

Factors Associated with Internet Gambling in University Students

Nicholas M. Harris

Thesis submitted in partial fulfillment of the requirements for the degree of

Master of Arts (Clinical Psychology)

Lakehead University

Supervisor: Dr. Dwight Mazmanian

Second Reader: Dr. John Jamieson



Library and Archives  
Canada

Published Heritage  
Branch

395 Wellington Street  
Ottawa ON K1A 0N4  
Canada

Bibliothèque et  
Archives Canada

Direction du  
Patrimoine de l'édition

395, rue Wellington  
Ottawa ON K1A 0N4  
Canada

*Your file* *Votre référence*  
ISBN: 978-0-494-71746-2  
*Our file* *Notre référence*  
ISBN: 978-0-494-71746-2

#### NOTICE:

The author has granted a non-exclusive license allowing Library and Archives Canada to reproduce, publish, archive, preserve, conserve, communicate to the public by telecommunication or on the Internet, loan, distribute and sell theses worldwide, for commercial or non-commercial purposes, in microform, paper, electronic and/or any other formats.

The author retains copyright ownership and moral rights in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

---

In compliance with the Canadian Privacy Act some supporting forms may have been removed from this thesis.

While these forms may be included in the document page count, their removal does not represent any loss of content from the thesis.

#### AVIS:

L'auteur a accordé une licence non exclusive permettant à la Bibliothèque et Archives Canada de reproduire, publier, archiver, sauvegarder, conserver, transmettre au public par télécommunication ou par l'Internet, prêter, distribuer et vendre des thèses partout dans le monde, à des fins commerciales ou autres, sur support microforme, papier, électronique et/ou autres formats.

L'auteur conserve la propriété du droit d'auteur et des droits moraux qui protègent cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

---

Conformément à la loi canadienne sur la protection de la vie privée, quelques formulaires secondaires ont été enlevés de cette thèse.

Bien que ces formulaires aient inclus dans la pagination, il n'y aura aucun contenu manquant.

  
**Canada**

## INTERNET GAMBLERS

### Abstract

Problem gambling can have devastating financial, psychological, and social effects on the individual and the individual's family. Over the past 15 years, Internet gambling has grown at an incredible pace and is believed to be a contributing factor to the increase in problem and pathological gamblers. Of particular concern is the increase in problematic gambling behaviours in university students. Research shows that university and college students engage in gambling more than any other group. The etiology of problem and pathological gambling is unknown, but is likely the result of numerous biological, psychological, and environmental factors. The current study examined factors related to problem Internet gambling in a university student sample ( $N = 325$ ). Measures administered included the South Oaks Gambling Screen (SOGS), the *DSM-IV-TR*-Based Questionnaire (DBQ), the Canadian Problem Gambling Index (CPGI), three scales from the Jackson Personality Research Form (PRF) (Impulsivity, Desirability, and Infrequency), and a questionnaire examining gambling and Internet gambling behaviours and attitudes. Results showed that Internet gamblers were significantly more likely than non-Internet gamblers and non-gamblers to report engaging in high risk behaviours such as alcohol use, tobacco use, and marijuana use. Many Internet gamblers reported that Internet gambling negatively affects their academic achievement and some reported that it affects their class attendance. Internet gamblers were more likely than non-Internet gamblers to have reported having a family member with a past or current gambling problem, but no differences were found between Internet problem gamblers and Internet non-problem gamblers on this variable. Furthermore, as hypothesised, (1) Males were significantly more likely to gamble on the Internet, significantly more likely to meet *DSM-IV-TR* criteria for pathological gambling, and significantly more likely to meet CPGI criteria for problem gambling. However, males were not

## INTERNET GAMBLERS

found to be significantly more likely than females to meet SOGS criteria for problem gambling.

(2) Internet gamblers were significantly more likely to meet *DSM-IV-TR* criteria for pathological gambling and meet SOGS and CPGI criteria for problem gambling and (3) Internet gamblers were significantly more likely than non-Internet gamblers to report trusting the Internet gambling industry. Finally, although impulsivity was not significantly correlated with problem gambling among all Internet gamblers, a significant positive correlation was found between impulsivity and problem Internet gambling behaviours among males.

## INTERNET GAMBLERS

### Acknowledgements

I would like to thank Dr. Mazmanian, for his expertise and help throughout this thesis process. I would also like to thank Dr. Jamieson for his input on both the proposal and final thesis. A special thanks to Carrie for her patience and support. Finally, thanks to Faye and Ed Harris for their encouragement.

# INTERNET GAMBLERS

## Table of Contents

	Page
Abstract.....	i
Acknowledgements.....	ii
Table of Contents.....	iii
Introduction.....	1
Youth and Gambling.....	3
Internet Gambling.....	5
Reasons People Gamble Online.....	5
Concerns about Internet Gambling.....	6
Internet Gambling Research.....	8
Internet Gambling and University Students.....	8
Current Study.....	11
Method.....	13
Participants.....	13
Measures.....	13
Demographic Questionnaire.....	13
Gambling Behaviour Questionnaire.....	13
South Oaks Gambling Screen.....	16
<i>DSM-IV-TR</i> Based Questionnaire.....	16
Canadian Problem Gambling Index.....	17
Impulsivity.....	17
Desirability.....	18

## INTERNET GAMBLERS

Infrequency.....	18
Procedure.....	18
Data Analysis.....	19
Results.....	21
Data Screening.....	21
Gambling Behaviours.....	23
Internet Gambling Behaviours.....	23
Internet Gambling and High Risk Behaviours.....	26
Internet Gambling and Academics.....	28
Main Analysis.....	28
Hypothesis 1.....	28
Hypothesis 2.....	29
Hypothesis 3.....	31
Hypothesis 4.....	31
Discussion.....	32
References.....	43
Appendix A: Demographic and Gambling Behaviours Questionnaires.....	54
Appendix B: South Oaks Gambling Screen.....	68
Appendix C: <i>DSM-IV-TR</i> - Based Questionnaire.....	72
Appendix D: Canadian Problem Gambling Index.....	73
Appendix E: Personality Research Form Impulsivity, Infrequency, and Desirability Scales.....	77
Appendix F: Informed Consent.....	79
Appendix G: Debriefing Form.....	80

## INTERNET GAMBLERS

Appendix H: Information Letter.....	81
Figure 1: Types of Internet Gambling Participation.....	82
Figure 2: Reasons for Choosing to participate in Internet Gambling.....	82
Figure 3: Average Time Spent per Session Gambling on the Internet.....	83
Figure 4: Average Amount of Money Spent per session Gambling on the Internet.....	83
Figure 5: Problem Gambling Score by Sex and Gambling Group.....	84
Figure 6: Reported Trust and Risks Associated With Internet Gambling.....	85



### Factors Associated with Internet Gambling in University Students

Various forms of gambling, such as land-based casinos, scratch tickets, lotteries, video-lottery terminals (VLTs), and sports betting, generate large amounts of money for governments worldwide. In 2006, the Canadian government alone had a net revenue of 13.3 billion Canadian dollars generated from government-run lotteries, VLTs, and land-based casinos, a number that increased from 2.7 billion in 1992 (Statistics Canada, 2007). In the past few decades, access to legalized gambling has increased at a substantial rate and as a result, gambling has become a socially acceptable activity (Cox, Yu, Afifi, & Ladouceur, 2005; Zangeneh, Blaszczyński, & Turner, 2008). Casinos are no longer found in only major cities, scratch tickets are sold at almost any local store or gas station, and VLTs are located in various bars and pool halls. The world of legalized gambling has embedded itself into everyday culture.

Gambling behaviour can be viewed through the use of a dimensional model ranging from non-gambler to social or recreational gambler, to problem gambler, to pathological gambler. Many individuals engage in social or recreational gambling activities and do so with little, if any, adverse effects. However, some individuals engage in what is termed problem gambling or, to a more severe extent, pathological gambling. These individuals may become “addicted” to gambling and lose control of their gambling behaviours (Steiker, 2008). Furthermore, they are likely to hide their gambling problem, possibly due to the perceived stigma that is associated with it. Thus, it is hard for others to detect (Horch & Hodgins, 2008). Problem and pathological gambling is an important issue made evident by the devastating financial, psychological, and social effects it can have on the individual and individual’s family (Shaffer, Hall, & Vander Bilt, 1999). It can be the direct or indirect cause of excessive debt, job loss, social isolation, family stress, divorce, or suicide (Griffiths, 2003).

Problem gambling is typically defined as “gambling behaviour that creates negative consequences for the gambler, others in his or her social network, or for the community” (Ferris & Wynne, 2001, p. 7). Studies have found that between 1.2% and 3.6% of adults are problem gamblers (Cox et al., 2005; Philippe & Vallerand, 2007; Rush, Veldhuizen, & Adlaf, 2007; Shaffer et al., 1999; Stucki & Rihs-Middel, 2007). Studies that examine problem gambling have typically administered the South Oaks Gambling Screen (SOGS), which is a self-report questionnaire that uses a cut-off score to classify problem gamblers (Lesieur & Blume, 1993). More recently, the Canadian Problem Gambling Index (CPGI) has been developed to provide a more comprehensive evaluation of individual gambling behaviour and degree of problem gambling severity (Ferris & Wynne, 2001).

In 1980, pathological gambling was included in the *Diagnostic and Statistical Manual of Mental Disorders (DSM; American Psychiatric Association, 1980)*, categorized as an impulse control disorder. This provided a more formal set of diagnostic criteria for the psychological assessment of pathological gambling behaviour. Presently, the 4<sup>th</sup> edition of the *DSM (DSM-IV-TR)* defines pathological gambling as a “persistent and recurrent maladaptive gambling behaviour (Criterion A) that disrupts personal, family, or vocational pursuits” (p. 671). Such pattern of behaviour may include a preoccupation with gambling (Criterion A1), a pattern of gambling with increasing amounts of money in order to reach desired excitement levels (Criterion A2), repeated attempts of unsuccessful control of their gambling behaviours (Criterion A3), restlessness or irritability when trying to cut back or stop gambling (Criterion A4), the use of gambling to escape problems or to relieve poor mood (Criterion A5), gambling to win back previous losses (Criterion A6), lying to others to hide gambling behaviours (Criterion A7), engaging in criminal behaviour in order to gain money for gambling behaviours (Criterion A8),

gambling negatively impacts a significant relationship or career opportunity (Criterion A9), and dependence on others for money to relieve debt caused by gambling (Criterion A10). Prevalence rates for pathological gambling generally range from 0.4% to 3.4% of adults; however, higher prevalence is typically reported in adolescent and university students (American Psychiatric Association, 1994).

### **Youth and Gambling**

Presently, youth are growing up in a society where gambling has become increasingly accessible and advertised. In a national survey of Canadian youth aged 15 to 24 years old ( $n = 5666$ ), 61.35% reported having gambled in the previous 12 months while 2.22% were identified as problem gamblers (Huang & Boyer, 2007). Similar results were found in a United States (US) telephone survey of youth aged 14 to 21 years ( $n = 2,274$ ) (Welte, Barnes, Tidwell, & Hoffman, 2008). Sixty-eight percent of respondents reported gambling in the past year, 11% reported gambling more than twice per week, 4.4% were identified as at-risk for problem gambling, and 2.1% of the respondents were identified as problem gamblers. Youth gambling has rapidly developed into an area of concern (Hardoon & Derevensky, 2002; Huang & Boyer, 2007; Moodie & Finnigan, 2006; Welte et al., 2008). Youth who are problem gamblers, or who are at risk of becoming problem gamblers, are significantly more likely to use drugs, misuse alcohol, engage in delinquent behaviours (e.g., destruction of property), have financial problems, and perform poorly in school (Welte, Barnes, & Hoffman, 2004; Winters, Stinchfield, Botzet, & Anderson, 2002).

Problem or pathological gambling behaviours in youth are believed to be the result of numerous environmental, biological, and psychological factors (Hardoon & Derevensky, 2002). Youth are significantly more likely to become problem gamblers if they have a parent who

gambles. This may be the result of youth modeling parent gambling behaviours (Felsher, Derevensky, & Gupta, 2003; Jacobs, 2000). Furthermore, gambling behaviours portrayed by the media have been found to enhance positive attitudes toward gambling in youth (Felsher et al., 2003). Gambling as a youth has also been linked to socioeconomic status; youth growing up in families with low socioeconomic status exhibited more gambling problems and began gambling at a younger age (Jacobs, 2000; Welte et al., 2004). Also, male youth are more likely than female youth to develop gambling problems (Blinne-pike, Worthy, & Jonkman, 2007; Huang & Boyer, 2007; Jacobs, 2000). Many researchers have also identified particular personality traits that may predispose youth to engage in problem gambling behaviours. High impulsivity, distractibility, risk taking, sensation seeking, and poor self-discipline have all been linked to pathological gambling in youth (Gupta, Derevensky, & Ellenbogen, 2006; Hardoon & Derevensky, 2002; Jacobs, 2000). Furthermore, youth who engage in problem or pathological gambling have a tendency to have higher levels of self-blame, poor coping skills, higher rates of depression, and increased suicidal ideation (Gupta & Derevensky, 1998; Gupta & Derevensky, 2000). These findings indicate that there might be distinct differences in the personalities and psychological makeup of youth who do not engage in gambling or engage in social gambling versus those who engage in problem or pathological gambling.

Within the youth population, undergraduate university and college students have been found most likely to develop gambling problems (Blinne-pike, Worthy, & Jonkman, 2007; Korn, Gibbins, & Azmier, 2003; Lightsey & Hulsey, 2002; Shaffer & Hall, 2001). Shaffer and Hall (2001) conducted a meta-analysis of 19 gambling studies and concluded that North American university and college students (16.4%) were more susceptible to problem or pathological gambling than adolescent (11.8%) or adult (6.1%) populations. An additional meta-analysis by

Blinne-pike, Worthy, and Jonkman (2007) that reviewed 15 studies, found that 7.89% of college students were problem gamblers. The present study examined the relationship between university students and a relatively new movement - Internet gambling.

### **Internet Gambling**

Since the Internet has become a major means of access to gambling, the number of people gambling on the Internet has increased at a substantial rate (Wood & Williams, 2007). Over only the past decade, Internet gambling has become an incredibly profitable business, reaching yearly profits in excess of ten billion US dollars (Brown, 2006). In the mid-1990s there were fewer than 25 gambling sites accessible via the Internet (Watson, Liddell, Moore, & Eshee, 2004), today there are thousands. This trend continues to expand and diversify (Griffiths & Barnes, 2008), now reaching people worldwide in such forms as online casinos, poker rooms, blackjack, craps, baccarats, slot machines, sports betting, and bingo (Casino City, 2008). This movement is evident by merely searching the term "online casino" on the Internet, yielding access to more than 17 million links. It is believed that the growth in Internet gambling is a contributing factor in the rising prevalence of problem gamblers (Messerlian, Byrne, & Derevensky, 2004; Shaffer et al., 1999).

### **Reasons People Gamble Online**

Gambling sites are a means of entertainment that can alleviate boredom (Derevensky & Gupta, 2007). Such sites offer various benefits including twenty-four hour access seven days a week, access to credit, and anonymity (Brown, 2006). Furthermore, many authors have argued that younger populations are drawn to Internet gambling because of their comfort level with technology (i.e., computers and Internet) and newly emerging popular media (i.e., televised poker tournaments and television series that capture the glamour of the gambling world in Las

Vegas) (Brown, 2006; Woodruff & Gregory, 2005). Wood, Williams, and Lawton (2007) conducted an online survey identifying the reasons why Internet gamblers prefer Internet gambling over land-based casinos. Respondents consisted of 1,920 Internet gamblers across North America. These respondents most often reported convenience (12.9%), ease (12.2%) and comfort (11.7%), distance from a casino (10%), and privacy (9.8%) as reasons for gambling on the Internet. Moreover, many respondents did not like land-based casinos for reasons such as aversions to the noise levels (4.1%), crowded environments (4.7%), and disliking the “kinds of people” found in casinos (5.7%).

### **Concerns about Internet Gambling**

Internet gambling is appealing to consumers for various reasons. However, several authors have identified concerns regarding Internet gambling (e.g., Brown, 2006; Griffiths, 2001; Messerlian & Derevensky, 2005).

- (1) *Minors are able to engage in Internet gambling* (Smeaton & Griffiths, 2004). Legal gambling age for land-based casinos in most provinces in Canada is 19 years of age. In Quebec, Manitoba, and Alberta it is 18 years of age. Gambling websites have few, if any, safeguards to prevent under-age youth from gambling on the Internet. Unlike land-based casinos, individuals are not asked for photo identification at the front door. Under-age youth participating in Internet gambling face the risk of developing a gambling problem along with the negative consequences associated with gambling behaviours (Messerlian et al., 2004).
- (2) *Gambling while under the influence of alcohol or other drugs* (Griffiths, 2001). Findings suggest that individuals often engage in problem gambling while under the influence of alcohol (French, Maclean, & Ettner, 2008). Land-based casinos can monitor the alcohol consumption of their patrons, while Internet casinos cannot. Individuals gambling on the

Internet are free to consume large amounts of alcohol or other drugs, causing impaired judgement and likely influencing gambling behaviour.

- (3) *The use of credit.* Credit cards provide Internet gamblers with access to money they do not have (Brown, 2006). It is likely that Internet gamblers, who are gambling on credit, will spend more than intended because the psychological value of credit is less than actual material cash (Griffiths, 2001). Internet gamblers can gamble themselves into excessive debt.
- (4) *Unlimited access to Internet gambling.* Given that Internet gambling is accessible twenty-four hours a day, seven days a week, Internet gamblers have no limitations on when they can gamble (Griffiths, 2001).
- (5) *Practice sites may encourage Internet gambling.* Many Internet gambling sites give access to practice gambling where the money exchanged is not real, yet the games played look identical to the real thing. These practice gambling sites have been shown to have higher payouts providing the individual with an unrealistic view of payouts in real Internet gambling (Sevigny, Cloutier, Pelletier, & Ladouceur, 2005). It is believed that practice sites may entice individuals, particularly under-age youth, to begin Internet gambling (Derevensky & Gupta, 2007).

The growing concerns around Internet gambling speak to the importance of conducting research in this area. However, only over the past decade has Internet gambling substantially increased in popularity and as a result, research in this area has only recently begun to emerge.

### **Internet Gambling Research**

Although research on Internet gambling remains in its infancy, the research that has been conducted demonstrates the importance of the topic. Moreover, Internet gambling prevalence rates over the last decade suggest a large increase in the number of Internet gamblers.

A US national survey conducted in 1999 showed that only 0.3% of American adults ( $n = 2,630$ ) had gambled on the Internet in the past year (Welte, Barnes, Wieczorek, Tidwell, & Parker, 2002). Griffiths (2001) surveyed 2,098 United Kingdom (UK) adult residents, of which 495 (24%) were Internet users. Only 1% of these Internet users reported ever gambling on the Internet, none of which reported gambling on the Internet more than once a week. A random telephone survey of 1,294 Ontario adults found that 5.3% of respondents had gambled on the Internet in the previous 12 months (Ialomiteanu & Adlaf, 2001). However, this study did not examine problem gambling. A survey administered to 389 US self-selected medical and dental patients found that 8.1% had gambled on the Internet in their lifetime and 3.7% had gambled on the Internet at least weekly (Ladd & Petry, 2002). These authors reported that Internet gamblers were significantly more likely to be problem gamblers than non-Internet gamblers.

### **Internet Gambling and University Students**

Of increasing concern are the effects that Internet gambling is having on the university student population. While research has shown that university students are vulnerable to developing gambling problems (e.g., Adams, Sullivan, Horton, Menna, & Guilmette, 2007; Blinne-pike et al., 2007; Korn et al., 2003; Lightsey & Hulse, 2002), few studies have examined whether university students have greater or less vulnerability to developing Internet gambling problems. Five studies examining Internet gambling and university students are summarized below.



In 2001, US college students ( $n = 10,275$ ) were surveyed about their activities over the past-year. Results showed that 1.9% ( $n = 201$ ) of respondents reported Internet gambling a few times over the past year, 0.3% ( $n = 29$ ) reported Internet gambling monthly, and 0.3% ( $n = 35$ ) reported Internet gambling weekly (LaBrie, Shaffer, LaPlante, & Wechsler, 2003). Kerber (2005) administered a survey to college athletes ( $n = 620$ ) from three American, Midwest universities. Results showed that almost 10% of respondents ( $n = 60$ ) had participated in Internet gambling before and that many of the respondents held positive attitudes toward Internet gambling.

In the UK, an online survey was carried out with 422 university student, self-defined “online poker players” ( $M$  age = 21 years) (Wood, Griffiths, & Parke, 2007). Sixty-six percent of respondents reported commencing online gambling in the previous 12 months. The survey included the *DSM-IV-TR* criteria for pathological gambling and various closed and open-ended questions addressing amount played, wins/losses, experiences, motivations, strategies, concerns, mood states, and perceptions regarding Internet gambling. Respondents were identified as gambling online rarely (32.9%), occasionally (37.9%), frequently (i.e., a few days a week) (22.3%), and daily (6.9%). Respondents who reported online gambling frequently or daily most often reported gambling because of excitement (51%), winning money (50.5%), relieving boredom (28%), and developing skills (27.5%). Using *DSM-IV-TR* criteria, results showed that 18% of respondents could be classified as probable pathological gamblers (4 or more criteria), 30% could have some gambling problems (2 or 3 criteria), and 52% were classified as non-problem gamblers (0 or 1 criteria). Various predictor variables of Internet problem gambling were identified, including holding a belief that poker outcome depended more on skill than chance, feeling unsatisfied after playing, and feeling unhappy after playing.

Griffiths and Barnes (2008) examined the Internet gambling behaviours of 473 e-mail recruited university students (*M* age = 22 years) in the UK. These respondents filled out online surveys consisting of demographics, the SOGS (Lesieur & Blume, 1987), and questions regarding general gambling and Internet gambling behaviours. One-hundred and five respondents reported having gambled on the Internet. Among the most popular forms of Internet gambling were sports betting (68%), poker (48%), and casino gambling (47%). Findings indicated that (1) males were more likely than females to gamble on the Internet, (2) Internet gamblers were more likely to be problem gamblers than non-Internet gamblers, and (3) males were more likely to be problem Internet gamblers.

Petry and Weinstock (2007) surveyed 1,356 university students from three campuses in the US. This survey included demographic information, the SOGS, the General Health Questionnaire, and questions regarding general gambling and Internet gambling history. Internet gambling respondents reported trying Internet gambling 1 to 10 times (10.4%), more than 10 times but never as often as weekly (6.3%), weekly but not daily (3.8%), and daily (2.5%). These authors concluded that the results demonstrate the need for further research in the area of university student Internet gambling, and call for the need of prevention and treatment efforts targeting problematic Internet gambling within this student population.

Research conducted in the UK and the US suggests that university students are increasingly becoming more susceptible to problem gambling over the Internet. However, prevalence rates vary depending on the sample studied and point in time of data collection. Given this population's comfort level with technology, and the anonymity and access to credit that Internet gambling provides, it is no surprise that university students are attracted to Internet gambling sites (Brown, 2006).

### **Current Study**

The purpose of the current study was to examine gambling behaviours in university students. In particular, we examined the prevalence of Internet gambling and problem Internet gambling within a university student sample from a Northern Canadian university. Basic information about Internet gambling and non-Internet gambling was examined, such as amounts won and lost, reasons for starting, use of credit or not, frequency of play, and negative consequences from play. It was hypothesised that males would be more likely to engage in both Internet gambling and problem gambling than females as this has been found in previous studies (Blinne-pike et al., 2007; Griffiths & Barnes, 2008; Huang & Boyer, 2007; Jacobs, 2000). Furthermore, it was predicted that more Internet gamblers than non-Internet gamblers would be problem gamblers (Griffiths & Barnes, 2008; Ladd & Petry, 2002; Wood & Williams, 2007).

The current study also examined the differences between Internet gamblers and non-Internet gamblers, and their levels of trust toward Internet gambling. Past research has shown that it is more challenging to communicate trust via the Internet than it is to communicate trust during face-to-face communication (Mayer, Davis, & Schoorman, 1995). Furthermore, lack of trust by consumers has been found to have a negative impact on the number of consumer transactions over the Internet (Bauer, Grether, & Leach, 2002). For instance, if consumers lack trust in the service provider they are less likely to buy from online shops (Buttner & Goritz, 2008), or use Internet banking (Nor & Pearson, 2007).

Trust can be defined as “a belief in the system characteristics, specifically belief in the competence, dependability and security of the system, under conditions of risk” (Kini & Choobineh, 1998, p. 1). The concepts of trust and risk are strongly related (Chen & Dibb, 2010). As the number of perceived risks associated with an online transaction increase, so does the

degree of trust that is needed for the consumer to purchase the suppliers product (Mayer et al., 1995). Thus, in order for a consumer to purchase online products or services their perceived trust in the supplier must be greater than any perceived risks. Previous research has not examined this theory as it pertains to Internet gambling. It was hypothesised that consumers who believe in risks associated with Internet gambling (e.g., actually receiving their winnings) are less likely to engage in Internet gambling. In addition, it is hypothesised that Internet gamblers will report having greater levels of trust in the Internet gambling industry than non-Internet gamblers.

Finally, this study examined the relationship between levels of impulsivity and Internet gambling. The *DSM-IV-TR* defines pathological gambling as an impulse control disorder (American Psychiatric Association, 1994). Numerous studies have found that high impulsivity is a predictor of problem and pathological gambling in both adults and youth (Gupta, Derevensky, & Ellenbogen, 2006; Haroon & Derevensky, 2002; Jacobs, 2000; Pagani, Derevensky, & Japel, 2009). Additional research has also found that adolescent pathological Internet users, characterized by *DSM* criteria, scored significantly higher on impulsivity than adolescent non-pathological Internet users (Cao, Su, & Gao, 2007). However, no study has directly investigated the relationship between impulsivity level and Internet gambling. It was hypothesised that problem Internet gamblers will score higher on impulsivity than non-problem Internet gamblers.

In summary, this study investigated Internet gambling in university students and four hypotheses were tested. (1) As found in previous studies, males would be more likely to engage in Internet gambling and meet criteria for pathological and problem gambling (i.e., *DSM-IV-TR*, SOGS, and CPGI). (2) As found in previous studies, Internet gamblers would be more likely to meet criteria for pathological and problem gambling than non-Internet gamblers. (3) Internet

gamblers would report higher levels of trust toward the Internet gambling industry than non-Internet gamblers. (4) Among Internet gamblers, high levels of impulsivity would be related to more problem and pathological gambling behaviours.

## Method

### Participants

Three-hundred-twenty-five Lakehead University students participated in the study. Participants consisted of 230 females and 95 males and ranged from 17 to 52 years of age ( $M$  age = 20.82 years,  $SD$  = 4.62). Participants were classified as non-gamblers (reported having never gambled for money before) ( $n$  = 90), non-Internet gamblers (reported having gambled for money but not on the Internet) ( $n$  = 182), and Internet gamblers (reported having gambled for money on the Internet) ( $n$  = 53). Demographic variables for these groups can be found in Table 1.

### Measures

**Demographic questionnaire.** Individual characteristics including age, sex, program and year of study, academic average, current residence, marital status, and occupational status were assessed (see Appendix A).

**Gambling Behaviour Questionnaire.** This questionnaire is a modified version of the questionnaire used by McBride (2007). The questionnaire is divided into two sections, one section addressing gambling behaviours and the other Internet gambling behaviours. Items included questions regarding types of gambling played (e.g., scratch tickets, sports betting, VLTs, cards, etc), reasons for playing, frequency of playing, wins/loses, first time playing, and whether the individual gambles alone or with others. Alcohol and drug use both during Internet gambling activities and during daily living were assessed. Participants rated their alcohol and drug use over the previous 12 months on a 4-point Likert-type scale where 0 (Never), 1 (Less

Table 1  
*Demographics – Means, Standard Deviations and Raw Frequencies (N = 325)<sup>1</sup>*

Variable	Classification of Gambler		
	Non-Gamblers ( <i>n</i> = 90)	Non-Internet Gamblers ( <i>n</i> = 182)	Internet Gamblers ( <i>n</i> = 53)
	Means and standard deviations		
Age (Years)	<i>M</i> = 19.64 ( <i>SD</i> = 3.67)	<i>M</i> = 21.22 ( <i>SD</i> = 5.05)	<i>M</i> = 21.48 ( <i>SD</i> = 4.25)
	Raw frequencies (percent)		
Sex:			
Female	75 (83.3%)	140 (76.9%)	15 (28.3%)
Male	15 (16.7%)	42 (23.1%)	38 (71.7%)
Marital Status:			
Single	55 (61.1%)	85 (46.7%)	24 (45.3%)
Dating	16 (17.8%)	29 (15.9%)	9 (17%)
In a long term relationship	17 (18.9%)	56 (30.8%)	16 (30.2%)
Married/Common-law	1 (1.1%)	9 (4.9%)	3 (5.7%)
Separated or Divorced	1 (1.1%)	1 (0.5%)	1 (1.9%)
Ethnic Background			
Caucasion/White	77 (85.6%)	172 (94.5%)	48 (90.6%)
African-Canadian/Black	1 (1.1%)	-	-
Asian	5 (5.6%)	1 (.05%)	-
Native-Canadian/Aboriginal	1 (1.1%)	4 (2.2%)	2 (3.8%)
Middle Eastern	1 (1.1%)	1 (0.5%)	-
East Indian	1 (1.1%)	1 (0.5%)	-
Other	3 (3.3%)	3 (1.5%)	3 (5.7%)

Table 1 (continued)	Non-Gamblers ( <i>n</i> = 90)	Non-Internet Gamblers ( <i>n</i> = 182)	Internet Gamblers ( <i>n</i> = 53)
Year of University Study			
First	60 (66.7%)	84 (46.2%)	25 (47.2%)
Second	11 (12.2%)	31 (17%)	9 (17%)
Third	15 (16.7%)	34 (18.7%)	6 (11.3%)
Fourth	3 (3.3%)	19 (10.4%)	10 (18.9%)
Fifth	1 (1.1%)	6 (3.3%)	-
Employment			
Unemployed	42 (46.7%)	54 (29.7%)	24 (45.3%)
Part-time	47 (52.2%)	117 (64.3%)	27 (50.9%)
Full-time	1 (1.1%)	10 (5.5%)	1 (1.9%)

<sup>1</sup>Note: In some cases the sample size has been reduced due to missing items.

than once a month), 2 (1-3 times per month), and 3 (once a week or more). Trust and perceived risks associated with Internet gambling, and the consequences of participation in Internet gambling on academic achievement and class attendance were assessed on a 4-point Likert-type scale consisting of “strongly disagree”, “disagree”, “agree” and “strongly agree” (see Appendix A).

**South Oaks Gambling Screen (SOGS)** (Lesieur & Blume, 1987). The *SOGS* was developed by Lesieur and Blume (1987) and is a 20-item self-report questionnaire used to measure gambling behaviour. This measure is based on the *DSM-III* criteria for pathological gambling and has been widely used in gambling research (Cox, Enns, & Michaud, 2004). Scoring is done by adding the number of items endorsed by the participant (out of a possible 20) with 5 being the cut-off score indicating probable problem gambler. The *SOGS* has been found to be a valid and reliable measure of problem gambling behaviours (Lesieur & Blume, 1993; Stinchfield, 2002). It has been found to have a high correlation with *DSM-III-R* criteria for pathological gambling (*Pearson product moment* = .94), high internal consistency ( $\alpha = .97$ ), and good test-retest reliability ( $r = .71$ ) (Stinchfield, 2002) (see Appendix B).

***DSM-IV-TR* Based Questionnaire (DBQ)** (Beaudoin & Cox, 1999). The *DBQ* is a *DSM-IV-TR*-based self-report questionnaire assessing gambling behaviours and associated features characteristic of problem gambling. This measure contains 32-items and is broken down into two sections. The first section contains 10-items and each is rated on a 4-point Likert-type scale where 0 (never), 1 (yes, at some time in my life), 2 (yes, in the past year), and 3 (yes, in the past month). These items consist of the *DSM-IV-TR* criteria for pathological gambling and have been widely used in problem gambling research (Cox, Enns, & Michaud, 2004; Volberg, 1999). The



second section contains 22 yes-no items. This section assesses several characteristics associated with problem gambling (see Appendix C).

**Canadian Problem Gambling Index (CPGI)** (Ferris & Wynne, 2001). The CPGI is a 31-item interview or self-report questionnaire that measures four dimensions: (1) Gambling Involvement (four items), (2) Problem Gambling Behaviour (eight items), (3) Adverse Consequences (four items), and (4) Problem Gambling Correlates (15 items). Nine of these items are rated on a 4-point Likert-type scale where 0 (never), 1 (sometimes), 2 (most of the time), and 3 (almost always). These nine scores are summed to generate a score between 0 to 27, using a cut-off score of eight or more to indicate problem gambling. Ferris and Wynne (2001) found good internal consistency ( $\alpha = .84$ ) and good test-retest reliability ( $r = .71$ ) for the CPGI nine item scale. Furthermore, gambling researchers have come to the consensus that the CPGI exhibits good content validity (Ferris & Wynne, 2001; Young & Stevens, 2008). Ferris and Wynne (2001) also established good criterion-related validity as the CPGI was found to correlate fairly well with both the *DSM-IV-TR* and SOGS ( $r = .83$ ) (see Appendix D).

**Impulsivity Scale of the Personality Research Form (PRF)** (Jackson, 1987). The Impulsivity scale of the PRF consists of sixteen self-report true-false items. A high score on the PRF Impulsivity scale indicates characteristics such as acting without deliberation, spontaneously, recklessly, and impatiently. The Impulsivity scale has been shown to have good test-retest reliability ( $r = .86$ ) and internal consistency ( $\alpha = .87$ ). Correlations found between PRF self-ratings and roommate ratings showed good validity (.56) for the Impulsivity scale. The PRF Impulsivity scale has also been found to have good convergent and discriminate validity (see Appendix E).

**Desirability Scale of the Personality Research Form** (Jackson, 1987). Eight of the sixteen true-false items from the PRF Desirability were administered. A high score on the Desirability scale indicates that the respondent, either consciously or unconsciously, is responding to the items in such a way that is making themselves appear desirable. The Desirability scale has been shown to have good test-retest reliability ( $r = .86$ ) and internal consistency ( $\alpha = .82$ ). The PRF Desirability Scale has been used in numerous studies in personality as a detector of mild to extreme participant distortion or faking (see Appendix E).

**Infrequency Scale of the Personality Research Form** (Jackson, 1987). Eight of the sixteen true-false items from the PRF Infrequency scale were administered. A high score on the Infrequency scale indicates that the respondent may be randomly or carelessly responding to the questionnaire items. Test-retest reliability ( $r = .46$ ) and internal consistency ( $\alpha = .51$ ) are adequate given the nature of this scale. The Infrequency items were scattered throughout the questionnaire booklet to detect careless or non-purposeful responding (see Appendix E).

### **Procedure**

Undergraduate psychology students were recruited through brief in-class recruitment presentations conducted by the researcher. In addition, recruitment posters were put up at various locations on the Thunder Bay, Lakehead University campus. Students interested in participating contacted the researcher via e-mail and were sent an online link to the study. This link provided further information about the study and informed participants that they were able to withdraw their consent at any time and that complete confidentiality would be maintained. Informed consent was then obtained (Appendix F), followed by the administration of the online questionnaire using Survey Monkey. Completion of the questionnaire took approximately 30 - 45 minutes. Upon completion of the study participants were given a debriefing form (Appendix

G). Participants filled out the online questionnaire at their convenience. Undergraduate psychology students received one bonus mark toward their final grade for their participation in the study. All other participants, not eligible for a bonus mark, were entered into a draw for fifty dollars for their participation in the study.

### **Data Analysis**

Screening for statistical outliers was conducted by calculating and examining descriptive statistics as recommended by Tabachnick and Fidell (2007). Statistical outliers were defined as scores three standard deviations above or below the mean. Descriptive statistics were calculated for the Personality Research Form (PRF) Infrequency scale. It was planned that participants endorsing three or more Infrequency items would be removed from further analysis as these participants were likely responding in a random or careless fashion.

A single global problem gambling score was calculated for each participant in both the non-Internet gambling and Internet gambling groups. This global problem gambling score was created by adding the total Z scores from the DBQ scale, SOGS, and CPGI total scores and dividing by three. This global problem gambling score was created to minimize random error associated with each individual gambling scale.

Descriptive statistics were calculated for gambling related behaviours and attitudes such as reasons for gambling, types of Internet gambling activities engaged in, alcohol consumption and drug use while Internet gambling, and Internet gambling effects on academic achievement and class attendance. A series of one-way ANOVAs were conducted to determine differences between Internet gamblers, non-Internet gamblers, and non-gamblers in alcohol consumption, cigarette smoking, marijuana use, or other illegal drug use (e.g., cocaine). Post hoc comparisons using Tukey HSD were employed to determine differences between specific groups. A one-way

ANOVA was also conducted to examine any differences in academic grades between Internet gamblers, non-Internet gamblers, and non-gamblers. Two-tailed Person product-moment correlation coefficients were performed to examine the relationships between global problem gambling score and academic variables (e.g., missing classes to gambling on the Internet). A Chi-square test was used to determine whether Internet gamblers were more likely than non-Internet gamblers to report having a family member with a previous or current gambling problem. Chi-square tests were also used to determine whether problem Internet gamblers were more likely than non-problem Internet gamblers to report having a family member with a previous or current gambling problem. An Independent samples *t*-test examined differences between Internet gamblers' and non-Internet gamblers' reported age of first gambling experiences for money not over the Internet. To examine if males were more likely than females to engage in Internet gambling and problem gambling, Chi-square tests were performed (Hypothesis 1). Three separate Chi-square tests were used to examine if Internet gamblers were more likely than non-Internet gamblers to meet classification criteria for pathological and problem gambling (Hypothesis 2) according to the *DSM-IV-TR*, SOGS, and CPGI. Furthermore, a two-way ANOVA was conducted to evaluate both individual effects and a possible interaction between sex and gambling group on global problem gambling scores. The four trust items administered (e.g., I trust Internet gambling, Internet gambling is a legitimate business) were combined to create the general construct of trust toward Internet gambling. This yielded a global trust measure with a Cronbach's alpha internal consistency of .76. A one-way ANOVA was conducted to evaluate if Internet gamblers reported a greater level of trust toward Internet gambling than non-Internet gamblers (Hypothesis 3). Finally, three two-tailed Pearson product-moment correlation coefficients were computed to examine the relationship between impulsivity

and problem gambling in all Internet gamblers, male Internet gamblers, and female Internet gamblers (Hypothesis 4).

## Results

### Data Screening

Prior to data analyses, data entered into SPSS were examined to ensure that data entry was done accurately and correctly. Descriptive statistics and frequencies of the variables were computed and analysed to allow for the detection of univariate outliers and missing data. No univariate outliers were detected. If a participant failed to answer one item from the PRM Infrequency scale, PRF Desirability scale, PRF Impulsivity scale, problem gambling DBQ, SOGS, or CPGI, that item was replaced with the participant's average score from that particular scale. If the participant failed to answer more than one item from any one of these scales, that total scale score was not calculated for the participant. As a result, it was not possible to compute participants' total scores for the Infrequency scale ( $n = 10$ ), Desirability scale ( $n = 15$ ), Impulsivity scale ( $n = 2$ ), CPGI ( $n = 5$ ), DBQ ( $n = 5$ ), and SOGS ( $n = 6$ ). Infrequency item scores were totalled to examine whether any participants had endorsed over two items on the Infrequency scale. One participant was identified as endorsing three Infrequency items, and upon further examination of this participant's questionnaire responses, it was determined that this participant had randomly responded and, as a result, was eliminated from further data analysis. Finally, as recommended by Tabachnick and Fidell (2007), violations of assumptions for each statistical test were assessed to ensure that no assumptions had been violated. Descriptive statistics for the main scales and gambling measures included in this study can be found in Table 2. Table 3 contains correlations between total scores on the PRF Desirability scale and total scores on each of the gambling measures. These correlations show that no

Table 2  
*Total Scores on Personality Research Form Scales and Gambling Measures – Means and Standard Deviations (N = 325)*

Scale/Measure	Classification of Gambler		
	Non-Gamblers ( <i>n</i> = 90)	Non-Internet Gamblers ( <i>n</i> = 182)	Internet Gamblers ( <i>n</i> = 53)
	Means and standard deviations		
PRF Impulsivity Scale (16 Items)	<i>M</i> = 4.8 ( <i>SD</i> = 2.01)	<i>M</i> = 5.62 ( <i>SD</i> = 2.03)	<i>M</i> = 5.92 ( <i>SD</i> = 2.19)
PRF Infrequency Scale (8 Items)	<i>M</i> = .22 ( <i>SD</i> = .47)	<i>M</i> = .19 ( <i>SD</i> = .5)	<i>M</i> = .35 ( <i>SD</i> = .69)
PRF Desirability Scale (8 Items)	<i>M</i> = 5.35 ( <i>SD</i> = 1.71)	<i>M</i> = 5.37 ( <i>SD</i> = 1.9)	<i>M</i> = 5.6 ( <i>SD</i> = 1.62)
South Oaks Gambling Screen (SOGS)	-	<i>M</i> = .66 ( <i>SD</i> = 1.31)	<i>M</i> = 2.83 ( <i>SD</i> = 2.98)
DSM-IV-TR Based Questionnaire (DBQ)	-	<i>M</i> = .08 ( <i>SD</i> = 0.39)	<i>M</i> = 1.23 ( <i>SD</i> = 2.29)
Canadian Problem Gambling Index (CPGI)	-	<i>M</i> = 1.5 ( <i>SD</i> = 2.42)	<i>M</i> = 4.47 ( <i>SD</i> = 5.78)

PRF = Personality Research Form

Table 3  
*Correlations between Gambling Measure Total Scores and Desirability Scale Total Scores*

Measure	SOGS Problem Gambling Score	CPGI Problem Gambling Score	Global Problem Gambling Score	Desirability Scale
DSM-IV-TR Based Questionnaire	.698**	.866**	.920**	.006
South Oaks Gambling Screen		.828**	.905**	-.084
Canadian Problem Gambling Index			.966**	-.033
Global Problem Gambling Score				-.042

Note: \**p* < .01, \*\**p* < .001

gambling measure total score had a significant relationship with the Desirability scale total score and, as expected, all four gambling measures were significantly correlated in a positive direction.

### **Gambling Behaviours**

A total of 27.7% of students reported having never gambled for money before, 56% reported having gambled for money but not on the Internet, and 16.3% reported having gambled for money over the Internet. Females were significantly more likely than males to report having never gambled before (83.3% of non-gamblers),  $\chi^2(1, n = 325) = 9.222, p = .002$ .

Table 4 compares males' and females' reasons for gambling. Table 5 compares Internet gamblers and non-Internet gamblers' reasons for gambling.

### **Internet Gambling Behaviours**

The most commonly reported types of gambling games played by Internet gamblers were cards (87.4%), blackjack (51.9%), sports betting (41.5%), slot or electronic gaming machines (26.4%), and roulette (17%) (Figure 1). The most commonly reported reasons why Internet gamblers choose to gamble on the Internet were 24 hour accessibility (69.8%), high speed play (60.4%), convenience (60.4%), the ability to gamble in your own home (50.9%), privacy (39.6%), anonymity (34%), competition (34%), bonuses (e.g., sign up for free cash) (28.3%), less intimidating than a real casino (20.8%), game diversity (15.1%) and easier to hide gambling from others (7.5%) (Figure 2).

Notably, of Internet gamblers, 18.9% reported that there are no drawbacks or disadvantages to gambling on the Internet. However, most Internet gamblers reported that the major drawbacks or disadvantages of Internet gambling are the need to provide personal information (54.7%) and use a credit card (49.1%). Most Internet gamblers reported gambling on the Internet from their home (96.2%), a friend's home (20.8%), at school (7.5%), at

Table 4

*Reasons for gambling by sex.*

	Females ( <i>n</i> = 155)	Males ( <i>n</i> = 79)	$\chi^2$ (1, <i>n</i> = 234)	<i>P</i>
Fun	137 (88.4%)	74 (93.7%)	1.68	.199
Relaxation	15 (9.7%)	17 (21.5%)	6.22	.013
Excitement	99 (63.9%)	68 (86.1%)	12.63	< .001
Be with friends/ make new friends	59 (38.1%)	43 (54.4%)	5.7	.017
Relieve anxiety and depression	7 (4.5%)	5 (6.3%)	.354	.552
Relieve boredom	59 (38.1%)	42 (53.2%)	4.86	.027
Escape from problems	3 (1.9%)	6 (7.6%)	4.53	.033
Feel older	8 (5.2%)	4 (5.1%)	.001	.974
Make money	89 (57.4%)	53 (67.1%)	2.05	.152

Table 5

*Reason for gambling by gambling group.*

	Non-Internet gamblers ( <i>n</i> = 182)	Internet gamblers ( <i>n</i> = 53)	$\chi^2$ (1, <i>n</i> = 234)	<i>P</i>
Fun	163 (89.6%)	49 (92.5%)	.389	.533
Relaxation	20 (11.0%)	12 (22.6%)	4.74	.03
Excitement	125 (68.7%)	43 (81.1%)	3.12	.077
Be with friends/ make new friends	74 (40.7%)	28 (52.8%)	2.48	.116
Relieve anxiety and depression	10 (5.5%)	2 (3.8%)	.251	.616
Relieve boredom	74 (40.7%)	28 (52.8%)	2.48	.116
Escape from problems	5 (2.7%)	4 (7.5%)	2.57	.109
Feel older	8 (4.4%)	4 (7.5%)	.84	.359
Make money	105 (57.7%)	38 (71.7%)	3.38	.066



work (5.7%), and at a cafe with Internet connection (3.8%). Most Internet gamblers reported typically Internet gambling alone (66%) or with friends (30.2%).

Defining a session as each time one logs onto an Internet gambling site, Internet gamblers most often reported that their average gambling session duration lasted “over four hours” (5.8%), “two to four hours” (13.5%), “one to two hours” (23.1%), “30 to 60 minutes” (28.8%), “less than 30 minutes” (28.9%) (Figure 3). Internet gamblers reported that the average amount of money they have spent per session in the previous 12 months was “101 to 500 dollars” (9.6%), “51 to 100 dollars” (23.1%), “25 to 50 dollars” (11.5%), “11 to 25 dollars” (7.7%), “six to ten dollars” (21.2%), and “one to five dollars” (27%) (Figure 4).

Internet gamblers reported chasing their Internet gambling losses (i.e., going back for another session with the intent of winning back losses) “never” (42.3%), “less than half of the time I lose money” (38.5%), “more than half of the time I lose money” (15.4%), and “all the time” (3.8%).

Internet gamblers were found to be significantly more likely than non-Internet gamblers to report having a family member with a previous or current gambling problem,  $\chi^2(1, n = 228) = 6.978, p = .031$  (37.3% vs. 22.5%). However, among Internet gamblers, problem Internet gamblers were no more likely than non-problem Internet gamblers (according to the SOGS, *DSM-IV-TR*, and CPGI criteria) to report having a family member with a previous or current gambling problem.

Finally, no difference was found on reported age of first time gambling experience for money (not including Internet gambling) between Internet gamblers ( $M = 16.47$  years,  $SD = 2.98$ ) and non-Internet gamblers ( $M = 16.15$  years,  $SD = 3.08$ ).

### Internet Gambling and High-Risk Behaviours

Internet gamblers ( $M = 2.22$ ,  $SD = .68$ ) reported consuming alcohol on a greater number of occasions over the previous 12 months than non-Internet gamblers ( $M = 1.87$ ,  $SD = .80$ ) and non-gamblers ( $M = 1.38$ ,  $SD = .97$ ),  $F(2, 319) = 18.38$ ,  $p < .001$ . Internet gamblers reported smoking cigarettes significantly more often ( $M = 1.08$ ,  $SD = 1.31$ ) than non-Internet gamblers ( $M = .55$ ,  $SD = 1$ ) and non-gamblers ( $M = .28$ ,  $SD = .70$ ),  $F(2, 318) = 10.74$ ,  $p < .001$ . Finally, Internet gamblers ( $M = .78$ ,  $SD = .95$ ) reported using marijuana or hashish significantly more often than non-Internet gamblers ( $M = .60$ ,  $SD = .97$ ) and non-gamblers ( $M = .36$ ,  $SD = .80$ ),  $F(2, 317) = 3.17$ ,  $p = .023$ .

Table 6 contains information on Internet gamblers' alcohol and drug use while gambling on the Internet in the previous 12 months. Analysis revealed that problem Internet gamblers (using SOGS criterion) were significantly more likely than non-problem Internet gamblers to report having consumed alcohol while gambling on the Internet,  $\chi^2(1, n = 53) = 4.10$ ,  $p = .043$ . Specifically, 81.8% of problem Internet gamblers compared to 47.5% of non-problem Internet gamblers reported consuming alcohol on at least one occasion while gambling on the Internet ( $n = 53$ ) = 4.27,  $p = .039$ . Specifically, 54.5% of Internet gamblers compared to 22.5% of non-Internet gamblers reported smoking cigarettes on at least one occasion while gambling on the Internet in the previous 12 months. Finally, problem Internet gamblers were significantly more likely than non-problem Internet gamblers to report using marijuana or hashish while gambling on the Internet,  $\chi^2(1, n = 52) = 7.03$ ,  $p = .008$ . Specifically, 50% of problem Internet gamblers compared to 12.5% of non-problem Internet gamblers reported using marijuana or hashish on at least one occasion while gambling on the Internet in the previous 12 months.

Table 6

*Drug use while Internet gambling.*

	Internet gamblers ( <i>n</i> = 53)			
	“Never”	“Less than once per month”	“1 to 3 times per month”	“once a week or more”
Consumed alcohol	25 (46.2%)	14 (26.9%)	12 (23.1%)	2 (3.8%)
Smoked cigarettes	38 (71.2%)	2 (3.8%)	0	13 (25%)
Used marijuana or hashish	44 (82.4%)	2 (3.9%)	5 (9.8%)	2 (3.9%)
Illicit drugs (e.g., cocaine, speed)	50 (94.1%)	2 (3.9%)	0	1 (2.0%)

### **Internet Gambling and Academic Variables**

There were no significant differences in reported average academic grade in university courses between Internet gamblers ( $M = 74.83\%$ ,  $SD = 8$ ), non-Internet gamblers ( $M = 74.80\%$ ,  $SD = 8.23$ ), and non-gamblers ( $M = 74.36\%$ ,  $SD = 9.34$ ),  $F(2, 231) = .062$ ,  $p = .94$ . Table 7 contains information on Internet gamblers' perceptions about their Internet gambling participation and its affects on their academic performance and class attendance.

Further analysis revealed that among Internet gamblers, global problem gambling score and beliefs that Internet gambling negatively affects academic achievement were significantly correlated in a positive direction ( $r = .615$ ,  $p < .001$ ). Global problem gambling score was also found to have a significant positive correlation with missing classes to gamble on the Internet ( $r = .667$ ,  $p < .001$ ). These findings show that among Internet gamblers, more problem gambling behaviours were related to beliefs that Internet gambling negatively affects academic achievement and results in missing classes to gamble on the Internet.

### **Main Analyses**

#### *Hypothesis 1*

Three significant differences were found between males and females and their level of engagement in Internet gambling and problem gambling (Table 8). First, a Chi-square analysis indicated a significant difference in the proportions of males and females [ $\chi^2(1, n = 324) = 53.41$ ,  $p < .001$ ] reporting engagement in Internet gambling (39.4% vs. 6.5%). As hypothesised, males were significantly more likely to have reported gambling on the Internet. Second and third Chi-square analyses indicated significant differences in the proportions of males and females meeting *DSM-IV-TR* criteria for pathological gambling [ $\chi^2(1, n = 229) = 4.58$ ,  $p = .032$ ] (6.4%

vs. 1.3%) and proportion of males and females meeting CPGI problem gambling criteria [ $\chi^2 (1, n = 229) = 6.21, p = .013$ ] (11.5% vs. 3.3%). These findings suggest that males were significantly more likely to meet criteria for pathological and problem gambling. However, males were not significantly more likely to meet criteria for problem gambling according to SOGS criteria,  $\chi^2 (1, n = 228) = 3.75, p = .53$ .

### *Hypothesis 2*

When compared to non-Internet gamblers, Internet gamblers of both sexes were significantly more likely to meet *DSM-IV-TR* criteria for pathological gambling [ $\chi^2 (1, n = 229) = 24.71, p < .001$ ], meet SOGS criteria for problem gambling [ $\chi^2 (1, n = 228) = 26.52, p < .001$ ], and meet CPGI criteria for problem gambling [ $\chi^2 (1, n = 229) = 34.88, p < .001$ ] (Table 9).

In addition, a two-way ANOVA was conducted that included global problem gambling score as the dependent variable and sex of respondent and Internet / non-Internet gambler as between subject factors (Figure 5). Internet /non-Internet gambler was found to have a significant main effect on global problem gambling score,  $F (1, 222) = 52.92, p < .001, \eta^2 = .231$ . Internet gamblers had a higher mean global problem gambling score ( $M = .85, 95\% \text{ CI} = .6 - 1.11$ ) than non-Internet gamblers ( $M = -2.32, 95\% \text{ CI} = -.38 - -.09$ ) indicating that Internet gamblers engaged in more problem gambling behaviours and experienced more adverse effects as a result of their gambling behaviours. However, sex of respondent did not have a significant main effect on global problem gambling score  $F (1, 222) = .04, p = .846$ , nor did the sex of respondent by Internet/non-Internet gambler interaction,  $F (1, 222) = .09, p = .129$  (Figure 5). Thus, whether or not an individual has gambled on the Internet was found to be a more significant predictor of global problem gambling score than sex of respondent. Furthermore, the effect of Internet/non-

Table 7

*Internet gambling and reported effects on academics and class attendance*

	Internet gamblers ( <i>n</i> = 53)			
	“Strongly disagree”	“Disagree”	“Agree”	“Strongly agree”
“Internet gambling negatively affects my academic achievement”	21 (39.2%)	14 (25.5%)	9 (17.6%)	9 (17.6%)
“I miss classes because I am gambling on the Internet”	32 (60%)	15 (28%)	5 (10%)	1 (2%)

Table 8

*Internet, Pathological, and Problem gamblers by sex*

		Females ( <i>n</i> = 230)	Males ( <i>n</i> = 95)
		Internet Gamblers	Yes
	No	215 (93.5%)	57 (60.6%)
		Females ( <i>n</i> = 153)	Males ( <i>n</i> = 78)
		Pathological Gamblers ( <i>DSM-IV-TR</i> criteria)	Yes
	No	152 (98.7%)	73 (93.6%)
Problem Gamblers ( <i>SOGS</i> criteria)	Yes	6 (3.9%)	8 (10.4%)
	No	147 (96.1%)	69 (89.6%)
Problem Gamblers ( <i>CPGI</i> criteria)	Yes	5 (3.3%)	9 (11.5%)
	No	148 (96.7%)	69 (88.5%)

Table 9

*Pathological and Problem gambler by gambling group*

		Internet gamblers ( <i>n</i> = 53)	Non-Internet gamblers ( <i>n</i> = 182)
		Pathological Gamblers ( <i>DSM-IV-TR</i> criteria)	Yes
	No	45 (86.5%)	178 (100%)
Problem Gamblers ( <i>SOGS</i> criteria)	Yes	11 (21.2%)	3 (1.7%)
	No	41 (78.8%)	174 (98.3%)
Problem Gamblers ( <i>CPGI</i> criteria)	Yes	12 (23.5%)	2 (1.1%)
	No	39 (76.5%)	177 (98.9%)

Internet gambling on global problem gambling score was not found to be dependent on the respondents' sex.

### *Hypothesis 3*

A one-way ANOVA indicated that Internet gamblers reported significantly higher ratings on global trust toward Internet gambling,  $F(1, 224) = 104.89, p < .001, \eta^2 = .319$ . This result shows that overall Internet gamblers report higher levels of trust toward Internet gambling and perceive less risks associated with gambling over the Internet. Additionally, one-way ANOVAs were conducted on each individual trust item. Results showed that non-Internet gamblers reported significantly higher ratings on distrusting Internet gambling [ $F(1, 227) = 131.21, p < .001, \eta^2 = .303$ ], viewing Internet gambling as an illegitimate business [ $F(1, 226) = 40.71, p < .001, \eta^2 = .196$ ], believing that credit card numbers are not secure when gambling on the Internet [ $F(1, 226) = 86.42, p < .001, \eta^2 = .263$ ], and believing that when downloading Internet gambling games possible computer viruses may be attached to the download [ $F(1, 226) = 15.28, p < .001, \eta^2 = .126$ ]. Figure 6 shows participant responses to trust items. Findings also show that Internet gamblers' primary means of payment while Internet gambling is the use of personal credit cards, as 75.5% of Internet gamblers reported using their credit card to pay losses and collect winnings while gambling on the Internet. This finding is consistent with the finding that Internet gamblers report fewer perceived risks associated with Internet gambling.

### *Hypothesis 4*

For all Internet gamblers ( $n = 53$ ), level of impulsivity was not significantly associated with global problem gambling score ( $r = .133, p = .353$ ). However, level of impulsivity was significantly associated with global problem gambling score ( $r = .42, p = .01$ ) among male Internet gamblers ( $n = 37$ ) but not among female Internet gamblers ( $n = 15$ ) ( $r = -.36, p = .212$ ).

These correlations suggest that impulsivity is associated with Internet problem gambling behaviours in males, but not females.

### **Discussion**

The current study explored gambling and Internet gambling behaviours among university students. Participants completed an online survey that included questions pertaining to non-Internet gambling and Internet gambling related behaviours, attitudes, and beliefs. In addition, three measures of pathological or problem gambling were administered: DBQ, SOGS, and CPGI; as well as the PRF Impulsivity scale.

#### **University Students and Internet Gambling**

The findings revealed that 16.3% of university student participants reported having gambled on the Internet in their lifetime. These prevalence rates are comparable to previous studies examining Internet gambling among university and college students. For instance, McBride (2007) found that about 12% of university and college students reported gambling over the Internet in the previous 12 months, while Petry and Weinstock (2007) found that about 22% of students reported previously gambling on the Internet on at least one occasion.

Twenty-four-hour accessibility, convenience, high-speed play, and the ability to gamble from home were the most frequently endorsed reasons why Internet gamblers reported preferring this gambling modality and these findings are consistent with previous studies (Griffiths & Barnes, 2008; McBride, 2007). As Griffiths and Barnes (2008) point out, these benefits may contribute to prolonged and frequent periods of gambling, possibly resulting in the development of a gambling problem. In addition, the need to provide personal information and use a credit card were found to be the most frequently endorsed drawbacks or disadvantages to gambling on the Internet. These findings were also reported by McBride (2007).



In our sample, the most frequently reported gambling games played on the Internet were cards (87.4%), blackjack (51.9%) and sports betting (41.5%). Other studies have found similar results suggesting that cards (predominately poker), blackjack, and sports betting are the most commonly played games by student Internet gamblers (Griffiths & Barnes, 2008; McBride, 2007). Internet poker has become the most frequently reported game played by student Internet gamblers; a finding that is not surprising given the recent surge in Internet poker advertising (e.g., Poker Stars) and televised poker tournaments (Brown, 2006; Wood et al., 2007). This increase in online poker is evident by reported findings of The Responsible Gambling Council of Ontario (2006) which showed that online poker participation increased by nearly 400%, between the years of 2001 and 2005, among Ontario residents 18-24 years of age.

Internet gamblers were more likely than non-Internet gamblers to report having a family member with a previous or current gambling problem. Although, Internet problem gamblers were no more likely than non-problem Internet gamblers to report having a family member with a previous or current gambling problem. This finding is not consistent with previous research that has examined the relationship between problem gambling and family history of problem gambling among non-Internet gamblers (Walters, 2001). However, this non-significant finding may be due partially to the small sample sizes of Internet gamblers meeting SOGS ( $n = 11$ ) and CPGI ( $n = 12$ ) criteria for problem gambling and *DSM-IV-TR* ( $n = 7$ ) criteria for pathological gambling in the current study.

### **Student Internet Gamblers and High-risk behaviours**

Internet gamblers were significantly more likely than non-gamblers and non-Internet gamblers to engage in high-risk behaviours such as alcohol consumption, tobacco smoking, and marijuana use. These findings are not surprising given that increased amounts of student

gambling activities have been found to be related to increased engagement in risky health behaviours such as alcohol and tobacco use (Goudriaan, Slutske, Krull, & Sher, 2009; Griffiths, Wardle, Orford, Sproston, & Erens, 2009; Huang, Jacobs, Derevensky, Gupta, & Paskus, 2007). Furthermore, examining a sample of North Western Ontario adults seeking treatment for addiction, Jamieson et al. (2010) found that those seeking treatment for substance abuse who also suffer from a secondary gambling problem, were significantly more likely than the substance abuse only group to report problems with alcohol and marijuana. Although Jamieson's et al.'s findings do not pertain specifically to Internet gamblers, these findings do demonstrate a link between problem gambling and alcohol and marijuana use among adults residing in the same geographical region as the current study.

Furthermore, student Internet gamblers reported consuming alcohol (53.8%), smoking marijuana (18.6%), and using other illicit drugs (e.g., cocaine, speed) (5.9%) while gambling over the Internet in the previous 12 months. These findings are particularly problematic given that previous research has shown that, while under the influence of alcohol or drugs, an individual's judgement can become impaired, and as a result, negatively influence an individual's gambling behaviours (Barnes, Welte, Hoffman, & Dintcheff, 2002; French et al., 2008). Thus, individuals gambling over the Internet while under the influence of a substance, may be more likely to gamble more money and for longer periods of time than intended. Moreover, 57.7% of student Internet gamblers reported "chasing" their Internet gambling losses, a behaviour characteristic of problem gamblers and one that may be increased while under the influence of alcohol or other drugs. Land-based casinos monitor their patrons' alcohol consumption and will usually prohibit overly intoxicated patrons from gambling further. However, while gambling over the Internet there are no such restrictions placed on the gambler.

### **Student Internet Gamblers and Academic Variables**

Although there were no differences in self-reported academic average between non-gamblers, non-Internet gamblers, and Internet gamblers, self-reports by the Internet gambling group suggest that about one-third of these students believe that their Internet gambling participation negatively affects their academic achievement. Twelve percent of Internet gamblers endorsed the statement that they have missed class as a result of gambling on the Internet. In addition, 35.2% of Internet gamblers reported that their academic achievement has been negatively affected by their Internet gambling participation. Furthermore, among Internet gamblers, significant positive correlations were found between global problem gambling score and both of these academic variables. This shows that as Internet gamblers' problem gambling behaviours increase, perceptions that Internet gambling negatively affects their academic achievement and the behaviour of missing classes to gamble on the Internet also increases. Previous studies have shown that non-Internet problem gambling behaviours are often associated with poor grades in school; however, such research does not speak to the directionality between these variables, nor does it determine if these variables are directly related (Hardoon, 2004; Ladouceur, Boudreault, Jacques, & Vitaro, 1999). For example, it has not been determined if Internet gambling causes low academic success, low academic success causes students to engage in Internet gambling, or if a third variable such as low socio-economic contributes to both Internet gambling participation and low academic success. Nonetheless, these findings suggest that many student Internet gamblers, particularly student problem Internet gamblers, believe that their Internet gambling participation negatively affects their academics and class attendance.

### **Main Hypotheses**

#### *Hypothesis 1*

As hypothesised, male students were significantly more likely than female students to have engaged in Internet gambling, were significantly more likely to meet classification for pathological gambler according to *DSM-IV-TR* criteria, and were significantly more likely to meet CPGI criteria for problem gambling. In contrast, males were not found to be significantly more likely to meet SOGS criteria for problem gambling. However, this analysis was very close to being significant at  $p = .053$ . Participants who reported having never gambled before were significantly more likely to be female. These findings are consistent with previous studies that have examined Internet gambling, non-Internet gambling, and non-gambling sex differences (Blinne-pike et al., 2007; Griffiths & Barnes, 2008; Huang & Boyer, 2007; Jacobs, 2000). These results further support previous findings that suggest males are at increased risk of becoming both Internet gamblers and problem gamblers.

#### *Hypothesis 2*

Internet gamblers were significantly more likely than non-Internet gamblers to meet *DSM-IV-TR* criteria for pathological gambling, were significantly more likely to meet SOGS criteria for problem gambling, and were significantly more likely to meet CPGI criteria for problem gambling. These findings are consistent with previous research (Griffiths & Barnes, 2008; Ladd & Petry, 2002; Wood & Williams, 2007). In addition, a significant difference was found between non-Internet gamblers and Internet gamblers on global problem gambling score. Specifically, Internet gamblers scored higher than non-Internet gamblers on global problem gambling. Furthermore, after controlling for non-Internet/Internet gambling group, sex of respondent was no longer found to predict global problem gambling score. The current study supports previous findings linking male sex to problem gambling (e.g., Welte et al., 2008).

However, whether or not a student is an Internet gambler was found to be a better predictor of problem gambling behaviours than the student's sex.

Although there was a strong relationship between Internet gambling and problem gambling, the current study's research design does not allow for the examination of the directionality of this relationship. For instance, it is unknown if students engaging in problem gambling behaviours may be more likely to seek out, or be attracted to, multiple means of gambling. Thus, student problem gamblers may be drawn to gambling via the Internet. In contrast, Internet gambling may be more problematic than non-Internet gambling, and as a result, students who engage in Internet gambling may develop problem gambling behaviours. Internet gambling brings various new dimensions to the gambling experience (e.g., comfort of gambling from your home, unlimited and easy access). As a result, Internet gamblers may be put at an increased risk of gambling more frequently and for longer periods of time, eventually leading to problem gambling behaviours.

### *Hypothesis 3*

Internet gamblers reported significantly higher ratings of global trust toward Internet gambling than non-Internet gamblers. Furthermore, Internet gamblers reported less perceived risk associated with Internet gambling. These findings can be interpreted in one of two ways. First, student Internet gamblers may be more likely to report trusting Internet gambling sites simply because their Internet gambling experiences have not given them any reason to distrust such sites. Thus, Internet gamblers developed trust in Internet gambling after they began participating in gambling over the Internet. Alternatively, student Internet gamblers may have trusted the Internet gambling industry prior to ever participating. As a result, these students may have originally commenced gambling on the Internet because they had perceived it as

trustworthy and safe. In contrast, many non-Internet gamblers may not have perceived Internet gambling as trustworthy, and thus, never began to gamble over the Internet. Previous research suggests that consumer trust is a significant predictor of whether or not a consumer will purchase online goods or services (Cheung & Lee, 2006). The results of the current study suggest that this finding may be similar for Internet gambling.

If trust is a contributing factor to engaging in Internet gambling, it follows that educating the public on deceitful or unethical Internet gambling tactics may decrease the number of individuals who engage in Internet gambling. For instance, Sevigny et al. (2005) found that 39% of 117 gambling sites visited provided inflated payout rates (over 100%) for demo or practice sessions. These demo or practice games are identical to the real game except the payouts are much lower for real gambling sessions. As a result, consumers engaging in demo or practice sites are left with a false sense of control and the belief that they will win more than they lose. These strategies and others are designed by Internet gambling sites to mislead consumers and reinforce false beliefs about the chances of winning. By educating the public on such findings, levels of trust toward Internet gambling sites may be reduced, possibly resulting in a decreased desire to gamble on the Internet.

#### *Hypothesis 4*

Impulsivity was significantly associated with global problem gambling score among male Internet gamblers. Specifically, male Internet gamblers with high impulsivity scores typically had higher global problem gambling scores. Previous studies have found this impulsivity-problem gambling relationship within university student males (e.g., Lightsey & Hulseley, 2002); however, these studies have typically examined non-Internet problem gambling. Results in the current study suggest that impulsivity in university student males is also associated with problem

Internet gambling behaviours. Dysfunctional forms of impulsivity are likely to play a strong role in the development and maintenance of the problem gambling cycle (Nower & Blaszczynski, 2006), regardless of the means by which the gambling activity occurs. Impulsivity can be characterized by acting without deliberation, acting spontaneously, acting recklessly, and acting impatiently. Excessive gambling without thinking about possible adverse consequences can lead to gambling away large amounts of money. In other words, impulsive problem gamblers may tend to act first and think later. By definition, the *DSM-IV-TR* classifies pathological gambling as an impulse control disorder, and as a result, it is reasonable to believe that impulsivity would be associated with any form of problem gambling: Internet-based or land-based.

A significant relationship was not found between global problem gambling score and impulsivity among female Internet gamblers, possibly due to the small number of participants in this group ( $n = 15$ ). However, surprisingly, a negative relationship was found between global problem gambling score and impulsivity in females. Thus, the higher the impulsivity score the lower the global problem gambling score tended to be among female Internet gamblers.

Although not significant, the direction of this relationship was unexpected given that previous research has not found this relationship (e.g., Wong, Chan, Tai, & Tao, 2008).

### **Limitations and Strengths**

There are several limitations to the current study. First, a retrospective self-report methodology was employed which can result in participant response biases, such as memory errors. To help overcome this limitation, Desirability and Infrequency items were randomly administered throughout the survey to detect desirable self-presentation response biases and random responding. Second, a cross-sectional correlational design was implemented which does not allow for the examination of directionality within relationships. For instance, the direction of

causality within the relationship between problem gambling and Internet gambling could not be examined. Third, the current study was presented to potential participants as a study examining gambling behaviours in university students, potentially resulting in an inflated number of student gambler participants. To help minimize the effects of this, potential participants were encouraged to participate regardless of their previous gambling experiences. Finally, about 50% of the university student sample consisted of first year university students. Furthermore, the study included students from a single university in Northern Ontario. As a result, generalizability of findings are limited.

Despite the limitations within the current study, there are also a number of strengths. First, three measures of pathological and problem gambling were administered: DBQ, SOGS, and CPGI. These scores were combined into a global problem gambling score to minimize random error associated with each individual measure. Second, the gambling behaviour questionnaires administered were quite comprehensive and often unique to Internet gambling behaviours, attitudes, and beliefs. As a result, a great deal of information was utilized for our analysis. Third, this study employed an online questionnaire, and previous research suggests that online questionnaires have some advantages when used to examine gambling and video gaming addictions. Griffiths (2010) recommends online questionnaires because this means of data collection may result in reduced social desirability and increased levels of honesty, particularly among participants discussing sensitive topics such as gambling addiction. Finally, Internet gambling research is relatively new and, as a result, underdeveloped. The current study examined some new areas of research within university students and Internet gambling such as trust toward Internet gambling as a predictor of Internet gambling behaviours and student



Internet gamblers' perceptions of how their gambling behaviours may affect their academic performance.

### **Summary**

The current study examined both non-Internet gambling and Internet gambling behaviours among a Canadian university student sample. Findings show that Internet gambling has become an activity that many university students engage in, and that university students who trust Internet gambling sites may be more likely to engage in gambling over the Internet. In addition, the results demonstrate a strong link between student Internet gambling and problem gambling behaviours. Not surprisingly, it seems that numerous factors, such as unlimited access, convenience, high-speed play, and the ability to gamble from home have attracted many university students to engage in Internet gambling. However, it is apparent that Internet gambling can become a problematic or hazardous activity for some university students; in particular, males who are impulsive. As a result, it is important that effective prevention and intervention methods be developed. Researchers have proposed measures that, if implemented, could lessen the relationship between student Internet gambling and problem gambling behaviours. Such measures include: setting credit limits, providing self-exclusion options on gambling sites, reducing event frequency by incorporating a slower gambling pace, providing each gambler with a regular problem gambling status update, and placing strict regulations on Internet gambling advertisements (Griffiths & Barnes, 2008; Wood, & Williams, 2007).

### **Future Research**

Internet gambling has only recently begun to emerge as a major means of gambling access. As a result, Internet gambling research is relatively underdeveloped and there are various avenues within this area of research that future studies can explore. For instance, future studies

need to further examine the directionality within the relationships between Internet gambling and problem gambling and the relationship between trust toward Internet gambling and engagement in Internet gambling. Such studies need to implement methodologies that allow for these directional findings. For instance, a longitudinal methodology would allow for the examinations of the temporal sequence of events. In these cases, it could be determined if problem gambling or Internet gambling is engaged in first, or if individuals develop trust in Internet gambling before or after they have engaged in it.

Future studies should also examine the relationship between Impulsivity and Internet problem gambling. Specifically, such studies should examine how impulsive tendencies may influence problematic Internet gambling behaviours. For example, research could examine male problem Internet gamblers betting patterns such as continuously chasing losses or recklessly betting large amounts of money on single bets. This research could help provide valuable information on how impulsive tendencies influence betting over the Internet.

Internet gambling participation and problem Internet gambling behaviours are steadily increasing. Future research needs to examine prevention method effects on at-risk problem Internet gamblers and treatment effects on individuals suffering from Internet gambling problems. Little research has been conducted in these areas.

## References

- Adams, G. R., Sullivan, A. M., Horton, K. D., Menna, R., & Guilmette, A. M. (2007). A study of differences in Canadian university students' gambling and proximity to a casino. *Journal of Gambling Issues* (19), 9-17. Retrieved from:  
<http://www.problemgambling.ca/EN/Research/Pages/JournalofGamblingIssues.aspx>
- American Psychiatric Association (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: American Psychiatric Press.
- American Psychiatric Association (1980). *Diagnostic and statistical manual of mental disorders* (3rd ed.). Washington, DC: American Psychiatric Press.
- Barnes, G.M. Welte, J.W., Hoffman, J.H., & Dintcheff, B.A. (2002). Effects of alcohol misuse on gambling patterns in youth. *Studies on Alcohol and drugs*, 63(6), 767-775. Retrieved from: <http://www.jsad.com/>
- Bauer, H.H., Grether, M., & Leach, M. (2002). Building customer relations over the Internet. *Industrial Marketing Management*, 31(2), 155-163. doi: 10.1016/S0019-8501(01)00186-9
- Beaudoin, C., & Cox, B. (1999). Characteristics of problem gambling in a Canadian context: A preliminary study using a DSM-IV based questionnaire. *The Canadian Journal of Psychiatry*, 44, 483-487. Retrieved from: <http://ww1.cpa-apc.org/Publications/cjpHome.asp>
- Blinne-pike, L., Worthy, S. L., & Jonkman, J. N. (2007). Disordered gambling among college students: A meta-analytic synthesis. *Journal of Gambling Studies*, 23, 175-183. doi: 10.1007/s10899-006-9036-2

- Brown, S. J. (2006). The surge in online gambling on college campuses. In S. J. Brown, *New directions for student services* (pp. 53-61). Published online in Wiley InterScience: Wiley Periodicals.
- Buttner, O.B. & Goritz, A.S. (2008). Perceived trustworthiness of online shops. *Journal of Consumer Behaviour*, 7(1), 35-50. doi: 10.1002/cb.235
- Cao, F., Su, L., & Gao, X. (2007). The relationship between impulsivity and Internet addiction in a sample of Chinese adolescents. *European Psychiatry*, 22, 466-471. doi: 10.1016/j.eurpsy.2007.05.004
- Casino City. (2008). *Online Casino City*. <http://casinocity.com/>
- Chen, J. & Dibb, S. (2010). Consumer trust in the online retail context: Exploring the antecedents and consequences. *Psychology & Marketing*, 27 (4), 323-346. doi: 10.1002/mar.20334
- Cheung, C.M.K. & Lee, M.K.O. (2006). Understanding consumer trust in Internet shopping: A multidisciplinary approach. *Journal of the American Society for Information Science and Technology*, 57(4), 479-492. doi: 10.1002/asi.20312.
- Cox, B. J., Yu, N., Afifi, T. O., & Ladouceur, R. (2005). A national survey of gambling problems in Canada. *Canadian Journal of Psychiatry*, 50 (4), 213-217. Retrieved from: <http://ww1.cpa-apc.org/Publications/cjpHome.asp>
- Cox, B.J., Enns, M.W., & Michaud, V. (2004). Comparisons between the South Oaks Gambling Screen and a DSM-IV-based interview in a community survey of problem gambling. *Canadian Journal of Psychiatry*, 49 (4), 258-264. Retrieved from: <http://ww1.cpa-apc.org/Publications/cjpHome.asp>

- Derevensky, J. L., & Gupta, R. (2007). Internet gambling amongst adolescents: A growing concern. *International Journal of Mental Health and Addiction*, 5, 93-101. doi: 10.1007/s11469-007-9057-9
- Felsher, J.R., Derevensky, J.L., & Gupta, R. (2003). Parental influences and social modeling of youth lottery participation. *Journal of Community & Applied Social Psychology*, 13 (5), 361-377. Retrieved from: <http://www3.interscience.wiley.com/journal/5625/home>
- Ferris, J., & Wynne, W. (2001). The Canadian Problem Gambling Index: Final report. Ontario: Canadian Centre on Substance Abuse.
- French, M. T., Maclean, J. C., & Ettner, S. L. (2008). Drinkers and bettors: Investigating the complementarity of alcohol consumption and problem gambling. *Drug and Alcohol Dependence*, 96, 155-164. doi: 10.1016/j.drugalcdep.2008.02.011
- Goudriaan, A.F., Slutske, W.S., Krull, J.L., & Sher, K.J. (2009). Longitudinal patterns of gambling activities and associated risk factors in college students. *Addiction*, 104(7), 1219-1232. doi: 2009-08701-022
- Griffiths, M. (2010). The use of online methodologies in data collection for gambling and gaming addictions. *International Journal of Mental Health Addiction*, 8, 8-20. doi: 10.1007/s11469-009-9209-1
- Griffiths, M. (2003). Problem gambling. *The Psychologist*, 16 (11), 582-584. Retrieved from: <http://www.thepsychologist.org.uk/>
- Griffiths, M. (2001). Internet gambling: Preliminary results of the first U.K. prevalence study. *eGambling: The Electronic Journal of Gambling Issues*, 5. Retrieved from: [http://www.camh.net.egambling/issues5/research/griffiths\\_article.html](http://www.camh.net.egambling/issues5/research/griffiths_article.html)

- Griffiths, M., & Barnes, A. (2008). Internet gambling: An online empirical study among student gamblers. *International Journal of Mental Health Addiction*, 6, 194-204. doi: 10.1007/s11469-077-9083-7
- Griffiths, M., Wardle, H., Orford, J., Sproston, K., and Erens, B. (2009). Gambling, alcohol consumption, cigarette smoking and health: Findings from the 2007 British gambling prevalence survey. *Addiction Research and Theory*, 18(2), 208-223. doi: 10.3109/16066350902928569
- Gupta, R., Derevensky, J.L., & Ellenbogen, S. (2006). Personality characteristics and risk-taking tendencies among adolescent gamblers. *Canadian Journal of Behavioural Science*, 38, (3), 201-213. doi: 10.1037/cjbs2006008
- Gupta, R., & Derevensky, J.L. (1998). An empirical examination of Jacob's general theory of addictions: Do adolescent gamblers fit the theory? *Journal of Gambling Studies*, 14, 17-49. doi: 10.1023/A:1023046509031
- Gupta, R., & Derevensky, J.L. (2000). Adolescents with gambling problems: From research to treatment. *Journal of Gambling Studies*, 16, 315-342. doi: 10.1023/A:1009493200768
- Hardoon, K. K., & Derevensky, J. L. (2002). Child and adolescent gambling behavior: current knowledge. *Clinical Child Psychology and Psychiatry*, 7 (2), 263-281. doi: 10.1177/1359104502007002012
- Hardoon, K.K. (2004). An examination of psychosocial variables involved in adolescent gambling and high-risk behaviours. Available from ProQuest Dissertations and Theses database. (ACC NO. 2004-99011-004)

- Horch, J. D., & Hodgins, D. C. (2008). Public stigma of disordered gambling: Social distance, dangerousness, and familiarity. *Journal of Social & Clinical Psychology*, 27 (5), 505-528. doi: 10.1521/jscp.2008.27.5.505
- Huang, J. H., & Boyer, R. (2007). Epidemiology of youth gambling problems in Canada: A national prevalence study. *Canadian Journal of Psychiatry*, 52 (10), 657-665. Retrieved from: <http://ww1.cpa-apc.org/Publications/cjpHome.asp>
- Huang, J.H., Jacobs, D.F., Derevensky, J.L., Gupta, R. & Paskus, T.S. (2007). Gambling and health risk behaviors among U.S. college students: Findings from a national study. *Adolescent Health*, 40(5), 390-397. doi: 10.1016/j.jabohealth.2006.11.146
- Ialomiteanu, A. & Adlaf, E. (2001). Internet gambling among Ontario adults. *eGambling: The Electronic Journal of Gambling Issues*, 5. Retrieved from: [http://www.camh.net.egambling/issues5/research/ialomiteanu\\_adalf\\_article.html](http://www.camh.net.egambling/issues5/research/ialomiteanu_adalf_article.html)
- Jacobs, D. F. (2000). Juvenile gambling in North America: An analysis of long term trends and future prospects. *Journal of Gambling Studies*, 16 (2/3), 119-152. doi: 10.1023/A:1009476829902
- Jackson, D. N. (1987). Personality Research Form manual (3<sup>rd</sup> ed). Port Huron, Michigan: Sigma Assessment Systems.
- Jamieson, J., Mazmanian, D., Penney, A., Black, N., & Nguyen, A. (2010). When problem gambling is the primary reason for seeking addiction treatment. *International Journal of Mental Health Addiction*. (in press) doi: 10.1007/s11469-009-9268-3
- Kerber, C. S. (2005). Problem and pathological gambling among college athletes. *Annals of Clinical Psychiatry*, 17 (4), 243-247. doi: 10.1080/10401230500295388

- Kini, A. & Choobineh, J. (1998, January). Trust in electronic commerce: Definition and theoretical considerations. Paper presented at the Thirty-First Annual Hawaii International Conference on System Sciences, Hawaii, United States. Abstract retrieved from: <http://www.computer.org/portal/web/csdl/doi/10.1109/HICSS.1998.655251>
- Korn, D., Gibbins, R., & Azmier, J. (2003). Framing public policy towards a public health paradigm for gambling. *Journal of Gambling Studies*, 19 (2), 235-256. doi: 10.1023/A:1023685416816
- LaBrie, R. A., Shaffer, H. J., LaPlante, D. A., & Wechsler, H. (2003). Correlates of college student gambling in the United States. *Journal of American College Health*, 52 (2), 53-62. Retrieved from: <http://www.heldref.org/pubs/jach/manuscripts.html>
- Ladd, G. T., & Petry, N. M. (2002). Disordered gambling among university-based medical and dental patients: A focus on internet gambling. *Psychology of Addictive Behaviors*, 16, 76-79. doi: 10.1037/0893-164x.16.1.76
- Ladouceur, R., Boudreault, N., Jacques, C., & Vitaro, F. (1999). Pathological gambling and related problems among adolescents. *Child and Adolescent Substance Abuse*, 8(4), 55-68. doi: 10.1300/j029v08n04
- Lesieur, H. R. & Blume, S. B. (1993). Revising the South Oaks Gambling Screen in different settings. *Journal of Gambling Studies*, 9 (3), 213-219. doi: 10.1007/BF01015919
- Lesieur, H.R. & Blume, S.B. (1987). The South Oaks Gambling Screen (SOGS): A new instrument for the identification of pathological gamblers. *American Journal of Psychiatry*, 144(9), 1184-1188. Retrieved from: <http://ajp.psychiatryonline.org/>



- Lightsey, O. R., & Hulsey, D. (2002). Impulsivity, coping, stress, and problem gambling among university students. *Journal of Counseling Psychology*, 49 (2), 202-211. doi: 10.1037/0022-0167.49.2.202
- Mayer, R. J., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *Academy of Management Review*, 20, 709-734. doi: 10.2307/258792
- McBride, J. I. (2007). *An exploratory analysis of Internet gambling among university students* (Unpublished master's thesis). McGill University, Montreal, Quebec.
- Messerlian, C., & Derevensky, J. L. (2005). Youth gambling problems: A public health perspective. *Health Promotion International*, 20(1), 69-79. doi: 10.1093/heapro/dah509
- Messerlian, C., Byrne, A. M., & Derevensky, J. L. (2004). Gambling, youth and the internet: Should we be concerned? *Canadian Child and Adolescent Psychiatry Review*, 13 (1), 3-6. Retrieved from: <http://www.ncbi.nlm.nih.gov/pmc/journals/788/>
- Moodie, C., & Finnigan, F. (2006). Prevalence and correlates of youth gambling in Scotland. *Addiction Research and Theory*, 14 (4), 365-385. doi: 10.1080/16066350500498015
- Nower, L., & Blaszczynski, A. (2006). Impulsivity and pathological gambling: A descriptive Model. *International gambling studies*, 6(1), 61-75. doi: 10.1080/14459790600644192
- Nor, K. & Pearson, J.M. (2007). The Influence of trust on internet banking acceptance. *Journal of Internet Banking and Commerce*, 12(2). Retrieved from: <http://www.arraydev.com/commerce/jibc/>
- Pagani, L.S., Derevensky, J.L., & Japel, C. (2009). Predicting gambling behavior in sixth grade from kindergarten impulsivity. *Archives of Pediatrics & Adolescent Medicine*, 163 (3), 238-243. Retrieved from: <http://archpedi.ama-assn.org/>

- Petry, N. M., & Weinstock, J. (2007). Internet gambling is common in college students and associated with poor mental health. *American Journal of Addiction*, *16*, 325-330. doi: 10.1080/10550490701525673
- Philippe, F., & Vallerand, R. J. (2007). Prevalence rates of gambling problems in Montreal, Canada: A look at old adults and the role of passion. *Journal of Gambling Studies*, *23* (3), 275-283. doi: 10.1007/s10899-066-9038-0
- Responsible Gambling Council of Ontario (2006). The poker boom: Harmless pastime or gateway to gambling problems? *Newslink, Fall/Winter 2006*. Toronto, Ontario, Canada: Author.
- Rush, B., Veldhuizen, S., & Adlaf, E. (2007). Mapping the prevalence of problem gambling and its association with treatment accessibility and proximity to gambling venues. *Journal of Gambling Issues*, *20*, 193-213. Retrieved from: <http://www.problemgambling.ca/EN/Research/Pages/JournalofGamblingIssues.aspx>
- Sevigny, S., Cloutier, M., Pelletier, M.F., & Ladouceur, R. Internet gambling: Misleading payout rates during the 'demo' period. *Computers in Human Behavior*, *21*(1), 153-158. doi: 10.1016/j.chb.2004.02.017
- Shaffer, H. J., & Hall, M. N. (2001). Updating and refining meta-analytic prevalence estimates of disorder gambling behavior in the United States and Canada. *Canadian Journal of Public Health*, *92* (3), 168-172.
- Shaffer, H. J., Hall, M. N., & Vander Bilt, J. (1999). Estimating the prevalence of disordered gambling behavior in the United States and Canada: A research synthesis. *American Journal of Public Health*, *89* (9), 1369-1376. doi: 10.2105/AJPH.89.9.1369

- Smeaton, M., & Griffiths, M. (2004). Internet gambling and social responsibility: An exploratory study. *CyberPsychology and Behavior*, 7, 49-57. doi: 10.1089/109493104322820110
- Statistics Canada (2007). *Gambling. Perspectives on Labor and Income, Vol 8(5)*, 1-5. Accessed from: <http://www.statcan.gc.ca/bsolc/olc-cel/olc-cel?lang=eng&catno=75-001-X200710510476>
- Steiker, L. K. (2008). Gambling addiction: An interview with two specialists. *Journal of Social Work Practice in the Addictions*, 8 (2), 269-275. doi: 10.1080/15332560802157164
- Stinchfield, R. (2002). Reliability, validity, and classification accuracy of the South Oaks Gambling Screen (SOGS). *Addictive Behaviors*, 27, (1), 1-19. doi: 10.1016/s0306-4603(00)00158-1
- Stucki, S., & Rihs-Middel, M. (2007). Prevalence of adult problem and pathological gambling between 2000 and 2005: An update. *Journal of Gambling Studies*, 23 (3), 245-257. doi: 10.1007/s10899-006-9031-7
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5<sup>th</sup> ed). Boston: Pearson.
- Volberg, R. A. (1999). Research methods in the epidemiology of pathological gambling development of the field and directions for the future. *Anuario de Psicologia*, (30), 33-46. Retrieved from: <http://dialnet.unirioja.es/servlet/revista?codigo=2015>
- Walters, G.D. (2001). Behavior genetic research on gambling and problem gambling: A preliminary meta-analysis of available data. *Journal of Gambling Studies*, 17(4), 255-271. doi: 10.1023/A:1013652328999
- Watson, S., Liddell, P., Moore, R. S., & Eshee, W. D. (2004). The legalization of internet gambling: A consumer protection perspective. *Journal of Public Policy and Marketing*, 23 (2), 209-213. doi: 10.1509/jppm.23.2.209.51401

- Welte, J. W., Barnes, G. M., & Hoffman, J. H. (2004). Gambling, substance use, and other problem behaviors among youth: A test of general deviance models. *Journal of Criminal Justice* , 32, 297-306. doi: 10.1016/j.jcrimjus.2004.04.002
- Welte, J. W., Barnes, G. M., Tidwell, M. O., & Hoffman, J. H. (2008). The prevalence of problem gambling among U.S. Adolescents and young adults: Results from a national survey. *Journal of Gambling Studies* , 24, 119-133. doi: 10.1007/s10899-007-9086-0
- Welte, J. W., Barnes, G. M., Wieczorek, W. F., Tidwell, M. C., & Parker, J. (2002). Gambling participation in the U.S.- Results from a national survey. *Journal of Gambling Studies* , 18 (4), 313-337. doi: 10.1023/A:10211019915591
- Winters, K. C., Stinchfield, R. D., Botzet, A., & Anderson, N. (2002). A prospective study of youth gambling behaviours. *Psychology of Addictive Behaviors* , 16 (1), 3-9. doi: 10.1037/0893-164x.16.1.3
- Wong, V.W., Chan, E.K., Tai, S.P., & Tao, V.Y. (2008). Problem gambling among university students in Macao. *Journal of Psychology in Chinese Societies. Special Issue: Liberalization of Maccao's casino industry and psychological phenomena*, 9(1), 47-66. Retrieved from: [http://www.chineseupress.com/asp/JournalList\\_en.asp?CatID=1&Lang=E&JournalID=6](http://www.chineseupress.com/asp/JournalList_en.asp?CatID=1&Lang=E&JournalID=6)
- Wood, R. T., Griffiths, M. D., & Parke, J. (2007). Acquisition, development, and maintenance of online poker playing in a student sample. *CyberPsychology and Behaviour* , 10 (3), 354-361. doi: 10.1089/cpb.2006.9944
- Wood, R. T., & Williams, R. J. (2007). Problem gambling on the internet: Implications for Internet gambling policy in North America. *New Media and Society* , 9 (3), 520-542. doi: 10.1177/1461444807076987

Wood, R. T., Williams, R. J., & Lawton, P. K. (2007). Why do Internet gamblers prefer online versus land-based venues? Some preliminary findings and implications. *Journal of Gambling Issues* (20), 235-252. Retrieved from:

<http://www.problemgambling.ca/EN/Research/Pages/JournalofGamblingIssues.aspx>

Woodruff, C., & Gregory, S. (2005). Profile of internet gamblers: Betting on the future. *UNLV Gaming Research & Review Journal*, 9 (1), 1-14. Retrieved from:

<http://journalseek.net/cgi-bin/journalseek/journalsearch.cgi?field=issn&query=1535-7589>

Young, M., & Stevens, M. (2008). SOGS and CGPI: Parallel comparison on a diverse population. *Gambling Studies* (24), 337-356. doi: 10.1007/s10899-007-9087-z

Zangeneh, M., Blaszczynski, A., & Turner, N. E. (2008). In the pursuit of winning: Problem gambling theory, research and treatment. In L. Cavion, C. Wong, & M. Zangeneh, *Gambling: A sociological perspective* (pp. 95-117). New York: Springer Science + Business Media.

## Appendix A

## Questionnaire

The following questionnaire refers to your gaming preferences and behaviours. For each statement, please indicate your responses by putting a check mark in the circle next to the statement you agree with. All information is confidential and anonymous. We do not require any identifying information and only our research team at Lakehead University will have access to this information.

1. Sex:

- Male                       Female

2. Age: \_\_\_\_\_

3. Where are you currently living?

- Residence  
 Apartment  
 Renting a house  
 House owner  
 With parents/ parent  
 Other

Please specify: \_\_\_\_\_

4. What is your ethnic background?

- |   |                                      |
|---|--------------------------------------|
| <input type="radio"/> Caucasian/White             | <input type="radio"/> Middle Eastern |
| <input type="radio"/> African-Canadian/Black      | <input type="radio"/> East Indian    |
| <input type="radio"/> Hispanic/Latino             | <input type="radio"/> Other          |
| <input type="radio"/> Asian                       |                                      |
| <input type="radio"/> Native-Canadian/ Aboriginal |                                      |

Please specify: \_\_\_\_\_

5. Marital Status:

- |   |   |
|---|---|
| <input type="radio"/> Single                      | <input type="radio"/> Married/Common-law    |
| <input type="radio"/> Dating                      | <input type="radio"/> Separated or divorced |
| <input type="radio"/> In a long term relationship | <input type="radio"/> Widowed               |

6. Indicate which of the following levels of education that you have achieved?

- Some college
- College diploma
- Some university
- Undergraduate degree completed
- In graduate program
- Master's degree completed
- Doctorate degree completed

What year of university are you currently in?

- First
- Second
- Third
- Fourth
- Fifth
- Other: \_\_\_\_\_

What is your average grade in university (0% – 100%) \_\_\_\_\_?

If this is your first year in university, what was your average grade in high school \_\_\_\_\_?

7. Do you hold a job while going to school?

- I do not hold a job
- I work part-time
- I work full-time

8. In the past 12 months, how often have you:

	Never	Less than once per month	1-3 times per month	Once a week or more
Consumed alcohol .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Smoked tobacco (cigarettes, cigars) .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Used marijuana or hashish .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Used other illicit drugs .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(e.g., cocaine, speed, etc)				

9. In the past 12 months, how much time have you spent on the internet per day?

- Less than 30 minutes                       2 to 4 hours  
 30 to 60 minutes                               Over 4 hours  
 1 to 2 hours

10. In the past 12 months, how often have you made online purchases for personal use?

- Never  
 Occasionally (less than once per week)  
 Regularly (once a week or more)  
 Daily (once a day or more)

11. In the past 12 months, how often have you participated in an on-line chat group/chat room?

- Never  
 Occasionally (less than once per week)  
 Regularly (once a week or more)  
 Daily (once a day or more)



12. In the past 12 months, how often have you played each of the following games for money?

*This does NOT include games you play on the Internet*

	Never	Less than once per month	1-3 times per month	Once a week or more
Lottery scratch cards/pull tabs .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lottery draws (e.g. Lotto 6/49) .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Horse racing .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sports betting .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sports betting through the lottery .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Poker .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bingo .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Slot machines .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Electronic gaming machines .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(e.g., VLT, video poker, Pokies)				
Casino table games .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(e.g., Blackjack, Poker, etc)				
Dice/craps .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cards .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spread betting .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stock market .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please specify: \_\_\_\_\_

13. How old were you the first time you played gambling games for money? (***NOT including games you play on the internet***)

Age: \_\_\_\_\_

I have never played gambling games for money

14. Indicate all the reasons you play gambling games (***NOT including games you play on the internet***)

(You may choose more than one answer)

I have never played gambling games

Relieve boredom

Fun

Escape from problems

Relaxation

Feel older

Excitement

Make money

Entertainment

Other

Be with friends/make new friends

Please specify:

Relieve anxiety or depression

\_\_\_\_\_

15. Out of all the reasons you listed above, what are the TOP THREE (3) REASONS you play gambling games? (***NOT including games you play on the internet***)

(Choose up to 3 answers)

I have never played gambling games

Relieve boredom

Fun

Escape from problems

Relaxation

Feel older

Excitement

Make money

Entertainment

Other

Be with friends/make new friends

Please specify:

Relieve anxiety or depression

\_\_\_\_\_

16. In general, who do you play gambling games with? (***NOT including games you play on the internet***)

(You may choose more than one answer)

- |  |                                  |
|--|----------------------------------|
| <input type="radio"/> I have never played gambling games | <input type="radio"/> Co-workers |
| <input type="radio"/> Alone                              | <input type="radio"/> Strangers  |
| <input type="radio"/> Friends                            | <input type="radio"/> Other:     |
| <input type="radio"/> Parents                            | Please specify:                  |
| <input type="radio"/> Siblings/relatives                 | _____                            |

17. Indicate all the gambling opportunities near your home (within 50 miles or 80 km).

- There are no gambling opportunities near my home
- Casino
- Electronic gaming machines (Video Poker, VLT, Pokies)
- Race track
- Lottery ticket outlet
- Bingo
- Other

Please specify: \_\_\_\_\_

18. *The following questions refer to GAMBLING ON THE INTERNET WITH MONEY.*

In the past 12 months, how often have you played the following gambling games *on the internet with money*?

	Never	Less than once per month	1-3 times per month	Once a week or more
Roulette .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Blackjack .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Baccarat .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dice (craps) .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Keno .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sports betting .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Horse racing .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Slot machines or other electronic gaming ... machines (e.g. VLT, video poker, pokies)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cards .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spread betting .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stock market .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please specify: \_\_\_\_\_

19. How old were you the first time you played *gambling games on the internet with money*?

Age: \_\_\_\_\_

- I have never gambled on the internet

20. In the past 12 months, how many gambling sites have you regularly played with money?

- None
- 1 internet site
- 2-5 internet sites
- More than 6 sites

21. There are many places where a person might choose to gamble. **Why do you choose to gamble on the internet?**

(You may choose more than one answer.)

- |  |   |
|--|---|
| <input type="radio"/> I have never gambled on the internet                 | <input type="radio"/> Convenience                           |
| <input type="radio"/> 24 hour accessibility                                | <input type="radio"/> Privacy                               |
| <input type="radio"/> Graphics   | <input type="radio"/> Anonymity                             |
| <input type="radio"/> Realistic-looking games                              | <input type="radio"/> Less intimidating than a real casino  |
| <input type="radio"/> Sex appeal   | <input type="radio"/> Easier to hide gambling from others   |
| <input type="radio"/> Game diversity                                       | <input type="radio"/> Don't need to leave the house to play |
| <input type="radio"/> High speed play                                      | <input type="radio"/> Good odds                             |
| <input type="radio"/> Bonuses (sign up, free cash, redeposit, referral...) | <input type="radio"/> Fair/reliable payout                  |
| <input type="radio"/> Competition (person to person gambling)              | <input type="radio"/> Other                                 |
|  | Please specify:<br>_____                                    |

22. Out of all the reasons you listed above, what are your **TOP THREE (3) REASONS** you **gamble on the internet?**

(Choose up to 3 answers.)

- |  |   |
|--|---|
| <input type="radio"/> I have never gambled on the internet                 | <input type="radio"/> Convenience                           |
| <input type="radio"/> 24 hour accessibility                                | <input type="radio"/> Privacy                               |
| <input type="radio"/> Graphics   | <input type="radio"/> Anonymity                             |
| <input type="radio"/> Realistic-looking games                              | <input type="radio"/> Less intimidating than a real casino  |
| <input type="radio"/> Sex appeal   | <input type="radio"/> Easier to hide gambling from others   |
| <input type="radio"/> Game diversity                                       | <input type="radio"/> Don't need to leave the house to play |
| <input type="radio"/> High speed play                                      | <input type="radio"/> Good odds                             |
| <input type="radio"/> Bonuses (sign up, free cash, redeposit, referral...) | <input type="radio"/> Fair/reliable payout                  |
| <input type="radio"/> Competition (person to person gambling)              | <input type="radio"/> Other                                 |
|  | Please specify: _____                                       |

23. What do you view as being the major **drawback of gambling on the internet?**

(You may choose more than one answer.)

- There are no drawbacks to gambling on the internet
- Need a credit card
- Worried about credit card fraud
- Don't want to give personal information on-line (like my name and account numbers)
- The bets might be rigged (no chance of winning)
- Lack of casino ambiance (doesn't feel like a real casino)
- Unsure if I could actually collect my winnings
- Easier to hide problems with gambling
- Other

Please specify: \_\_\_\_\_

24. Out of all the drawbacks you listed above, what do you view as being the **TOP THREE (3) DRAWBACKS of gambling on the internet.**

(Choose up to 3 answers)

- There are no drawbacks to gambling on the internet
- Need a credit card
- Worried about credit card fraud
- Don't want to give personal information on-line (like my name and account numbers)
- The bets might be rigged (no chance of winning)
- Lack of casino ambiance (doesn't feel like a real casino)
- Unsure if I could actually collect my winnings
- Easier to hide problems with gambling
- Other

Please specify: \_\_\_\_\_

25. How did you come across your first internet gambling site?

- I have never visited an internet gambling site
- I clicked on a pop-up while I was on an internet site unrelated to gambling
- While I was surfing the internet, I decided to search for a gambling site
- A friend recommended it
- Advertisement on the internet
- Advertisement in a magazine/on television/on a poster
- Promotion (e.g. free money to gamble with)
- Other

Please specify: \_\_\_\_\_

26. In the past 12 months, how much time have you spent gambling with money per session?

NOTE: *A session is defined as each time you log onto the internet.*

- |  |                                    |
|--|------------------------------------|
| <input type="radio"/> Never                | <input type="radio"/> 1 to 2 hours |
| <input type="radio"/> Less than 30 minutes | <input type="radio"/> 2 to 4 hours |
| <input type="radio"/> 30 to 60 minutes     | <input type="radio"/> Over 4 hours |

27. When you *gamble on the internet with money*, who do you usually gamble with?

(You may choose more than one answer)

- |  |                                  |
|--|----------------------------------|
| <input type="radio"/> I don't gamble on the internet | <input type="radio"/> Co-workers |
| <input type="radio"/> Alone                          | <input type="radio"/> Strangers  |
| <input type="radio"/> Friends                        | <input type="radio"/> Other:     |
| <input type="radio"/> Parents                        | Please specify:                  |
| <input type="radio"/> Siblings/relatives             | _____                            |

28. In general, from where do you *gamble on the internet*?

(You may choose more than one answer.)

- |   |   |                             |
|---|---|-----------------------------|
| <input type="radio"/> I don't gamble on<br>the internet | <input type="radio"/> At a friend's home  | <input type="radio"/> Other |
| <input type="radio"/> At home                           | <input type="radio"/> At school           | Please specify:             |
| <input type="radio"/> At work                           | <input type="radio"/> At an internet café | _____                       |
|   | <input type="radio"/> Cellular phone      |                             |

29. In the past 12 months, most of the time, WHEN *have you gambled on the internet*?

- |  |  |
|--|--|
| <input type="radio"/> I don't gamble on the internet | <input type="radio"/> Weekend mornings                     |
| <input type="radio"/> Weekday mornings               | <input type="radio"/> Weekend afternoons                   |
| <input type="radio"/> Weekday afternoons             | <input type="radio"/> Weekend evenings                     |
| <input type="radio"/> Weekday evenings               | <input type="radio"/> Anytime I feel like it; day or night |

30. In the past 12 months, what is the average amount of money you have spent gambling on the internet per session? NOTE: *A session is defined as each time you log onto the internet.*

- |                                |                                  |                                    |
|--------------------------------|----------------------------------|------------------------------------|
| <input type="radio"/> None     | <input type="radio"/> \$11-\$25  | <input type="radio"/> \$100-\$500  |
| <input type="radio"/> \$1-\$5  | <input type="radio"/> \$25-\$50  | <input type="radio"/> \$500-\$1000 |
| <input type="radio"/> \$6-\$10 | <input type="radio"/> \$50-\$100 | <input type="radio"/> Over \$1000  |



31. In the past 12 months, which is the most money you have wagered in one internet session?

- |                                |                                  |                                    |
|--------------------------------|----------------------------------|------------------------------------|
| <input type="radio"/> None     | <input type="radio"/> \$11-\$25  | <input type="radio"/> \$100-\$500  |
| <input type="radio"/> \$1-\$5  | <input type="radio"/> \$25-\$50  | <input type="radio"/> \$500-\$1000 |
| <input type="radio"/> \$6-\$10 | <input type="radio"/> \$50-\$100 | <input type="radio"/> Over \$1000  |

32. In the past 12 months, which is the most money you have WON in one internet session?

- |                                |                                  |                                    |
|--------------------------------|----------------------------------|------------------------------------|
| <input type="radio"/> None     | <input type="radio"/> \$11-\$25  | <input type="radio"/> \$100-\$500  |
| <input type="radio"/> \$1-\$5  | <input type="radio"/> \$25-\$50  | <input type="radio"/> \$500-\$1000 |
| <input type="radio"/> \$6-\$10 | <input type="radio"/> \$50-\$100 | <input type="radio"/> Over \$1000  |

33. In the past 12 months, which is the most money you have LOST in one internet session?

- |                                |                                  |                                    |
|--------------------------------|----------------------------------|------------------------------------|
| <input type="radio"/> None     | <input type="radio"/> \$11-\$25  | <input type="radio"/> \$100-\$500  |
| <input type="radio"/> \$1-\$5  | <input type="radio"/> \$25-\$50  | <input type="radio"/> \$500-\$1000 |
| <input type="radio"/> \$6-\$10 | <input type="radio"/> \$50-\$100 | <input type="radio"/> Over \$1000  |

34. What method(s) of payment do you use to *gamble on the internet*?

- I don't gamble on the internet
- Personal credit card
- Credit card belonging to a family member (with permission)
- Credit card belonging to a family member (without permission)
- Debit card/ATM
- Personal cheque
- Wire/bank transfer
- Other

Please specify: \_\_\_\_\_

35. When *gambling on the internet*, how often do you go back on-line another day to win back money you lost?

- Never
- Some of the time (less than half the time I lose money)
- Most of the time (more than half the time I lose money)
- All of the time

36. In the past 12 months, while *gambling on the Internet*, how often have you:

	Never	Less than once per month	1-3 times per month	Once a week or more
Consumed alcohol .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Smoked tobacco (cigarettes, cigars) .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Used marijuana or hashish .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Used other illicit drugs .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(e.g. cocaine, speed, ecstasy)				

Indicate the degree you which you agree with the following statements.

	Strongly agree	Agree	Disagree	Strongly disagree
37. Internet Gambling is a legitimate business.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38. I am afraid to download gambling games on the internet because of possible computer viruses that may be attached to the download.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39. Internet gambling payouts are equal to land-based casino payouts.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40. I trust internet gambling.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
41. Credit card numbers are secure when when gambling on the internet.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
42. I miss classes because I am gambling on the internet.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
43. Internet gambling negatively affects my academic achievement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix B

SOGS

1. Please indicate which of the following types of gambling you have done in your lifetime. For each type of gambling, please mark "X" for one answer: "Not at All," "Less than Once a Week," or "Once a Week or More."

	NOT AT ALL	LESS THAN ONCE A WEEK	ONCE A WEEK OR MORE
a. Played cards for money			
b. Bet on horses, dogs, or other animals (at OTB, the track or with a bookie)			
c. Bet on sports (parlay cards, with a bookie at Jai Alai)			
d. Played dice games, including craps, over and under, or other dice games			
e. Went to casinos (legal or otherwise)			
f. Played the numbers or bet on lotteries			
g. Played bingo			
h. Played the stock or commodities market			
i. Played slot machines, poker machines, or other gambling machines			
j. Bowled, shot pool, played golf, or some other game of skill for money			
k. Played pull tabs or "paper" games other than lotteries			
l. Some form of gambling not listed above Please specify: _____			

2. What is the largest amount of money you have ever gambled with on any one-day?

- |  |   |
|--|---|
| <input type="radio"/> Never gambled                        | <input type="radio"/> More than \$1,000.00, up to \$10,000.00 |
| <input type="radio"/> \$1.00 or less                       | <input type="radio"/> More than \$10,000.                     |
| <input type="radio"/> More than \$1.00, up to \$10.00      |   |
| <input type="radio"/> More than \$10.00, up to \$100.00    |   |
| <input type="radio"/> More than \$100.00, up to \$1,000.00 |   |

3. Check which of the following people in your life has (or had) a gambling problem.

- |                                      |  |
|--------------------------------------|--|
| <input type="radio"/> Father         | <input type="radio"/> My Child(ren)                            |
| <input type="radio"/> Mother         | <input type="radio"/> Another Relative                         |
| <input type="radio"/> Brother/Sister | <input type="radio"/> A Friend or Someone Important in My Life |
| <input type="radio"/> Spouse/Partner |  |

4. When you gamble, how often do you go back another day to win back money you have lost?

- Never
- Some of the Time (Less than half the time I lose)
- Most of the Times I Lose
- Every Time I Lose

5. Have you ever claimed to be winning money gambling, but weren't really? In fact, you lost?

- Never
- Yes, less than half the time I lost
- Yes, most of the time

6. Do you feel you have ever had a problem with betting or money gambling?

- No
- Yes
- Yes, in the past, but not now

7. Did you ever gamble more than you intended to?

- Yes
- No

8. Have people criticized your betting or told you that you had a problem, regardless of whether or not you thought it was true?

- Yes     No

9. Have you ever felt guilty about the way you gamble, or what happens when you gamble?

- Yes     No

10. Have you ever felt like you would like to stop betting money on gambling, but didn't think you could?

- Yes     No

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

- Yes     No

12. Have you ever argued with people you live with over how you handle money?

- Yes     No

13. (If you answered "Yes" to question 12)

Have money arguments ever centered on your gambling?

- Yes     No

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

- Yes     No

15. Have you ever lost time from work (or school) due to betting money or gambling?

- Yes     No

16. If you borrowed money to gamble or to pay gambling debts, who or where did you borrow from (check "Yes" or "No" for each):

- |   |                           |                          |
|---|---------------------------|--------------------------|
| a. From household money                                       | <input type="radio"/> Yes | <input type="radio"/> No |
| b. From your spouse   | <input type="radio"/> Yes | <input type="radio"/> No |
| c. From other relatives or in-laws                            | <input type="radio"/> Yes | <input type="radio"/> No |
| d. From banks, loan companies, or credit unions               | <input type="radio"/> Yes | <input type="radio"/> No |
| e. From credit cards  | <input type="radio"/> Yes | <input type="radio"/> No |
| f. From loan sharks   | <input type="radio"/> Yes | <input type="radio"/> No |
| g. You cashed in stocks, bonds or other securities            | <input type="radio"/> Yes | <input type="radio"/> No |
| h. You sold personal or family property                       | <input type="radio"/> Yes | <input type="radio"/> No |
| i. You borrowed on your checking accounts (passed bad checks) | <input type="radio"/> Yes | <input type="radio"/> No |
| j. You have (had) a credit line with a bookie                 | <input type="radio"/> Yes | <input type="radio"/> No |
| k. You have (had) a credit line with a casino                 | <input type="radio"/> Yes | <input type="radio"/> No |

Appendix C  
DSM-IV-TR-Based Questionnaire

	Never	Yes, at some time in my life	Yes, in the past year	Yes, in the past month
1. Have you ever tried to cut down gambling, and then found that you couldn't?	0	1	2	3
2. Have you ever tried to cut down or stop gambling and found that you were restless or irritable?	0	1	2	3
3. Do you ever gamble as a way of escaping from problems in life or as a way of getting rid of unpleasant feelings?	0	1	2	3
4a. Have you ever lost a job or got into trouble at work because of gambling?	0	1	2	3
4b. Have you ever jeopardized or lost a marriage or other significant relationship because of gambling?	0	1	2	3
5. Have you ever committed a crime to get money for gambling (i.e., stealing, forgery, fraud, etc)?	0	1	2	3
6. Do you find yourself thinking often about gambling, such as reliving past gambling experiences, planning your next gambling venture, or thinking of ways to get money with which to gamble?	0	1	2	3
7. Do you find you need to gamble with increasing amounts of money in order to get the desired level of excitement?	0	1	2	3
8. Do you find yourself gambling in an attempt to recover your previous gambling losses?	0	1	2	3
9. Have you ever lied to family, friends, or others about your gambling?	0	1	2	3
10. Have you ever turned to family or friends to help you with financial problems that were caused by your gambling?	0	1	2	3

Please answer the following questions by checking either yes or no.



	Yes	No
1. I always gamble only with friends, family, or coworkers, and never by myself.	<input type="radio"/>	<input type="radio"/>
2. If I decide in advance how long I will gamble for, I can usually stick to that time.	<input type="radio"/>	<input type="radio"/>
3. I usually decide before I start gambling how much money I can lose.	<input type="radio"/>	<input type="radio"/>
4. Have you ever felt guilty because of your gambling?	<input type="radio"/>	<input type="radio"/>
5. Have you ever felt detached from your surroundings while gambling, as though in a trance?	<input type="radio"/>	<input type="radio"/>
6. Do you take a lot of risks in life?	<input type="radio"/>	<input type="radio"/>
7. Do you see money as the solution to almost all your problems?	<input type="radio"/>	<input type="radio"/>
8. Would you describe yourself as a "big spender?"	<input type="radio"/>	<input type="radio"/>
9. Would you describe yourself as a competitive person?	<input type="radio"/>	<input type="radio"/>
10. Would you say that in general you are easily bored?	<input type="radio"/>	<input type="radio"/>
11. Would you describe yourself as a "workaholic?"	<input type="radio"/>	<input type="radio"/>
12. Do you feel that in general you are too concerned with receiving the approval of other people?	<input type="radio"/>	<input type="radio"/>
13. Do you feel you have restructured your life to revolve around gambling?	<input type="radio"/>	<input type="radio"/>
14. Have you ever been seen by a mental health professional for any psychological problems? If yes, what type of problem(s) did you have? _____	<input type="radio"/>	<input type="radio"/>
15. Do you have any current medical problems? If yes, what type of problem(s) do you have? _____	<input type="radio"/>	<input type="radio"/>
16. In the past year have you thought a lot about death?	<input type="radio"/>	<input type="radio"/>
17. In the past year have you felt like you wanted to die?	<input type="radio"/>	<input type="radio"/>
18. In the past year have you felt so low at times that you have thought about committing suicide?	<input type="radio"/>	<input type="radio"/>

---

	Yes	No
19. Have you ever attempted suicide?	<input type="radio"/>	<input type="radio"/>
20. Have you ever attempted suicide at some other time in your life?	<input type="radio"/>	<input type="radio"/>
Were these thoughts or feelings of suicide due to problems related to your gambling?	<input type="radio"/>	<input type="radio"/>
21. I gamble on a regular basis.	<input type="radio"/>	<input type="radio"/>
I gamble on a binge basis.	<input type="radio"/>	<input type="radio"/>
22. Do you gamble because (you may check more than one)		
I gamble for excitement	<input type="radio"/>	<input type="radio"/>
I gamble to make money	<input type="radio"/>	<input type="radio"/>
I gamble to get rid of unpleasant feelings	<input type="radio"/>	<input type="radio"/>
I don't know why I gamble	<input type="radio"/>	<input type="radio"/>
Other reason	<input type="radio"/>	<input type="radio"/>

## Appendix D

## Canadian Problem Gambling Index

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

THINKING ABOUT THE LAST 12 MONTHS...

	Never	Sometimes	Most of the time	Almost always
1. Have you bet more than you could really afford to lose?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Have you needed to gamble with larger amounts of money to get the same feeling of excitement?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. When you gambled, did you go back another day to try and win back the money you lost?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Have you borrowed money or sold anything to get money to gamble?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Have you felt that you might have a problem with gambling?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Has gambling caused you any health problems, including stress or anxiety?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Has your gambling caused any financial problems for you or your household?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Have you felt guilty about the way you gamble or what happens when you gamble?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Have you lied to family members or what happens when you gamble?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Have you bet or spent more money than you wanted to on gambling?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Have you wanted to stop betting money	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

or gambling, but didn't think you could?

Next, we explore some of your beliefs about gambling, as well as any early experiences you have had with gambling or betting money.

For each of the following, please indicate if you strongly agree, agree, disagree, or strongly disagree.

	Strongly agree	Agree	Disagree	Strongly disagree
13. After losing many times in a row, you are more likely to win.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. You could win more if you used certain system or strategy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Indicate Yes or No for the remaining items.

	Yes	No	Don't Know
15. Do you remember a big Win when you first started gambling?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Do you remember a big Loss when you first started gambling?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Yes	No	Don't Know
17. Has anyone in your family EVER had a gambling problem?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. Has anyone in your family EVER had an Alcohol or drug problem?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Appendix E

## Three Scales from the Personality Research Form: Impulsivity, Desirability, and Infrequency

Below are a series of statements which one might use to describe oneself. Read each statement and decide whether or not it describes you. If you agree with a statement or decide that it does describe you, answer TRUE. If you disagree with a statement or feel that it is not descriptive of you, answer FALSE. Answer every statement either true or false, even if you are not completely sure of your answer.

	True	False
1. I am careful to consider all sides of an issue before taking action.	<input type="radio"/>	<input type="radio"/>
2. I could easily count from one to twenty-five.	<input type="radio"/>	<input type="radio"/>
3. I am never able to do things as well as I should.	<input type="radio"/>	<input type="radio"/>
4. I am pretty cautious.	<input type="radio"/>	<input type="radio"/>
5. I have never talked to anyone by telephone.	<input type="radio"/>	<input type="radio"/>
6. I believe people tell lies any time it is to their advantage.	<input type="radio"/>	<input type="radio"/>
7. Rarely, if ever, do I do anything reckless.	<input type="radio"/>	<input type="radio"/>
8. I make all my own clothes and shoes.	<input type="radio"/>	<input type="radio"/>
9. To me, crossing the ocean in a sailboat would be a wonderful adventure.	<input type="radio"/>	<input type="radio"/>
10. I think it would be fun to be a test pilot for experimental jet planes.	<input type="radio"/>	<input type="radio"/>
11. I like to live dangerously.	<input type="radio"/>	<input type="radio"/>
12. Parachute jumping is a hobby that appeals to me.	<input type="radio"/>	<input type="radio"/>
13. If I discover a cave I would explore I would explore it right away even if I was not sure how risky it was.	<input type="radio"/>	<input type="radio"/>
14. I would enjoy walking on a tightrope.	<input type="radio"/>	<input type="radio"/>
15. Exploring dangerous sections of a city sounds like fun to me.	<input type="radio"/>	<input type="radio"/>
16. I am never one to sit on the sidelines at a party.	<input type="radio"/>	<input type="radio"/>

	True	False
17. I would be willing to do something a little unfair to get something that was important to me.	<input type="radio"/>	<input type="radio"/>
18. Emotion seldom causes me to act without thinking.	<input type="radio"/>	<input type="radio"/>
19. Things with sugar in them usually taste sweet to me.	<input type="radio"/>	<input type="radio"/>
20. I did many very bad things as a child.	<input type="radio"/>	<input type="radio"/>
21. I have a reserved and cautious attitude toward life.	<input type="radio"/>	<input type="radio"/>
22. I have never had any hair on my head.	<input type="radio"/>	<input type="radio"/>
23. I often question whether life is worthwhile.	<input type="radio"/>	<input type="radio"/>
24. My thinking is usually careful and purposeful.	<input type="radio"/>	<input type="radio"/>
	True	False
25. I have never ridden in an automobile.	<input type="radio"/>	<input type="radio"/>
26. My daily life includes many activities I dislike.	<input type="radio"/>	<input type="radio"/>
27. I am not one of those people who blurt out things without thinking.	<input type="radio"/>	<input type="radio"/>
28. I try to get at least some sleep every night.	<input type="radio"/>	<input type="radio"/>
29. Many things make me feel uneasy.	<input type="radio"/>	<input type="radio"/>
30. I generally rely on careful reasoning in making up my mind.	<input type="radio"/>	<input type="radio"/>
31. I have attended school at some time during my life.	<input type="radio"/>	<input type="radio"/>
32. I find it very difficult to concentrate.	<input type="radio"/>	<input type="radio"/>

## Appendix F

Project title: University Student Internet Gamblers: Pathways to Problem Gambling

Consent Form

I \_\_\_\_\_ (please print), have read the information letter provided and have been told how to get more information about this study. My signature on this page indicates that I agree to participate in this research and understand the following:

- I have received an explanation about the nature of the research project, its purpose, and procedures.
- The study consists of completing a booklet of questionnaires regarding demographics, gambling behaviours, and personality traits.
- This booklet will take approximately 45-60 minutes to complete and I can choose to skip any questions that I am not comfortable answering.
- If I am a student in an Introductory Psychology course, I will be able to receive 1 bonus mark added to my final grade. All other participants will receive no direct benefit.
- I am a volunteer and can withdraw at any time from this study without explanation or penalty.
- I understand my data will be securely stored for five years.
- Only persons directly involved with the research will have access to the questionnaires, and they will be required to uphold confidentiality.
- I will not be identified on any reports or publications stemming from this research.
- A summary of the research findings can be made available to me at the completion of the study in spring 2010 by e-mailing Nick Harris at [nharris@lakeheadu.ca](mailto:nharris@lakeheadu.ca)

---

Participant Signature

---

Date

## Appendix G

Project title: University Student Internet Gamblers: Pathways to Problem Gambling

Debriefing Form

Thank you for participating in this study on internet gambling. By participating, you are helping us to gain a better understanding of the factors that contribute to problem gambling over the internet. This information is important because problem internet gambling has become a growing concern and by understanding what factors predispose an individual to problem internet gambling can help prevent it.

Please be assured that the data you provided will be in no way linked to your name or contact information. All the questionnaires will be labelled with ID numbers that will not be connected to you and all data will remain anonymous. To obtain a summary of the results after the study is completed, please e-mail Nick Harris at [nharris@lakeheadu.ca](mailto:nharris@lakeheadu.ca) and an electronic summary of the results will be sent to you at the completion of the study.

If you have concerns about your gambling behaviours, either over the internet or otherwise, you can contact the Student Health and Counselling Centre at UC1007 (telephone: 343-8261). If you should have a personal emergency, please call the Thunder Bay Crisis Response Service at (1-807) 346-8282 to speak with a counsellor.

Sincerely,

Nick Harris  
Clinical Psychology  
Master of Arts Candidate

Dwight Mazmanian, Ph.D., C. Psych.  
Associate Professor  
Department of Psychology  
Email: [dmazmani@lakeheadu.ca](mailto:dmazmani@lakeheadu.ca)  
Tel: (807) 343-8257



## Appendix H

Project title: University Student Internet Gamblers: Pathways to Problem Gamblers

Information letter

To the Potential Participant,

Thank you for being interested in our study on internet gambling. This research project is being conducted by Nick Harris and Dr. Dwight Mazmanian with the Department of Psychology at Lakehead University. This study is being conducted to examine internet gambling and non-internet gambling in a university student population. By participating, you can help us gain a better understanding of gambling behaviours among university students. You are being invited to participate because you are a member of the Lakehead University community.

This study consists of filling out a booklet of questionnaires regarding demographics, gambling behaviours, internet use, and personality traits. Completion of this booklet will take approximately 45 minutes. Some of the questionnaires may contain similar items, but please answer each item independently.

Anonymity will be maintained throughout the study. Your name will not be published in any reports stemming from this research. All forms will be stored in a secure place at Lakehead University for five years for publication purposes. A number will uniquely identify you. Only persons directly involved with the research will have access to the questionnaires, and they will be required to uphold confidentiality. Your participation in this study is completely voluntary, you may refuse to complete any part or question in the study, and you may withdraw from this study at any point without any explanation or penalty.

If you are willing to participate, please complete the consent form provided, and return it to the student researcher. The consent form will be kept in a file separate from the study results in order to maintain confidentiality and anonymity. If you are a student in an undergraduate Psychology course, you will receive two bonus marks for completion of the study, otherwise there is no direct benefit for completing this study.

Manuscripts and posters documenting the research findings may be submitted for publication and conference presentations in the future. If you would like information on the results of the study, you can make a request via e-mail to the address below and a summary will be sent to you at the end of the study.

If you have concerns about your gambling behaviours, either over the internet or not, you can contact the Student Health and Counselling Centre at UC1007 (telephone: 343-8261). If you should have a personal emergency, please call the Thunder Bay Crisis Response Service at (1-807) 346-8282 to speak with a counsellor.

If you have any questions or concerns regarding this study, please contact Nick Harris at [nharris@lakeheadu.ca](mailto:nharris@lakeheadu.ca). You may also contact Lakehead University's Research Ethics Board at 343-8283.

Sincerely,

Nick Harris  
Clinical Psychology  
Master of Arts Candidate

Dwight Mazmanian, Ph.D., C. Psych.  
Associate Professor  
Department of Psychology  
Email: [dmazmani@lakeheadu.ca](mailto:dmazmani@lakeheadu.ca)  
Tel: (807) 343-8257

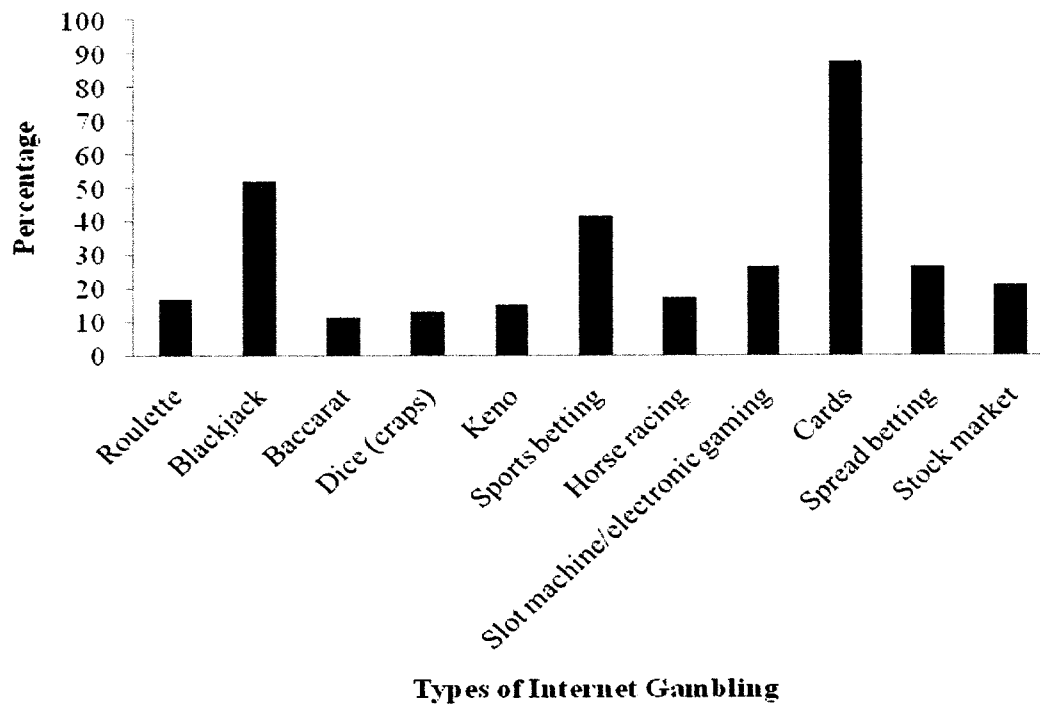


Figure 1: Types of Internet gambling games played.

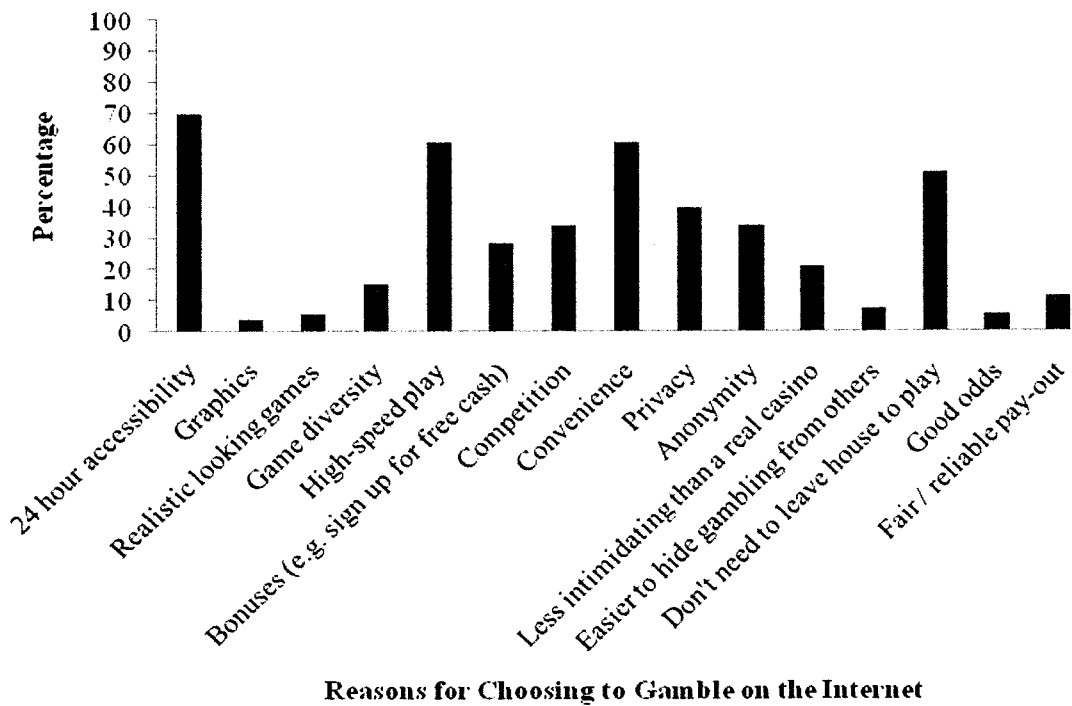


Figure 2: Reasons for Choosing to participate in Internet gambling.

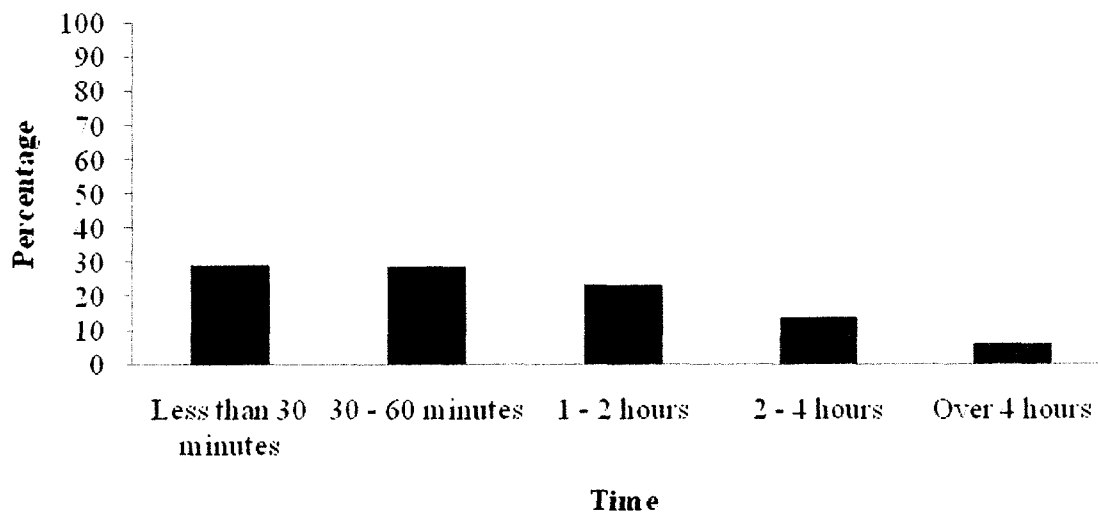


Figure 3: Average time spent per session gambling on the Internet

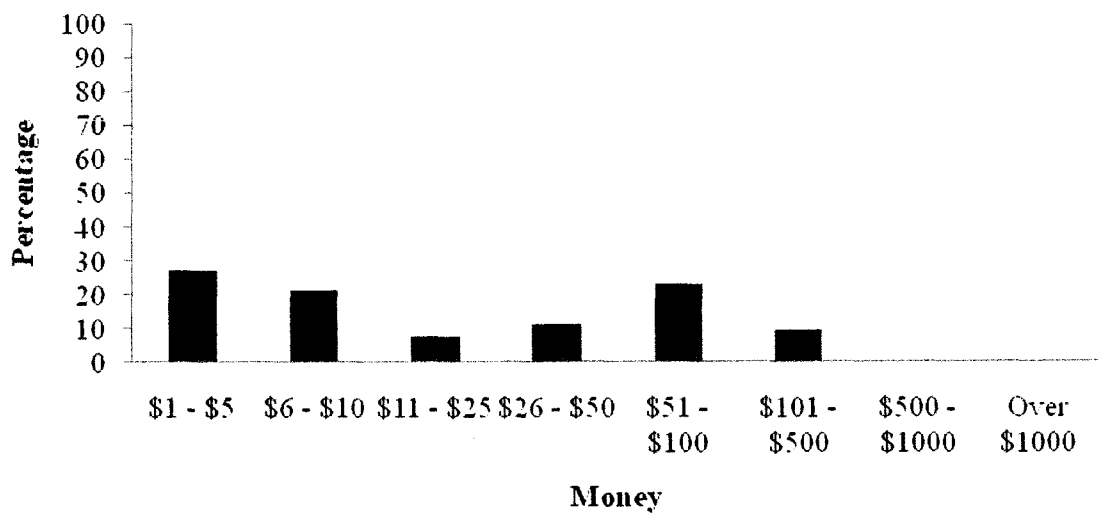


Figure 4: Average amount of money spent per session Gambling on the Internet

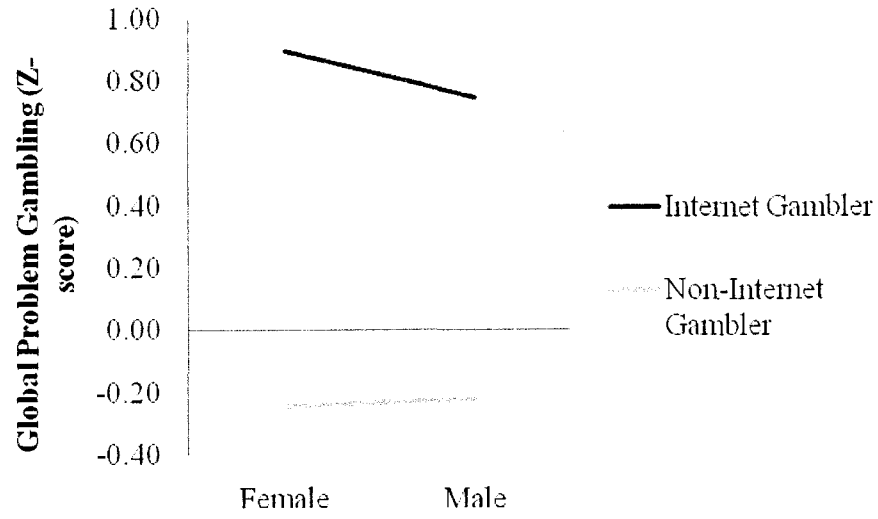


Figure 5: Problem gambling score by sex and gambling group

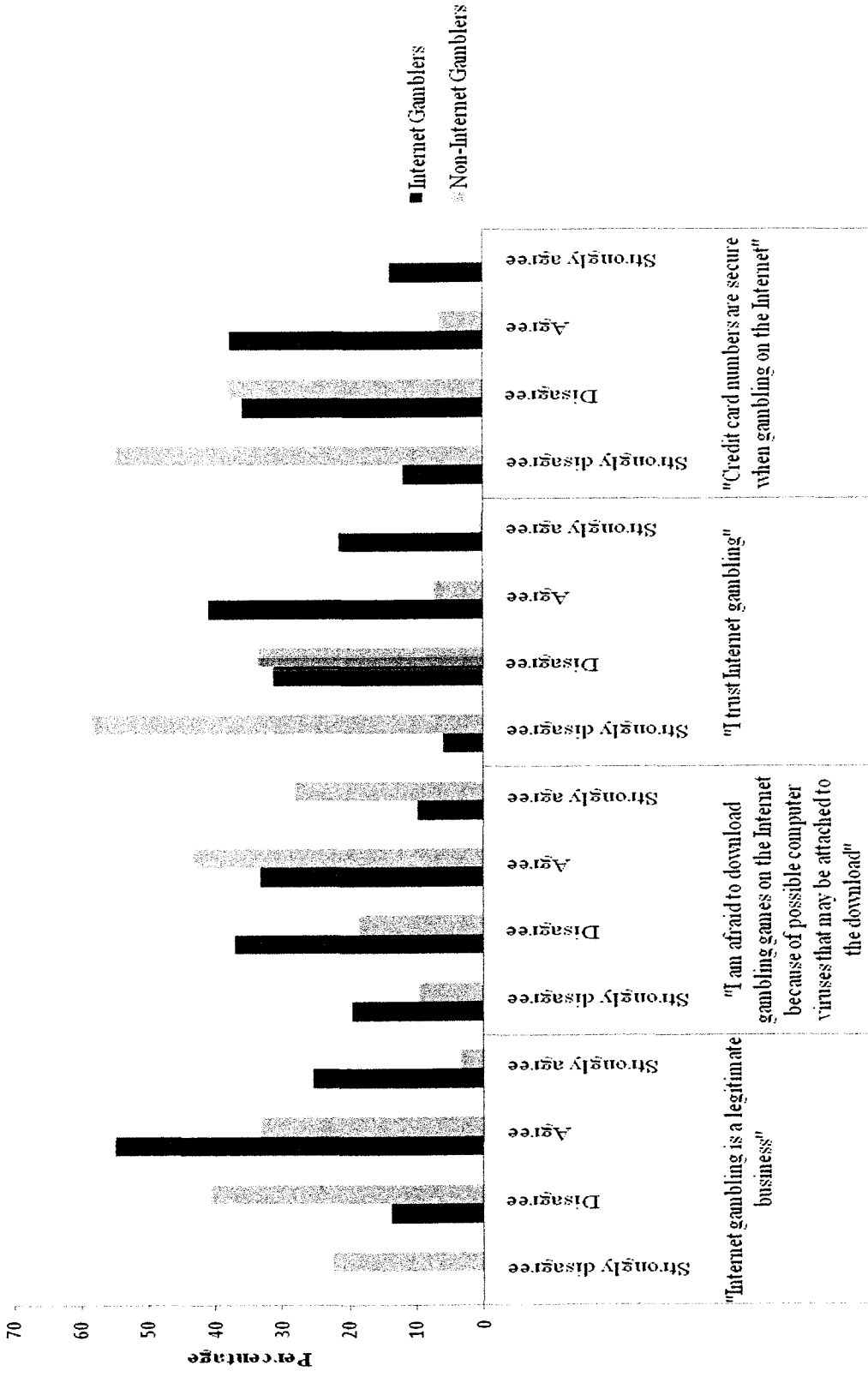


Figure 6: Reported trust and risks associated with Internet gambling.