

THE PREVALENCE OF PROBLEM AND PATHOLOGICAL GAMBLING IN A
CANADIAN UNIVERSITY STUDENT POPULATION

BY

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**The Prevalence of Problem and Pathological Gambling in a
Canadian University Student Population**

BY

William Roy Smitheringale

**A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University
of Manitoba in partial fulfillment of the requirements of the degree
of**

MASTER OF EDUCATION

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THE PREVALENCE OF PROBLEM AND PATHOLOGICAL GAMBLING IN A CANADIAN UNIVERSITY STUDENT POPULATION

Thesis Abstract

The prevalence of problem and pathological gambling is an ongoing concern in Canada, especially in recent years given the previously unprecedented access to legalized gambling. Various factors may put young adults, and university students in particular, at higher risk for having problems with gambling. In this study, 487 undergraduate students at the University of Manitoba completed a survey that included the South Oaks Gambling Screen (SOGS) as well as other socio-demographic and lifestyle information. Study findings included an overall prevalence rate of 10.4 % (5.4 % problem gambling and a further 5.0 % probable pathological gambling), and male problem gambling prevalence rates that were significantly higher than female rates (16.5 % and 4.3 % respectively). Significant correlations were also found between gambling problems and a number of other factors including: problems with alcohol or drug use, having a parent who gambled too much, and having experienced emotional and/or verbal abuse. Given these high prevalence rates, it may be that increased efforts are needed to raise awareness and educate students about responsible gambling as well as where to get help should they experience problems with gambling.

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Preface

I took my life tonight because of VLT. Please get Government to take them out. I lost in two years over \$125,000 because of them. They cost my life - and will destroy my family. They are crooked and give no body a chance.

Dennis Wynant (committed suicide November 8, 1997)

The inception of this study is rooted in the experiences of the thousands of Manitobans whose lives have been, and continue to be, adversely affected by problem gambling. The specific focus of the study, problem gambling among university students, was chosen for two reasons. Firstly, to date there have been relatively few studies which have measured problem gambling prevalence rates within a Canadian university population. Secondly, the high problem gambling prevalence rates that have been reported across Canada among adolescents and young adults seem to warrant some concern and attention.

While determining the prevalence of problem gambling in our local universities is important, there is also a need to look deeper and explore what factors may put students at risk for developing gambling problems as well as what more could be done to help students avoid problems with gambling. Some of the key areas of focus in this study include determining whether there are: (a) correlations between socio-demographic factors and problem gambling; (b) correlations between problem gambling and alcohol and drug use problems; (c) correlations between problem gambling and depression, abuse or suicidal ideation; (d) correlations between problem gambling and

parental gambling habits; (e) and correlations between problem gambling and early experiences with gambling.

My hope is that the results of this study will help to provide the impetus for the implementation of an improved and more effective prevention and education strategy aimed at addressing problem gambling at universities. Current efforts to educate students about gambling, and the inherent risks involved, may be inadequate given the potential magnitude of the problem. In any event, knowing to what extent the problem exists is the first step toward creating a solution.

The Prevalence of Problem and Pathological Gambling in a
Canadian University Student Population

CHAPTER 1

Introduction

Gambling In Our Society: Defining the Problem

Legalized gambling has become increasingly prominent in Canadian society. Gross gambling revenues in Canada increased more than threefold between 1992 and 2000 (\$ 2.7 billion and \$ 9.0 billion respectively) (Azmier, 2001). Manitoba gambling revenues in fiscal 2001 totaled over \$239 million (Manitoba Lotteries Corporation (MLC), 2002) and accounted for 4 % of provincial government own source revenues (Azmier, 2001). Manitoba also had the highest per capita expenditure of all provinces in 2001, at \$504 per adult, a 300 % increase from the 1992 figures (MLC, 1992; 2001). Perhaps, not coincidentally, Manitoba also has the most Electronic Gambling Machines (EGMs) per capita of all provinces at 6.8 per 1000 people (Azmier, 2001).

It is a fact that most Manitobans gamble. In a provincial gambling survey completed in 2001, 85 % of adults reported having gambled in one form or another over the past year (Addictions Foundation of Manitoba (AFM), 2002). Most Canadians can gamble without experiencing any adverse consequences (Shaffer, Hall, & Bilt, 1997). There are those, however, for whom gambling causes serious problems, affecting their relationships, their families, their financial stability, and their emotional health (Lesieur, 1992). Gambling problems have even been linked to a number of suicides in Manitoba.

Prevalence of Problem Gambling in Canada

How many people in our society are problem gamblers? There is some uncertainty on this matter. In a meta-analysis of 120 problem gambling prevalence studies from across North America, the average problem gambling rate among the general population was 5.45 % with a 95 % confidence interval of 4.3 % to 6.6 %. To date, the most commonly used instrument to measure the prevalence of problem gambling among general populations has been the South Oaks Gambling Screen (SOGS). Developed in 1987, the SOGS has been shown to be a valid and reliable instrument for the screening of clinical and general populations for problem and probable pathological gambling (Lesieur & Blume, 1987). These terms, when used in relation to the SOGS, refer to scores that surpass a pre-defined threshold (the instrument defines problem gambling as a SOGS score greater than two while probable pathological gambling is defined as a SOGS score greater than four). Both terms are further discussed and defined later in the text.

In Manitoba, the current problem gambling prevalence estimates using the SOGS (August 2000 to August 2001) are as follows: an estimated 3.8 % of the adult population are problem gamblers and a further 2.3% are probable pathological gamblers (AFM, 2002). The combined prevalence rate indicates that approximately 6.1 % of adult Manitobans are currently experiencing problems with their gambling. This provincial problem gambling prevalence rate is the highest reported across Canada to date (see Table 1).

Table 1

Problem and Probable Pathological Gambling Prevalence Rates By Province Based on the SOGS

Province and Year Of Study	Gambling Category		
	Problem	Probable Pathological	Combined Prevalence
Manitoba 2001	3.8 %	2.3 %	6.1 %
Alberta 1998	2.8 %	2.0 %	4.8 %
Quebec 1996	2.4 %	2.1 %	4.5 %
British Columbia 1996	2.4 %	1.8 %	4.2 %
New Brunswick 1996	1.9 %	2.2 %	4.1 %
Ontario 1996	2.0 %	2.0 %	4.0 %
Nova Scotia 1999	1.1 %	2.0 %	3.1 %
Prince Edward Island 1999	1.1 %	2.0 %	3.1 %
Saskatchewan 1994	1.9 %	0.8 %	2.7 %

Manitoba's combined adult problem gambling prevalence rates in 2001 (6.1 %) showed an increase from the previous general population survey in 1995 when the combined problem gambling prevalence rate was 4.3 % (problem gamblers = 2.4 %; probable pathological gamblers = 1.9 %)(MLC, 1995). Manitoba is not alone in experiencing a climb in problem gambling prevalence rates. In their meta-analysis of prevalence rates of problem gambling across North America, Shaffer, Hall, and Bilt (1997) found a trend of increasing problem gambling prevalence rates over the past two decades in conjunction with the expansion of legal gambling.

While the SOGS has been the most widely used problem gambling prevalence instrument, there have been many other efforts at developing an instrument that measures problem gambling. In Canada, representatives from a number of provinces met to discuss the development of a new prevalence instrument that could accurately identify and classify "non-problem", "at risk", and "problem gamblers" in the general population. In 1997, a group of Canadian problem gambling researchers were commissioned with developing, testing, and validating this new prevalence instrument. Work was completed on the Canadian Problem Gambling Index (CPGI) in 2001 and it has since been used in a number of provincial prevalence surveys.

In Manitoba, prevalence rates using the CPGI indicate that 2.3 % of adult Manitobans are "moderate risk" gamblers and a further 1.1 % are "problem gamblers" (AFM, 2002). The AFM sums up these results by stating that 3.4% of adult Manitobans could benefit from problem gambling counselling. Looking at the problem gambling prevalence rates of the four provinces that have used the CPGI in provincial surveys, Manitoba's is among the lowest (see Table 2).

Table 2

At Risk and Problem Gambling Prevalence Rates By Province Based on the CPGI

Province and Year Of Study	Gambling Category	
	Moderate Risk	Problem Gambling
Manitoba 2001	2.3 %	1.1 %
Alberta 2001	3.9 %	1.3 %
Saskatchewan 2001	4.7 %	1.2 %
Ontario 2001	3.1 %	0.7 %

Using these figures and recent population estimates (Population Report, 2000), the number of adult Manitobans who are currently experiencing problems with gambling is likely somewhere between 29,000 (CPGI) and 52,000 (SOGS). It may be that those figures actually under-represent the number of problem gamblers in Manitoba due to the phone survey method of data collection. Problem gamblers may be more likely than others either to underreport their gambling or to refuse to participate in phone surveys, especially if they have already been lying to their families about their gambling and are in fear of repercussions from creditors. Refusal rates for these problem gambling prevalence studies tend to be in the 60 % range (AFM, 2002). Other factors that could affect the accuracy of prevalence rates included the possibilities that problem gamblers may be less likely than others to actually be at home to receive a call and less likely to actually have an operating phone because of unpaid phone bills.

Consequences of Problem Gambling

While the exact number of problem gamblers in Manitoba may be uncertain, there is no doubt that excessive gambling can cause serious problems for individuals, families, and possibly entire communities or our society as a whole. The AFM (2001) found that of the clients admitted to a gambling rehabilitation program, 71 % reported having problems with their families and/or spouse, 54% reported not being able to pay their bills, 74 % reported being in debt, and 74 % reported feeling depressed. Other researchers have identified a variety of physical illness that are more common among problem gamblers and their spouses including stomach problems, insomnia, headaches, high blood pressure, back aches, ulcers, and heart palpitations (Lorenz & Yaffee, 1986;

1988). Speculation is that the financial worries and relationship difficulties caused by the gambling are responsible for the elevated rates of these stress related maladies.

Problem Gambling, Crime, and Suicide

Problem gambling may also contribute to crime in our society. A representative of the Loss Prevention Group Inc. reported that the company's figures showed a 52% increase in the number of workplace thefts throughout Western Canada between 1994 and 1995. They attributed this increase largely to problem gambling, based on the statements made by those apprehended (AFM, 1996). The same company also reported that at that time, problem gambling was a contributing factor in almost 70% of the crimes it had investigated in the previous two years.

These anecdotal reports are consistent with research that has been done on the relationship between problem gambling and crime. Meyer and Fabian (1992) found that 54.5% of the gamblers they studied admitted having committed illegal actions to obtain money for gambling. Similarly, Legg-England and Gotestam (1991) indicated that about 50% of pathological gamblers commit an offence to get money. Blaszczynski, McConaghy and Frankova (1989) also found that a high proportion of pathological gamblers commit crimes that are gambling related. Their study indicated that gamblers generally committed nonviolent crimes against property that involved larger sums of money than non-gambling related offenses.

The fact that problem gambling often leads to crime is perhaps less surprising when one considers the large amounts of money that problem gamblers often lose and the desperate circumstances they sometimes create for themselves through their gambling. One third of the clients admitted to the AFM's Problem Gambling Services

in 2000-2001 reported spending over half their household incomes on gambling during the previous twelve months while an additional 22.4% reported spending 31% to 50% of their household incomes on gambling (AFM, 2001). Research also has established a clear link between problem gambling and elevated levels of suicidal ideation and actual suicide attempts. Over 62 % of the clients admitted to the AFM gambling program in 2000-2001 had previously thought of suicide (AFM, 2001). Over 26 % of those who had thought of suicide had actually made attempts to end their lives.

A Need to Better Assess Problematic Gambling

It is clear that while gambling does provide a major source of income for the provincial government, it also exacts a toll on some individuals, their families, employers, and possibly on society in general. The full extent of this toll may not yet be realized fully in Manitoba. Video Lottery Terminals (VLTs), seemingly the form of gambling most problematic for Manitobans, have only been available across the province since 1993.

While more research is being done all the time, problem gambling is a relatively new area of study that is still far from being fully understood. It would seem prudent to closely monitor the prevalence of problem gambling and its effects on our society so as to ensure that the financial benefits accrued from widespread legalized gambling are not overshadowed by the very real social costs.

Purpose of Study

While this study is designed to provide information about the prevalence of problem and probable pathological gambling in a Canadian university population, it is also the hope of the author that through this study, levels of awareness will be raised

around the both existence of and the consequences that are associated with problem gambling. A total of 483 participants from the University of Manitoba completed a survey questionnaire that asked for: (a) socio-demographic information, (b) information on gambling habits, (c) information on alcohol and drug use, (d) experiences with depression and suicide ideation and attempts, (e) and experiences with various forms of abuse. The questionnaire included the SOGS to survey gambling habits and the CAGE to survey alcohol and other drug use habits. The study was designed to determine the prevalence of problem and pathological gambling within the study population but also to examine possible correlations between various demographic variables and gambling habits as well as possible correlations between various lifestyle variables and gambling habits.

Hypotheses Tested In This Study

Hypotheses that are tested in this study include: a) the study population is likely to have higher prevalence rates of problem and probable pathological gambling rates than the general population of Manitoba, as determined by previous research; b) male participants are likely to have higher prevalence rates of problem and probable pathological gambling rates than females; c) participants identified as problem and pathological gamblers are more likely than non-problem gamblers to report having drug and/or alcohol use problems; d) participants who reported having a parent who gambled too much are more likely than those who did not to be problem or pathological gamblers themselves. These hypotheses were chosen based primarily on findings from previous studies and other published literature in the field. The following chapter reviews this

literature in order to provide a framework through which the results of this current study can be interpreted.

CHAPTER 2

Review of Related Research

This review of related research is divided into four broad sections. The first explores the common behaviors and developmental stages of problem gambling.

Various theories about the causes and underlying motivations for problem gambling also are examined in this section. Some of the conditions that are commonly co-morbid with problem gambling are discussed in the second section. The current body of literature dealing with the prevalence of problem gambling among youth, university, and college students is examined in section three. The reasons why electronic gaming machines (slot machines, Video-Lottery Terminals, etc.) seem to be more problematic, and possibly more addictive, than other forms of gambling are explored in the last section.

Understanding Problem Gambling

This section will discuss various aspects of problem gambling including: defining behaviors, typical stages of development, explaining theories, underlying motivations, and factors that seem to put a person at greater risk for becoming a problem gambler.

One of the first steps in understanding gambling is to define it. The AFM (1999) defines gambling as any gaming behavior involving the risking of money or valuables on the outcome of a game, contest or other event. The outcome of the activity is partially or totally dependent upon chance. Types of gambling encompassed by this definition include: (a) VLTs, (b) slot machines in casinos, (c) table games in casinos, (d) lottery tickets, (e) break-open tickets, (f) scratch tickets, (g) bingo, (h) keno, (i) horse races, (j)

Sports Select, (k) other sporting event wagers, (l) informal wagering, and (m) gambling on the internet.

Gambling In Manitoba

In 2001, Manitoba had 4,482 VLTs in 563 bars, hotels, legions, restaurants, and gaming lounges across the province (Azmier, 2001). There are currently 2 full service casinos in Winnipeg offering a complete gamut of machine and table games. In addition to this, the first Aboriginal run casino opened in The Pas in 2001. Horse betting can be done at either the Assiniboia Downs or at one of the many off track betting establishments in the city. Many convenience stores and supermarkets sell lottery and scratch tickets and you can even gamble at any casino game 24 hours a day at work or in the privacy of your own home over the internet. Clearly, adults in our society have extremely easy access to a variety of gambling activities should they be so inclined.

Does this increased access to legalized gambling opportunities affect the occurrence of problem gambling? Most people in the problem gambling field acknowledge that widespread access and promotion of legalized gambling likely does contribute to higher rates of problem gambling (AFM, 2002).

Defining Problem and Pathological Gambling

The term problem gambling is commonly defined as any type of gambling that compromises, disrupts or damages personal, family, or work pursuits. A wide range of gambling behaviors can fall under the umbrella of problem gambling, from those causing only minor problems all the way to gambling that causes severe problems. Other terms that are sometimes used in the field include disordered gambling, compulsive gambling, addicted gambling, and pathological gambling. All of these terms

are usually used to describe more severe cases of problem gambling, with pathological gambling being the widely accepted clinical term.

Pathological gambling was first categorized as a mental disorder in 1980 when it was included in the Diagnostic and Statistical Manual – Third Edition (American Psychiatric Association (APA), 1980). In each subsequent edition, changes were made to reflect the most current thinking in the field. The most recent edition, the DSM IV states “the essential feature of Pathological Gambling is persistent and recurrent maladaptive gambling behavior that disrupts personal, family, or vocational pursuits”. The DSM IV (APA, 1994) also lays out ten diagnostic criteria for pathological gambling.

Pathological Gambling as an Addiction

Up until about two decades ago, pathological gambling was not recognized as an addiction by the medical community but was generally considered a vice. Pathological gambling was first included in the DSM III in 1980 (APA, 1980). Orford and McCartney (1990) found that excessive gambling is still seen in more moral terms than other addictive behaviors. They found that the gamblers themselves were more likely to describe their excessive behavior in terms of weakness, vice, or lack of willpower than were those receiving treatment for other forms of addictive behavior. Gamblers were also more likely to admit that pleasure seeking was a motive for their behavior.

It is now generally accepted that pathological gambling is an addictive illness. Lesieur and Blume (1993) state that both pathological gambling and eating disorders have now been conceptualized as addictive diseases, comparable to alcoholism and other drug dependencies. Mobilia (1993) also did research that supported the hypothesis that

gambling is a rational addictive behavior. The fact that gambling and other excessive or addictive behaviors seem to occur together in the same families (Dickerson, 1989; Daghestani, 1987; Marston, Jacobs, Singer, Widaman, & Little, 1988) seems to support the theory that pathological gambling is an addiction. Researchers have concluded that the euphoric sensations, tolerance, and withdrawal symptoms that pathological gamblers report also suggest similarities with addictions (Dickerson, 1989; Hickey, Haertzen, & Henningfield, 1986).

Conceptualizing pathological gambling as an addiction can provide various insights through comparisons with other addictive behaviors. For example, one can see the parallels between pathological gambling behaviors and traditionally accepted addictions models such as: the addictive substance or condition is used as an avenue of escape or relief from psychological and physiological pain, the addictive substance or condition is used to temporarily create a better state which is more rewarding and pleasurable or in which the person feels more powerful or more in control; and the addicted person establishes a relationship or love affair with the substance or condition. Addictions research has shown that as the number and intensity of the contacts with the addictive substance or activity increases, so does the likelihood that a person will cross over into a dissociative state (Jacobs, 1986). Again, this theory seems to be applicable to pathological gambling and the way in which a gambling addiction is formed. Pathological gambling also fits the addictions theory that states that contact with an addictive substance or activity often blurs reality testing, lowers self-criticalness and self-consciousness, and permits complementary fantasies about oneself. Finally, the model of the addictive cycle (addictive behaviors cause more problems, create more of a

need for escape, leading to a need to increase the dose or stay in the state longer) can also clearly be applied to pathological gambling addictions.

Defining Behaviors and Characteristics of Problem Gambling

In an attempt to gain a better understanding of problem gambling, researchers, psychologists, and gambling counsellors have worked to identify some of the behaviors typically exhibited by problem gamblers. Four of the most commonly identified are progression, intolerance of losing, preoccupation, and a disregard for consequences.

Progression. Progression is basically a problem gambler's tendency to make increasingly larger bets over time. Problem gamblers seem to develop a kind of tolerance, similar to the tolerance a person can develop toward alcohol or various other drugs, whereby they must wager larger amounts of money in order to achieve equivalent levels of excitement (DSM-IV diagnostic criterion A2). Progression in the size of bets may also be related to efforts to recoup previous losses. Problem gamblers may make progressively larger bets in an effort to recover their accumulated losses with just a few large wins (DSM IV diagnostic criterion A6). While many non-problem gamblers may chase losses within a single gambling session, problem gamblers often engage in long term chasing, sometimes over a period of weeks, months, or years. Long-term chasers often operate under the mistaken assumption, or unfounded hope, that at some point their luck is bound to change.

Some researchers suggest that progression is also related to unrealistic fantasies of achieving an improved life through one large win (Carlton, Manowitz, McBride, Nora, Swartzburg, & Golstein, 1987). Size of bets may gradually increase as the problem gambler becomes more obsessed with achieving a big win. The hope of

achieving this fantasy win also can act as a justification or rationalization to continue gambling, even as the chasing of this dream causes more and more problems.

Intolerance of losing. A second trait that often associated with problem gambling is an intolerance of losing. What lies behind this intolerance of losing? For some, it may be their competitive nature. This may partly explain why males have traditionally had higher problem gambling prevalence rates than females. An intolerance of losing may be related to the self-image that some problem gamblers create in which they see themselves as a winner or a high roller. Adopting these positive self-images may help problem gamblers to temporarily feel better about themselves.

Unfortunately, when the reality of their gambling experiences are inconsistent with their self-image of being a winner, gamblers may be unwilling to accept those losses which they experience as blows to their self-esteem. In the face of mounting losses, problem gamblers sometimes abandon prior gambling strategies and gamble recklessly in the hopes of attaining a large, self-esteem redeeming win (DSM-IV diagnostic criterion A6). Like progression, intolerance of losing can also lead to chasing behaviors in which gamblers try desperately to win back lost money. When gamblers say "I just want to get my money back", it is a fairly clear sign that they have not yet accepted their losses and in fact still erroneously consider that lost money to be "their money".

Problem gamblers often make great efforts to conceal their losses and provide explanations for time spent gambling, often lying to family, friends, colleagues, and employers (DSM-IV diagnostic criterion A7). The pattern of lying becomes a major element in the gambling cycle. Some problem gamblers hide or deny the existence of a problem so well that even those closest to them are unaware of the magnitude of the

problems often until a crisis situation, usually financial, is reached. Gambling is sometimes called the invisible addiction because, in contrast to alcohol and most drug addictions, there are few if any obvious outward indicators of the addiction.

Preoccupation. A third behavior that is common among problem gamblers is a preoccupation with gambling and gambling related activities. Reliving past gambling experiences, planning future gambling, and thinking of ways to get money with which to gamble can become a constant obsession and single-minded focus (DSM-IV diagnostic criterion A1). Many problem gamblers mentally replay their gambling experiences and identify what they could have done differently and how it would have changed the results. Nowhere more than in gambling does the phrase “hindsight is always 20/20” apply.

A problem gambler’s preoccupation with gambling can also serve as a defensive mechanism against the troubled reality of their lives (DSM-IV diagnostic criterion A5). Problem gamblers can enter into a kind of dissociative state by focusing on various aspects of their gambling, including pre-gambling thoughts or rituals and post-gambling activities like mentally re-living the experience. Problem gamblers often delude themselves into believing that gambling is a way to solve their problems, even as their gambling continues to cause more problems in their lives.

Disregarding consequences. A fourth commonly found behavior among problem gamblers is the tendency to disregard or discount the consequences of their continued gambling. Researchers (Carlton et al., 1987) have found that pathological gamblers will break their own moral and ethical prohibitions in an attempt to stay in action and avoid the inevitable collapse of their self-esteem and finances. Problem gamblers commonly

resort to forgery, fraud, theft, and embezzlement to obtain gambling money (DSM-IV diagnostic criterion A8). Pathological gamblers who have committed crimes often will maintain that they intended to set everything right once they scored a big win. They may rationalize to themselves that the stolen money is merely a loan that they will repay as soon as they hit a big win. In at least one instance, a gambler was caught only because he was trying to return stolen money before it was noticed missing.

Dickerson and Hinchy (1991) also found that problem gamblers are far more likely to engage in extreme measures such as stealing and selling personal property in order to finance their gambling. Problem gamblers are also much more likely to borrow money from family and friends to finance their gambling than non-problem gamblers (DSM-IV diagnostic criterion A10). Problem gamblers also often report having jeopardized or lost a significant relationship, job, or educational or career opportunity because of their gambling (DSM IV diagnostic criterion A9).

Development of Problem Gambling

Another focus of research, closely related to the identification of common problem gambling behaviors, has been an examination of the common phases in the development of problem gambling. Although the development of problem gambling is somewhat unique from individual to individual, four general phases are often evident: winning, losing, desperation, and giving up.

Winning phase. In some cases, the beginning of problem gambling behaviors can be traced to a big or early win. Gamblers who experience such a win may begin to view gambling as an easy way to make money and improve their lives. This kind of faulty belief can help contribute to the development of a preoccupation with gambling.

Gamblers who experience early wins may begin to view gambling as an easy way to improve their lives.

The gambler may experience feelings of special status and power. Gamblers who experience early wins sometimes start to take winning for granted and begin to need larger wins to produce the levels of excitement that smaller wins used to hold. The gambler may also begin to depend on gambling as a way to cope with disappointments, problems, and negative emotional states while simultaneously pulling away from emotional attachments to family and friends. Inevitably, all winning streaks end; but someone who has become accustomed to winning may find losing unpalatable or possibly intolerable and unacceptable. Gamblers in this situation sometimes stubbornly continue to gamble in the hopes of rediscovering their previous good luck. This persistent gambling can propel gamblers into and through the next common developmental stage of problem gambling: the losing phase.

Losing phase. The losing phase is often heralded by an unexpected loss that occurs under improbable circumstances. In other cases, an ordinary losing streak ushers in the losing phase. The losing phase is characterized by distortions in thinking such as denial and rationalization. Gamblers often lie in order to cover losses. Withdrawing large sums of money from bank accounts and borrowing money from a variety of sources are also common behaviors in this phase.

Life for gamblers in the losing phase can become increasingly limited to working, gambling, and searching for more money with which to gamble (DSM-IV diagnostic criterion A1). Any money that is won is usually gambled away in the pursuit of a big win that the problem gambler hopes will solve all his or her problems. It also is

common for problem gamblers who have run out of money to seek bailouts from wherever possible (DSM-IV diagnostic criterion A10). Sometimes family or friends provide bailouts under false pretences put forward by the gambler. Other times, money is lent on the condition that the gambling will stop. Most times, this does not happen as the bailout actually takes the financial pressure off the gambler, making further gambling possible.

Desperation phase. The desperation phase is generally characterized by an intensification of the feelings and behaviors of the losing phase. Losses increase and are chased with even more determination. Gamblers may commit illegal acts such as fraud or embezzlement to support their gambling (DSM-IV diagnostic criterion A8). In the face of mounting losses, there may be an almost delusional belief in the certainty of a big win just around the corner. Conversely, some problem gamblers describe a kind of fatalism where they know they will lose all their money but still cannot stop themselves from going to gamble. Irritability, mood swings, escape fantasies, and suicide attempts are common during this phase (APA, 1994).

Giving up phase. Often, this final phase is not when the gambler gives up gambling. The giving up refers to the gambler surrendering his or her fantasy of recouping accumulated losses. In this phase, a problem gambler's main goal is simply to stay in the action and continue gambling. It may be that gamblers who reach this stage have been using gambling as a way to deal with their problems for so long and have invested so much, both financially and emotionally, that they do not know what else they can do. They often have emotionally withdrawn from or alienated the important people in their lives. They probably have been lying to hide the amount of time and money that

they have spent on gambling (DSM-IV diagnostic criterion A7) and likely are experiencing a variety of negative emotions including guilt, shame, anger, self loathing, and worthlessness. Ironically, problem gamblers in this phase may still see gambling, the cause of most of their problems, as the only refuge from their troubled lives.

There are definitely exceptions to the developmental patterns described above as not all problem gamblers pass through four distinct phases. For example, in situations where a memorable win is not involved, problem gambling behaviors may begin with a large investment of time on the part of the gambler, such as working out a system for handicapping horses or picking stocks, or learning strategies for playing blackjack. Researchers have found that a winning phase is more common among males and gamblers who describe themselves as "action-seekers". Those who do not experience a winning phase tend to be women and those who describe themselves as "escape-seekers" (Lesieur and Blume, 1991b). These two terms are discussed further in the following section that examines different needs that can be met through gambling.

Motivations Behind Problem Gambling

By now it should be apparent that gambling means more to problem gamblers than simply a form of entertainment. No discussion of problem gambling would be complete without examining what gambling does for and means to the problem gambler. It is likely that a variety of needs and motivations drive problem gamblers to continue gambling even as their gambling exacerbates their problems. Gamblers often cite excitement or the desire to win money as the reason for their gambling. Questionnaires have found that about three-quarters of gamblers entering treatment report that winning money is one of their main reasons for gambling (Blaszczynski & McConaghy, 1989a).

While money may be a motivating factor, other less obvious motivating factors also are often at work.

Need for spectacular success. Researchers have found that problem gamblers sometimes have a deep-seated need for success, recognition, and approval (APA, 1994). Some have hypothesized that this need may be linked to lingering feelings of inadequacy stemming from a sense of rejection by parents or peers. Problem gamblers often view gambling as an opportunity to earn recognition and approval. Problem gamblers may associate gambling wins with praise and admiration. Any praise that the gambler received for having exceptional skill or good luck only reinforces this association.

Problem gamblers commonly report that they believe, often correctly so, that they are skillful gamblers and take pride, even define themselves, through their gambling. Unfortunately, in the vast majority of games, even the most skillful gamblers will lose money over time. Those who continue to gamble in order to attain the heightened self-esteem that comes with being a consistent winner are inevitably disappointed in the long run. The desire to attain approval through spectacular success at gambling can also fuel the chasing of losses. Clearly, it is difficult to feel spectacularly successful while losing money. It may be that when pathological gamblers chase their losses, they are sometimes chasing self-esteem. Gambling also can provide structure, continuity, and meaning to the lives of problem gamblers. Problem gamblers commonly report that they feel like they can predict the future, control fate, and defy the odds while they are gambling. Some gamblers report feeling powerful and even omnipotent while gambling (Walters, 1994.)

The gambler's self image as someone who can beat the odds by virtue of his or her incredible skill or luck is an extremely attractive one, especially to someone who feels inadequate in other areas of his or her life. In contrast to reality, the fantasy world of the problem gambler can be one in which he or she feels important and decisive (Miller, 1986). Feelings of low self-worth are compensated by feelings of omnipotence while gambling (Begler, 1997). Unfortunately, the inevitable losses of continued gambling lead to even more feelings of inadequacy.

One can easily see how the paradoxical effects of the problem gambler's actions can create a vicious cycle in which the gambler needs to continue gambling to experience feelings of self-worth in the short term, only to find that increasing losses result in feelings of guilt, shame, and even lower self-worth in the long run. When caught in such a situation, a problem gambler may decide to protect what feels very good even if it causes problems.

Escape from painful or intolerable feelings. Other researchers have suggested that gambling can act as a defense against a host of painful affects including feelings of helplessness, guilt, anxiety, and depression (APA, 1994). Gamblers often are aware of this effect and have stated that they sometimes gamble to lift their mood and to forget their troubles (Blaszczynski & McConaghy, 1989; Dickerson, Hinchy, & Fabre, 1987). Researchers have found that 79% of gamblers entering treatment report that negative internal states such as loneliness, depression, or stress seem to precipitate their gambling (Blaszczynski & McConaghy, 1989; Corless & Dickerson, 1989). Legg-England and Gotestam (1991) also found that excessive gambling often involves a desire to modify internal emotional states and gain some reprieve from feelings of loneliness, depression,

or stress. They found that gamblers seemed to take longer to achieve satiation if they begin in a depressed or un-aroused mood.

Researchers have described the changes in internal state that pathological gamblers seek in a number of ways. Pathological gamblers have been described as sensation-seeking (Dickerson, Hinchy, & Fabre, 1987), as seeking self-stimulation on adrenaline (Breo, 1989), as trying to escape into an altered state of consciousness (Taber, McCormick, & Ramierez, 1987), and as seeking anxiety reduction (Blaszczynski & McConaghy, 1989). It seems likely that the act of gambling provides different things to different people.

Emotional intimacy. Unmet needs for emotional intimacy also may contribute to the development of gambling problems. Some problem gamblers have difficulty with emotional intimacy. If they have low self-esteem, they may avoid intimacy out of the fear that others will find out just how uncomfortable and unworthy they feel. Instead of seeking out authentic emotional intimacy, they gamble as a means of meeting their intimacy needs. Problem gamblers often are more comfortable with the machines they gamble on than they are with other people. Problem gamblers who feel safest when they are gambling can develop underlying feelings that the machines are the only ones who are completely accepting of them and who can always be counted on to be there without asking questions or passing judgment. While gamblers may feel like they are having their intimacy needs met through gambling, clearly this is not happening in a very real or healthy way. By distancing themselves from the people closest to them, they are actually sabotaging their chances of experiencing and developing authentic and rewarding interpersonal relationships.

Freedom from dependence. There is no arguing that winning a very large amount of money can bring financial independence. Unfortunately, some people confuse financial independence with emotional independence and happiness. It is common for problem gamblers to associate money with security, power, and control. Our society's attitudes and beliefs about the importance of money may also help contribute to the development of some cases of problem gambling. Those who feel as though their lives are out of control may turn to gambling in hopes of gaining control over their lives. There is actually an illusion, or perhaps delusion, of being in control when one gambles. For example, people feel that they are exerting some form of control when they push the buttons of a VLT, select their lottery numbers, or ask a blackjack dealer for another card. Problem gamblers seem to perceive that they have greater control over the outcome of the game than is the case (Langer, 1975). They also tend to view their wins as results of their skill but explain away their losses as attributable to bad luck (Browne & Brown, 1994).

Theories About the Etiology of Problem Gambling

There is certainly no shortage of theories that attempt to explain problem gambling. Most of the major psychological schools of thought have put forth at least some ideas on the nature or dynamics of problem gambling. In the following discussion, theories have been grouped into the following broad theoretical approaches: physiological theories, psychological theories, and sociological theories.

Physiological theories. Physiological theories suggest that problem gamblers may have a physiological and/or biological condition that predisposes them to gamble heavily (Lesieur and Rosenthal, 1991). They posit that the physiological pre-disposition or

condition results in a physiological response to gambling that is somehow different from a normal response. Research in this area has mainly focused on three areas: EEG waves, plasma endorphin levels, and other brain chemical imbalances (Lesieur and Rosenthal, 1991). Researchers have found that gamblers who were more aroused by gambling were likely to gamble for longer and that frequent gamblers experienced more arousal than those who gambled less often (Dickerson et al., 1987).

Jacobs' (1986) General Theory of Addictions also attributes problem gambling, at least in part, to irregularities in arousal states. His theory suggests that certain underlying and interacting conditions cause discomfort and lead to an attempt to self-medicate by engaging in addictive behaviours. The two necessary underlying conditions according to the theory are: an uncomfortable physiological resting state, either chronically under or over stimulated; and, an unresolved psychological problem that creates psychological pain and an urge to escape from that pain. This theory, like many other physiological theories tends to view the biological component as only one of possibly many contributing factors to problem gambling (Blaszczynski & McConaghy, 1989b; Dickerson et al, 1987).

Psychological theories. Included in this group are psychodynamic theories and personality or trait theories. A common element of these theories is that they believe that the problems with gambling develop as a result of some problem related to the individual's psyche (Rosenthal, 1992; Begler, 1997). Psychodynamic theories suggest that the problem gambler uses gambling to try to cope with conflict or to heal an emotional wound, often in response to a painful trigger or event. Gambling is pursued because it offers a temporary escape from an unpleasant psychological state.

Psychoanalytic theorists argue that compulsive gamblers have an unconscious desire to lose and gamble to relieve psychic guilt (Bergler, 1997; Rosenthal, 1992).

Personality or trait theories suggest that there may be certain traits or personality types that predispose someone to have problems with gambling; that is, there may be a gambling personality or trait-cluster that marks the gambler as a habitual or compulsive risk taker (Kagen, 1987). The DSM-IV (APA, 1994) states that problem gamblers are frequently highly competitive, energetic, restless, and easily bored. Other research has suggested three separate types or clusters of problem gamblers: (a) those who are depressed, (b) those who are bored, and (c) those who are depressed and bored (Blaszczynski and McConaghy, 1989a).

Still other research has identified a variety of other seemingly conflicting personality traits have been associated with problem gambling including low ego strength, exhibitionism and dominance, low self-control, a high desire for control, and high incidence of narcissistic personality disorder (Corless and Dickerson, 1989) (Taber et al., 1987). There is a growing body of research that suggests there may be several different trait profiles of problem gamblers and that there may also be different clusters of personality traits that cause gambling problems. McCormick, Taber, and Kreldebach (1987) identified five major clusters that seemed to be linked to problem gambling: obsessive-compulsive tendencies; a mood factor, ranging from depression to hypomania; presence of a significant trauma or major life stressor, ranging from recent and acute to chronic and remote; a socialization factor, such as an antisocial personality disorder; and substance abuse or multiple addictions problems.

Sociological theories. Sociological theories suggest that gambling problems are not necessarily compulsive or destructive (Oldman, 1974; Rosecrance, 1988) and that the problem gambler benefits from gambling in some way, whether it is the social rewards of belonging to a sub-culture that provides an identity and contact with like-minded peers (Rosecrance, 1995; 1988) or the escape from the complexities of the world outside the gambling context (Walters, 1994). Walters (1994) found that problem gambling behavior could be conceptualized as a lifestyle in which individuals find wagering money personally rewarding and helpful in managing existential fear and ignoring personal inadequacies. A central belief of these theories is that observational learning and vicarious reinforcement from watching family or friends gamble explains how gamblers first become involved in gambling (Dickerson, 1984; Rosecrance, 1986; Walker, 1992). A number of studies have also suggested that there may be a strong cognitive bias involved in problem gambling behaviour (Griffiths, 1990). Langer (1975) found that gamblers may suffer from the illusion of control and other erroneous perceptions including irrational beliefs in luck or skill that lead them to overlook the laws of probability.

One of the most prominent sociological theories is the social learning theory which, in some ways, encompasses elements of the physiological, psychodynamic, and sociological theories. Derived from broad psychological theories of learning and personality (Bandura, 1977), social learning models view gambling as a behaviour that is learned through imitation and which is influenced by the social context and environment of the gambler. Griffiths (1990) found that sociological factors appear to be important in the acquisition of gambling behavior, although the development and maintenance of

problem gambling appear to be sustained by psychological and physiological factors such as hoping for the next win and enjoying the rush of excitement when it arrives.

Behavioural theorists also view problem gambling as a learned maladaptive behaviour (Lesieur, 1988) but tend to focus more on external sources, such as the games themselves, as well as environmental sources, such as family or cultural, to explain irrational gambling behaviour. Some of the aspects of the games that likely contribute to the development of problem gambling include the speed of the new electronic games, the continuous nature of the play, the way they involve the player, and the wide spread access to them. Culturally, legalized gambling has never before as socially acceptable in that provincial governments actively promote gambling through a variety of different types of media.

One of the aspects that sets social learning theories apart is their view that because the behaviour was learned, it can also be unlearned (Lesieur and Rosenthal, 1991). This is in sharp contrast to the medical or disease model of addictions that views problem gambling as a disease that someone either has or does not have. The medical model views compulsive gamblers as qualitatively different from other gamblers. This model can also be seen to cross over theoretical boundaries in that the qualitative difference that predisposes an individual to compulsive gambling may be a physiological factor, a mental illness such as obsession or compulsion, or a combination of factors, including environmental factors (Jacobs, 1986). Some researchers have attempted to make a distinction between the disease of pathological gambling and other varieties of problem gambling by saying that the gambling must repeatedly cause significant harm to an individual before it can be considered a disease. One of the cornerstone beliefs of the

disease model is that compulsive gambling is a condition that someone has for life, whether he or she continues to gamble or not.

The cognitive-behavioural model is one of the more accepted social learning theories (Sharpe and Tarrier, 1993). It suggests that problem gambling behaviours are acquired through operant and classical conditioning (Sharpe and Tarrier, 1993) and are reinforced on a variable ratio reinforcement schedule through a combination of financial rewards and heightened physiological arousal levels. Personality characteristics that can make an individual more likely to develop problems once he or she is exposed to this conditioning may include an inability to control heightened arousal, to delay reinforcement, or to apply sound problem solving and decision making skills (McCormick, 1984; Sharpe and Tarrier, 1993).

It seems unlikely that any one theory can fully explain persistent gambling (Murray, 1993). Probably the best conceptual models of gambling are inclusive in that they take behavioural, cognitive, and emotional factors into account. Lesieur (1988) also suggested that pathological gambling should be approached with an eclectic perspective, one that acknowledges that sociological, psychological, and biological processes are likely all involved in an interactive and complex fashion.

Types of Problem Gamblers

In addition to the many theories that try to explain problem gambling, there has also been speculation that there are actually different types of problem gamblers, specifically action gamblers and escape gamblers (Jacobs, 1986; Miller, 1986).

Action gamblers. Many pathological gamblers say that the main reason they gamble is to experience the excitement of action (APA, 1994). They report entering an aroused or euphoric state while gambling, similar to the kind of high described by cocaine users. Other emotions such as sadness, guilt, shame, insecurity, helplessness, anxiety, frustration, or anger can all be absorbed or replaced by the action and fantasy world of gambling. A gambler can redefine these emotions as part of the action and thereby transform them from unpleasant into acceptable or even enjoyable aspects of the ups and downs of the game. In a way, the gambler embraces those troublesome emotions but in the process reduces them to random by-products of the gaming activity instead of acknowledging them as real and painful feelings that need to be accepted and addressed. The excitement of gambling can temporarily distract the action gambler's attention from emotional discomfort and situational stress (Boyd & Bolen, 1970); however, once the gambling session is over, the gambler returns to reality only to find the same problems and worries. In fact, the gambler is often in an even worse situation than before the gambling session: financially, because of additional losses that may have been incurred; and emotionally, because of guilt or shame over those losses.

Escape gamblers. While for some, gambling provides a rush, for others gambling has been shown to have a tranquilizing effect (Miller, 1986). Some pathological gamblers, usually referred to as escape gamblers, enter a state in which they are numb while they are gambling. Escape gamblers commonly use gambling as a method of

dealing with crisis, stress, and other negative emotions (APA, 1994). Instead of redefining negative emotions by experiencing them as part of the game, as action gamblers do, escape gamblers are more likely to enter a dissociative state that is more trance-like in which all outside problems are ignored (Adkins, Kreudelbach, Toohig, & Rugle, 1987). Escape gamblers can become almost hypnotized through the steady pace and repetitive actions involved in playing the games. Jacobs (1986) found that players increased their playing when they wanted to escape from their current situation - especially if they felt depressed. Research seems to indicate that women are more likely than men to be escape gamblers and more likely to be depressed (Lesieur, 1988; APA, 1994).

Dissociative state. Most gambling activities require concentration and focus. The act of concentrating can divert conscious awareness away from any unpleasant internal states such as loneliness, depression, emptiness, anxiety, or anger. When gamblers enter this kind of dissociative state, the rest of the world, with all of its problems and disappointments, disappears for a while. By entering this dissociative state, gamblers can effectively escape from any unpleasant aspects of their lives. Jacobs (1986) hypothesized four signs of dissociation among problem gamblers: feeling like a different person, feeling like you are in a trance, feeling like you are on the outside watching yourself, and experiencing memory blackouts. While research has shown that many problem gamblers do enter into this kind of dissociative state, there are others for whom gambling seems to sharpen their awareness rather than numb it. This may add weight to the supposition that there are qualitatively different types of problem gamblers, with somewhat unique traits and motivations. For example, there may be

problem gamblers who are higher functioning, intelligent, achievement oriented who continue to gamble because they are overly competitive and harbour a mistaken belief in their ability to beat the game. In contrast to this profile, there may also be problem gamblers who are dysfunctional in many areas of their lives and who use gambling as an escape.

People who gamble to escape from stress in their lives often do not have more appropriate problem solving strategies or, if they do, they have temporarily abandoned them (Sullivan, 1994). They see gambling as a way of achieving a respite from the pain in their lives while turning a blind eye to the fact that their gambling is contributing to their problems (APA, 1994). Continued gambling leads to more problems that in turn create more need for an escape. Problem gamblers can become caught in a vicious cycle where their method of coping only serves to aggravate their problems.

Risk Factors For Problem Gambling

Problem gambling is not confined to one group of people or one type of individual. Nevertheless, various researchers have done work compiling demographic information in an effort to determine whether certain sub-groups of society are represented more often among problem gamblers. The findings of these demographic analyses, while being somewhat ambiguous, have resulted in the identification of some typical profiles of problem gamblers. Pohlman (1993) suggests that the typical male problem gambler is in his late 30s, bright, good with figures, likes speedy rewards, doesn't like frustration, and has been gambling since his teens. He also found that compulsive gamblers often like to act the big shot and that they frequently talk about the rush they get from gambling, sometimes describing it in sexual terms. They also may be

excessively concerned with the approval of others and may be generous to the point of extravagance (APA, 1994). Interestingly, Pohlman (1993) found that female problem gamblers are a different breed - relying more on luck or intuition (e.g., the colour of the horse). They generally become addicted to gambling later in life, although they are often captured more quickly, and come from unhappy or deprived backgrounds. They frequently view gambling as an escape from reality.

Bland, Newman, Orn, and Stebelsky (1993) found that the peak age of onset of problem gambling was 25 to 29 years and that problem gamblers were likely to have made suicide attempts (13.3%), to have been convicted of offenses (26.7%), to be spouse and child abusers (23.3% and 16.7%, respectively), and to have spent long periods unemployed (40%). These findings were fairly consistent with the research of Schwarz and Lindner (1992) who found that most gamblers were young, previously convicted of theft, highly indebted, in danger of committing suicide, and susceptible to other addictive substances, especially alcohol. Still other researchers have found that problem gamblers seem to be more prevalent among males, people under 30 years old, those with relatively low incomes or who are unemployed, and those with low education levels (Volberg & Steadman, 1988). While many possible risk factors have been suggested, a person's family of origin is the one most often identified as being a determining factor in the development of gambling problems.

Family of origin. The research of Gambino, Fitzgerald, Shaffer and Renner (1993) indicates that parental gambling habits can have a strong influence on the gambling habits of children. Their results also extended this association to include grandparents, thus confirming the familial influence. Researchers also have found that

the frequency of gambling seems to be positively related to the number of gamblers among one's significant acquaintances including family, friends, and colleagues (Dickerson, Cunningham, Legg England, & Hinchy, 1991). Hickey, Haertzen, & Henningfield (1986) found that various factors are be associated with gambling problems, including parental gambling, socio-economic status, social and structural stress, social isolation, low self-esteem, personality problems, biological problems, and psychopathology.

Researchers have found that a dysfunctional family of origin can be viewed as an environmental risk factor in developing a gambling problem. Psychosocial histories indicate that addicted gamblers often have experienced several unresolved psychological or physical traumas (Taber et al, 1987), histories of parental absence, emotional deprivation, family histories of gambling addiction, alcoholism, or other psychiatric disorders (Ciarrocchi & Richardson, 1989). Ciarrocchi and Richardson (1989) also report pathological gamblers have been victims of verbal, physical, or sexual abuse, or some combination of abuses.

Jacobs (1986) suggests that certain individuals are predisposed to developing an addiction as a result of a childhood and adolescence marked by deep feelings of inadequacy, inferiority, and a sense of rejection by parents and significant others. As feelings of worthlessness develop, the individual engages in fantasy to escape painful realities. Retreating into this dissociative state becomes a maladaptive coping strategy that is carried into adulthood.

Related Problems: Co-dependence, Abuse, Depression, and Suicide

Recently, there has been a fair amount of research done looking at multiple addictions in problem gamblers. Results seem to indicate that problem gamblers are much more likely than the general public to have drug or alcohol addictions. Some research has suggested that more than half of those who have problems with gambling also have problems with alcohol or drug abuse (Lesieur, 1988). Other research suggests that 20 to 40 per cent of the gambling population could be diagnosed as concurrently chemically dependent (Murray, 1993). It appears that the reverse relationship, that people with drug or alcohol addictions are more likely than most to have gambling problems, also is true. Gambino et al (1993) found that substance abusers are about 6 times as likely to be addicted to gambling as the general population. Ciarrocchi (1993) also found higher rates of problem gambling in substance abusers than in the general population.

Researchers have discovered other links between substance and gambling addictions. A study with the MacAndrew Alcoholism Scale (Kagan, 1987) found that both alcoholics and excessive gamblers obtained elevated scores on the social maladjustment, cognitive impairment, and risk-taking scales. In another study using the California Personality Inventory, McCormic, Taber, Kruedelbach, and Russo (1987) found that alcoholics and problem gamblers scored significantly lower than controls in adaptability and tolerance for ambiguity, concern for presenting oneself in a favourable manner to others, and ability to moderate impulses and inhibit action when it would be adaptive to do so.

There is evidence that problem gamblers have some characteristics that are not common to other addictions. Castellani, and Rugle (1995) found that while gamblers

did not score significantly higher than either alcoholics or cocaine abusers on sensation seeking, gamblers did score significantly higher than both of those groups on impulsivity and the inability to resist cravings. These findings suggest that high impulsivity and the inability to resist cravings may be important factors in the development of problem gambling.

In addition to substance addictions, high incidences of various other conditions have been identified in problem gamblers. Murray (1993) suggests that gambling may be related to other psychiatric or medical disorders, especially depression and obsessive-compulsive disorders. The DSM IV states "increased rates of Mood Disorders, Attention-Deficit/Hyperactivity Disorder, Substance Abuse or Dependence, and Antisocial, Narcissistic, and Borderline Personality Disorders have been reported in individuals with Pathological Gambling" (p. 616).

Gonzalez-Ibanez, Mercade, and Aymami-Sanroma (1992) found that subjects tend to have other addictions and disorders in addition to problem gambling. Other researchers have found that excessive gambling is associated with high rates of depression, disturbed sleep and eating patterns, sexual problems, and suicidal tendencies as well as alcoholism and other addictions (Dickerson, 1989; Daghestani, 1987). Depression is one of the most common co-morbid disorders with pathological gambling. Of the 1,164 problem gamblers who called the AFM Problem Gambling HelpLine between March 1994 and April 1995, 90.8% reported being depressed. Other researchers also have found that significant rates of major depressive disorder have been reported among problem gamblers (McCormick, 1984). Affective disorders that are

common among problem gamblers include hypo-manic disorder, panic disorder and schizo-affective disorders (McCormick, 1984).

While it has been shown that problem gamblers are commonly depressed (Blaszczynski & McConaghy, 1988; Roy, Custer, Lorenz & Linnoila, 1988), it is not clear whether the depression precedes or follows difficulties with gambling. Clinical depression may be the primary problem and the gambler may be attempting to self-medicate with the high derived from gambling. The DSM IV diagnostic criteria for pathological gambling specifically states that "the diagnosis is not made if the gambling behavior is better accounted for by a Manic Episode" (p.615). Some research has been done, however, that suggests that a large part of a pathological gambler's distress often stems from the gambling itself (Roy et al., 1988). Sullivan (1994) found that problem gamblers often experience feelings of guilt which can lead to behaviors such as hiding evidence of gambling from family and friends, claiming to win when they have actually lost, periods of depression, and in extreme cases, suicidal thoughts and suicide attempts. The illusion of control that gambling can provide can be especially attractive to depressed individuals who feel otherwise indecisive or are suffering from low self-esteem (Legg-England & Gotestam, 1991). In his novel "The Gambler", Dostoyevsky alluded to a rewarding sense of power obtained through gambling (Breo, 1989).

The DSM IV characterizes pathological gambling as an impulse-control disorder. DeCaria, Hollander, Grossman, and Wong (1996) found that compulsivity is often a comorbid trait in pathological gamblers. Corless and Dickerson (1989) reported that negative emotions such as frustration and depression and a belief in chasing were commonly reported by the impaired control problem gamblers that they studied.

Research has established a clear link between problem gambling and high levels of suicidal ideation and actual suicide attempts. In Manitoba, 62.5% of the clients admitted to the AFM problem gambling program in 1995/96 had previously thought of suicide and of these, 26.6% had actually made attempts to end their lives. Why is it that problem gamblers are so highly suicidal? Answers to this question can be found by examining some of the thoughts and feelings often involved in suicide and relating them to thoughts and feelings that problem gamblers often experience. For example, a common characteristic of most suicides is that the people who attempt suicide see it as a solution. Suicide survivors often report later that they saw suicide as the only way out of a crisis or unbearable situation. Problem gamblers often report that they had considered suicide as a solution to their gambling problems (Sullivan, 1994). Roy (1986) has identified a variety of other commonalities between most suicide attempts. In examining this list it is striking how the typical pathological gambler could easily share the majority of these traits. For example, he identified the common goal of suicide as the cessation of consciousness, saying the suicidal person wants an escape from the worries and emotional turmoil he or she is experiencing. Problem gamblers often experience extreme emotional turmoil accompanied by a variety of unpleasant emotions including guilt, anger, and self-loathing (APA, 1994). He also suggests that the common stimulus in suicide is intolerable psychological pain. Again, the typical pathological gambler often experiences a whole range of painful feelings. Roy (1986) found that the common stressor in suicide is frustrated psychological needs. In a previous section, I discussed the various needs that problem gamblers unsuccessfully try to meet through gambling.

Included in these are the needs for achievement, independence, and emotional belonging.

Roy (1986) suggests that the common emotions in suicide are hopelessness and helplessness. A pathological gambler commonly feels both helpless and hopeless in the later stages of the illness when financial and emotional resources are depleted and the gambler is faced with losing his or her primary coping mechanism, namely gambling. He found that the common cognitive state in suicide is constriction. Pathological gamblers are often preoccupied with the entire gambling experience and can focus all their hopes on the one big win that will change their lives and solve their problems. Often they have been using gambling to deal with their problems for so long that they can no longer think clearly about alternative solutions.

There is evidence to suggest that the common action in suicide is escape (Roy, 1986). Problem gamblers frequently report that they use gambling to escape from the problems in their lives. When they are no longer able to gamble they may search for other ways to escape. Another related motivation for suicide may be to help others escape from the problems caused by their gambling. Problem gamblers who have attempted suicide often say they felt that their spouse or family would be better off without them. In addition to depression, gamblers seem to exhibit traits such as inattentiveness and impulsiveness that are associated with ADD in children. Retrospective self-reports by pathological gamblers suggest that they may have experienced these traits since childhood (Legg-England & Gotestam, 1991).

Are certain types of problem gamblers more likely to commit suicide than others? Frank, Lester, and Wexler (1991) found that of the 162 members of Gamblers

Anonymous surveyed, incidences of suicidality were higher in problem gamblers who began gambling at an earlier age. They tended also to have more addicted relatives and addicted children than did non-suicidal gamblers, and they were more likely to be divorced or separated. The results of the study also suggest that problem gamblers who had been suicidal tended to be more serious gamblers than non-suicidal gamblers and were more likely to have stolen to support their gambling. Research has also found that found that chemically dependent gamblers more often reported having attempted suicide and being seriously depressed than subjects who were only chemically dependent (Ciarrocchi, 1987).

Gambling and University Students

While there have been previous studies that have focused on problem gambling among university students, they number relatively few. In their meta-analysis of gambling prevalence research in North America, Shaffer, Hall, and Bilt (1997) reported on 16 gambling studies that focused on college or university students. The overall mean prevalence rates (95% confidence interval) for these studies were 9.28 % problem gamblers (lifetime) and 4.67 % probable pathological gamblers (lifetime) for a combined mean prevalence rate of 13.95 % (lifetime). One conclusion of the report was that “gambling disorders are significantly more prevalent among young people than among the general adult population” (p. iv). As in the general population, most university students reported that they had gambled. The incidence of pathological gambling was high among males, those with parents who had gambling problems, those who abused alcohol or other drugs, those who had non-traffic arrests, and those in universities in the northeastern and western states (Lesieur, Cross, Frank, and Welch,

1991). Problem gambling was only weakly correlated with age, religion, lower grade point average in school, overeating, living in neighborhoods that are poorer than most, family income, and parental drug use. Problem gambling was not correlated with academic year in college, marital status, parental occupation, parental alcohol use, and bulimic behavior.

Browne and Brown (1994) examined the lottery gambling behavior of 288 college students aged 18-38 yrs. Student lottery gambling was related to having parents and friends who were lottery gamblers. Subjects who were frequent lottery gamblers were more likely to participate in other forms of gambling and to have begun gambling at younger ages than less frequent gamblers. In Canada, Ladouceur, Dube and Bujold (1994a) surveyed 1471 college (17-19 year old) students in Quebec and found lifetime prevalence rates of 5.8 % problem gamblers (male = 9.5 %, female = 3.0 %) and 2.8 % probable pathological gamblers (male = 5.7 %, female = 0.6 %). These prevalence rates are at the very low end of the range of college age findings. A contributing factor to these low rates may be that at the time of the study, VLTs had not yet been introduced in Quebec. The body of research examining problem gambling among youth is somewhat more extensive.

Adolescent Gambling

Griffiths (1990) found that adolescent gambling is more widespread than is generally recognized. A number of researchers have reported that, in some adolescents, gambling may become pathological (Lesieur & Klein, 1987; Ladouceur & Mirault, 1988). In Manitoba, a provincial prevalence study of youth (mean age = 16.7 years) found that 50% of students said they had gambled in the last 12 months and that based

on their own perceptions, about 5% of the females and 11% of the males thought gambling had been a problem for them (AFM, 2002). Dickerson (1990) completed a study that suggests that two-thirds of Albertans aged 12 to 17 gamble. The study found young people aged 12 to 17 appeared four times more likely than adults to be at risk to experience some problems with gambling. Of those who gamble, the study found 23 % are considered to be at-risk or problem gamblers. The typical problem gambler is a 17-year-old boy who drinks, uses drugs, and comes from a home where gambling is commonplace. The study found that of the adolescents who gamble, 44% scored as non-problem gamblers, 15% as at-risk gamblers, and 8% as problem gamblers. The findings are consistent with other studies that have found gambling rates in young people tend to be from 1.5 to 4 times higher than adult rates.

It appears that adolescent problem gambling is an issue in the United States as well as in Canada. Researchers at the Harvard Medical School in the U.S. reviewed data from American and Canadian studies involving more than 7,700 adolescents and concluded that between 10 and 14 per cent of North American adolescents are at risk of developing - or returning to- serious gambling problems. The study concluded that between 4.4% and 7.4% of today's adolescents meet the criteria for pathological gambling.

Why Do Electronic Gaming Machines (EGMs) Cause So Many People Problems

AFM statistics show that Video lottery Terminals (VLT's) are by far the most often used form of gambling by problem gamblers and have earned the somewhat dubious nickname of the crack cocaine of gambling. Why is it that EGMs (a VLT is merely one form, slot machines are another, of EGM) seem to be so much more

addicting than other forms of gambling? Some clues to the answer to this question may be found in some of the psychology of problem gambling.

Some researchers have suggested that the new electronic forms of gambling may have the potential to rapidly increase the prevalence of problem gambling due to the continuous nature of play (Sullivan, 1994). Many other forms of gambling are not continuous. Buying a lottery ticket is a one-time event, at least until the next draw. EGMs allow you to play games one after another. Traditional or paper bingo is somewhat continuous while the games are being played, however after a certain amount of games, the evening is over and you have to leave. When someone plays a VLT, a slot machine in a casino, or even the electronic bingo or keno games also offered in the casinos, there are no external cues for when to stop playing. It is possible to play a VLT for 17 hours (9 AM until 2 AM) without ever having to stop.

Griffiths (1990) talked about the importance of a cognitive bias in persistent gambling. Aspects of cognitive bias include operant conditioning, the psychology of the near miss, cognitive regret, and the illusion of control. Examining this cognitive bias and specifically these theories may help explain why VLTs seem to be so addictive.

Operant conditioning. It seems likely that the payout schedule on VLTs may be a factor in development of pathological gambling through the process of operant conditioning. VLTs are programmed so that a gambler will inevitably lose money in the long run; however, the intermittent reinforcement schedule is likely to produce gambling behaviour that is highly resistant to extinction. Other researchers also have concluded that the game itself compels gamblers to continue gambling because of the variable-ratio schedule of reinforcement (Dickerson, 1984).

Near-miss psychology. It seems likely that near misses in gambling (failures that are close to being successful) tend to encourage future play. Some commercial gambling activities are formulated to ensure a higher than chance frequency of near misses. At a behaviorist level, a near miss may have a similar kind of conditioning effect on behavior as a success. A near miss is still strongly reinforcing but at no extra expense to the machine's owner. Thus, at a lower cognitive level, a near miss could produce some of the excitement of a win (i.e., cognitive conditioning through secondary reinforcement). Research findings have confirmed that regular players get physiologically aroused when they win or when they nearly win. This may explain why players continue to gamble in spite of constant losses. Frequent near wins combined with the occasional actual win combine to provide near constant physiological stimulation, thereby strongly reinforcing further play. The secondary reinforcement of seeing others win may also contribute to gamblers continuing to play until they get the win that they feel they deserve.

The poker style VLT games have another aspect of their payout schedules that may produce similar results to those of a near miss. By far the most common type of "win" on these machines is one where the gambler does not actually win any additional money but merely wins back the original wager, the net result being that the gambler breaks even. The act of simply winning back the original wager may nonetheless provide physiological stimulation and thereby reinforce continued gambling in much the same way that a near miss would.

Cognitive regret. Researchers have suggested that cognitive regret may also stimulate persistent gambling. They have theorized that failing to fulfill the goal of winning can produce frustration that can in turn strengthen ongoing gambling behavior.

It is interesting to note that in most situations, setting a goal then persistently pursuing that goal is an effective strategy for achieving success. Society generally encourages this type of persistent and systematic approach. Unfortunately, in the world of gambling, the more persistently the goal is pursued, the more certain failure becomes.

Illusion of control. The illusion of control, the gambler's belief that he or she has more personal control over the outcome of a game than actually exists, has been linked to pathological gambling by a number of researchers (APA, 1994). It seems that some aspects of the method of play on the VLT poker machines may specifically be designed to foster an illusion of control in the gamblers who play them. Selecting which cards to keep and which cards to throw away is a basic part of playing video poker. This process requires the gambler to make decisions, presumably based on logic and at least a basic understanding of probabilities that have a direct influence on the outcome of the game. By making these decisions, gamblers become more personally involved in the game. The illusion of control may be present in cases where gamblers play hunches and make decisions contrary to what would give them the best opportunity to win according to the laws of probability. The illusion of control may also be at work when gamblers disregard the role that chance plays in the outcome of the game.

If a gambler does win while playing video poker, he or she is given the opportunity to "double up" the winnings. If the gambler accepts, the machine shows one card face up and four face down. The gambler then chooses one of the face down cards. If that card is higher than the original face up card the winnings are doubled. If it is lower the winnings are lost. Before resuming the next game, the other face down cards are

revealed whereby the gambler can see which of the four face down cards would have beaten the original face up card.

It is clear that chance alone determines if the gambler's card is higher or lower than the original face up card - there is no skill involved. However, the very act of choosing between the four face down cards can foster a powerful illusion of control, especially when the gambler is then shown the cards he or she could have picked but did not. Statistically, the end results would be the same if the machine simply showed two cards where the gambler would win if the second card is higher and lose if it is lower. The unnecessary act of choosing from four face down cards likely has a powerful affect on a gambler in terms of fostering a mistaken feeling of control in the outcome of the game. This type of illusion of control may be a contributing factor in the addictive nature of VLTs.

The option to double winnings, which is unlimited in that gamblers can double and redouble as long as they keep winning, may also cause problems for problem gamblers who are at the stage of looking for a large or fantasy win that will erase accumulated debts and significantly change their lives. While there is the chance of a large win through repeated doublings, the large majority of the time the gambler will lose whatever winnings have been accumulated, adding to feelings of frustration and regret.

Speed of play. The speed of play on VLTs is thought by some researchers to be one of the key factors in why they cause people problems. The speed of play may have an influence in at least two ways: by enabling pathological gamblers to more easily enter a dissociative state and by giving clear and instantaneous feedback to gamblers.

A proficient VLT player can play one complete game cycle every five to six seconds on average. The repetitive physical actions that a VLT player performs in tandem with the continuous visual and auditory stimulation of flashing lights and various electronic sounds likely all contribute to a gambler's tendency to enter a dissociative state. Anyone who has been near a bank of VLT machines that are all being used can understand how the physical, visual, and auditory cues coming from the other machines and players surrounding a gambler could easily serve to intensify the hypnotic effect of gambling on VLTs.

An important contributing factor in the problematic effect of VLTs on some gamblers is the fact that quitting is so difficult. Quitting gambling can often cause a whole new set of problems for the problem gambler. Problem gamblers often make repeated unsuccessful attempts to control, cut down or stop their gambling (DSM IV diagnostic criterion A3). They often experience restlessness or irritability when attempting to cut down or stop gambling (DSM IV diagnostic criterion A4).

Problem gamblers who try to quit gambling often find themselves caught between two crises. On one hand, if they continue to gamble all the financial and emotional problems that have been caused by gambling will continue to escalate. On the other hand, by quitting gambling problem gamblers must abandon their hopes of achieving a life changing win and they must give up their self-image of being a risk-taking, high-rolling, winner and admit that they were a loser at their favorite past-time. Even more importantly, problem gamblers who try to quit gambling end up losing their preferred method of coping at the very time when they have the most difficulties to cope with. They are likely faced with huge financial debts, many of which may have been

hidden from their spouse or family members. Problem gamblers often face severe marital problems when their spouses find out the extent to which they have been deceived and lied to. Problem gamblers often also have face legal problems related to actions by creditors or by the courts for thefts. Problem gamblers in this kind of situation often face having to declare bankruptcy, to do jail time, or both.

As mentioned earlier, problem gamblers often believe that money is both the cause and the solution to their problems (APA, 1994). It could be said that alcoholics feel the same way about alcohol, however, a recovering problem gambler must often deal with a financial hangover that can last for years. Money is the medium through which the pathological gambler's addiction is expressed just as alcohol is the medium through which the alcoholic's addiction is expressed. Unfortunately, because people need to carry money or bank cards to function in today's society, a recovering problem gambler often finds him or herself in a position which is analogous to that of a recovering alcoholic having to walk around with a bottle in the coat pocket.

Clearly, problem and probable pathological gambling are conditions that pose challenges not only to those who experience them first-hand, whether in themselves or someone close to them, but also to those who try to better understand them through research, to those who strive to help those affected by them, and to those who try to prevent or minimize their development through various prevention and educational strategies. This and other similar studies are important in that they can help us to better understand, and ultimately, to better treat and prevent problem gambling in our society.

CHAPTER 3

Method

Recruiting Study Participants

Participants were recruited for this study from the University of Manitoba student population, specifically from the Faculty of Education and the Department of Psychology, using two slightly different methods.

Education students were invited to complete the study questionnaire on a voluntary basis during class time that various professors had agreed to set aside for this purpose. After a brief talk explaining the nature of my study, I circulated copies of my questionnaire, waited for them to be completed, and then collected them. Education students did not receive any academic credit for taking part in my study.

The Department of Psychology participants came from the introductory psychology experimental pool. Students enrolled in introductory psychology courses are required to participate in a specified number of experimental studies in order to receive full course credit. I attended a variety of introductory psychology classes, briefly explained the nature of my study, and then invited students to sign up to attend one of the sittings I had scheduled. All Psychology students who completed my questionnaire received credit toward their experimental credit requirement.

All subjects were treated according to Canadian Psychology Association and American Psychology Association ethical guidelines (1992). There was no deception involved in the delivery of this study. Before filling out the questionnaire, study participants were assured of their anonymity and of the fact that individual test results

would be kept completely confidential. Volunteers were told they had the option of withdrawing from the study at any time. Before proceeding with any data collection, I obtained approval from the ethics committees from both the Faculty of Education and the Department of Psychology.

Screening Instruments Used

This section discusses the three formal instruments used in this study: the SOGS, the CAGE, and the MGPS. Areas covered include the development of these instruments; the establishment of their validity and reliability, and the scoring that is typically used for each instrument.

South Oaks Gambling Screen. The South Oaks Gambling Screen (SOGS) is a 20-item questionnaire based on the DSM-III criteria for pathological gambling. Developed in 1987 (Lesieur and Blume), the SOGS is an easily administrable instrument to screen clinical and general populations for problem and pathological gambling. Before its development, the common methods of identifying pathological gamblers were based on the DSM-III criteria and the 20 questions of Gamblers Anonymous. Neither of these methods was completely satisfactory in that the DSM-III criteria concentrated on late stage (desperation phase) signs and symptoms while the 20 questions of Gamblers Anonymous tended to generate an excessive number of false-negatives.

The validity of the SOGS was established by cross-tabulating the scores of 297 inpatients with the independent assessment of counselors based on interviews with the inpatients and their family members ($r = .60$, $df = 125$, $p < .001$). Additional testing was done using 213 members of Gamblers Anonymous, 384 college students, and 152 hospital employees in which SOGS scores were cross-tabulated with DSM-III-R

diagnostic scores. The results showed that the SOGS and the DSM-III-R are highly correlated ($r = .94$, $df = 747$, $p < .001$).

The reliability of the SOGS was established using two procedures. First, all 749 of the surveys mentioned above were submitted to an internal consistency reliability check. The analysis showed that the screen is highly reliable ($\alpha = .97$, $p < .001$). In addition, 74 inpatients and 38 outpatients filled out the questionnaire twice at least 30 days apart. There was overall a high test-retest correlation. The higher correlation for outpatients ($r = 1.0$, $df = 36$, $p < .001$) than for inpatients ($r = .61$, $df = 72$, $p < .001$) was attributed to the inpatients' awareness that scores were being used in decisions about their treatment.

Based on this and other research, the SOGS appears to be a valid and reliable screening instrument for use in problem gambling prevalence surveys.

The scoring of the SOGS is as follows:

- 0-2 positive responses = non-problem/non-gambler
- 3-4 positive responses = problem gambler
- 5 + positive responses = probable pathological gambler.

CAGE questionnaire. The CAGE questionnaire is a self-report screening instrument used to identify problem drinkers and/or chemical users. CAGE is a mnemonic for attempts to "Cut down on drinking, Annoyance with criticisms about drinking, Guilt about drinking, and using alcohol as an Eye-opener" (Hickey, Haertzen, & Henningfield, 1986; Marston, Jacobs, Singer, Widaman, & Little, 1988). The validity of this screen was tested using 366 patients of the Veterans Administration Hospital, Durham, N.C. The CAGE scores were correlated with a social worker's categorization of each patient

as either alcoholic or non-alcoholic based on diagnostic formulations by the multi-disciplinary team and from the information collected from the patient and from informant sources. Using the two or three positive responses on the CAGE as the criteria for identifying problem drinking, a correlation coefficient of .89 was found. Since its introduction (Ewing & Rouse, 1970) the CAGE has become recognized as one of the most efficient and effective screening devices. A positive response to the CAGE interview is not diagnostic of alcoholism. A positive response should, however, alert the interviewer to the high likelihood of the presence of alcoholism. Ewing's study assessed the value of the CAGE questionnaire in detecting alcohol dependence in the walk-in clinic of an acute care Veterans Affairs hospital. Over 1,660 male veterans attending the walk-in clinic were asked several questions. The results from the Cage questionnaire were compared with the results of a diagnostic interview utilizing DSM III -R criteria to determine the presence or absence of a lifetime diagnosis of alcohol dependence. The CAGE scale, when used with one or more yes responses indicating a positive response, achieved a sensitivity of 86% and specificity of 93% when using the diagnostic interview as the criterion standard. This study adds to the evidence that the CAGE questionnaire is an effective, efficient, easily used screening instrument for the detection of alcohol dependence in a clinical setting (Liskow, Campbell, Nickel, & Powell, 1994).

Studies have been done which suggest that the CAGE may not be an appropriate instrument to identify problem drinkers within a college student population. It may be that the problem drinking patterns of college students may differ from those of adult alcoholics. Specifically the symptom of dependency, identified by the E question on the CAGE, did not appear to be a characteristic of college problem drinking. The CAGE

was proved to be especially ineffective in identifying female problem drinking, likely because of the low frequency of female problem drinkers among the student samples.

The CAGE had demonstrated a high degree of accuracy in identifying alcoholism and excessive drinking in adults assessed within a variety of medical settings (Niles & McCrady, 1991; Wayland & Hardwicke, 1991). The CAGE had also demonstrated its utility as a screening instrument within a more general population and had been highly recommended as an initial screening test for identifying college students whose alcohol use warrants further diagnostic evaluation. The screening instrument, which can be self-administered or conducted by a clinician, poses four overt yes-no questions and requires approximately one minute to complete. Bush and colleagues (Gilovitch, 1983) used the CAGE to screen 518 patients in a community teaching hospital. At a cutoff score of 2 (in this case, meaning two "yes" answers), the investigators found that the test correctly identified 75 percent of alcoholics (sensitivity) and 96 percent of non-alcoholics (specificity).

Manitoba Gambling Pre-Screen. The Manitoba Gambling Pre-Screen (MGPS), an instrument developed by researchers at the Addictions Foundation of Manitoba, is designed to identify problem and pathological gamblers. It is made up three questions taken from the CAGE that have been modified to apply to gambling and two questions taken from the DSM-III diagnostic criteria for pathological gambling.

The next four questions on the survey focused on the subjects' history of suicidal ideation and history of actual suicide attempts. These questions were not taken from any formal instrument. They were chosen to obtain the information suicidal ideation and attempts in the most direct and unambiguous manner possible.

The following set of four questions asked if subjects have ever experienced physical, emotional, sexual, or verbal abuse. Again these questions are not taken from any formal instrument but are chosen to directly access the desired information.

The final remaining two questions asked subjects whether they have ever experienced depression and then whether they have ever experienced depression as a result of problems related to gambling. Again these are questions that were chosen to directly access the desired information

CHAPTER 4

Results

Socio-demographical Profile of Participants

All study participants ($N = 483$) were asked to provide certain socio-demographic information on their study questionnaire. This information identified the study population and also highlighted the socio-demographic differences between participants from Psychology and Education.

Gender

One striking demographic aspect of the study population was the gender distribution. Female participants (62.9%, $n = 304$) significantly outnumbered male participants (37.1%, $n = 179$). The gender ratio was most pronounced among the participants from the Faculty of Education (females 70.0%; males 30.0%). There was a more equal gender balance among participants from the Department of Psychology (females 56.5%; males 43.5%).

Age

The overall mean age of study participants was 22.1 years; however, because the age distribution had a strong positive skew (participants were bunched in the lower age range rather than distributed evenly), a more meaningful figure is the trimmed mean in which the oldest and youngest 5% are discounted. The trimmed mean age for the entire study population was 21.4 years. The trimmed mean age for Education participants (23.0 years) was considerably higher than for Psychology participants (19.9 years). The range in ages of participants was 18 to 52; however 73% of participants were either at or between the ages of 18 and 22.

Marital Status

A large majority of study participants reported they had never been married (85.7%; $n = 414$). Participants who said they were either married or living common-law accounted for 12.2% of the total study population. A relatively small percentage of participants reported being either separated (1.0%) or divorced (1.0%). A higher percentage of Psychology participants were single (90.5%) in comparison with Education participants (80.4%), likely due, at least in part, because they were younger on average.

Years at University

The overall mean for time spent at university was 2.8 years. Education participants had spent an average of 2.7 more years at university than Psychology participants (4.2 and 1.5 years respectively).

Parental Income

Most participants reported their annual parental income as above \$ 25,000, however a significant number (19.5 %) either did not know or did not respond. Of the participants who responded, 89% reported a parental or guardian income of \$25,000 a year or more. The reported parental income levels did not vary greatly between Education students and Psychology students (see Table 3).

Table 3

Percentage of Participants By Faculty Who Reported Various Levels of Parental or
Guardian Income

Parental/Guardian Annual Income Level	Education	Psychology	Study Total
Less than \$25, 000	7.8 %	10.3 %	9.1 %
\$25, 000 - \$49, 999	27.9 %	29.2 %	28.6 %
\$50, 000 - \$75, 000	21.9 %	20.2 %	21.1 %

Summary of Socio-Demographic Data

The majority of the study population can be characterized in the following manner: never married (86 %), age 18 to 26 (88 %), at university less than five years (83 %), and a parental annual income greater than \$ 25, 000 (89 %). Sixty-six percent of the study population fit into all four of the categories described above. This study population is fairly representative, demographically speaking, of the general undergraduate population with the notable exception of gender distribution (63% female and 37% male). In an effort to reflect a more typical undergraduate population, in certain cases I had to weight the male responses so that males and females were represented equally. Also, because of this gender discrepancy, male and female data are analyzed separately.

Gambling Related Results

This section reports on various gambling related variables, including participant categorization according to gambling type based on scores from the SOGS. Correlations between SOGS categories and a variety of other variables, both socio-demographic and otherwise, are also examined.

Prevalence of Gambling

Over 86 % of participants have been involved in at least one form of gambling in the last year while 14 % of participants said they have not gambled at all in the last year.

Types of Gambling

The most frequently reported form of gambling was playing VLTs/slots, followed closely by lotteries and break-opens/scratch tickets (see Table 4).

Table 4

Percentage of Participant Involvement In Various Forms of Gambling at Different Frequencies

Gambling Type	Frequency			
	Weekly	Monthly	< Monthly	Never
VLTs/Slots	4.0%	20.0%	39.0%	37.0%
Lotteries	6.0%	16.0%	41.0%	38.0%
Break-opens/ Scratch tickets	3.0%	11.0%	40.0%	46.0%
Cards for Money	2.0%	4.0%	27.0%	67.0%
Bingo	0.0%	2.0%	25.0%	73.0%
Table Games	2.0%	4.0%	20.0%	75.0%
Sports Betting	2.0%	5.0%	15.0%	78.0%
Horses	0.0%	1.0%	10.0%	89.0%
Other	1.0%	1.0%	6.0%	91.0%

Prevalence of Problem and Probable Pathological Gambling

Based on their overall score on the SOGS, participants were classified as non-problem/non-gamblers, problem gamblers, or probable pathological gamblers. Table 5 shows these prevalence figures for the overall study as well as gender weighted prevalence rates (which is an average of the male problem and probable pathological gambling rates [6.8 % and 9.7 % respectively] and the female problem and probable pathological gambling rates [4.0 % and 0.3 % respectively]). The gender weighting was necessary because female participants (n=304) significantly outnumbered male participants (n=179). The gender weighted figures show that 5.4% of study participants were categorized as problem gamblers and an additional 5.0% of participants were categorized as probable pathological gamblers. The combined prevalence rate suggests that 10.4 % of study participants have experienced problems related to gambling. It should be noted that the Manitoba prevalence numbers (AFM, 2002) are not directly comparable to those of this study because the two surveys used different versions of the SOGS. Specifically, this study asked about lifetime gambling habits and experiences while the AFM study asked participants to answer based only on the previous year.

Table 5

Prevalence of Problem and Probable Pathological Gambling In the Study Population and
Manitoba's Adult Population of Manitoba Based on the SOGS

Province and Year Of Study	Gambling Category		
	Problem	Probable Pathological	Total
University of Manitoba 1997 – Overall	4.8 %	3.8 %	8.6 %
University of Manitoba 1997 – Gender Weighted	5.4 %	5.0 %	10.4 %
Manitoba 2001	3.8 %	2.3 %	6.1 %

Correlations Between Gambling and Other Variables

This section will discuss the relationships that were present between variables such as gender, parental gambling habits, alcohol and/or drug use problems, depression and the participants' SOGS category.

Gambling Categories and Gender

A comparison by gender of the gambling categories of study participants, based on SOGS scores, shows that the prevalence of problem and probable pathological gambling was considerably higher among males (6.7% and 9.7% respectively; $n = 29$) than among females (3.7% and 0.3% respectively; $n = 11$), ($\chi^2 = 28.892$, $df = 2$, $p < 0.001$). When the prevalence rates are combined, the overall male problem rate (16.4%) was more than four times the overall female problem rate (4.0%) (see Table 6).

Gambling Categories and Age

Statistical analysis also indicated that there was no significant relationship between the age of participants and their SOGS category. The limited age range of study participants likely weighed against finding significant results in this area.

Gambling Categories and Marital Status

Statistical analysis indicated that there was no significant relationship between SOGS categories and marital status within this study population.

Table 6

Prevalence of Male and Female Problem and Probable Pathological Gambling Within
the Study Population

Gender	Gambling Category		
	Problem	Probable Pathological	Total
Females	4.0 %	0.3 %	4.3 %
Males	6.8 %	9.7 %	16.5 %

Gambling Categories and Years At University

Statistical analysis also indicated there was no significant relationship between participants' SOGS category and the number of years they had spent at university.

Gambling Categories and Parental or Guardian Income

Once again, statistical analysis indicated there was no statistically significant relationship between parental or guardian income and participants' SOGS category.

Gambling Categories and Parental Gambling Problems

There was a statistically significant relationship between having a parent who “gambles/gambled too much” and participants' own gambling habits (see Table 7). The prevalence of problem or probable pathological gambling was approximately 5 times greater among participants who have had a parent who “gambles/gambled too much” in comparison with those who have not ($\chi^2 = 31.471$, $df = 2$, $p < 0.001$).

Table 7

Percentages of Participants Who Reported Having or Not Having a Parent Who Gambled Too Much By Gambling Category

Parental Influence	Gambling Category		
	Problem	Probable Pathological	Total
Neither Parent Had a Gambling Problem	4 %	3 %	7 %
At Least One Parent Had a Gambling Problem	12 %	21 %	33 %

Gambling Categories and Age of First Gambling Experience

Statistical analysis also indicated there was no significant relationship between participants' SOGS category and the age of their first gambling experience. It was interesting to note, however, that none of the 49 participants who first gambled at age 18 or older had a gambling problem.

Gambling Categories and CAGE Scores

There was a statistically significant relationship between participants' SOGS gambling category and their score on the CAGE ($\chi^2 = 32.613$, $df = 8$, $p < 0.001$). This suggests that participants who have experienced gambling related problems are also more likely to have experienced drug or alcohol use problems.

Gambling Categories and Depression

There was a statistically significant relationship between participants' SOGS category and having felt depressed, however the confidence interval for this relationship is only at the 95% level ($\chi^2 = 6.227$, $df = 2$, $p < 0.05$). The relationship between participants' SOGS category and having felt depressed as a result of gambling was present at a 99% confidence level ($\chi^2 = 146.622$, $df = 2$, $p < 0.001$).

Gambling Categories and Suicidal Ideation and Attempts

There was no statistically significant relationship between participants' SOGS category and either thoughts of suicide or suicide attempts. Participants were also asked whether they had considered or attempted suicide as a result of gambling problems. Two participants reported they had considered suicide as a result of gambling problems ($\chi^2 = 50.548$, $df = 2$, $p < 0.001$) and one participant reported having attempted suicide as a result of gambling problems ($\chi^2 = 20.407$, $df = 2$, $p < 0.001$). As would be expected, all

the participants who had considered or attempted suicide as a result of gambling problems were categorized as problem gamblers according to their SOGS score.

Gambling Categories and Reported History of Abuse

There was no statistically significant relationship between participants' SOGS category and a history of either physical or sexual abuse. There was a statistically significant relationship between participants' SOGS category and a history of both emotional abuse ($\chi^2 = 6.939$, $df = 2$, $p < 0.05$) as well as verbal abuse ($\chi^2 = 6.638$, $df = 2$, $p < 0.05$). The following chapter discusses the results that have been reported here and attempts to identify the potential implications of these findings.

CHAPTER 5

Discussion of Results

Socio-Demographic Results

The study population ($N = 483$) seems to be a fairly typical same of undergraduate students in most respects including age, marital status, years at university and parental income. The overrepresentation of females among the study population (63% female, 37% male) also seems to be a fairly typical representation given the preponderance of female students in both the Faculty of Education and the Department of Psychology.

Gambling Related Results

The popularity of gambling among participants, over 86% of study participants had been involved in at least one form of gambling in the past year, was expected. These figures are comparable to gambling involvement numbers for the general population. Similarly, the types of gambling students are involved in, primarily VLTs, lottery tickets, and break-open or scratch tickets, were fairly typical and again closely mirrored the gambling involvement among the general public.

The problem gambling prevalence rates (5.4% problem; 5.0% probable pathological) are higher than prevalence rates for the general population (3.8 % problem; 2.3 % probable pathological), however this too was expected in that most other studies have found elevated problem gambling prevalence rates among college and university students. A meta-analysis of gambling prevalence reported by Shaffer, Hall, and Bilt (1997) had stated that problem gambling prevalence rates for college students ranged from 4.43% to 14.12% in the academic literature with an average overall prevalence rate

of 9.28%. This study found a problem gambling prevalence rate of 5.4%, which actually falls near the low end of the range of rates reported by Shaffer and associates (1997).

The probable pathological gambling prevalence rate of 5.0 % found in this study also fell between the range of rates reported by Shaffer and associates (1997) from 3.44% to 5.90%. This probable pathological gambling prevalence rate of 5.0% is slightly above the average prevalence rate given in the meta-analysis of 4.67%.

The overall prevalence rate of 10.4% in this study is below the overall mean (13.95%) for studies of college or university students reported in the meta-analysis, although again it fell within the range of reported rates (7.87% to 20.02%).

Expectations were that the prevalence rates for this study would be slightly higher than the average mean because of the proliferation of VLT sites and casinos in Winnipeg; however, the rates are nonetheless significant in that they indicate that more than one out of every ten students had experienced problems with gambling.

Correlations Between Gambling Related Results and Other Variables

The finding of this study was, as expected, that male participants had significantly higher problem gambling prevalence rates than females (16.5% and 4.3 % respectively). There were, however, some interesting aspects to note in the data. The first was the magnitude of the difference in prevalence rates. The combined prevalence rate for males (16.5%) was nearly four times the combined female prevalence rate (4.3%). Looking specifically at the probable pathological gambling rates revealed some other interesting findings. The male rate for probable pathological gambling (9.7%) was actually higher than the male rate for problem gambling (6.8%). This is somewhat unusual in that in most other studies, problem gambling rates are equal or slightly higher

than probable pathological gambling rates. This result suggests that study participants who have become involved in gambling in a problematic way have done so in a fair extensive manner and may have suffered more negative consequences as a result.

By contrast, the female probable pathological gambling prevalence rate (0.3%) is a fraction of the female problem gambling rate (4.0%), indicating that while some females may be experiencing some minor negative effects from gambling, they are involved to the extent that would result in serious harms. Comparing the two probable pathological gambling rates (males = 9.7 %; females = 0.3%) helps illustrate the marked differences in male and female gambling habits, especially at this level of involvement. Reading these results cannot help but raise the question "Why are problem gambling prevalence rates so much higher among male students than female students?". Possible explanations may include: (a) it may be more socially acceptable for males to gamble (traditionally it definitely was, although this, like so many other social inequities, is changing); (b) males may be socialized to be more competitive, aggressive, or "winning" oriented and may find it harder to walk away from a VLT having lost money; and (c) males may be more likely in general to engage in risk-taking behaviors. Whatever the explanation, it seems that simply being male is a potential risk factor for experiencing problems with gambling.

Study results indicated there was no significant relationship between gambling categories and other socio-demographic factors including age, marital status, years at university, or parental income. These results were expected with the possible exception of age where it could reasonably be predicted that a relationship would exist between youth and gambling problems. This was not evident however this was likely a result of

the very small range of ages represented (the majority of participants were between ages 18 and 21).

The significant influence of parental gambling habits was an expected finding but the strength of that influence was somewhat surprising. The combined prevalence rate (33%) for participants who had at least one parent who “gambles/gambled too much” is nearly 5 times that of participants who did not have a parent who gambles/gambled too much.

The relationship between gambling problems and alcohol or drug use problems was anticipated. The relationship between depression and problem gambling was also to be expected. While it is a fairly well established fact that patterns of addictions and depression are often convergent, the nature of the relationship, in terms of which is cause and which is effect, has yet to be clearly established. It seems likely that it is actually a complex and situational relationship in which sometimes depression leads to problem gambling and sometimes problem gambling leads to depression. Clearly, each can have an exacerbating effect on the other, regardless of which occurred first.

Gambling problems and suicidal ideation and attempts are also known to be related however there was no significant relationship between these variables within this study. Suicidal ideation and attempts usually manifest in the later stages of gambling addiction, which may help explain why the relationship was not present in this study. It may be that even though a significant number of participants had experienced problems related to their gambling, many may not have reached the later desperation and giving up phases when suicidal thoughts most often occur. Also, most participants in this study

did not have families, jobs, and homes to lose and often it is these types of consequences that lead a problem gambler to consider suicide.

The results around abuse and gambling problems indicated that there was also no significant relationship between gambling problems and having experienced physical or sexual abuse but there was a relationship between gambling problems and both emotional and verbal abuse (95% confidence intervals). Similar to substance abuse and depression, experiences with abuse often correlate with gambling problems. Therefore it was slightly surprising that there was a relationship between gambling problems and only two of the four types of abuse. The explanation may lie in the fact that physical and especially sexual abuse victims are much more likely to be female while it is the males that are much more likely to be problem gamblers.

Implications and Further Research

While the problem gambling prevalence rates found in this study were basically in line with expectations, the fact that they indicate that gambling problems likely affect somewhere around 1 in 10 university students is still significant. With a problem of this magnitude, it would seem prudent to have some kind of active prevention and education program in place to help raise student awareness about the risks involved with gambling, to alert them to potential early signs and symptoms of problem gambling, and inform them of the resources that are available to someone who is experiencing problems with gambling. Another important component of such a program might be educating students about safe and responsible gambling strategies and ideas for how to set and stick to pre-set gambling limits.

There are clearly a number of factors that make university students an at risk population for problem gambling. University age students are often in an experimental phase of their lives in which they are seeking out new experiences, including gambling. Risk taking in general is more common among young adults who are testing their limitations and sometimes living under a false sense of invulnerability. There may be other social factors that put university students at risk. Gambling has never before been such a pervasive and accepted part of society. For many youth, gambling has become a new rite of passage and students may experience peer pressure to gamble. University students often spend more time in close proximity to VLTs in bars and lounges, increasing the likelihood of their gambling involvement. Additional risk factors may include experiencing times of high stress, feelings of isolation as a result of living away from home for the first time, and new found access to large sums of money through student loans and credit cards.

Finally, the new electronic forms of gambling such as VLTs and electronic slot machines may be particularly appealing to young adults who have grown up playing video games and may view VLTs as simply a form of adult video game. While university years are often a time when people experiment, they are also important years in that success or failure at university can have a lasting impact throughout a person's life. Given all these risk factors, it would seem prudent that more steps are taken to educate students about problem gambling. This is a concern that already exists in our universities and one which has the potential to have serious a negative impact students' lives.

Limitations

While it appears that the study population is a fairly representative one, generalizing the study results to groups outside the study population is problematic. Study participants were not chosen randomly and in fact they self-selected themselves. It is very difficult to know what effect this had on the make-up of the study population and how it may or may not have biased it in any way. It also should be noted that study included multiple comparisons which increases the possibility that a false significant comparison occurs due to chance. Finally, the use of self-report questionnaires in this study also introduces the potential for a self-report bias. Self-report bias could result in participants minimizing the behaviours because of guilt or shame. Conversely, study participants could over-report their gambling involvement in an effort to give the researcher what they perceive is being looked for.

Having said this, results are fairly consistent with studies looking at similar populations and other than the self-selection of study participants, there does not appear to be any compelling reasons to doubt that the findings are likely representative of at least the range of gambling activities and problems currently experienced by the overall university student population.

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APPENDIX A

South Oaks Gambling Screen

- 1) When you gambled, how often did you go back another day to win back the money you lost?
 never some of the time most of the time every time I lost
- 2) Have you ever claimed to be winning money gambling, but you weren't really; that you in fact lost?
 never yes, less than half the time I lost yes, most of the time
- 3) Do you feel you have a problem with gambling?
 no yes, in the past, but not now yes
- 4) Do you ever gamble more than you intend to?
 no yes
- 5) Have people criticized your gambling?
 no yes
- 6) Have you ever felt guilty about the way you gamble, or what happens when you gamble?
 no yes
- 7) Have you ever felt like you would like to stop gambling, but didn't think you could?
 no yes

8) Have you ever hidden betting slips, lottery tickets, gambling money, or other signs of gambling from your spouse, children, or other important people in your life?

no yes

9) Have you ever argued with people you live with over how you handle money?

no yes

10) Have money arguments ever centred on gambling?

no yes

11) Have you ever borrowed from someone and not paid them back as a result of your gambling?

no yes

12) Have you ever lost time from work or school due to gambling?

no yes

13) If you borrowed money to gamble or to pay gambling debts, who or where did you borrow from?

- a. From household money
- b. From your spouse
- c. From other relatives/in-laws
- d. From banks, loan companies, credit unions
- e. From credit cards
- f. From "loan sharks"
- g. You cashed in stocks, bonds, or other securities

- h. You sold personal or family property
- i. You borrowed on your chequing accounts/passed bad cheques

South Oaks Gambling Screen Scoring and Interpretation

- 1) score 1 for “most of the time” or “every time I lost”
- 2) score 1 for “yes, less than half the time” or “yes, most of the time”
- 3) score 1 for “yes, in the past, but not now” or “yes”
- 4) score 1 for yes
- 5) score 1 for yes
- 6) score 1 for yes
- 7) score 1 for yes
- 8) score 1 for yes
- 9) not counted
- 10) score 1 for yes
- 11) score 1 for yes
- 12) score 1 for yes
- 13) score 1 for each yes

Interpretation

0 – 2	=	“No Problem”
3 – 4	=	“Problem Gambler”
5 – 20	=	“Probable Pathological Gambler”

APPENDIX B

. CAGE Questionnaire

- 1) Have you ever felt the need to cut down on your drinking or drug use?
- 2) Have you ever felt annoyed by criticism of your drinking or drug use?
- 3) Have you ever had guilty feelings about your drinking or drug use?
- 4) Have you ever used alcohol or drugs upon waking up in the morning?