gambling more frequently when stressed by his marital problems, though he stated that he never “felt controlled by gambling nor can I say I lost sight of my financial situation”.

Pragmatic Barriers Associated with Seeking Treatment

A small number of participants commented on the pragmatic barriers to treatment seeking. The most common barriers cited were the monetary cost of treatment (2.6% of respondents) and the time required to engage in treatment (3.5% of respondents). Some also commented on not being aware of where or how to get help for gambling (1.7%).

In summary, common themes in the open-ended responses of those who have sought treatment typically spoke about some form of distress as being the central motivating factor for treatment seeking. This included distress as a result of adverse financial consequences, inability to control gambling behaviour, pressure from their immediate social network to stop gambling, and general interpersonal distress. For individuals that have not sought treatment, a different set of themes emerged. The most prevalent was the denial of gambling problems, or that the gambling issue was not serious enough to warrant treatment. Related to this, many responses also included a minimization of adverse consequences, as well as an endorsement of the positive gains associated with engaging in gambling behaviour. It is likely that factors such as gambling severity and adverse financial consequences perceived to be less problematic for the non-treatment-seeking respondents. However, factors such as denial or minimization of the gambling problems are also likely to have influenced the overall quality of the open-ended responses of these non-treatment seekers as to why they have not sought help. For both treatment seekers and non-treatment seekers, the perception of control over their gambling behaviour and the emotional experience of shame and embarrassment appeared to have significant influences on their help-seeking behaviour.
CHAPTER V: DISCUSSION

The primary purpose of the present study was to empirically test whether the Revised Andersen Behavioural Model (ABM) could be applied to explain the help-seeking process of problem gamblers. The ABM defines help-seeking behaviour as being determined by three broad factors: Predisposing Factors, Enabling Factors, and Need Factors. In an attempt to adapt the model to the unique characteristics of a gambling population, Readiness to Change was added to the revised model, and hypothesized to predict Help-Seeking Outcome. Overall, the Revised ABM received partial support in the analyses. Predisposing and Enabling Factors were both found to predict Help-Seeking Outcome, and Need Factors were found to predict increased Readiness to Change. However, neither Need Factors nor Readiness to Change were found to be significant predictors of Help-Seeking Outcome. Moreover, significant relationships were found between Need Factors, Enabling Factors, and Predisposing Factors that were not originally hypothesized in the model, and yet may aid the interpretation of the non-significant outcomes. Each of these topics is addressed in the discussion of the Revised ABM.

Due to evidence of misspecification of certain variables in the Revised Andersen Behavioural Model, a post-hoc Dual Outcome Model was subsequently generated and tested. This model separated predictors of informal help-seeking from predictors of professional help-seeking. It was found that informal and professional help-seeking predictors significantly predicted the help-seeking outcomes from the corresponding sources (e.g., informal help-seeking predictors predicted informal help-seeking outcome), but did not predict help-seeking outcomes from different sources (e.g., formal help-
seeking predictors did not predict informal help-seeking outcome). This result revealed that there are differential pathways to formal versus informal help-seeking outcome for problem gamblers. These findings are further addressed in the discussion of the Dual Outcome Model.

**Revised Andersen Behavioural Model**

In the following section, Hypotheses 1, 2, 4, and 5 is discussed in order first. Given that Hypothesis 3 involves the consideration of the Revised Andersen Behavioural Model as a whole, it is discussed last.

*Predisposing Factors and Help-Seeking Outcome*

Hypothesis 1, which stated that Predisposing Factors would positively predict Help-Seeking Outcome, was supported in the present study. It was found that the strongest direct effect predicting Help-Seeking Outcome in the Revised Andersen Behavioural Model came from the Predisposing Factors. In the Revised ABM tested in the current study, Predisposing Factors consisted of attitudinal measures of help-seeking. Thus, the subsequent discussion refers specifically to the relationship between attitudes toward help-seeking and willingness to seek help.

The strong correspondence between attitudes and willingness to seek help found in the present study supports previous help-seeking research, which has indicated that help-seeking attitudes were among the most consistent and strongest predictors of intentions to seek psychological help (Cepeda-Benito & Short, 1998; Kelly & Achter, 1995; Morgan et al., 2003; Vogel & Wester, 2003). Attitudes toward help-seeking has been conceptualized as a key predictor in various models of help-seeking, including
Andersen’s (1968) Behavioural Model and Cramer’s (1999) Model of the Willingness to Seek Counseling. With regards to Cramer’s model, attempts at replication have also substantiated the relationship between help-seeking attitudes and willingness to seek help (Leech, 2007; Liao et al., 2005).

The findings in the present study not only support previous literature that demonstrated a relationship between attitudes and willingness to seek help, but further suggest that help-seeking attitudes may be among the most influential factors in the help-seeking behaviour of problem gamblers. In the present study, it was shown to better predict Help-Seeking Outcome than other variables such as gambling severity, adverse financial consequences, and Readiness to Change.

The notably high correlation between attitudes and willingness to seek help prompts the question of whether attitudes, willingness, and intent to seek help are all part of a singular overarching construct. Alternatively, these constructs may all be components of the behavioural help-seeking process, which may start with attitudes toward help-seeking, lead to willingness and intent to seek help, and culminate in the actual behavioural action of seeking help.

In the present study, there were notable between-group differences in attitudes and willingness to seek professional and informal help that warrant discussion. In-treatment and general population gamblers endorsed significantly more positive attitudes toward seeking help from professionals, while psychology pool gamblers endorsed significantly more positive attitudes to seek help from their informal support network. Although there were no significant group differences in willingness to seek professional help, gamblers from the psychology participant pool endorsed greater willingness to seek
help from their informal support network than gamblers in-treatment and in the general population.

These findings could be interpreted in the context of differences in gambling severity and Readiness to Change observed between these two groups; in-treatment and general population gamblers reported significantly greater gambling severity as well as greater Readiness to Change than gamblers from the psychology pool. The observed differences in help-seeking attitudes could suggest that informal sources of help may be a more common option for those with less severe gambling problems or for those with lower Readiness to Change. Previous research in the alcohol abuse literature has found that individuals with less severe drinking problems may be more likely to seek help from informal sources rather than from professional services, and are also more likely to recover on their own outside of formal treatment (Weitzman & Chen, 2005; Willenbring, 2007). As gambling problems and adverse consequences of gambling become more severe, individuals may be more likely to seek help from professionals (Evans & Delfabbro, 2005). These individuals may feel that their problems have grown so severe that only formal treatment can be effective in helping to change their behaviours.

The preference for whom to seek help from may also be influenced by the age of the gambler. Previous research has suggested that young adults and adolescents seeking help for gambling and other addictions may prefer informal sources of help over formal treatment. For instance, Delfabbro, Lahn, and Grabosky (2005) found that adolescent gamblers were most likely to first turn to friends for help before seeking help from formal treatment sources. In the substance abuse literature, Power, Hartnoll, & Chalmers (1992) found that younger drug users may not perceive formal services as an attractive option for
help, and may have a preference for more informal and approachable services. Consistent with previous investigations, results from the present study found age to be positively related to attitudes toward professional help-seeking, indicating that older individuals had more positive attitudes toward seeking help from professionals compared to younger individuals. In addition, those from the younger psychology pool sample of gamblers had more positive attitudes toward seeking help from informal support compared to gamblers from the older in-treatment and general population sample. Furthermore, individuals from the psychology participant pool reported significantly greater perceived social support, which may also contribute to their greater willingness to seek help from their informal support networks.

**Enabling Factors and Help-Seeking Outcome**

Hypothesis 2, which stated that Enabling Factors would positively predict Help-Seeking Outcome, was partially supported in the present study. Due to problematic misspecification of the Enabling Factors latent variable (see results section and Figure 4.3), this factor was only representative of perceived social support and not of perceived barriers. Thus, the results of the present study indicated that greater perceived social support positively predicted greater willingness to seek formal and informal help for problem gambling. This is consistent with previous research in gambling and substance addictions, which has shown that those with stronger social support networks may be more likely to seek professional treatment and benefit from it compared to individuals with poor social support (Beattie & Longabaugh, 1999; Oei & Gordon, 2008).

Although the relationship between Enabling Factors and Help-Seeking Outcome was statistically significant, it only had a small effect size and was therefore considerably
less meaningful than the relationship between Predisposing Factors (i.e., attitudes toward help-seeking) and Help-Seeking Outcome. The primary reason for this is because social support and barriers to treatment did not converge into a meaningful latent variable, despite the fact that they are both conceptually considered as Enabling Factors in Andersen’s model. Barriers to treatment had a significantly stronger relationship with formal help-seeking compared to informal help-seeking. In contrast, social support had a significantly stronger relationship with informal help-seeking compared to formal help-seeking. The fact that these two variables within the Enabling Factors latent variable corresponded to different help-seeking outcomes suggests that they may be divergent constructs that should not be construed as a single latent variable. Moreover, this misspecification limits the interpretative usefulness of Enabling Factors. It was largely because of the problems inherent with the Enabling Factors latent variable that the alternative Dual Outcome Model was proposed. Social support, barriers to treatment, and their respective relationships to informal and formal help-seeking outcome are discussed in the context of the Dual Outcome Model later in this chapter.

**Need Factors and Readiness to Change**

Hypothesis 4, which stated that Need Factors would positively predict Readiness to Change, was supported in the present study. One of the strongest paths in the Revised Andersen Behavioural Model was between Need Factors and Readiness to Change. That is, as need for treatment increased (i.e., greater gambling severity, greater frequency of current gambling behaviour, more money spent on gambling in the last 12 months, and greater adverse financial consequences), Readiness to Change also increased, as determined by the four subscales of the URICA.
The positive relationship between problem severity and Readiness to Change supports an established relationship in the addictions and help-seeking literature between these two variables (Freyer et al., 2007). Petry (2005a) found that a continuous measure of Readiness to Change was positively correlated with gambling severity. Krenek, Maisto, Funderburk, and Drayer (2011) found that a measure of alcohol severity accounted for 19% of the variance in a measure of Readiness to Change, with severity positively correlating with readiness. The strength of the relationship between problem severity and readiness for change was found to be consistent in the present study with three of the URICA subscales corresponding to the contemplation, action, and maintenance stages. It was found that these three subscales were highly correlated with one another, calling into question whether these subscales really measure three distinct stages of change as originally theorized. Previous studies have found very high correlations among these three scales in various addictions populations. A number of researchers have cited the inability to yield discrete stages from Readiness to Change measures as one of the major criticisms of the Transtheoretical Model (Callaghan & Herzog, 2006; Clarke, 2007; Sutton, 2001; West, 2006). The Transtheoretical Model posits that the contemplation stage is differentiated from the action and maintenance stages in that the former lacks the behavioural activation component associated with taking action in an attempt to modify one’s addictive behaviour (Prochaska & DiClemente, 1983). The finding that gambling severity strongly predicted all three URICA subscale scores to a very similar degree suggests that although gambling severity has a strong association with Readiness to Change, this readiness construct cannot differentiate between contemplating about whether to change one's behaviour and
actually taking action to do so. Consistent with this interpretation, it was found that Readiness to Change did not significantly predict Help-Seeking Outcome in the present study.

These findings also raise the question of whether there may be other forms of behavioural action beyond help-seeking that need to be considered in future studies, such as attempts by the problem gambler to limit or stop their gambling behaviour without external help. Analysis of quantitative information from the Barriers to Seek Treatment Scale as well as qualitative information from open-ended responses in the present study suggest that the desire of many gamblers to resolve their behaviour problem on their own was a key factor that prevented them from seeking help from both formal and informal sources. This prompts the question of whether some gamblers who endorsed high Readiness to Change might have opted for addressing their gambling problems on their own in lieu of seeking help. Findings from a population survey of gamblers in Ontario showed that gamblers used self-help materials more frequently than any other form of treatment or help resource (Suurvali et al., 2008). Future investigations should include assessments of gamblers’ attempts to resolve their problem other than treatment seeking behaviour, such as the use of self-help materials, casino self-exclusion, and other strategies to change gambling behaviour.

Readiness for Change and Help-Seeking Outcome

Hypothesis 5, which stated that Readiness to Change would positively predict Help-Seeking Outcome, was not supported in the present study. Upon closer examination, it was found that the relationship between Readiness to Change and Help-Seeking Outcome is complex. This relationship depends on factors such as the level of
gambling severity and whether the gambler was recruited from the general population, in-treatment, or from the psychology pool. In the general population and in-treatment group, the subscale scores corresponding to contemplation, action, and maintenance stages were all positively correlated with willingness to seek professional help, whereas there was a strong negative relationship between precontemplation scores and willingness to seek professional help. In the psychology pool, the reverse relationship was observed. The scores on contemplation, action, and maintenance subscales were negatively correlated with willingness to seek formal as well as informal help. Because the relationship between Readiness to Change and Help-Seeking Outcome was in the opposite direction between these sample groups, the overall relationship was essentially cancelled out when analyzing the relationship based on the entire sample.

It is important to note that the overall Readiness to Change scores were significantly higher for the in-treatment and general population gamblers compared to those of the psychology pool gamblers. As discussed earlier, the general population/in-treatment group also scored significantly higher in Need Factors compared to the psychology participant pool group, suggesting that the former group has experienced more adverse consequences as a result of their gambling behaviour. The results of the present study suggest that the higher Readiness to Change reported by gamblers from the general population and in-treatment group may be related to the more severe consequences they had experienced as a result of their gambling.

In contrast, individuals from the psychology participant pool scored significantly lower on Need Factors, and likely had experienced less adverse consequences from their gambling problems than those from the general population and in-treatment group. In the
present sample, this finding corresponded to a significantly lower mean Readiness to Change in the psychology pool group and is likely to be associated with the precontemplation stage of change. Thus, denial regarding gambling problems may be more prominent for this group. For these gamblers from the psychology pool group, Readiness to Change was negatively associated with willingness to seek both formal and informal help for problem gambling. Furthermore, the psychology pool sample was also significantly younger than the general population/in-treatment sample, with a mean age of approximately 21 years compared to 44 years for the latter group. This large discrepancy in age may indicate that gamblers in the psychology pool are likely at the earlier phases in the course of their gambling habit, as well as in their process of change.

There appears to be a strong possibility that the non-significant relationship between Readiness to Change and willingness to seek help may be more appropriately conceptualized as a differential effect of Readiness to Change on Help-Seeking Outcome, depicted graphically in Figure 5.1. In other words, for individuals with high Readiness to Change, there appears to be a positive relationship between Readiness to Change and Help-Seeking Outcome. However, for individuals with a low Readiness to Change, such as was the case for the majority of individuals in the psychology pool sample, Readiness to Change was negatively correlated with Help-Seeking Outcome.

Results from the present investigation suggest that while greater gambling severity may correspond to greater Readiness to Change, this may not translate into behavioural action in terms of seeking help from professionals or from one’s social network. This does not necessarily exclude attempts to change addictive behaviour through alternate means other than seeking help from others. As previous research has
noted, a sizable proportion of problem gamblers who may be classified under natural recovery are most likely to first try and attempt modification of their gambling behaviour without help from either professionals or social support networks (Slutske, Blaszczynski, & Martin, 2009). The non-significant finding of Readiness to Change on Help-Seeking Outcome in both the Revised Andersen Behavioural Model and the Dual Outcome Model begs future studies to investigate the role of Readiness to Change in alternative strategies of behaviour change for gamblers, such as those associated with natural recovery.

*Need Factors and Help-Seeking Outcome*

Hypothesis 3, which stated that Need Factors would predict Help-Seeking Outcome, was not supported. Unexpectedly, Need Factors (i.e., greater gambling severity, greater frequency of gambling behaviour, more money spent on gambling in the last 12 months, and greater adverse financial consequences) were not significant in
predicting Help-Seeking Outcome. This contradicts most of the existing research in this area, which points to gambling severity as among the most critical predictors of seeking help among gamblers (Evans & Delfabbro, 2005; Lesieur & Blume, 1987; Pulford et al., 2009a; Tremayne et al., 2001). Interpretation of the relationship between Need Factors and Help-Seeking Outcome in the present study is complex, illustrated by the fact that Need Factors formed significant relationships with all the other latent variables in the Revised Andersen Behavioural Model. Thus, the null finding between Need Factors and Help-Seeking Outcome needs to be considered within the larger context of the relationship between Need Factors and the other key predictors of Help-Seeking Outcome.

Interestingly, Need Factors had significant negative relationships with Predisposing Factors such as attitudes toward help-seeking and Enabling Factors such as social support and perceived barriers toward treatment. It is therefore important not to look at the relationship between Need Factors and Help-Seeking Outcome in isolation. In the present study, it was found that Need Factors negatively predicted Predisposing Factors, such that individuals with a greater need for treatment tended to have more negative attitudes toward seeking help for gambling problems from both professionals and informal support networks. As discussed earlier, more negative attitudes toward help-seeking was predictive of lower willingness to seek help for gambling problems.

A similar phenomenon was observed in the relationship between Need Factors and Enabling Factors. It was found that an increase in Need Factors corresponded with lower perceived social support and greater perceived barriers to treatment. Lower social support and higher perceived barriers, in turn, was predictive of lower willingness to seek
help for gambling problems. The negative association between social support and addiction problem severity found in the present study is consistent with the research literature. Poor social support has been considered to be a contributing factor in the development of various addictive disorders (Beattie & Longabaugh, 1999; O’Farrell & Fals-Stewart, 2003). In problem gamblers, those with lower levels of social support at baseline have been found to have greater gambling severity as well as greater psychiatric and family problems (Petry & Weiss, 2009). Furthermore, this study by Petry and Weiss found that problem gamblers with greater social support scores reported lower gambling severity at 12-months post-treatment. Thus, the results of the present investigation add to previous findings on social support, which have focused mainly on its relationship with treatment efficacy and outcome. This study extends current understanding by linking the role of social support to the help-seeking process for problem gamblers. The results from the present study indicate that greater perceived social support is associated with lower gambling severity, more positive attitudes toward seeking help from social networks, and greater overall willingness to seek help. Thus, it appears from the present study that social support has a positive influence on the help-seeking process of problem gamblers, which is consistent with the positive effects of social support on treatment outcome found in other studies.

Given the results of the present study, interpretation of the relationship between Need Factors and Help-Seeking Outcome requires consideration of the Revised Andersen Behavioural Model as a whole. It was found that increased need for treatment predicted a greater Readiness to Change. At the same time, increased need also predicted lower perceived social support, greater perceived barriers to treatment and more negative
attitudes toward seeking help from professionals and informal networks – all of which were negatively predictive of Help-Seeking Outcome. It is conceivable that Need Factors do affect Help-Seeking Outcome, but that this effect is offset by multiple mediating variables in the model, namely – Need Factors' positive effect on Readiness to Change and negative effects on Predisposing and Enabling Factors. This phenomenon is illustrated graphically in Figure 5.2.

This is one of the most interesting findings in the present investigation, precisely because it is widely agreed upon in the literature that gambling severity is a positive predictor of help-seeking outcome (Hodgins & el-Guebaly, 2000; Mechanic, 2002; Tremayne et al., 2001; Ustun & Rehm, 1998). It is important to note that none of these cited studies employed structural equation modeling in their analyses. SEM affords the unique ability to consider the relationship between gambling severity and help-seeking in the context of the relationships between gambling severity and all other variables included in the model. Thus, the results of the present study challenge the consensus in the literature that gambling severity is positively predictive of help-seeking. It is argued that one needs to also consider that gambling severity may have negative effects on attitudes toward help-seeking and social support, which in turn may have negative effects on help-seeking behaviour. An important finding in the present study is that the predictive effect of Need Factors on Help-Seeking Outcome was essentially nullified. As the present sample predominantly consisted of frequent gamblers in a university population, future replications will be necessary in order to determine whether these findings will hold with samples that are more representative of a pathological gambling population.
Another potential explanation for the null finding for the relationship between Need Factors and Help-Seeking Outcome is that the former, which were defined predominantly in objective terms (i.e., self-reported gambling severity scores, reported frequency of gambling, financial consequences), may not necessarily correspond to the recognition of a problem, which is more subjective (i.e., individual perception) to the individual. Models of help-seeking for addiction have generally acknowledged that subjective recognition of a problem is one of the first and most significant indicators of help-seeking behaviour (Pringle, 1982). However, problem recognition may often be absent for a gambler despite meeting criteria for problem gambling behaviour. In an adolescent sample, the majority of individuals found to meet DSM-IV criteria for pathological gambling failed to recognize or at least report the presence of gambling problems. These problem gamblers believed that gambling was not a harmful activity (Splevins, Mireskandari, Clayton, & Blaszcznski, 2010). Furthermore, it has been suggested that those suffering from addiction must deteriorate below a certain threshold...
as a result of their behaviour before they will seek treatment – commonly referred to as the “bottoming out” phenomenon (Miller & Tonigan, 1996). This threshold is typically associated with the experience of one or more significant problems in relationships, employment, and other key social roles and functions; it has been found that these events often precede treatment-seeking behaviour (Blomqvist, 1999; Hajema, Knibbe, & Drop, 1999; Kaskutas, Weisner, & Caetano, 1997).

The present sample is mainly represented by at-risk or frequent gamblers rather than pathological gamblers. It is likely that many gamblers in the sample have not reached the threshold of severity sufficient to motivate them to seek treatment. Thus, although Need Factors was not been found to be a significant predictor of Help-Seeking Outcome in the present study, this does not exclude the possibility of a non-linear relationship between these two constructs. For instance, it is possible that gambling severity is positively related to help-seeking only within a certain range of severity with an associated level of distress.

**Modification Indices – Revised Andersen Behavioural Model**

In this study, the Revised Andersen Behavioural Model underwent several modifications as guided by modification indices; this process significantly improved the fit of the model to the observed data. The following is a discussion of the modification indices (M. I.) included in the Revised ABM.
M.I. #1: Covariance between ATSIH and WSH Informal scores, and M.I. #7: Covariance between ATSPPH Confidence subscale scores and WSH-Professional Scores

Two of the post-hoc modifications to the Revised Andersen Behavioural Model that significantly improved model fit had to do with the relationship between help-seeking attitudes and willingness to seek help. One was the high error covariance between ATSIH scores and WSH-Informal subscale scores, and the other was between ATSPPH Confidence subscale scores and WSH-Professional subscale scores. Although these modifications provided further evidence for the strong relationship between attitudes and willingness to seek help, the high error covariance between the attitudinal measures and the corresponding willingness to seek help measures suggested that a significant proportion of the relationship between attitudes to seek help and willingness to seek help had not been accounted for in the model. More specifically, it is the differentiation between professional and informal help-seeking attitudes that was not being accounted for by the Revised Andersen Behavioural Model. As indicated in the Revised ABM (see figure 4.1), attitudes toward seeking formal and informal help for problem gambling were combined into a single latent predictor factor. Similarly, willingness to seek formal and informal help were also grouped together to form a single latent outcome variable. These modification indices suggested that it may be more appropriate to revise the model in such a way that differentiated predictors and outcomes of help-seeking between formal and informal sources.

The results showed that attitudes towards seeking help from professionals led to willingness to seek help from professionals, while attitudes toward seeking help from one's social network led to one's willingness to seek help from one's social network. It
makes logical sense that one’s attitudes toward seeking help from a particular source, such as one’s social network, should best predict one's willingness to seek help from that particular source. Modification Indices #1 and #7 allowed the model to take into account this correspondence based on the source of help sought. As a result, both M.I.’s significantly improved model fit. Pertaining to professional help-seeking, M.I. #7 suggests that one’s confidence concerning the efficacy of the professional or the treatment may be particularly meaningful in terms of predicting one’s willingness to seek formal help. Previous quantitative help-seeking research has focused exclusively on attitudes toward professional help-seeking and its correspondence to professional help-seeking outcome (Vogel & Wester, 2003). This is the first study to concurrently investigate attitudes and willingness to seek help from informal sources with a problem gambling population. The findings suggest that help-seeking attitudes and outcome should be considered separately based on different sources of help sought (i.e., formal/professional help, informal/social network help). This was one reason that the Dual Outcome Model was tested and discussed later in this chapter.

_M.I. # 3: Need Factors predict ATSPPH Need Subscale scores_

Another significant modification index for the Revised Andersen Behavioural Model stemmed from a path from Need Factors to the ATSPPH Need subscale score. This indicated that a gamblers’ need for treatment significantly predicted a subset of help-seeking attitudes pertaining to one’s perceived need for professional gambling treatment. While Need Factors captured predominantly objective variables of need, the Need subscale of the ATSPPH (see Appendix B) measured a subjective assessment of need for treatment. It is theoretically consistent that individuals who reported greater
severity of objective, gambling-related symptoms and consequences would also tend to endorse a greater subjective need for professional treatment. Moreover, the finding that Need Factors had the highest correspondence with attitudes associated with perceived need for treatment supports the factor structure of the latent variable of Need Factors (i.e., this factor is capturing objective variables indicative of need for gambling treatment), as well as the construct validity of the Need subscale in the ATSPPH (i.e., this subscale is measuring the construct of perceived need for treatment).

**M.I. #4: Need Factors predict BTS Scores**

The addition of a path from Need Factors to Barriers to Treatment scores significantly increased overall fit of the Revised Andersen Behavioural Model. It was found that as an individual’s need for treatment increased, it was more likely that the individual perceived greater barriers to treatment. The observed finding may be explained in terms of the difference between assessing help-seeking attitudes in a hypothetical sense, and assessing help-seeking attitudes when treatment seeking is a realistic possibility. In the present sample, gamblers in the lower end of the continuum of need for treatment are moderate risk gamblers who may not yet have experienced adverse consequences as a result of their gambling behaviour. For these individuals, reporting on their willingness to seek treatment may be more of an intellectualized and hypothetical exercise than a reality. These individuals may be reporting a greater willingness to seek help precisely due to the fact that the prospect of treatment may seem quite remote for them. For individuals with a greater need for treatment, the possibility of treatment slowly becomes an undeniable reality in view of their worsening symptoms. For these
individuals, barriers to treatment may become more intimidating because treatment becomes a more realistic possibility.

M.I. #2 and #5: Precontemplation

Two post-hoc modifications to the Revised Andersen Behavioural Model that substantially improved model fit involved the URICA Precontemplation subscale scores. It was found that precontemplation had a strong negative relationship with Predisposing Factors. Individuals who scored high on precontemplation tended to have more negative attitudes toward seeking both professional and informal help. Similarly, higher precontemplation scores also predicted more perceived barriers toward treatment seeking.

Assuming that individuals who scored high on the URICA Precontemplation subscale were in the precontemplation stage in terms of their Readiness to Change, the above findings make theoretical sense. According to the Transtheoretical Model, the process of becoming ready to change a maladaptive behaviour is a decisional balance whereby the individual must weigh the pros and cons of engaging in the behaviour (Prochaska & DiClemente, 1983). In the precontemplation stage, gamblers are thought to perceive the pros of their problem behaviour as outweighing the adverse consequences. Furthermore, precontemplators also view the cons of seeking help for their problems to outweigh the benefits. It is thus consistent with the Transtheoretical Model that precontemplators in the study were more likely to hold negative attitudes toward treatment seeking, and to also perceive greater barriers with seeking help.

Furthermore, results from the exploratory factor analysis provided additional support that features associated with the precontemplation stage of change are significantly related to attitudes toward professional help-seeking. A review of the
individual items of the URICA Precontemplation subscale indicates that many of these items contain strong assertions that change nor treatment for their gambling problem is not necessary. It is not surprising that individuals who strongly endorse such items would also hold negative attitudes toward professional help-seeking for gambling.

M.I. # 6: Relationship between Barriers to Seek Treatment and Predisposing Factors

The final modification index included in the Revised Andersen Behavioural Model involved an error covariance between barriers to seek treatment and Predisposing Factors. This M.I. indicates that there was a significant relationship between barriers to seek treatment and attitudes towards help-seeking. Although this relationship was not accounted for in the Revised ABM originally, previous research has suggested a high correspondence between perceived barriers to treatment and attitudes toward help-seeking (Cunningham, Sobell, Sobell, & Agrawal, 1993). This modification index also suggests that barriers to treatment may be mis-specified under Enabling Factors, and may be more appropriately grouped with attitudinal help-seeking variables. The relationship between barriers to treatment and attitudes toward treatment is addressed further in the discussion of the Dual Outcome Model in the next section.

Dual Outcome Model

One of the key findings that emerged from analysis of the Revised Andersen Behavioural Model was the differentiated outcomes and predictors associated with help-seeking from professional sources and from one’s social support network. Attitudes toward professional help-seeking were strongly predictive of willingness to seek professional help, while attitudes toward informal help-seeking were strongly predictive
of willingness to seek help from informal sources. In addition to the attitudinal help-seeking measures, it was found that willingness to seek formal help and informal help had different sets of predictors. Furthermore, it was revealed that barriers to treatment and perceived social support (i.e., the Enabling Factors latent variable) predicted help-seeking from professional versus informal sources in the Revised ABM with differential patterns. It was for these reasons that the alternative Dual Outcome Model was generated and tested.

Social Network Predictors

In the Dual Outcome Model, a latent variable of Social Network Predictors was formed based on measures of attitudes toward seeking help from informal sources and perceived social support. It was found in the present sample that greater perceived social support and positive attitudes toward informal help-seeking had a strong predictive effect on willingness to seek help from one’s social support networks. In the present data, this relationship had a large effect size.

Greater perceived social support was found to positively predict willingness to seek help from informal support sources. It made intuitive sense that gamblers with stronger social support networks would be more willing to seek help from these networks for their gambling problem. Although previous help-seeking research on problem gamblers has found that social stressors (e.g., marital conflict, social coercion) are common and influential precipitants to formal treatment entry (Pulford et al., 2009a; Sheehan, 1991; Tepperman, 2009), the influence of social support on help-seeking has been understudied in problem gamblers, particularly in terms of seeking help from informal support sources. This is the first study to specifically investigate the impact of
perceived support on attitudes toward seeking help from one’s social network among gamblers. The observed findings suggest that not only are social stressors of problem gamblers important in motivating professional treatment entry, but that increased social support can also have a positive influence on gamblers' willingness to seek help from one's support network.

The results of the current study add another dimension to our understanding of the role of social support in help-seeking among gamblers. Social support was found to have differential effects on Help-Seeking Outcome, depending on the source of help sought. While Social Network Predictors had a large effect on willingness to seek help from informal sources in the current sample, there was no relationship between Social Network Predictors and willingness to seek help for gambling from professionals.

The present findings may supplement the current understanding of the role of social support in help-seeking behaviour. For instance, Cramer’s (1999) Willingness to Seek Counseling Model hypothesized and validated that low perceived social support led to increased distress, which subsequently led to increased willingness to seek counseling. Given this finding, it was concluded that low social support was predictive of professional help-seeking, with those reporting higher social support indicating lower willingness to seek help from professionals. In light of the findings of the present study, it is posited that gamblers with high levels of social support may be more likely to seek help from their support networks first, while gamblers with low levels of social support may be more likely to opt for professional treatment once they decide to seek help for their problem.
The finding that social support was significantly more impactful on informal help-seeking than on formal help seeking may have important implications for future research on the role of social support in help-seeking and treatment efficacy. Most addiction research involving social support has focused on the role of social support on treatment outcome rather than on help-seeking behaviour. This body of research also focuses on professional treatment efficacy rather than informal support sources (Dobkin et al., 2002; Gomes & Pascual-Leone, 2009; Oei & Gordon, 2008). The results of the present study suggest that social support may be a more relevant factor in predicting help-seeking from social networks than from professional sources. For instance, the impact of social support may be particularly relevant for peer support treatment such as Gamblers Anonymous. In the present study, over half of the participants recruited from GA indicated that GA was an important part of their support network. In fact, almost all of these individuals reported that they sought more support from fellow GA members than other individuals in their support network. As most pathological gamblers do not seek formal treatment, it is important to consider alternative forms of help in future studies and to investigate how social support networks may influence the effectiveness of these alternative options for help.

*Formal Treatment Predictors*

In the Dual Outcome Model, it was also found that perceived barriers to treatment converged with attitudes toward professional help-seeking to form a latent factor of Formal Treatment Predictors. Individuals with greater perceived person-related (e.g., shame, embarrassment, fear of judgment, difficulty with openness) and treatment-related (e.g., treatment cost, location, format) barriers also reported more negative attitudes
toward seeking help from professionals. This finding is consistent with previous research using the Barriers to Treatment measure, which found that less perceived barriers predicted help-seeking behaviour for a sample of problem drinkers (Saunders et al., 2006). This finding is also in line with previous research on barriers to treatment in the problem gambling population, which found that barriers, particularly person-related barriers, were crucial to why many addicts refrained from seeking professional help (Evans & Delfabbro, 2005; Hodgins & el-Guebaly, 2000; Pulford et al., 2009b). Results from the present investigation also suggest that person-related barriers are more influential than treatment-related barriers on gamblers' decision to seek help.

Previous researchers have also commented on the similarity of attitudes and barriers to help-seeking. In a study of both help-seeking and non-help-seeking problem drinkers, it was found that “attitudinal barriers” explained why some problem drinkers do not seek treatment (Cunningham et al., 1993). These attitudinal barriers refer to beliefs and attitudes which prevent individuals with addictions from seeking treatment. These include beliefs that they do not have a problem, that the problem is not serious enough to warrant seeking treatment, that the problem can be handled on their own, or that they enjoy the addictive behaviour. From interviews with a large representative American sample (N = 42,862) with an alcohol use disorder, attitudinal barriers were endorsed approximately twice as frequently as the pragmatic considerations of accessibility and affordability (Grant, 1997). Thus, previous research has indicated that attitudes towards treatment and perceived barriers to treatment are interrelated and may belong to a single overarching construct that can significantly predict professional help-seeking outcome. The finding in the current study that attitudes toward formal treatment and barriers to
treatment significantly predicted formal treatment outcome is therefore consistent with previous research with other addictions. The present study indicates that the effect seems to hold for problem gamblers as well.

Furthermore, it was found that the latent variable of professional help-seeking predictors was predictive of formal help-seeking outcome ($\beta = .65$) but it was not predictive of informal help-seeking outcome ($\beta = .045$). Similarly, informal help-seeking predictors were predictive of informal help-seeking outcome ($\beta = .79$) but were not predictive of formal help-seeking outcome ($\beta = .071$). As such, the current study is one of the first to empirically reveal that there are different predictors and pathways associated with seeking help for problem gambling from professionals versus informal networks.

**Need Factors and Predictors of Help-Seeking**

In the Dual Outcome Model, it was found that Need Factors for treatment negatively predicted both social network and formal treatment variables. This suggests that as gamblers’ need for treatment increased, they had less resources or motivators that would likely promote help-seeking, such as strong social support or positive attitudes toward help-seeking. This vicious cycle, depicted in Figure 5.3, may be the predicament faced by many problem gamblers. As gambling problems grow more severe and treatment became an increasingly realistic possibility, gamblers’ affect-laden beliefs about what treatment would entail may become activated. This may increase gamblers’ perceived barriers to treatment and lead them to hold more negative attitudes toward help-seeking (see Figure 5.3). Moreover, as problem gambling severity increases, gamblers may experience increasingly strained social relationships with romantic partners, family relatives, co-workers, and friends as a result of repeatedly borrowing
money to gamble and/or failing to repay loans (Pavalko, 2001; Petry, 2005b). Thus, the negative relationship between Need Factors and Social Network Predictors is consistent with previous research on the deterioration of social relationships which often occurs as problems with gambling grow more severe.

**Significant Events and Help-Seeking Outcome**

The finding that Need Factors nor Readiness to Change significantly predicted Help-Seeking Outcome presents the possibility that other relevant factors might exist in the help-seeking process of problem gamblers that were not accounted for in the Revised ABM. Analysis of a number of open-ended responses of the present study offers insight into why some gamblers chose to seek treatment. These responses often alluded to the pivotal influence of significant life events. Several of the detailed responses provided by participants described specific events which led to their decision to seek treatment. For instance, the significant event for one participant was when his wife found his bank statement and demanded to know where he was spending his money. She then gave him an ultimatum to change his behaviour or face a separation. This ultimatum was the precipitant to his entry into problem gambling treatment. For another participant, the significant event was a fight with his spouse, to which he reacted by spending a large sum of money on gambling activity over the next few days as a “sign of his anger”. Following this gambling binge, his spouse gave him the condition that he must seek treatment before he could see his family, to which he complied. These two examples illustrate the importance of considering significant events that may trigger help-seeking behaviour. In fact, approximately one-third of the open-ended responses given by those in the sample
who had sought help involved an element of coercion from individuals within their social network.

There is both empirical and theoretical support for the influence of significant events within one’s social network that precipitate subsequent help-seeking behaviour for individuals struggling with addictions. In the alcohol literature, for instance, it has been well-documented that there are specific types of events that are pivotal in motivating treatment for alcohol dependency. These include drinking while driving, traffic accidents, and serious family, health, and job problems (Caldeira et al., 2009). In a study utilizing open-ended alcohol pre-treatment interviews with participants, it was found in most cases that a trigger event was the pivotal precipitant for entry into the treatment system (Orford et al, 2006). Similarly, Blankfield (1986) studied 50 consecutive admissions to an
Australian alcohol treatment unit and found that a recent major personal crisis – typically involving relationship, legal, and/or psychiatric problems – was identified in 68% of the cases. In another study conducted in London, group differences between 120 help-seeking problem drug users and 120 non-help-seeking problem drug users were investigated (Power et al., 1992). The most significant difference found between these two groups was that help-seekers reported more drug-related negative life events in the past three months prior to seeking help compared to non-help-seekers. In the nine months prior, however, there were no significant differences between the groups; help-seekers and their non-help-seeking counterparts were found to be similar behaviourally as well as demographically. In the same way, specific events pertaining to problem gambling have likely influenced the decision to seek treatment for gamblers in the present sample. Significant events such as bankruptcy, trouble with the law, and serious marital/familial conflict were alluded to in the open-ended responses of problem gambling treatment seekers in the present study.

There is also theoretical support for the pivotal influence of significant trigger events to help-seeking behaviour. Newer models of help-seeking view the process as being socially determined, and place the focus on how significant social events precipitate help-seeking behaviour. For instance, the Network Episode Model (NEM; Pescosolido, 1992; Pescosolido, Gardner, & Lubell, 1998) stresses the role of social networks with a special focus on the impact of social coercion on help-seeking behaviour. In a qualitative investigation of the narratives of individuals entering into mental health treatment, Pescosolido and colleagues (1998) found that important individuals in the support network of treatment seekers played a pivotal role in making the target
individuals aware of their problems its adverse impact on their lives. Open-ended responses from the current study parallel the findings of Pescosolido et al. (1998). The results confirm that social networks, particularly in the context of significant trigger events, are key precipitants to help-seeking behaviour for many problem gamblers.

It is possible that significant events related to gambling could represent a mediator between both gambling severity and Readiness to Change to Help-Seeking Outcome. Unfortunately, significant events were not assessed in the present as they were not included in the proposed help-seeking models. Available measures of gambling severity such as the CPGI used in the current study inquire only about the overall picture of severity, and do not inquire about significant recent events that may be associated with one’s gambling behaviour. However, the qualitative data of the present study, along with empirical and theoretical support from the addictions literature suggest that investigating significant trigger events would be a fruitful and interesting direction for future help-seeking research of problem gamblers. Developing a new gambling severity measure that would assess these recent trigger events may aid this effort.

*Non-Significant Findings in the Context of the Majority University Population*

Addiction literature on adolescent, young adult, and university populations has suggested that these groups may have particularly low service utilization rates despite evidence of increased risk of various addiction disorders (Caldeira et al., 2009; Wu et al., 2007). For this reason, it is important to consider the two key non-significant findings of the present study – namely, the null finding of both gambling severity and Readiness to Change in predicting willingness to seek help – with respect to the university participants from which the majority of the present sample was derived. The literature suggests that
the proportion of individuals meeting DSM-IV criteria for a substance use disorder who have never sought help is greater for young adults than for any other age group (Caldeira et al., 2009). As a result, psychological service utilization may be particularly low in college populations, including those seeking help for gambling problems. In a study with a large college student sample, only four percent of students who had alcohol use disorders obtained treatment for their disorder – a lower service utilization rate than their non-student counterparts (Wu et al., 2007). Studies have suggested that low service utilization rates in this age group may be due to feelings of invincibility and a propensity for risk-taking behaviours (Arnett, 1996; Boyer, 2006; Kuhn, 2006). Similarly, a significantly lower rate of mental health help-seeking was found in young adults as compared to adult populations (Aalta-Setala, Marttunen, Tuulio-Henriksson, Poikolainen, & Lonnqvist, 2002; Kessler & Walters, 1998).

There may be factors that apply specifically to problem gambling in regards to treatment service underutilization by young adults. For instance, adolescents are more likely to be “bailed out” of financial trouble by parents, and thus typically never reach a true point of crisis that leads them to seek external help (Griffiths, 2002). Parental support could buffer the negative impact of increased gambling severity. This may account for the weak relationship between gambling severity and help-seeking observed in the present study. Gupta and Derevensky (2000) found that in adolescent gamblers, denial, fear of problem identification, negative perceptions of therapy, guilt, and belief that gambling can be self-managed may all contribute to the lack of help-seeking in this population.
To summarize, a number of factors that could influence service utilization in young adult gamblers appear to be attitudinal in nature; they include attitudes regarding professional services, attitudes regarding gambling behaviour, denial of a potential gambling problem, and a belief or insistence that they can handle the problem on their own. Furthermore, problem gambling severity may be deemphasized as a motivator for help-seeking in this age group due to external financial and social support (e.g., from parents and a larger network of friends) that can potentially buffer them against more adverse consequences of gambling behaviours. With regards to Readiness to Change, young adults may simply be at an earlier point of the natural course of their gambling addiction and may not have reached the advanced stages of change. As a result, this may reduce the relevance of Readiness to Change in predicting help-seeking behaviour in this young adult population.

**Limitations**

The findings of the present study have contributed to the limited existing literature on help-seeking of problem gamblers. Although the hypothesized models were found to have a marginal fit to the current data, important relationships among key determinants of help-seeking as specified in the Revised Andersen Behavioural Model were revealed. Nevertheless, the findings in the present study should be qualified by the limitations inherent in its sample and methodology.

*Characteristics of the Sample*

A consideration regarding conclusions drawn from the present study is that the data collected appeared to come from three distinct populations of gamblers. Analysis of
the data indicated that there were significant mean group differences on a number of variables, particularly between gamblers recruited from the psychology participant pool group and gamblers recruited from in-treatment and the general population. Group mean differences on variables may also lead to differences in the ways in which these variables relate to one another, which constitute a significant concern in the present investigation. For instance, the scores on Readiness to Change varied greatly between groups. Depending on the sample group, it was found that Readiness to Change formed different relationships with variables such as gambling severity and help-seeking attitudes. Thus, the effect of Readiness to Change on Help-Seeking Outcome was confounded by divergent relationships between these variables across groups.

Similarly large group differences were found in terms of gambling severity. Likewise, gambling severity also failed to predict Help-Seeking Outcome in the present study. Due to the large range on gambling severity in the entire sample and the finding that gambling severity had differential relationships with variables such as help-seeking attitudes, readiness for change, and willingness to seek help, one cannot conclude that gambling severity had no effect on Help-Seeking Outcome across all levels of gambling severity. In other words, the strength of relationships between variables in the model might be different across different levels of gambling severity, thus adding noise to the analyses. This may have contributed to the null findings.

Using a sample from more than one distinct population also negated the opportunity to draw any conclusions about the predictive effect of demographic variables on help-seeking behaviour. Because there were significant differences on a number of key demographic variables between groups, it was impossible to discern whether any
significant effects may be attributed to differences in group characteristics or differences in help-seeking attitudes and behaviours.

Cross-Sectional Data

Help-seeking is a complex process in which multiple factors and sequences of significant life events combine in one’s pivotal decision to seek treatment. Such a multi-determined process is difficult to fully capture in a cross-sectional design, which provides merely a snapshot of what may be occurring in a given sample of gamblers at a single point in time. Following a sample of gamblers over a period of time can uncover relationships that cannot be detected using a cross-sectional design. For instance, gambling severity and Readiness to Change were not found to significantly predict help-seeking willingness in the present study. If this same sample was followed for a period of time, however, an effect may be revealed for these variables in predicting subsequent help-seeking behaviour over time. Help-seeking is often the result of a series of events (Pescosolido et al., 1998), so it would make sense that certain factors may take time to take effect in influencing gamblers’ decision to seek help. With cross-sectional data, implications of the findings in the present study can only be drawn about gamblers in a singular point during the complex help-seeking process; it is not possible to track gamblers’ progress through the full help-seeking process.

Internet Data

While there are several advantages to internet research (e.g., faster recruitment rate, logistical ease of increasing the geographic radius of the recruitment sample, increased sense of anonymity), there are also significant drawbacks with this method of recruitment, particularly when monetary compensation for research participation is
involved. During the course of recruitment, the study attracted spambots that introduced fraudulent entries in an attempt to gain additional compensation for study completion. Extensive efforts were made to remove suspect entries, but the integrity of the dataset was nevertheless compromised.

Another disadvantage of internet data collection is the detached level of interaction between the researcher and the participants. Participants may feel less accountable to take the time to provide conscientious responses. Opening recruitment to the internet also increases the likelihood that gamblers are motivated to participate in the study principally for compensation and less because of intrinsic motivation. The difference in the length of open-ended responses between the paper-and-pencil format group and the internet format group appears to support this possibility. On average, the open-ended responses were significantly longer and more thoughtfully written by the former group than the latter group.

Further evidence lies in the significant difference found in the mean Consistency Index score from participants who completed the online questionnaire compared to participants who completed the paper-and-pencil questionnaire. It was found that participants who completed the paper-and-pencil questionnaire responded in a more consistent fashion as determined by items spanning multiple measures compared to participants completing the online questionnaire. As the majority of the data collected for the present study was via internet recruitment, issues of random responding and lackadaisical response style may be a concern. The inclusion of data from respondents who may not have attended to items in the questionnaire judiciously might have
introduced noise to the analyses, making it more difficult to discern legitimate findings that may have existed.

**Future Directions**

*Deepening the Understanding of Attitudes Toward Help-Seeking*

The present investigation highlighted the importance of attitudes toward help-seeking in the help-seeking process of problem gamblers. However, attitudes toward help-seeking are still not well understood in this population. It is not yet known how these attitudes are initially formed, how malleable they are, how they may fluctuate with time, and how various experiences with social networks and treatment systems may alter them. Given that attitudes toward help-seeking had the strongest direct effect on willingness to seek help in the present study, it would be clinically useful to conduct future research focusing on deepening the understanding of gamblers’ attitudes toward seeking help.

*Longitudinal Design*

One of the overarching conclusions that can be drawn from the results of the present study is that help-seeking for problem gambling is a complex process determined by many variables and the interactions among them over time. Although valuable information is gained from the present cross-sectional study of help-seeking, a longitudinal study would be in a better position to fully capture the sequelae that ultimately leads to gamblers’ help-seeking behaviour. Future studies should aim to investigate how attitudes and willingness to seek help changes with time. By following the same group of gamblers longitudinally, researchers are also able to note any
fluctuations in key antecedents to help-seeking over time, such as social support, perceived barriers, and attitudes toward help-seeking, and to determine which of these are most influential in motivating help-seeking behaviour.

A longitudinal design will also allow for an investigation of the predictors of actual help-seeking behaviour, as compared to self-reported willingness or intent to seek help. Furthermore, a longitudinal design also allows the unique opportunity to investigate both help-seeking and treatment outcome concurrently with the same sample. Based on treatment entry data concerning reasons and circumstances for help-seeking, future longitudinal designs can help answer questions such as whether voluntary, intrinsically motivated treatment entry versus socially coerced treatment entry (e.g., ultimatum from spouse) may lead to differences in treatment outcome.

*Increased Emphasis on Qualitative Methodology*

Results from the present study indicate that help-seeking is a complex process that cannot be reduced to a rational decision derived from a fixed set of factors, such as overall social support, attitudes toward help-seeking, and problem gambling severity. As indicated by the open-ended responses, help seeking is often triggered by emotional, psychological, and/or financial distress associated with a specific event or series of events. Consistent with the Network Episode Model, almost all of these events involved the social network of the individual. The importance of significant social events as precipitants to treatment entry for many problem gamblers calls for an increased emphasis on qualitative investigation in help-seeking research for problem gamblers. This approach lends itself well to capturing the rich detail of vignettes of each individual’s idiosyncratic help-seeking process. Guided by existing theories, such as the
NEM, researchers can discover patterns of social events that may be particularly pivotal to the treatment-seeking behaviour of gamblers through qualitative research.

Assessment of Significant Social Network Events

The findings from the present study suggest that social network members of problem gamblers, including partners, families, friends, professionals, and referral agents, may play a critical role in the help-seeking process of gamblers. Although measures of social support exist, there are currently no measures that specifically assess the role of social networks in relation to the help-seeking process. Questions that should be addressed by such a measure include whether interactions with the social network are perceived as supportive or coercive, the degree of both emotional (i.e., encouragement to seek services) and instrumental support (i.e., assistance in providing information for treatment services) received, and the degree to which gambling behaviours affect one’s network members. Information gathered using qualitative methodology can be used to inform the development of a quantitative assessment of significant social network events related to problem gambling and their relationship to gamblers’ subsequent help-seeking behaviour.

Development of a More Comprehensive Help-Seeking Model

To develop a comprehensive model of help-seeking, it is important for future studies to expand the variables and constructs considered in the help-seeking process. For instance, additional variables such as coping strategy could be considered as part of the process of help-seeking. Comorbid psychological symptomology and distress level should be considered with the inclusion of such measures as the Brief Symptom Inventory (Derogatis & Melisaratos, 1983). Enabling Factors that were not considered in
the present study, such as insurance/financial considerations and other logistics associated with access to treatment could also be quantitatively assessed. Unfortunately, many of these constructs that may play a significant role in help-seeking behaviour for many problem gamblers do not have established scales designed to measure them. As a result, one of the key directions in future studies of the help-seeking behaviour of problem gamblers should be the construction of additional measures with consideration to the unique features of the help-seeking process for this population.

Convergence between Research and Clinical Practice with Problem Gambling

Because of the enlightening information that was uncovered by the relatively limited amount of qualitative information in the present study, it is recommended that clinicians working with gamblers in treatment should engage in qualitative research or collaborate with problem gambling researchers (and vice versa). Clinicians who are working with clients struggling with problem gambling are afforded the unique opportunity to conduct first-person, experiential observations of how their clients progress during the course of treatment. Research contributions from active problem gambling clinicians could provide rich qualitative and case study information which would help illuminate the full process of recovery. Thus, it is strongly encouraged that clinicians and treatment facilities become more active in research involving the problem gambling population.
Implications

The Importance of Attitudes in Treatment-Seeking Process

One of the key results of the present study is the pivotal influence of attitudes and attitudinal barriers in the help-seeking process for problem gamblers. It stands to reason that an effective strategy to increase help-seeking behaviour among gamblers is to modify the cognitive perception of what treatment would entail and the affective meaning of seeking help. The reoccurring findings in the present study as well as from previous research indicate that the decision to seek help is not a simple decision based on logic and reason. More often than not, treatment is an affect-laden prospect, with stubbornly held beliefs posing as large barriers to treatment entry. Treatment recruitment campaigns should focus on attitudinal barriers that appear to be particularly prominent for gamblers, such as the belief that one should be able to cope with gambling problems on one’s own, or the fear of social judgment and embarrassment in seeking help. Prevention and outreach efforts should include psychoeducation on the powerful effect of attitudes and attitudinal barriers in influencing the process of gamblers’ problem recognition and help-seeking behaviour. It would be especially helpful for gamblers in the early stages of their addiction to gain insight into how processes such as denial, defensiveness, and precontemplation may negatively affect their attitudes toward help-seeking as their gambling behaviour evolves.

Once gamblers have entered the treatment system, service providers should be mindful of the most common attitudinal barriers faced by gamblers, and make every effort to have open discourse about these issues with clients early in the course of treatment. It is important for treatment providers to appreciate the fact that the decision to
seek treatment is an ambivalent one for many gamblers. Ensuring that apprehensions and negative attitudes towards treatment or the treatment provider are openly addressed early on will set a tone of transparency and openness. This will likely help bolster trust in the therapeutic relationship and lower the drop-out rate of gamblers who are in treatment. Furthermore, it may be prudent to consider changing attitudes toward professional help as one of goals of treatment. Helping problem gambling clients develop more positive attitudes toward treatment may positively influence the client's engagement in treatment, improve treatment efficacy, and increase the likelihood that clients would consider treatment as a viable option in the future should they relapse back into problem gambling behaviour.

Role of Social Support Networks in Help-Seeking

The present investigation was one of the first to assess the role of informal support in the help-seeking process of problem gamblers. It was found in the present study that gamblers recruited from the university population had more positive attitudes toward seeking help from their support network and a greater willingness to seek help from these informal sources compared to gamblers from the general population and in-treatment. From these findings, it can be inferred that seeking help from informal support sources for gambling problems may be a more prominent option to help-seeking for gamblers with less problem severity, who are at an earlier course of their gambling behaviour, and who have more supportive social networks.

Thus, it is important for problem gambling researchers and clinicians to consider informal support systems as an important resource for at-risk gamblers, especially in the young adult population. For instance, advertisement and proactive efforts aimed at young
adults should place emphasis on encouraging potential problem gamblers to seek help from those in their lives that provide the most meaningful social support. Furthermore, campaigns aimed at increasing awareness of significant social losses that often result from gambling (e.g., alienation from family and friends, marital stressors as a result of disputes over excessive gambling behaviour, strained friendships due to unpaid loans to fund gambling) may be effective in motivating treatment seeking. Results from the present study along parallel findings from previous research in revealing that social stressors and the threat of significant social losses are among the most common reasons for treatment entry (Pescosolido et al., 1998).

Although findings from the present study suggest the importance of informal support in the help-seeking behaviour of problem gamblers, informal support and professional treatment options should not be considered mutually exclusive. In fact, the studies on the positive effects of social support on problem gambling treatment efficacy (e.g., Petry & Weiss, 2009) suggest that both formal and informal support would likely be beneficial for problem gamblers who are open to accepting help. Thus, it is imperative for problem gambling treatment and prevention agencies to provide more resources not only to problem gamblers, but also to those individuals who are closely connected to a problem gambler. Agencies should be mindful to provide materials tailored to individuals who are seeking support for loved ones who are experiencing gambling problems. It would be beneficial for members of these social support networks to gain insight into the nature of problem gambling, the significant treatment barriers faced by gamblers, and the common motivators for seeking help. Given that a significant proportion of problem
gamblers seek help following social coercion, members of one's social network can play a crucial role in prompting many gamblers to seek help (Hodgins et al., 2002).

For problem gamblers that have just entered the treatment system, treatment providers would be well-advised to conduct a thorough assessment of the client's social support structure as well as his/her most significant social stressors. Seeking support from social networks should be encouraged to complement formal treatment. From the results of the current study, it was found that a large proportion of individuals who were in formal treatment reported quite negative attitudes toward seeking informal support for their gambling problems, and reported a low level of social support. For these problem gamblers, there would likely be a great sense of isolation with respect to their addiction; this would likely increase the amount of distress and suffering they experience. Service providers should encourage the use of available social supports, as it has been shown to contribute to treatment efficaciousness throughout the course of the treatment process (Oei & Gordon, 2008). For instance, treatment could include a systematic assessment of a gambler’s available support system and encouragement to rekindle long-dormant social connections. This may provide short-term symptom relief (e.g., decreased sense of isolation) as well as long-term treatment success (e.g., greater support to hold off temptations for relapse) for the client.

Gambling Severity

Although the present study did not support previous findings of a significant relationship between gambling severity and help-seeking behaviour, the study results did uncover important interrelationships between gambling severity and other key variables. These findings can be applied in a clinical setting. When a clinician is working with a
problem gambler in treatment, the clinician should be mindful to consider how the severity of the gambling symptoms may affect the individual in a wide range of areas, including the quality of their social support network and their readiness for change. Helping gamblers draw connections between their gambling severity and other important areas of their lives may be more beneficial than a focus on gambling severity alone. Using a motivational interviewing approach (Rollnick & Miller, 1995), for instance, therapists could help clients increase their awareness of how their gambling behaviour may negatively impact their social relationships and functioning in various facets of their lives. This may help develop discrepancy for clients, helping them see that their behaviours may not be consistent with their long-term goals. With gambling and other addictions, it has been shown that adverse consequences resulting from the addiction may be more critical in motivating treatment seeking behaviour rather than the severity of the addiction itself (Freyer et al., 2007; Pulford et al., 2009a).

**Conclusion**

The present study found partial support for the Revised Andersen Behavioural Model. The results showed that Predisposing and Enabling Factors were both predictive of help-seeking willingness in a heterogeneous sample of gamblers. However, the results also suggested that deterministic models such as the ABM may not adequately illustrate the full help-seeking process of problem gamblers. Help-seeking behaviour in this population appears to be a dynamic process in which the variables that are predictive of help-seeking, such as attitudes toward help-seeking, social support, and gambling severity are also influenced by one another. Furthermore, there appear to be differential
pathways to help-seeking, involving different predictors that may influence the decision of whether a gambler would seek help from informal support networks, professional sources, or a combination of the two. It is evident that the decision to seek help is a complicated one for many problem gamblers, and likely involves consideration of multiple variables. While a definitive model of help-seeking for problem gamblers has yet to be established, results from the present investigation suggest that considerations of attitudes toward seeking help from informal and formal sources, perceived barriers to help-seeking, and social support may be the most crucial factors that influence whether or not a gambler chooses to seek help.
REFERENCES
Andersen, R. M. (1968). *A behavioral model of families' use of health services* Chicago: Center for Health Administration Studies.


Appendix A – Demographics Form

Sex: ________ Age: ________

Years of Education: ________ (high school completion = 12, 1st year university = 13, etc.)

Ethnicity: a) African Origin
           b) Asian/Asian Pacific Island
           c) European Origin/White
           d) First Nations
           e) Latino-a/Hispanic
           f) Middle Eastern
           g) Bi-racial/Multi-racial
           h) Other _______________

Marital status ______________________ (married, separated, divorced, widowed, never been married)

Household income
$0-10,000
$10,000-25,000
$25,000-50,000
$50,000-75,000
75,000-100,000
100,000 and above

Have you ever received any psychological services, i.e. counseling, psychiatric treatment, psychotherapy, or treatment for gambling. (please circle one): YES NO

How long have you engaged in gambling activity? ____________ (years)
Approximately how much money have you spent in the past 12 months on gambling activity? $_________

Please list the gambling activities you engage in
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

How frequently do you engage in gambling activities, on average, per week?
________________________________________________________________________

Have you ever sought treatment for your gambling problem? Yes / No
Appendix B – ATSPPH-PG

Instructions: Please indicate your responses to the following questions by circling the appropriate response.

<table>
<thead>
<tr>
<th></th>
<th>Disagree</th>
<th>Probably Disagree</th>
<th>Probably Agree</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Although there are clinics for people with gambling problems, I would not have much faith in them.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. If a good friend asked my advice about a gambling problem, I might recommend that he seek professional treatment.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. I would feel uneasy seeking problem gambling treatment because of what some people would think.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. A person with a strong character can get over gambling problems alone, and would have little need of professional treatment.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. There are times when I have felt completely lost and would have welcomed professional advice for my gambling problem.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. Considering the time and expense involved in gambling treatment, it would have doubtful value for a person like me.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. I would willingly confide intimate matters to an appropriate person if I thought it might help me or a member of my family.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8. I would rather live with gambling problems than go through the ordeal of getting gambling treatment.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9. Gambling problems, like many things, tend to work out by themselves.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
10. There are certain problems which should not be discussed outside of one's immediate family.  
   | 0 | 1 | 2 | 3 |

11. A person with a serious gambling problem would probably feel most secure in a good gambling treatment centre.  
   | 0 | 1 | 2 | 3 |

12. If I believed I had a serious gambling problem, my first inclination would be to get professional attention.  
   | 0 | 1 | 2 | 3 |

13. Keeping one's mind on a job is a good solution for avoiding personal worries and concerns.  
   | 0 | 1 | 2 | 3 |

14. If I believed I had a serious gambling problem, my first inclination would be to get professional attention.  
   | 0 | 1 | 2 | 3 |

15. Keeping one's mind on a job is a good solution for avoiding personal worries and concerns.  
   | 0 | 1 | 2 | 3 |

16. Having been a gambling treatment patient is a blot on a person's life.  
   | 0 | 1 | 2 | 3 |

17. I would rather be advised by a close friend than by a gambling counselor, even for a gambling problem.  
   | 0 | 1 | 2 | 3 |

18. I resent a person - professionally trained or not - who wants to know about my gambling problems.  
   | 0 | 1 | 2 | 3 |

19. Having been a gambling treatment patient is a blot on a person's life.  
   | 0 | 1 | 2 | 3 |

20. I would rather be advised by a close friend than by a gambling counselor, even for a gambling problem.  
   | 0 | 1 | 2 | 3 |

21. Having been a gambling treatment patient is a blot on a person's life.  
<p>| 0 | 1 | 2 | 3 |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>22. It is probably best not to know <em>everything</em> about oneself.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>23. If I had a serious gambling problem at this point in my life, I would be confident that I could find relief in professional treatment.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>24. There is something admirable in the attitude of a person who is willing to cope with his/her gambling problem without resorting to professional help.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>25. At some future time I might want to have professional counseling.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>26. A person should work out his or her own gambling problems; getting professional counseling would be a last resort.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>27. Had I received treatment in a gambling treatment centre, I would not feel that it ought to be &quot;covered up&quot;.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>28. If I thought I needed professional help for my gambling problem, I would get it no matter who knew about it.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>29. It is difficult to talk about personal affairs with highly educated people such as doctors, teachers, and clergymen.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Appendix C – ATSIH-PG

Often when people face a crisis situation or are met with hardship, they are likely to confide in the help of individuals within their own social support network. Think for a moment about those individuals whom you would confide in and/or go to get help from when you are in need. Examples of these individuals from your social support network may include your spouse/partner, parent/guardian, friends, siblings, family relatives, work/school associates, neighbours, or respected members of your ethnic/religious community (i.e. the priest of the local church). Then think of the following individuals listed below in relation to your own social support network.

To what extent do you agree or disagree that you would likely go to this individual if you had problems related to gambling?

<table>
<thead>
<tr>
<th></th>
<th>Disagree</th>
<th>Probably Disagree</th>
<th>Probably Agree</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. If I had a gambling problem, I would readily seek help from my:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spouse or partner</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Friend</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Parent / Guardian</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Sibling</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Close relative</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Priest, pastor, or respected ethnic community member</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Neighbour</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Work/school Associates</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

2. If I believed I had a serious gambling problem, my first inclination would be to get help from a member of my social support network.

3. The idea of talking about problems with a member of my social support network strikes me as a poor way to get rid of a gambling problem.
4. If I were experiencing a serious gambling problem at this point in my life, I would be confident that I would find relief confiding in a member of my social support network.  

5. There is something admirable in the attitude of a person who is willing to cope with his/her gambling problem without resorting to help from a member of their social support network.  

6. I would want to seek help from a member of my social support network if I was worried or upset about my gambling behaviour for a long period of time.  

7. A person with a gambling problem is not likely to solve it alone; he or she is most likely to solve it with the help of their social support network.  

8. A person should work out his or her own gambling problems; getting help from their social support network would be a last resort.  

9. I would be reluctant to seek help from a member of my social support network for a gambling problem for fear that they may judge me.  

10. A person with strong character can get over gambling problems by himself/herself, and would have little need of help from his/her social support network.  

11. I would rather live with certain gambling problems than go through the trouble and/or shame of confiding in a member of my social support network.  

12. There are certain problems, such as problems with gambling, that should be kept within one’s social support network.
<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>13. I would rather be advised by a member of my social support network than by a gambling counselor, even for a gambling problem.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>14. I would be reluctant to seek help for my gambling problem from a member of my social support network, in fear of bringing shame to myself or my family/friends.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>15. I would be more comfortable seeking help for my gambling problem from a member of my social support network, rather than an experienced professional whom I do not know.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>16. If I had a gambling problem, I would be open and trusting in discussing it with a member of my social support network.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>17. It is less intimidating to seek help from a member of my social support network than to seek help from a professional for a gambling problem.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>18. I would be reluctant to seek help for a gambling problem from a member of my social support network because I do not want to feel indebted to them, or feel like I owe them a favour.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>19. If I have a gambling problem, I would seek help from whoever is most qualified to help me in dealing with my problem, not who cares about me the most.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>20. If I have a gambling problem, it is better to get help from a nonprofessional person with whom I know and who cares deeply about me, even if he or she is not an expert.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Appendix D - Barriers to Treatment Scale

People often encounter a variety of obstacles or barriers in making a decision to seek treatment for a drinking problem. Please indicate the extent to which the following affected or influenced your decision to seek treatment.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Not at all</th>
<th>A little bit</th>
<th>Somewhat</th>
<th>Quite a bit</th>
<th>A great deal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wanting to handle the problem on my own (P)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Not believing that treatment would really help me (T)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Believing I should be able to handle the problem on my own, without professional help (P)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Worrying or believing that I could not afford treatment (P)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Feeling embarrassed that I have a gambling problem (P)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Worrying or believing that the treatment would be too costly (T)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Not having the motivation to stop gambling (P)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Being unaware of what treatments are available (T)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Worrying that I would be looked down on by others if I admitted I had a gambling problem (P)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Being unaware of what treatment would involve (T)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Feeling unable to share my gambling problem with others (P)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Difficulty of coming to treatment because of the time required (T)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Feeling embarrassed that I needed professional help (P)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>--------------------------------------------------------</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Being unsure of whether my insurance covered the treatment (T)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Feeling unable to talk about my gambling problem (P)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The distance needed to be travelled to get to treatment (T)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Worrying that I would be looked down on by others if I sought professional help for a gambling problem (P)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Believing that treatment is ineffective or does not work (T)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Not having reasons to stop gambling (P)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Unsure of how to go about obtaining treatment (T)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>The location of the treatment clinic (T)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

*Note: Items denoted with (P) refer to a person-related barrier, while items denoted with a (T) refer to a treatment-related barrier.*
Appendix E - MOS Social Support Survey Short Form

Next are some questions about the support that is available to you.

1. About how many close friends and close relatives do you have (people you feel at ease with and can talk to about what is on your mind)?
   Write in number of close friends and close relatives __________

People sometimes look to others for companionship, assistance, or other types of support. How often is each of the following kinds of support available to you if you need it?

(circle one number on each line)

<table>
<thead>
<tr>
<th></th>
<th>None of the time</th>
<th>A little of the time</th>
<th>Some of the time</th>
<th>Most of the time</th>
<th>All of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Someone to help you if you were confined to bed (T)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. Someone to show you love and affection (A)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. Someone to have a good time with (P)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. Someone to confide in or talk to about yourself or your problems (EI)</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Someone to prepare your meals if you were unable to do it yourself (T)</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Someone who hugs you (A)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. Someone to get together with for relaxation (P)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. Someone to share your most private worries and fears with (EI)</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Someone to help with daily chores if you were sick (T)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11. Someone to love and make you feel wanted (A)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12. Someone to do something enjoyable with (P)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13. Someone to turn to for suggestions about how to deal with a personal problem (EI)</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Someone you can count on to listen to you when you need to talk (EI)</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Someone to give you good advice about a crisis (EI)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16. Someone to take you to the doctor if you needed it (T)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17. Someone to give you information to help you understand a situation (EI)</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. Someone to do things with to help you get your mind off things (P)</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Someone whose advice you really want (EI)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>20. Someone who understands your problems (EI)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

*Note: T = tangible support; A = affectionate support; P = positive social interaction support; EI = emotional-informational support
Appendix F - CPGI

Some of the next questions may not apply to you, but please try to be as accurate as possible.

THINKING ABOUT THE LAST 12 MONTHS…

1. Have you bet more than you could really afford to lose? Would you say never, sometimes, most of the time, or almost always?
   a) Never
   b) Sometimes
   c) Most of the time
   d) Almost always

2. Still thinking about the last 12 months, have you needed to gamble with larger amounts of money to get the same feeling of excitement?
   a) Never
   b) Sometimes
   c) Most of the time
   d) Almost always

3. When you gambled, did you go back another day to try to win back the money you lost?
   a) Never
   b) Sometimes
   c) Most of the time
   d) Almost always

4. Have you borrowed money or sold anything to get money to gamble?
   a) Never
   b) Sometimes
   c) Most of the time
   d) Almost always

5. Have you felt that you might have a problem with gambling?
   a) Never
   b) Sometimes
   c) Most of the time
   d) Almost always

6. Has gambling caused you any health problems, including stress or anxiety?
   a) Never
   b) Sometimes
   c) Most of the time
   d) Almost always
7. Have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?
   a) Never
   b) Sometimes
   c) Most of the time
   d) Almost always

8. Has your gambling caused any financial problems for you or your household?
   a) Never
   b) Sometimes
   c) Most of the time
   d) Almost always

9. Have you felt guilty about the way you gamble or what happens when you gamble?
   a) Never
   b) Sometimes
   c) Most of the time
   d) Almost always
Appendix G - Adverse Financial consequences Measure

Please answer the following questions as truthfully and accurately as possible. Please recall that your responses will be kept strictly anonymous.

1. Are you currently in debt?
   a) Yes
   b) No

2. Are you currently bankrupt, or have you declared bankruptcy in the past twelve months?
   a) Yes
   b) No

3. Please indicate the approximate credit card debt you currently owe.
   $__________________________________________________________

4. Please indicate the approximate debt you owe to institutions (e.g. banks, credit unions).
   $__________________________________________________________

5. Please indicate the approximate debt you owe to a bookie or loan shark.
   $__________________________________________________________

6. Please indicate the approximate debt you owe to a familiar person (e.g. friend, family member, work colleague).
   $__________________________________________________________
Appendix H - University of Rhode Island Change Assessment: Adapted for Gambling

Please indicate the extent to which you agree or disagree to the following statements.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. As far as I'm concerned, I don't have any problems with gambling that need changing. (P)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. I think I might be ready for some self-improvement regarding my gambling. (C)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. I am doing something about my gambling problems. (A).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. It might be worthwhile to work on my problem with gambling (C).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. I'm not the one with a problem with gambling. It doesn't make much sense for me to be in this program. (P)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>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. (M)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. I am finally doing some work on my problem with gambling. (A)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. I've been thinking that I might want to change something about my gambling. (C)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. I have been successful in working on my problem with gambling but I'm not sure I can keep up the effort on my own. (M)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10. At times my problem with gambling is difficult, but I'm working on it. (A)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11. Being here is pretty much of a waste of time for me because I don't really have a problem with gambling. (P).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12. I'm hoping this place will help me to better understand myself and my problem with gambling. (C)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13. I guess I have faults, but there's nothing that I really need to change about my gambling. (P)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14. I am really working hard to change my gambling. (A)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15. I have a problem with gambling and I really think I should work on it. (C)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16. 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. (M)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17. Even though I'm not always successful in changing, I am at least working on my problem with gambling. (A)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>18. 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. (M)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>19. I wish I had more ideas on how to solve my problem with gambling. (C)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>20. I have started working on my problem with gambling, but I would like help. (A)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>21. Maybe this program will be able to help me with my gambling problem (C)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>22. I may need a boost right now to help me maintain the changes I've already made regarding my gambling. (M)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>23. I may be part of the problem, but I don't really think I am. (P)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>24. I hope that someone here will have some good advice</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Question</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>---</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>25</td>
<td>Anyone can talk about changing their gambling; I'm actually doing something about it. (A)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>26</td>
<td>All this talk about psychology is boring. Why can't people just forget about their problems? (P)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>27</td>
<td>I'm here to prevent myself from having a relapse of my problem with gambling. (M)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>28</td>
<td>It is frustrating, but I feel I might be having a recurrence of a gambling problem I thought I had resolved. (M)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>29</td>
<td>I have worries but so does the next guy. Why spend time thinking about them? (P)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>30</td>
<td>I am actively working on my problems with gambling. (A)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>31</td>
<td>I would rather cope with my faults than try to change them. (P)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>32</td>
<td>After all I had done to try and change my problems with gambling, every now and again it comes back to haunt me. (M)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

*Note: P = Precontemplation Subscale, C = Contemplation Subscale, A = Action Subscale, M = Maintenance Subscale*
Appendix I - Willingness to Seek Help for Problem Gambling Scale

Please indicate the likelihood in which you would seek professional or informal help in the following scenarios.

Note:
Professional help refers to seeking services that aim to help individuals with gambling problems. This may include inpatient and outpatient addiction treatment centres, problem gambling groups led by a trained professional, and services provided by individual psychologists and social workers.

Informal help refers to support received from one’s social support system, including one’s friends, family, spouse, work colleagues, or other members of the community. It also includes support sought from peer support groups such as gamblers anonymous, as well as internet resources and telephone help lines.

<table>
<thead>
<tr>
<th>1. Would you go for professional help if you felt you had a serious gambling problem?</th>
<th>Extremely unlikely</th>
<th>Very unlikely</th>
<th>Unlikely</th>
<th>Neither likely nor unlikely</th>
<th>Likely</th>
<th>Very likely</th>
<th>Extremely likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Would you seek help from your social support network (family, friends, community members) if you felt you had a serious gambling problem?</th>
<th>Extremely unlikely</th>
<th>Very unlikely</th>
<th>Unlikely</th>
<th>Neither likely nor unlikely</th>
<th>Likely</th>
<th>Very likely</th>
<th>Extremely likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Would you go for professional help if you noticed you needed to gambling with increasing amounts of money in order to achieve the desired excitement?</th>
<th>Extremely unlikely</th>
<th>Very unlikely</th>
<th>Unlikely</th>
<th>Neither likely nor unlikely</th>
<th>Likely</th>
<th>Very likely</th>
<th>Extremely likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. Would you seek help from your social support network if you noticed you needed to gamble with increasing amounts of money in order to achieve the desired excitement?</th>
<th>Extremely unlikely</th>
<th>Very unlikely</th>
<th>Unlikely</th>
<th>Neither likely nor unlikely</th>
<th>Likely</th>
<th>Very likely</th>
<th>Extremely likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. Would you go for professional help if your gambling behaviour has jeopardized a significant relationship, job, educational or career opportunity?</th>
<th>Extremely unlikely</th>
<th>Very unlikely</th>
<th>Unlikely</th>
<th>Neither likely nor unlikely</th>
<th>Likely</th>
<th>Very likely</th>
<th>Extremely likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Question</td>
<td>Options</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>---------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Would you seek help from your social support network if your gambling behaviour has jeopardized a significant relationship, job, educational or career opportunity?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Would you go for professional help if you are in a desperate financial situation as a result of your gambling behaviour?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Would you seek help from your social support network if you are in a desperate financial situation as a result of your gambling behaviour?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Would you go for professional help if you had to resort to illegal acts such as theft, fraud, or forgery to finance your gambling?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Would you seek help from your social support network if you had to resort to illegal acts such as theft, fraud, or forgery to finance your gambling?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Would you go for professional help if you noticed that you had difficulty cutting back or controlling your gambling behaviour?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Would you seek help from your social support network if you noticed that you had difficulty cutting back or controlling your gambling behaviour.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix J - Removal of Observations Due to Identical Responses on Open-Ended Items

*Observations screened out because of identical responses to the open ended question “Treatment Yes”*


3. Response = “Consciousness”: ID#s: 131, 150, 166, 207, 208, 237, 238, 244 of General Population Dataset 8 total REMOVED


10. Response = “Self-blame”: ID#s: 139, 142, 144, 176, 183, 189, 200 of General Population Dataset 7 total REMOVED


12. Response = “Relief”: ID#s: 149, 154, 178, 179, 188, 224, 234 of General Population Dataset 7 total REMOVED


14. Response = “Failure”: ID#s: 163, 175, 226, 257 of General Population Dataset 4 total REMOVED
15. Response = “Change bad habits”: ID#s: 177, 186, 190, 220, 236, 259 of General Population Dataset 6 total REMOVED

16. Response = “Reflect”: ID#s: 181, 192, 255 of General Population Dataset 3 total REMOVED

17. Response = “Confused”: ID#s: 184, 197, 252 of General Population Dataset 3 total REMOVED

18. Response = “Depression”: ID#s: 198, 222, 247 of General Population Dataset 3 total REMOVED


20. Response = “Mental burden”: ID#s: 217, 250 of General Population Dataset 2 total REMOVED

21. Response = “Poor” ID#: 228 of General Population Dataset NOT REMOVED, only one observation


130 Total Observations Removed

Observations screened out because of identical responses to the open ended question “Treatment No”
1. Response = “Economic reasons”: ID#: 75 of General Population Dataset NOT REMOVED, because only one observation

Observations removed because identical name and email address
1. ID# 119 and 126: same name, email address, age, years of education and ethnicity, but slightly different values for various questionnaires – both entries removed.
ID#s: 119, 126 of General Population Dataset REMOVED

Observations removed because of identical idyioyncractic response to “type of gambling engaged in”
1. Response = “A bet on a horse”
Very similar but slightly different responses on both: ID#s: 110, 121 of General Population Dataset REMOVED

Observations removed because of almost no data entered in responses
1. ID#s 141, 156, 239, 264 of General Population Dataset REMOVED
Appendix K - Consistency Index

*Items from ATSPPH-PG*

**Consistency Pair 1**
5. There are times when I have felt completely lost and would have welcomed professional advice for my gambling problem.  
VS
8. I would rather live with gambling problems than go through the ordeal of getting gambling treatment.

**Consistency Pair 2**
28. If I thought I needed professional help for my gambling problem, I would get it no matter who knew about it.  
VS
3. I would feel uneasy seeking problem gambling treatment because of what some people would think.

**Consistency Pair 3**
27. Had I received treatment in a gambling treatment center, I would not feel that it ought to be "covered up".  
VS
14. Having been a gambling treatment patient is a blot on a person's life.

**Consistency Pair 4**
23. If I had a serious gambling problem at this point in my life, I would be confident that I could find relief in professional treatment.  
VS
19. The idea of talking about problems with a gambling counselor strikes me as a poor way to get rid of a gambling problem.

**Consistency Pair 5**
11. A person with a serious gambling problem would probably feel most secure in a good gambling treatment center.  
VS
1. Although there are clinics for people with gambling problems, I would not have much faith in them.

**Consistency Pair 6**
7. I would willingly confide intimate matters to an appropriate person if I thought it might help me or a member of my family.  
VS
17. I resent a person - professionally trained or not - who wants to know about my gambling problems.
Items from ATSIH

Consistency Pair 7
2. If I believed I had a serious gambling problem, my first inclination would be to get help from a member of my social support network.
   VS
3. The idea of talking about problems with a member of my social support network strikes me as a poor way to get rid of a gambling problem.

Consistency Pair 8
19. If I have a gambling problem, I would seek help from whoever is most qualified to help me in dealing with my problem, not who cares about me the most.
   VS
20. If I have a gambling problem, it is better to get help from a nonprofessional person with whom I know and who cares deeply about me, even if he or she is not an expert.

Consistency Pair 9
7. A person with a gambling problem is not likely to solve it alone; he or she is most likely to solve it with the help of their social support network.
   VS
10. A person with strong character can get over gambling problems by himself/herself, and would have little need of help from his/her social support network.

Consistency Pair 10
16. If I had a gambling problem, I would be open and trusting in discussing it with a member of my social support network.
   VS
9. I would be reluctant to seek help from a member of my social support network for a gambling problem for fear that they may judge me.

Items from URICA

Consistency Pair 11
1. As far as I'm concerned, I don't have any problems with gambling that need changing.
   VS
15. I have a problem with gambling and I really think I should work on it.

Consistency Pair 12
13. I guess I have faults, but there's nothing that I really need to change about my gambling.
   VS
4. It might be worthwhile to work on my problem with gambling.
Consistency Pair 13
11. Being here is pretty much of a waste of time for me because I don't really have a problem with gambling.
VS
12. I'm hoping this place will help me to better understand myself and my problem with gambling.
Appendix L

Observations removed from Psychology Pool Data due to Low Scores on Consistency Index (10 or less)

ID# 42 = 2 REMOVED
ID# 51 = 5 REMOVED
ID#57 = 5 (1 missing value) REMOVED
ID# 60 = 2 REMOVED
ID#61 = 1 REMOVED
ID#65 = 7 (1 missing value) REMOVED
ID#66 = 0 REMOVED
ID#69 = 8 REMOVED
ID#70 = 7 REMOVED
ID#74 *A lot of missing values*
ID#97 = 0 REMOVED
ID#105 = 6 REMOVED
ID#118 = 10 REMOVED
ID#125 = 10 REMOVED
ID#129 = 8 (1 missing value) REMOVED
ID#134 = 10 (1 missing value)
#139 = 7 (1 missing value) REMOVED
#144 = 10 (1 missing value)
#151 = 7 REMOVED
#153 = 10 REMOVED
#154 *10 missing values* REMOVED
#156 = 10 REMOVED
#169 = 0 REMOVED
#171 = 10 REMOVED
#176 = 8 REMOVED
#177 = 10 REMOVED
#178 = 9 (2 missing values)
#187 = 7 REMOVED
#190 = 8 REMOVED
#193 = 8 (1 missing value) REMOVED
#194 = 3 REMOVED
#210 = 6 REMOVED
#216 = 10 REMOVED
#238 = 3 REMOVED
#239 = 8 (1 missing value) REMOVED
#241 = 8 REMOVED
#244 = 9 REMOVED
#272 = 0 REMOVED
#279 = 10 (1 missing value)
#282 *8 missing values*
#285 = 5 REMOVED
#289 = 10 REMOVED
#296 = 6 REMOVED
#297 = 2 REMOVED
#298 = 7 (1 missing value) REMOVED
#302 *missing almost all data* REMOVED
#314 = 7 REMOVED
#324 = 10 REMOVED
#329 = 6 REMOVED
#330 = 4 REMOVED
#335 = 7 REMOVED
#337 = 10 REMOVED
#338 = 10 REMOVED
#341 = 10 REMOVED
#350 = 8 REMOVED
#358 = 3 REMOVED
#361 = 10 REMOVED
#375 = 8 REMOVED
#377 = 8 (2 missing values)
#378 = 8 REMOVED
#383 = 7 REMOVED
#384 = 8 REMOVED
#397 = 5 (2 missing values) REMOVED
#415 = 3 REMOVED
#416 = 10 REMOVED
#418 = 4 REMOVED
#422 = 3 (1 missing value) REMOVED
#428 = 8 REMOVED
#434 = 0 REMOVED
#438 = 5 REMOVED
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#444 = 5 REMOVED
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#453 = 9 REMOVED
#459 = 5 REMOVED
#464 = 6 (1 missing value) REMOVED
#475 = 5 (2 missing values) REMOVED
#478 = 7 REMOVED
#486 = 7 REMOVED
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#494 = 7 REMOVED
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#504 = 8 REMOVED
#507 = 9 REMOVED
#510 = 7 REMOVED
#511 = 2 (1 missing value) REMOVED
#513 = 8 REMOVED
#520 = 5 (1 missing value) REMOVED
#526 = 8 (1 missing value) REMOVED

94 total observations removed
Appendix M

Observations removed from General population and In-Treatment Sample due to low scores on Consistency Index (scores of 10 or less)

*Observations removed due to low scores on inconsistency index (scores of 10 or less)*

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<tr>
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</table>

34 total observations removed
Appendix N

Observations removed due to being outlier on $x$
Based on leverage statistic using cut-off of $3(k-1)/N = 3(11-1)/312 = .09615$

*From General Population/In-Treatment*

ID# 83: **REMOVED**
Data entered on 10/14, entered $2.5$ million in money gambled last 12 months, age 35, years gambled 25, gambles 20 times per week

ID# 85: **REMOVED**
Data entered on 10/14, 12 months gambled - $250,000, age 38, years gambled 24

ID# 86: **REMOVED**
Data entered on 10/14, age 39, 12 months gambled - $3.6$ million, 25x weekly gambled, years gambled

ID# 88: **REMOVED**
Data entered on 10/14, age 36, but years gambled = 42, 12 months money gambled = $256,000,

ID# 89: **REMOVED**
Data entered on 10/14, age 39, 12 months gambled = $568,000, 25 years gambled

ID# 94: **REMOVED**
Leverage = .417, data entered on 10/14, borderline score on inconsistency index (12)

ID# 101: **REMOVED**
Leverage = .117, data entered 10/14, borderline score on consistency index (11)

ID# 103: **REMOVED**
Data entered 10/14, insufficient data entered

ID# 117: **REMOVED**
Outlier on X, Data entered 10/15, age 34, 20 years education, 10 years gambled, $50,000 gambled, gambles 7x/week, entered almost all "3's" in ATSIH, all 4's in BTs, all 7's in WSH, all 5's in MOS.

ID# 282: **REMOVED**
Very high leverage = .5236 and also influential observation, DFFTS = 5.97

*From Psychology participant pool*

ID# 218: **REMOVED**
Very low (almost all 0s) for ATSIH, ATPPH, BTS. Most likely is an outlier on ATSPPH and ATSIH. Seems like legitimate entry, but also does not appear to be at any risk for gambling problems.
Observations removed due to being outlier on y
Based on standardized residuals and cutoff of 3.29

From General Population/In-Treatment
ID# 37: REMOVED
Years of education = 1990, 15x weekly gambled, entered either "0" or "2" to all responses, also missing many responses.

ID# 81: REMOVED
Data entered 10/14

ID# 94: REMOVED
Data entered 10/14, money gambled $125,000, 25x weekly gambled

From Psychology participant pool
ID# 331: REMOVED
Outlier on WSH - entered all 1s

Observations removed due to being influential observation
Based on the DFFITS statistical and using cutoff of 2

From General Population/In-Treatment
ID# 74: REMOVED
Data entered 10/14, MOS all 4's, BTs almost all 2's, ATSPPHS almost all 3's, ATSIH almost all 2's, URICA all 5's, WSH almost all 7's

ID# 117: REMOVED
Influential observation, data entered 10/15, age 34, 20 yrs ed, $50,000 money gambled last 12 months, ATSIH and ATPPH all 3s MOS and URICA all 5's, WSH all 7s

From Psychology participant pool
ID# 218: REMOVED
BTS all 4's, MOS all 5's

ID# 429: REMOVED
(BTS very low, ACFM very high)

ID# 503: not removed, high discrepancies within scales but looks to be legitimate entry
VITA AUCTORIS

<table>
<thead>
<tr>
<th>NAME:</th>
<th>David Han Zhang Liang</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLACE OF BIRTH:</td>
<td>Guang Zhou, China</td>
</tr>
<tr>
<td>YEAR OF BIRTH:</td>
<td>1983</td>
</tr>
</tbody>
</table>
| EDUCATION:                   | University of British Columbia, Vancouver, BC  
                             | 2001-2005 B.A.                        |
|                              | University of Windsor, Windsor, ON    |
|                              | 2005-2007 M.A.                        |