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A QUALITATIVE ASSESSMENT OF THE GAMBLING HABITS OF CURRENT
AND FORMER CANADIAN VARSITY STUDENT-ATHLETES

By

Philip A. Wick

A Thesis
Submitted to the Faculty of Graduate Studies
Through the Faculty of Human Kinetics
In Partial Fulfillment of the Requirements for
The Degree of Master of Human Kinetics at the
University of Windsor

Windsor, Ontario, Canada

2011

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A Qualitative Assessment of the Gambling Habits of Current and Former Canadian
Varsity Student-Athletes

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Author's Declaration of Originality

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ABSTRACT

The general purpose of this thesis was to extend research on gambling susceptibilities. More specifically, this thesis was designed to examine two questions which have received very little attention in Canada: what are the gambling habits of current and former Canadian student-athletes and what is their propensity for problematic gambling? To the researcher's knowledge, this would be the first documented study to have examined the gambling behaviour of Canadian student-athletes, both current and former. Modifications were made to the Canadian Problem Gambling Index (CPGI) to help in the identification of gambling behaviour. The results revealed that while a large majority of the respondents gambled in the past year (95.4%), very few classified as "problem gamblers" (1.5%). Furthermore, the results suggest that respondent gambling behaviour more closely resembles that of the general population (Ontario adults), as opposed to the behaviour of their American cohorts; however, future study is required.

It is the mark of an educated mind to be able to entertain a thought without accepting it.

- Aristotle

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I have been truly blessed to be where I am today. Having known where I have been, it is sometimes hard to believe where I am. There are a number of people who I need to thank for this, for I would not be where I am today without their love and support.

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Inspiration for the Current Study

The current study was first inspired by a genuine interest in understanding the sudden increase in the popularity of poker in North America over the past five years. The “masculine” guise used in and around the poker table was of particular interest to the researcher. In the researcher’s experiences, the poker table demanded the portrayal of “manly” characteristics such as risk-taking, aggressiveness, and competitiveness. Seemingly, those who failed to exhibit these characteristics were often ridiculed, degraded, or simply not taken seriously. Also during this time a number of high-profile gambling scandals involving college and professional athletes encouraged the researcher to take on an independent class research project focused on highlighting the ambiguity surrounding the legality of sports gambling. The combination of the researcher’s passion for sport sociology, an interest in the concept of social construction, and previous research on gambling, powered this thesis in the early stages. A desire to learn more propelled this thesis in the latter stages.

CHAPTER I

INTRODUCTION

This chapter introduces information on the nature of the current study. Specifically, this chapter addresses the purpose of the current study and the theoretical justification behind it. It also provides assumptions, limitations, and delimitations identified prior to conducting the study. Finally, provided within this chapter are working definitions of four key variables that help to ensure reader consistency throughout the duration of this thesis.

Introduction to the Current Study

There is an increasing amount of evidence suggesting that college and university students are an especially vulnerable segment of the population partaking in gambling activities (Ladouceur, Dube, & Bujold, 1994; Winters, Bengston, Dorr, & Stinchfield, 1998). There is also increasing evidence that this population is at an abnormally high risk for developing gambling problems (LaBrie, Shaffer, LaPlante, & Wechslet, 2003; Williams, Connolly, Wood, & Nowatzki, 2006). A number of other studies have shown that student-athletes are more likely to gamble and more likely to develop gambling related problems than non-athletes (Ellenbogen, Jacobs, Derevensky, Gupta, & Paskus, 2008; Kerber, 2005; Stuhldreher, Stuhldreher, & Forrest, 2007). As a result, there is a growing consensus in the literature that an individual's status as an athlete may be directly linked to problematic gambling as well as other maladaptive behaviours, such as heavy alcohol consumption (Miller, Adams, Kraus, Clayton, Miller, Anderson, & Ogilvie, 2001; Weiss, 2010). However, while there appears to be a belief that an affinity

for excessive drinking and drug use will ultimately subside with maturity, the same cannot be said for gambling (Weiss & Loubier, 2008).

The Purpose of the Current Study

The purpose of this study is to extend existing research that has examined gambling susceptibilities. This particular research will explore gambling behaviour of current and former Canadian varsity male student-athletes, and attempt to address two questions which have received very little attention in Canada: what are the gambling habits of current and former Canadian student-athletes and what is their propensity for problematic gambling? To the researcher's knowledge, this will be the first study to examine the gambling behaviour of Canadian varsity student-athletes since Markle and Donnelly attempted to do so in 2001.

Theoretical and Practical Justification

The current study will contribute to the body of knowledge on potential gambling tendencies by a specific demographic through an investigation into the gambling behaviour of Canadian student-athletes, a particular area of research that is non-existent with the exception of the aforementioned 2001 study by Markle and Donnelly that remains incomplete. Such a study may heighten awareness of potential for problem gambling and in return motivate organizations wishing to adjust or implement gambling prevention programs. The development of such a program may help to foster a social setting that is more proactive than reactive when organizational members place themselves at risk. The study's results were analyzed and interpreted with a goal of contributing to an enhanced understanding of gambling. This process is essential to assist

with developing or improving the effectiveness of current gambling policies and prevention strategies.

Assumptions

1. A modified version of the Canadian Problem Gambling Index (CPGI) (Ferris & Wynne, 2001) is a valid data-collecting instrument that is a reliable measure of potential problem gambling behaviour. (Appendix A)
2. The research participants for this study have the necessary reading ability in the English language to comprehend and complete the survey instrument.
3. The research participants will complete the survey thoroughly, truthfully, and to the best of their ability.

Limitations

1. Access to the pool of research participants will be dependent upon student-athletes opening an e-mail from the university's Information Technology Services (ITS) and choosing to respond to an invitation to complete an online survey.
2. Despite sworn confidentiality, student-athletes may be reluctant to provide accurate responses, or at least, truthful responses due to the sensitivity surrounding the issues of gambling and corruption in sport.
3. Research participants may not be able to properly recall all of their gambling tendencies in the past year.
4. The total scores of the survey will be limited by the subjects' ability to complete the research instrument.

Delimitations

1. The study is exploratory in nature and does not allow for generalization of the findings.
2. The study population was delimited to one athletic team within one university, in the province of Ontario.
3. One university (varsity) team was chosen for convenience of accessibility.
4. The definition and perception of the key variables (gambling, sports gambling, problem gambling, pathological gambling) may vary among different populations. Operational definitions were provided to communicate the boundaries of this study.

Operational Definitions of Key Variables

To ensure consistency throughout the length of this paper, working definitions as well as introductory information on gambling (i.e., “chance-based” versus “skill-based”), sports gambling, problem gambling, and pathological gambling have been provided below.

Gambling. The online Columbia Encyclopedia, Sixth Edition (2008) defines gambling as “the betting of money or valuables on, and often participation in, games of chance (some involving degrees of skill)”. However, often gambling is an umbrella term that covers a number of varying activities (i.e., poker, lotteries, scratch tickets, roulette, internet gambling).

A distinction exists between “skill-based” gambling and “chance-based” gambling. According to Caillois (1961), competition (a.k.a. skill-based) or *agôn* (the ancient Greek word meaning contest or challenge) stresses the ability of contestants to

surmount obstacles and opponents to achieve victory. Games such as poker and blackjack are considered skill-based gambling. In contrast, chance or *alea* (the ancient Greek term for gaming, or playing at a game of chance, of any kind) consists of those games where the outcome is rendered completely independent of the player. In these cases winning is the result of luck as opposed to triumph over an opponent. Games such as roulette or dice are fundamentally chance-based games. A classification of various gambling activities is provided in Appendix B.

The common conception of gambling is readily associated with casinos, racetracks, and lottery tickets. Beyond this, the Centre for Addiction and Mental Health (CAMH) (2009) lists the following as popular methods of gambling:

- i. Casino games, including Craps, Dice, Sic Bo (Chinese dice game), Pai Gow Tiles (Chinese Dominoes), Slot machines, Roulette, Blackjack, Caribbean Stud, Three Card Poker, Casino War, Baccarat, Spanish 21, Pai Gow Poker and others.
- ii. Bingo
- iii. Keno
- iv. Slot machines
- v. Lottery tickets
- vi. Scratch tickets, Nevada or pull-tab tickets
- vii. Betting on card games, mah-jong or dominoes
- viii. Betting on horse racing
- ix. Betting on sports
- x. Betting on games of skill, such as pool
- xi. Tombola and other similar games

- xii. Internet gambling
- xiii. Stock market speculation

Sports Gambling. Betting on sports (sports gambling, sports betting, sports wagering) is believed to be an activity that entails predicting the outcome of a sporting event by means of a wager [real or virtual] (Claussen & Miller, 2001; Smith, 1990). This includes sports lotteries/pools, head-to-head sports betting, and wagering on national pastimes by means of drafts or fantasy leagues. One can also bet on any sport the “sportsbook” (an establishment that accepts bets on sporting events) covers. Typically, sportsbooks cover professional and college football and basketball, professional baseball, professional hockey, and horse and dog racing. Occasionally some sportsbooks will offer proposition bets for events that are not performed on a regular basis such as boxing, major golf tournaments, and auto races. There are numerous types of sport bets on which one can wager including: proposition bets, money line bets, spread bets, over/under bets, parlays, teasers, and a bet called ‘buying a half point’ (Manteris & Talley, 1991).

Problem Gambling. According to Ferris and Wynne (2001), problem gambling is “gambling behaviour that creates negative consequences for the gambler, for others in his or her social network, or for the community” (p. 2). The term “problem gambling” is preferred to “compulsive gambling” among many professionals. The reason for this, according to “www.medic8.com”, is because few people ever experience true clinical diagnosable compulsions. Furthermore, while compulsive gambling only refers to individual gambling behaviour, problem gambling often entails harm experienced by others.

Pathological Gambling. Pathological gambling was once a diagnosable psychiatric disorder much more severe than problem gambling (as recognized in the DSM-III). However, in large part due to large-scale studies and statistical methods, pathological gambling is now defined as “an impulse control disorder that is a chronic and progressive mental illness” (DSM-IV, 2000). Severe problem gambling may be diagnosed as clinical pathological gambling (persistent and recurrent maladaptive gambling behaviour) if the gambler meets at least five of the following criteria, as long as these behaviours are not better explained by a manic episode (“www.medic8.com”):

1. Preoccupation. The subject has frequent thoughts about gambling experiences, whether past, future, or fantasy.
2. Tolerance. As with drug tolerance, the subject requires larger or more frequent wagers to experience the same "rush".
3. Withdrawal. Restlessness or irritability associated with attempts to cease or reduce gambling.
4. Escape. The subject gambles to improve mood or escape problems.
5. Chasing. The subject tries to win back gambling losses with more gambling.
6. Lying. The subject tries to hide the extent of his or her gambling by lying to family, friends, or therapists.
7. Loss of control. The subject has unsuccessfully attempted to reduce gambling.
8. Illegal acts. The subject has broken the law in order to obtain gambling money or recover gambling losses.
9. Risked significant relationship. The subject gambles despite risk of losing a relationship, job, or other significant opportunity.

10. Bailout. The subject turns to family, friends, or another third party for financial assistance as a result of gambling.

11. Biological Bases. The subject has a lack of norepinephrine.

CHAPTER II

REVIEW OF LITERATURE

This chapter provides a summary on the evolution of gambling since its inception in early medieval times. After this, emphasis is placed on the evolution of gambling, particularly sports gambling, in Canada, from the time of Confederation until the present day. Although this has little to do with the underlining purpose of the present study, such information may assist in the understanding of today's gambling industry. This in return may help to provide a reasonable context in which to view the results of the current study. The review of literature then provides information on the rates of problem gambling among the general population in North America. This is followed by a more specific review of the literature on the gambling behaviour of current and former college and university students, particularly male student-athletes. Finally, current gambling policy for the National Collegiate Athletic Association (NCAA) and Canadian Interuniversity Sport (CIS) is addressed.

The Evolution of Gambling

According to Reith (2004), widespread participation in various forms of gambling can be traced all the way back to early medieval times in Europe when the types of games played, and the freedom to partake in them, was largely dependent on an individual's position in his/her social hierarchy. "Blood sports" such as bearbaiting and cockfighting were popular among the poor, while regular contests, such as horse racing were a pastime limited to the aristocracy. According to Reith, it was not long after that playing cards was introduced into Europe, where it became widespread over the next three centuries, from an aristocratic pastime into an activity popular among every social class. It is believed

that the invention of the printing press in the fifteenth century was crucial in the transformation of playing cards among varying levels of society. Lotteries also began to flourish shortly after the fifteenth century, but were governed by (political) legislation that resulted in often illegal participation. According to Reith, attempts were made by both the church and the state to limit or prohibit gambling as criticism about the consequences of gambling rose during the seventeenth and eighteenth centuries. There were many who believed that gambling undermined the value of hard work and wasted valuable resources, such as time and money. This was the first time any emphasis was put on the disorderly effects of gambling within society (Reith, 2004).

Gambling in Canada: 1867 – 2011

According to Smith (2009), the following observations can be made about the evolution of gambling in Canada: One, Canadian gambling laws around the time of Confederation were heavily influenced by English statutes; two, gambling [up until the mid-20th century] was clearly seen as a moral issue; and three, despite ongoing official sanctions throughout the years, gambling continued to thrive.

Historically, it is suggested that gambling in Canada has been strongly tied to the Canadian Criminal Code. This code was very similar to the English laws that Canada incorporated during its Confederation in 1867, which banned most gambling activities. Since confederation, however, the stance on gambling has slowly softened and due in large part to a change in societal values, the ban on gambling has gradually been lifted (Stevens, 2002). Less than 30 years after Confederation, in spite of moral resistance, charitable games such as bingo and raffles were legally allowed in Canada. This was followed by horse racing in 1910 and gambling events that were allowed to take place at

agricultural fairs and exhibitions in 1925 (Rollins, 2007). A Criminal Code amendment passed in 1969 allowed federal and provincial governments to use the lottery to help fund worthy projects. In 1974 the first national lottery was held to help to raise money for the Montreal Olympics. Shortly after, in the 1980s, Canada saw the opening of the country's first year-round charitable casino in Calgary, Alberta. In 1985 another amendment to the Criminal Code permitted provincial governments to administer and have control over both computer and video gaming devices, which included slot machines and video lottery terminals (VLTs). In 1990, New Brunswick became the first province in Canada to allow VLTs in non-licensed establishments such as bowling alleys and taxi stands. The 1990s continued to see widespread expansion of legalized gambling in the form of VLTs in community settings (in bars and restaurants, for example) leading to the construction of permanent casinos in several Canadian provinces.

Presently, according to Canadian Mental Health Association (CMHA) records, Canada has roughly 87,000 gambling machines (slot machines and VLTs), 33,000 lottery ticket centres, 60 permanent casinos, 250 race tracks and teletheatres, and 25,000 licenses to run various bingo, temporary casinos, raffles, pull tickets and other activities. Ontario, in particular, has four permanent commercial/resort casinos, OLG slots at 18 different racetracks, 8 OLG charity casinos, 10,439 ticket lottery outlets and 80 bingo facilities. CMHA records show that revenues generated by the Canadian gaming industry exceed the combined earnings of cinema showings, movie rentals, sporting event admissions and live theatre in Canada. Today, surveys also indicate that many Canadians approve of funding charities, health care and other similar organizations including sport, with funds generated from gambling avenues.

Sports Gambling in Canada: 1892 - 2011

According to Howell (2001), dog and horse races, unauthorized prize and animal fights, baseball, basketball, lacrosse, football, and hockey games have attracted gambling patrons since before the time of Confederation. According to the Criminal Code of Canada (1892) (which banned most gambling activities), betting on a sporting event by itself was not considered a crime as long as a betting transaction fee was not charged. The activity was, however, illegal if done through a bookmaker. After 1892, Canadian gambling legislation (related to sport gambling) remained relatively constant for the next 75 years with the exception of the introduction of horse race betting in 1910. In fact, the only legal forms of sports betting in Canada up until the early 1970s were horse racing, friendly wagers on the outcome of popular athletic events such as boxing, hockey or football, and betting on one's self in games of skill such as pool, darts, golf or bowling. Throughout this time although betting on sports with a bookmaker was illegal, it was still commonplace for many young males in urban settings (Smith, 2009).

Presently, there are at least six ways to place a bet on sports in North America. Between the United States and Canada only two of six are entirely legal. Today, the only way to place a legal sports bet in the United States is with any licensed sportsbook in Nevada. According to Galanter (1995) there were roughly 150 sportsbooks in the United States in the mid 1990s, all of which were located in Nevada casinos. Today, there are over 750 recognized sportsbooks in the United States alone, according to "www.sportsbooksreview.net". Up until 2007, the Oregon Lottery offered "Sports Action", a game based on the outcome of professional football games, however, a bill passed in January of 2007 to amend Oregon Revised Statutes and to remove the

legislative direction to the Lottery to operate games based on the results of sporting events (Oregon Lottery, 2011). Canada offers a second avenue to place a legal sports bet with “Sport Select”, one of the largest legal sports betting networks in the world. Sport Select refers to a group of sports betting games offered by Canada’s provincial governments. In Ontario and Atlantic Canada (all provinces east of Quebec), Sport Select is better known as “Pro-Line”. Pro-Line is the current form of legalized sports betting through Ontario Lottery and Gaming (OLG) played by selecting your predicted outcomes for 3 to 6 sporting events based on a list of events provided and odds for various outcomes. You must be correct on all your selections to win. The minimum wager is \$2 and the maximum wager is \$100.

Illegally, one can bet with a bookmaker, who takes bets at agreed upon odds, from virtually anywhere. One can also bet online, which is, at best, ambiguous in terms of its legality. According to Nick Rupcich (2009), a retired Certified Compulsive Gambling Counselor and former Chairperson of the Problem Gambling Research Group Advisory Panel in Windsor, Ontario, despite regulatory efforts from both federal and state legislation, there exists up to 700 offshore gambling sites that are out of reach of North American jurisdiction. Two other (increasingly popular) sports betting formats in North America are sports pools and fantasy sport leagues. Although sports pools can be licensed by the provincial government and run by charities as a fundraiser, they are mostly privately organized (which means they are likely illegal). An example of a legal sports pool is a “Grey Cup” raffle where tickets are sold for \$2 on the outcome of a Canadian Football League (CFL) game. Participants with the correct quarter, half time, and full time scores receive prizes. Privately organized pools can be legal providing no money is

charged for a handling or administration fee (Smith, 2009). Fantasy sports leagues, on the other hand, are a gambling format whereby professional athletes, generally from a major sporting league (i.e., National Hockey League, Major League Baseball, National Football League) are selected to make up a player's fantasy team. Participants who accumulate the most points over the season based upon various statistical categories (i.e., goals, assists, penalty minutes in hockey) are declared the winners. Since these leagues are primarily online, it is difficult to determine if the activity is legal.

A Shift in Gambling Opportunity

The lifting of gambling restrictions and shifts in the perception of gambling in Canada over the years has increased gambling opportunities which continue to grow at an unprecedented rate (Cox, Yu, Afifi, & Ladouceur, 2005). Unfortunately, research on problem gambling shows a correlation between increased opportunity and increased disordered gambling (Saint-Charles, Mongeau, & Biron, 2008).

Shaffer, Hall, and Bilt (1999) conducted the first comprehensive empirical review of the academic literature that estimated the prevalence of disordered gambling in the United States and Canada. The authors found evidence supporting the notion that the prevalence of gambling disorders among adults in the general population increased between 1974 and 1997 (p. 4). Shaffer et al. found that as gambling has become more socially accepted and accessible during the past two decades, adults in the general population have started to gamble in increasing numbers. As a result, some adults in the general population are beginning to experience increasing problems with gambling. In addition to the study of adults, Shaffer et al. found that lifetime estimates of disordered gambling among adolescents exceed those among adults. The authors believe the higher

estimate of disordered gambling among adolescents may be attributable not only to adolescence itself but rather adolescence and the current social setting (i.e., availability, social setting, cultural approval). The authors warn that if this is the case, disordered gambling in the general population will increase as adolescents grow into adulthood and that new generations of adolescents will continue to repeat this pattern.

Claussen and Miller (2001) have suggested that “a declining adherence to the Judeo-Christian moral system, an increasingly unquestioned acceptance of a deterministic worldview, the legitimizing effect of governmental endorsement, and the availability of new telecommunications technology” (p. 351) are reasons why gambling is one of the fastest growing industries in North America. McKelvey (2004a) has suggested that increased societal and governmental endorsement has made sport gambling a widely accepted form of entertainment in North America.

Although experts have estimated that the vast majority of Americans and Canadians gamble recreationally, and subsequently experience no measurable ill effects, it is nevertheless regrettable that some gamblers inflict a great deal of harm through excessive gambling behaviours not only upon themselves, but also upon their families and communities (National Gambling Impact Study Commission, 1999).

A Public Health Concern

“It would be really difficult to lose \$100,000 in a single day by drinking or by snorting cocaine or smoking. But, I mean, that’s a realistic outcome that can happen with gambling...” (Turner, CAMH, 2009)

According to documents posted on “www.problemgambling.ca”, 332,000 people in the province of Ontario alone are experiencing problems as a result of their gambling,

and experts estimate more than \$1 million a week is lost to bankruptcy from gamblers in debt. Of even more concern, according to the Canada Safety Council, [a disproportionate] 36 percent of Ontario Lottery Gaming Commission (OLGC) revenue comes directly from problem gamblers, and an estimated 300 suicides a year are linked to problem gambling.

Of concern, Dixon (2007) believes there is further indication that these numbers are on the rise, and Azmier (2005) predicts that the current untapped potential market for the next generation of gambling products (i.e., internet gambling, television and video game gambling, and cell phone) will increase disordered gambling. Benzie (2010) has also suggested that innovative gambling outlets will likely increase the size of the industry, prey on the vulnerable, expose youth to gambling, and encourage addiction.

Referencing Eadington, “What happens to the best laid plans: Global lessons on the legalization and liberation of gambling laws”, CAMH (2009) lists traditional lotteries and bingo, often considered “soft gambling”, and slightly more harmful destination resort casinos and urban or suburban casinos, as the least harmful forms of gambling.

“Convenient gambling”, including gaming devices in bars (i.e., slot machines, VLTs) and, “ultra-convenient” gambling such as interactive television, mobile phone, or internet gambling were listed as more potentially dangerous forms of gambling.

Problem and Pathological Gambling

Problem and pathological gambling has been found to lead to a host of personal, social, and health consequences including educational disruption, financial difficulties, anxiety and depression (Miller, et al., 2001) as well as drug and alcohol abuse, and attempted suicide (Stuhldreher, et al., 2007).

Motivation of Pathological Gamblers

Today, one of the prominent interest areas of research on gambling is whether or not motivation (i.e., “I gamble because it distracts me” or “I gamble because I like the competition”) plays a role in explaining gambling behaviour. Carruthers, Platz, and Busser (2006) studied the gambling motivation of individuals who gamble pathologically. The authors found that rather than gambling for the satisfaction obtained from the act of gambling, pathological gamblers were more likely to gamble for extrinsic reasons including gambling to reduce tension, gambling to distract themselves from daily concerns, or gambling to become rich or win. Ego-needs, such as feeling important in the eyes of others, also seemed to be a motivation to gamble among these pathological gamblers.

The Canadian Problem Gambling Index (CPGI)

The Canadian Problem Gambling Index (CPGI) (Ferris & Wynne, 2001) was launched in 2001 to help measure the prevalence of gambling and problem gambling in the general population. It was developed, in part, to be “the most valid and reliable instrument possible for use in general population surveys” (Ferris & Wynne, 2001, p. 6). The CPGI measures for information on type of gambling, frequency of play, amount spent on gambling activities and gambling-related harms. The CPGI is divided into three sections followed by demographics: Gambling Involvement, Problem Gambling Assessment, and Problem Gambling Correlates. The “Gambling Involvement” section is made up of 22 items and provides indicators of gambling involvement including information on an individual’s frequency of play, duration of play, and spending habits. The “Assessment” section consists of 12 items. Nine (9) of these items make up the

Problem Gambling Severity Index (PGSI) and include four (4) potential gambling behaviours and five (5) potential gambling consequences. The PGSI can be scored to describe the prevalence rate of problem gambling in a population. The PGSI categorizes participants into one of the following five groups: non-gambler, non-problem gambler, low risk gambler, moderate risk gambler, or problem gambler. The PGSI can also be used as a self-assessment tool, or by researchers who wish to investigate gambling as a possible issue without the need to have participants complete a longer questionnaire. The “Correlates” section is comprised of 15 items that can be used to develop profiles of different types of gamblers and problem gamblers. The final 11 items are questions related to demographics. Since its launch in 2001, the CPGI has been used in all Canadian provinces.

Merits of the CPGI

McMillen and Wenzel (2006) performed a study to assist in the clarification and debate about the relative merits of three problem gambling prevalence screens, including the South Oaks Gambling Screen (SOGS) and the Canadian Problem Gambling Index (CPGI). Participants in the study were randomly selected from residential telephone numbers in the state of Victoria, Australia. In the end, 8,479 adults 18 years of age or older completed the telephone interview. Participants were randomly assigned to complete one of three prevalence screens. Participants were interviewed to assess the construct validity of the measures (i.e., whether the measures actually measure problem gambling). The findings indicated that overall, the CPGI was the superior screen and demonstrated the best measurement properties of all three instruments. These findings were later confirmed in a national review of research on problem gambling.

In a separate attempt to determine the reliability and validity of measures for detecting problem gamblers, Arthur, Tong, Chen, Hing, Sagara-Rosemeyer, Kua, and Ignacio (2008) measured four problem-gambling diagnostic and screening instruments with convincing psychometric properties: the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV), Gamblers Anonymous 20 (GA-20), the South Oaks Gambling Screen-Revised (SOGS) and the Canadian Problem Gambling Index (CPGI). After conducting their study, the authors found that “the CPGI demonstrated the best psychometric results in terms of reliability, validity, and well-identified attributes” [when compared with the other instruments] (p. 459). Furthermore, their findings suggested that not only does the CPGI correlate significantly with the DSM-IV (often considered the ‘gold standard’ in identifying problem-gambling), but that the CPGI was also most useful for identifying, not only problem gambling, but other issues such as depression, suicide, drinking and financial problems related to gambling.

CPGI Inventory: Gambling Among Ontario Adults

The inventory of CPGI studies is quite extensive. Prevalence studies using the CPGI have been performed at international, national and provincial levels. International prevalence studies have been performed in Iceland, Norway, and Australia, and in 2005, Cox, Yu, Afifi, and Ladouceur performed a national survey of the gambling problems in Canada. Provincially, prevalence studies have been performed by various authors from British Columbia to Prince Edward Island.

Wiebe, Single, and Falkowski-Ham (2001) conducted a survey intended to determine the nature and extent of gambling and gambling problems in Ontario. The survey was conducted under the direction of the Canadian Centre on Substance Abuse

and the Responsible Gambling Council (Ontario) under a grant from the Ontario Problem Gambling Research Centre. The measure of gambling problems used in this survey was the Canadian Problem Gambling Index (CPGI) (Ferris & Wynne, 2001). The results from a stratified random sample of persons aged 18 or older living in Ontario households that had a telephone showed that gambling is a very common activity. Approximately five of six Ontario adults (83%) who responded, reported gambling in some fashion in the previous year. The most common gambling activity was the purchase of lottery tickets (64.6%). In terms of socio-demographics, it was determined that males were more likely to become involved with problematic gambling than females. It was also found that young adults aged 18 to 24 years of age were the most likely to gamble at problematic levels, while respondents 60 years of age and older were the least likely age group to experience severe gambling problems and the most likely group to be non-gamblers. In relation to marital status, those individuals who were single, including those who were divorced or separated, were found to be most likely to be gambling at problematic levels. In addition, it was found that gambling problems were more common among those with no children living in the household. Finally, employed respondents were found to be most likely to be non-problem gamblers while students and those who were unemployed were most likely to experience severe gambling problems. The results from this study were found to provide an appropriate baseline measure for future studies on trends in problem gambling among Ontario adults.

Gambling on College and University Campuses

Using the South Oaks Gambling Screen (SOGS) (Lesieur & Blume, 1987)

Ladouceur, et al. (1994) examined the prevalence of gambling and gambling related

problems among college students in the province of Quebec. The results revealed that gambling practices are widespread among college students and the incidence of pathological gambling (2.8%) is twice as high in this population as in the general adult population.

Winters, et al. (1998) surveyed college students from two universities in Minnesota about their gambling involvement. A college gambling survey was designed for this study. It consisted of (a) demographic, school performance, and drug use frequency items routinely included in the University of Minnesota yearly student health survey; (b) the 20-item SOGS (Lesieur & Blume, 1987); and (c) questions about amount lost while gambling, perceptions of peer gambling, and personal finances and spending (income during the previous year, average monthly disposable income, and total credit card debt as of the previous month). The authors found that gambling was reported to be a widespread experience, with 87% of the college population having participated in some form of gambling at least once in the past year. The authors also found that most students gambled only on occasion, and very few students identified any financial, social, or personal hardships as a result of their gambling. By contrast, the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (2000), reported that the lifetime prevalence of pathological gambling in college students may be as high as 8%, which is more than double than that of adults in the general population.

Williams, et al. (2006) administered a questionnaire to assess the gambling behaviour of Canadian university students from southern Alberta (n=585). The authors found that 72% of the population under investigation reported gambling in the past 6 months while 7.5% of these students classified as problem or pathological gamblers.

These rates were found to be significantly higher than the rates found in the general Alberta population.

According to Jeff Marotta (NCAA News, 2006), manager of the problem-gambling programs for the State of Oregon, most colleges seem to view student gambling as “a harmless extracurricular activity” (p. 1). Marotta has reported that “about one college student in 20 has a gambling problem, but it’s an issue that’s very much under the radar”, noting that some students apply their financial dollars to pay off their gambling debts (NCAA News, 2006, p. 1). In a small paragraph, hardly visible, tucked away in the bottom right corner of a “comments” section in the NCAA News, Marotta explains that due to gambling debt some students are forced to take semesters off to work because they can no longer afford to pay for tuition and books as well as all the other expenses that come along with being a college student. He also thinks this is happening a lot more frequently than people realize.

Gambling Correlates for Students

In a recent study performed by Stuhldreher, et al. (2007) the prevalence of gambling and connections to health among college undergraduate students was investigated. The method used was a health-habit questionnaire given to students enrolled in a university-required course. What the authors found was that gambling is correlated with high-risk health behaviours. In terms of comorbid factors, it was found that “several gambling practices were correlated with failure to use seatbelts, driving or riding with someone under the influence, and using drugs (including cigarettes)” (p. 75). Furthermore, it was found that twice as many students who were measured to have gambling problems considered and or attempted suicide than those students who were not

assessed as having a gambling problem. These results are consistent with Ladouceur, et al. (1994) who found pathological gambling to be associated with economic, professional and interpersonal problems. More specifically, these problems included alcohol abuse, drug abuse and criminality.

Motivation of College and University Students

Neighbors, Lostutter, Cronce, and Larimer (2002) conducted a study designed to examine the gambling motivation among college students with the goal of determining why gambling is prevalent in this population. The participants in the study were asked to list in rank order their top five reasons for gambling. The results showed that a majority of college students gamble either to win money, for fun, for social purposes, for excitement, or just for something to do. It was found that over 40 percent of this sample reported monetary gain as their primary motivation for gambling.

Of concern is that despite having the highest prevalence rates of problem and pathological gambling among various segments of the population (Ladouceur, et al., 2004; Williams, et al., 2006; Weiss & Loubier, 2008), little research has addressed the motivation behind why it is that college students gamble.

Gambling by College and University Student-Athletes

“Gambling is the invisible addiction. While alcohol and drug abuse are often easily detected, gambling behaviour is not. At the moment, it may not even be on the radar of administrators or coaches as an at-risk behaviour. An athlete who is performing poorly because of alcohol or drugs is much easier to detect than one who is spending too much time gambling” (Darden & Rockey, 2006, p. 2).

In 2005, the NCAA produced a national study on collegiate gambling and associated health risks. The goal of the study was to provide very basic information related to the gambling behaviour of the student-athlete population from Division I, II and III schools. In total, over 20,000 student-athletes were surveyed. Using the DSM-IV Gambling Screen, the results revealed that 69% of male student-athletes reported participating in gambling activities and 35% reported participating in gambling activities that violated NCAA regulations. In addition, it was found that close to 5% of males in all three divisions were categorized as a problem or pathological gambler. Kerber (2005), on the other hand, determined that nearly 15% of 636 college student-athletes at three American Midwest universities showed problem or pathological gambling behaviour.

Nelson, LaBrie, LaPlante, Stanton, Shaffer, and Wechsler (2007) performed a novel study of gambling on college and professional sports and the influence of attending colleges with differing levels of “sports interest”. Among those examined were athletes, sports fans, and other students (N = 10,559) at 119 colleges in the United States. The results showed that athletes and fans reported more sport gambling compared to other students, with no differences between athletes and fans. The authors also found that students attending schools with a greater “sports interest” (i.e., loyalty, connection to school team) were more likely to gamble on college sports.

Ellenbogen, et al. (2008) determined that male student-athletes in high profile sports (e.g., baseball, football) were more likely to report a gambling related problem as compared to their counterparts in other sports (e.g., track & field, volleyball). This finding is in contrast to a previous study performed by Huang, Jacobs, Derevensky, Gupta, & Paskus (2007a), who found that student-athletes in golf and lacrosse were more

likely to report sports wagering than athletes in other sports such as ice hockey, football, and baseball. Ellenbogen et al. also found evidence that only a very small number of student-athletes reported major infractions such as attempting to alter the outcome of a game or sharing inside information.

Gambling Correlates for Student-Athletes

In a study conducted by Miller, et al. (2001), addictive disorders among athletes with a specific accent on gambling as an addictive disorder were investigated. The focus of the study was to determine whether gambling was seen as a co-morbid factor with other addictions and with depression among athletes, both college and professional. Risk factors that are often associated with athletes who may have an addictive disorder were investigated from the perspective of personal, peer, family, and community influences. The results from the study indicated that following the onset of gambling success and winning, the athlete then experiences losing, resulting in indebtedness and the cycle of addiction, and ultimately, desperation and depression.

Stuhldreher, et al. (2007) found that “athletes more frequently bet on sports and played games of chance, had gambling debt, and sought help for gambling than non-athletes” (p. 75). Weiss (2010) suggested that while it has been found that gambling and substance use (i.e., drug, alcohol) go hand in hand across all segments of the population, it is perhaps especially so for college student-athletes. Utilizing the Michigan Alcohol Screening Test (MAST) and the South Oaks Gambling Screen (SOGS), Weiss found that college student-athletes had higher frequencies of alcohol dependency with disordered gambling when compared with non-athletes.

Weinstock, Whelan, Meyers, and Watson (2007) suggested that although gambling problems appear to be an issue for college and university students, student-athletes in particular should be given extra attention because of the implications gambling could have on the integrity of intercollegiate sport as well as their personal well-being.

Gambling by Former College and University Student-Athletes

In an unpublished Master's thesis, Bourn (1998) tracked the gambling behaviour among college student-athletes, non-athletes, and former student-athletes. Bourn's study was designed to determine whether differences and/or interactions exist across athletic status (i.e., current athletes vs. former athletes) and gender in both the incidence of gambling behaviour and in pathological gambling. Gambling and pathological gambling behaviour was tracked using the South Oaks Gambling Screen (SOGS) (Lesieur & Blume, 1987). Data was collected from participants from two NCAA Division III colleges (n=432). After conducting the study, the researcher concluded that student-athletes are more susceptible to pathological gambling than both non-athletes and former student-athletes. In the same article, it was found that males are more susceptible to pathological gambling than females.

In response to Curry and Jiobu's (1995) theory that active athletes who internalize competitive motivations may only begin to feel this "internal competitiveness" after their formal playing days are over, Weiss and Loubier (2008) investigated the possibility of a "delayed competitive effect" among athletes who might later emerge as pathological gamblers. Weiss and Loubier posed the question of whether former athletes who no longer have the sporting event to maintain their desire for competition will turn to gambling in general and possibly, specifically sports gambling, to fulfill those missing

needs (p. 3). In a preliminary investigation, Weiss and Loubier looked at former athletes who had been inactive from the sport they once played for a minimum of 10 years. As with Bourn’s (1998) study, gambling tendencies were determined from participants’ responses on the South Oaks Gambling Screen (SOGS) (Lesieur & Blume, 1987). The results showed that the frequency of those classified as “probable pathological” gamblers was higher among former athletes (13.0%) than both current athletes (7.0%) and non-athletes (3.0%). Their findings indicated that delayed competition might arise in the form of elevated gambling tendencies among former athletes. The authors viewed the study as exploratory in nature.

Two years later, building on their research of a delayed competitive effect among athletes, Weiss and Loubier (2010) conducted a study aimed at determining the types of gambling that were most prevalent in those having gambling problems. Specifically, the authors examined the gambling habits of current athletes, former athletes, and non-athletes who were experiencing difficulties with their gambling. Only participants who scored high (classified as disordered gamblers) on the South Oaks Gambling Screen (SOGS) (Leisure & Blume, 1991) were tested. What the study revealed is best represented in the table below.

Participation in Various Types of Gambling Among Athletic Status Groups					
Variable	Sport gambling (%)	Poker (%)	Horse racing (%)	Slots (%)	Lotteries (%)
Non-athlete	20.0	43.3	16.7	60.0	66.7
Current athlete	40.0	50.0	33.3	26.7	43.3
Former athlete	70.0	76.7	43.3	26.7	30.0
All participants	43.3	56.7	31.1	37.8	46.7

** All participants were previously diagnosed as problem gamblers.
 ** Sport gambling, Poker, and Horse racing were considered skill-based gambling types.
 ** Slots and Lotteries were considered chance-based gambling types.

According to Weiss and Loubier, their findings indicated that the athletic population may be particularly fragile when it comes to gambling on something with which they may be familiar (i.e., sport, poker). It was found that 16 of the 21 former athletes (76%) self-reported as sport gamblers, were wagering on the sport they had once played. To a lesser extent, the pattern of betting on the same sport they played was witnessed among current athletes (50%). The authors noted that differences in the findings may be due to league regulations or less disposable income among current athletes.

Conclusion and Final Thoughts on the Literature

The literature has illustrated that an especially vulnerable segment of the population partaking in gambling activities and developing problems related to their gambling are college and university students, particularly student-athletes. A separate portion of the literature has shown that former student-athletes are at a higher risk for developing gambling related problems than any other segment of the population.

Hypotheses: Sub-problems and Predictions

The purpose of this study was to explore the gambling tendencies of current and former Canadian varsity male student-athletes in an attempt to determine their propensity for problematic gambling. Based on findings in the literature, the following sub-problems and predictions will be examined:

Sub-problem 1:

A comparative of gambling involvement in chance-based and skill-based gambling activities across particular demographics.

Sub-problem 2:

The identification of potential risk for problem or pathological gambling behaviour across particular demographics.

Prediction 1:

P1: Former student-athletes will have higher rates of involvement in forms of gambling that require greater elements of skill than current student-athletes (i.e., sports gambling, poker).

Prediction 2:

P2: Both current and former student-athletes will more frequently gamble on the sport in which they currently play, or once played at the university level, over any other form of gambling.

Prediction 3:

P3: Both current and former student-athletes will place their largest bets on the sport in which they currently play, or once played at the university level, over any other form of gambling.

CHAPTER III outlines the methods used to conduct the current study.

CHAPTER III

METHODOLOGY

This chapter outlines the methods and research design that were used to conduct the current study. It includes information on the research participants, the instrument, procedures, and data analysis.

Population of Interest

Current and former Canadian university (varsity) student-athletes were identified as the population for this study.

Sampling

The sample participants for this study were student-athletes and alumni of one sport from one university in southern Ontario. The sport under investigation was chosen due to the masculine and often competitive nature of its players.

Participant Designations

Participants were designated either as “current student-athletes” or “former student-athletes” based on their current athletic status. Participants were given former student-athlete status only if they participated in university athletics in the sport under study at the institution under study. The category of former student-athlete was divided into three subgroups: former student-athletes over the age of 55; former student-athletes ages 35 to 55; and former student-athletes ages 34 and under. The age range 34 and under was chosen as a subgroup because it was believed that this cohort would generally have younger families, higher mortgage payments, and less disposable income than those who were between the ages of 35 and 55. The age range 35 to 55 was chosen because although this cohort may still have the same responsibilities as those aged 34 and under, they may

also have more disposable income. The age range 55 and over was chosen as a subgroup because it was believed those aged 55 or over would have less dependent children, fewer financial responsibilities, and more disposable income than those in the other two groups. It was believed the above three cutoff dates followed a logical and practical sequence to provide a snapshot comparison of gambling habits over time.

Participants were given current student-athlete status only if they were playing the sport at the institution under study in the academic year the instrument was administered.

Instrumentation

For the purpose of the current study, a modified version of the Canadian Problem Gambling Index (CPGI) (Ferris & Wynne, 2001) was used to examine current and former Canadian varsity student-athlete gambling behaviour. To review, the CPGI was launched in 2001 to measure the prevalence of gambling and problem gambling in the general population. It was developed, in part, to be “the most valid and reliable instrument possible for use in general population surveys” (Ferris & Wynne, 2001, p. 6). The CPGI measures for information on type of gambling, frequency of play, amount spent on gambling activities and gambling-related harms. The CPGI is divided into three sections followed by demographics: Gambling Involvement, Problem Gambling Assessment, and Problem Gambling Correlates.

The modified instrument was created and made live on the internet using “FluidSurveys”, a ‘do-it-yourself’ online survey software tool that is intended to allow users from around the world to create surveys, collect data from respondents, and analyze results. FluidSurveys is designed to be intuitive and full-featured so that both beginners and advanced users can make the most of the program.

Since the CPGI was originally developed as a telephone survey, modifications were made to better replicate an online survey. This included deleting instructions for the interviewer. Additional modifications such as items dropped and items added were also made to better reflect the current study's population of interest and to allow for a more straight-forward approach to the investigation of the study's hypotheses. In Section 4, six (6) questions were dropped, while Section 5 was added. The modifications that were made are bolded in Appendix A.

Procedures

With clearance from the university's Research Ethics Board (REB) (Appendix C), which included letters of support from the university's Athletic Director and the Coach of the targeted team, the athletic department provided e-mail contacts for current and former student-athletes to the university's Information Technology Services (ITS) department. An e-mail was sent on April 18, 2011 by ITS inviting current student-athletes of the team under investigation to participate in the current study. On April 27, the same e-mail invite was sent to former student-athletes to participate in the study. Reminders to participate were sent to all participants on May 5 and May 12, 2011. The survey went offline on May 19, 2011.

All participants who were interested in participating in the study were instructed to click on a "continue with study" link ([http://app.fluidsurveys.com/surveys/philwick/cpgi-a-modified-version/.](http://app.fluidsurveys.com/surveys/philwick/cpgi-a-modified-version/)) provided at the bottom of the invitation e-mail. Once participants were directed to the new link, they were informed to read a combined letter of information and consent. Following this, they

could agree to participate in the study by clicking a “continue with survey” button or exit the website if they chose not to participate.

The combined letter of information and consent contained contact information for the advisor, student researcher, and REB. It also informed participants of their right to withdraw from the study at any time without any risks. Participants were informed that if they clicked to continue they agreed to be part of the study. If participants choose not to participate they did not click continue, and were informed to delete the e-mail. At no point during this process were participants asked to identify themselves.

When participants finished with the survey they were to click either a “submit” or “withdraw” button. The participant was informed that they were not able to withdraw from the study simply by closing the online browser. “Save” and “resume” options were made available. By clicking the “submit” button, the participant agreed to allow the researcher to use the information they provided. Participants were then taken to a separate web page where they were thanked for their participation in the study. Here participants were also given the opportunity to enter a draw for a gift of appreciation by entering their e-mail addresses in a box provided at bottom of the page. Since the two web pages were separate from one another, there was no way to link an e-mail address to a survey. The entry for the draw did not go to the researcher but to a neutral site for an independent administration of the selection procedure.

Individuals were selected at random from the draw by an individual at the university’s Information Technology Services (ITS) department. One current student-athlete and one former student-athlete (alumnus) won a pair of Canadian Football League (CFL) tickets. To protect their identity, winning participants were notified by the ITS

department. Participants were notified that if they were unable to attend a football game in the Toronto area they could choose to give their tickets away or sell them.

Data Analysis

Data analysis was to mirror the analysis conducted in previous similar research studies. Thus, an analysis of variance (ANOVA) was to be used to compare scores across age and athletic status. In each of the analyses, differences were to be tested using a significance level of .05. The analysis was to provide the basis for discussion about comparison of responses between:

- a) Current student-athletes and former student-athletes overall;
- b) The three subgroups of former student-athletes;
- c) Current student-athletes and each of the three subgroups of former student-athletes.

In terms of a comparative ANOVA, the approximate minimum number of participants for statistical power was 50 respondents for each of the four subgroups. Therefore, for statistical significance, a minimum of 200 responses (equally divided among the four subgroups) was needed. The sample size was estimated to be approximately 700 student-athletes (current and former student-athletes combined). This number was generated by multiplying the number of years the program has been in operation by the average number of graduating players on the team each year. In the event there were insufficient responses to conduct an ANOVA, descriptive analysis was to be performed. Descriptive statistics are used to communicate the basic features of the data in a study (i.e., what the data shows). Descriptive statistics provide summaries about

the sample and the measures (Trochim, 2006) and will be used in this study to communicate the landscape of gambling in Canadian university athletics.

The following chapter, CHAPTER IV, reports the study's results and discusses their significance.

CHAPTER IV

RESULTS AND DISCUSSION

This study was designed to extend existing research that has examined gambling susceptibilities. This particular research explored the gambling participation of current and former Canadian varsity male student-athletes from a university in Southern Ontario. A modified version of the Canadian Problem Gambling Index (CPGI) (Ferris & Wynne, 2001) was used to help gather information on the gambling habits, preferences, and classifications of the identified population of interest.

A total of 83 current student-athletes and 209 former student-athletes were identified to participate in the current study. The unanticipated discrepancy between the estimated total sample size ($n=700$) and the actual sample size ($n=292$) was the result of incomplete contact information for a large portion of the former student-athletes. This resulted in a forced change of data analysis. Since the study required a minimum of 200 respondents (50 per cell) for statistical power (to be derived from a pool of 292 student-athletes, not 700 as originally predicted), there were insufficient responses to conduct an analysis of variance (ANOVA) across age and athletic status. As such, descriptive analysis was utilized to report and discuss the findings.

Response Rate

The survey yielded 84 responses from 292 invitations for an overall response rate of 28.8%. Sixty five of the 84 responses were complete while 19 provided partial responses. According to Wiebe, et al. (2001) response rates for general problem gambling surveys in Canada range from 65.0% in Ontario to 25.0% in British Columbia. However, as a rule of thumb, 10-20% is a common online survey response rate. Therefore, while

the response rate achieved in the current study is only just within the range found in other gambling studies, it is a superior response rate for an online survey. Of the 84 responses, the researcher was only able to derive the athletic status and age of 60 participants (there was insufficient information to group the other 24 participants). Of the student-athletes that could be appropriately grouped, 13 (21.7%) were current student-athletes while 47 (78.3%) were alumni. The alumni were further grouped with 20 (42.6%) under the age of 34, 12 (25.5%) between the ages of 35 and 55, and 15 (31.9%) over the age of 55. A response bias may have contributed to the low response rate. A participant's motivation to complete the current study may have been diminished because they themselves had a gambling problem that discouraged them from participating. Fifty six of the 84 respondents (66.7%) entered the draw for a gift of appreciation. The participants' data was deleted once the results were analyzed.

The following highlights the key results found in each of the five (5) sections of the modified instrument, and discusses their significance. The "Canadian Problem Gambling Index (CPGI): A Modified Version" can be viewed in Appendix A. Due to the limited data, in most cases current student-athletes and former student-athletes had to be grouped into one pool to allow for discussion. For the sake of clarity, from this point forward, the pool of current student-athletes and former student-athletes combined will be referred to as "research participants". There are, however, a few instances where the data allowed for the comparison of responses between current student-athletes and former student-athletes overall. These instances will be identified.

Gambling Involvement

The first section of the instrument inquired about gambling involvement, with questions asked about frequency of involvement, spending, and duration.

Among the research participants (current student-athletes and former student-athletes combined), gambling, in one form or another, is common. Of those who adequately responded, 62 out of 65 (95.4%) engaged in one or more gambling activities at least once in the year prior to the administration of the survey. These findings are consistent with research which shows high rates of participation in gambling activities among student-athletes, (Ellenbogen, et al., 2008; Kerber, 2005; Stuhldreher, et al., 2007), and former student-athletes (Bourn, 1998; Curry & Jobu, 1995; Weiss & Loubier, 2008, 2010). According to Wiebe, et al. (2001), who provided a baseline measure for future studies on gambling trends among Ontario adults, about five in six Ontario adults gamble.

The most frequent form of gambling reported was the purchasing of raffle or fundraising tickets (68.0%). This was followed by the purchasing of lottery tickets, such as lotto 649 (67.0%). These findings were found to be representative of gambling involvement in the general population. Wiebe et al. (2001) found that 65.0% of Ontario adults purchased lottery tickets and 51.0% purchased fundraising tickets in the year prior to their study. However, the slightly higher rates of gambling involvement in fundraising among the current study's respondents (67.0%) when compared to Ontario adults in the general population (51.0%) may be explained in part, by the sport culture in which there is often a social expectation among athletes to "give back". It should be noted that despite the popularity of fundraising within athletics, 25.0% of the respondents clicked "never"

to the purchase of raffle or fundraising tickets in the past year. Such a number may suggest that athletes are in tune with the small odds and payouts of fundraisers and thus opt to not gamble or gamble elsewhere. This finding may also suggest that fundraisers need to look beyond alumni while attempting to generate revenue for sport because although gambling involvement in fundraising is popular among the research participants, 25% reported not participating in fundraising at least once in the past year.

A further analysis of the research participants' gambling involvement revealed participation in one gambling activity is not necessarily related to participation in other gambling activities. In other words, individuals who gambled on certain activities did not inevitably gamble in other ways. For example, 67.0%, or 43 survey respondents, purchased lotteries tickets such as the 649 at least once in the past year, while only 8.0%, or 5 respondents, purchased daily lottery tickets like Pick 3 at least once in the past year. These findings contrast the work of Wiebe, et al. (2001) who found that among the general population of Ontario adults, with a few notable exceptions (i.e., the internet), participation in one gambling activity was often related to another.

The more infrequent forms of gambling reported were betting on the internet (8.0%), playing bingo (6.2%), and making bets with a bookmaker (0.0%). The findings on bingo are consistent with the findings in the general population. Wiebe, et al. (2001) found that less than 10 percent of Ontario adults played bingo in the past year. The finding on internet gambling however, is perhaps one of the major findings of the current study. Although gambling online was reported as an infrequent form of gambling (8.0%) among the research participants compared with other forms of gambling in the current study, it is significantly higher than the numbers reported in the general population.

Comparatively, the Centre for Addiction and Mental Health (CAMH) (2009) determined that only 2.1% of Canadians gambled on the internet in the past year, while Wiebe, et al. (2001) determined that only 0.6% of Ontario adults were engaging in online gambling in the past year. These findings could have future repercussions for the research participants. Robert Murray, manager at the Problem Gambling Institute of Ontario, determined that problem gambling is three to four times higher among online gamblers than others who go to casinos or play lotteries. Furthermore, predictors of internet gambling in Canada include being male, being single, and being a student (Wood & Williams, 2009). It should be mentioned that 8.0% in this case only amounts to five (5) out of 62 responses.

Another major finding of the current study was that not one (0.0%) respondent overall reported betting with a bookmaker at least once in the past year. This number is lower than of the general population in Ontario, which is approximately 1.0% (Wiebe, et al., 2001). This number is also dissimilar to Cross and Vollano's (1999) results, who found among a population of NCAA male student-athletes that 7.0% had used either bookies or parlay cards for their gambling activities. This study's finding on the absence of betting with bookmakers may suggest that Canadian student-athletes are aware of the repercussions athletes face when they gamble. A lack of accessibility to bookmakers may also explain this finding as most significant sport gambling has ties to athletic competition in the United States such as NCAA sport or professional sport. This is supported by NCAA findings on gambling research.

In 2005, the NCAA released data from a study conducted in 2004 that surveyed over 21,000 male and female student-athletes among its three divisions (Division I, II,

and III). The results revealed that 35.0% of the respondents reported participating in gambling activities that violated NCAA regulations. The findings (regarding bookmaking) of the current study, therefore, are interesting because while 35.0% of American student-athletes reported violating strict NCAA regulations (including betting with a bookmaker), 0.0% of the study's population had bet with a bookmaker at least once in the past year despite the fact that Canadian Interuniversity Sport (CIS) has no gambling policy. This finding may be explained by differences in the ease of gambling opportunity. For example, unlike the United States where one can bet legally only through a licensed Nevada sportsbooks or through the Oregon Lottery, Canada continues to have one of the largest legal sports betting networks in the world, Sport Select or "Pro-Line". Perhaps then, since Canadian student-athletes have an avenue such as Pro-Line to place bets, they simply have no need for bookmakers. However, according to Nick Rupcich (2009), "[i]f you are involved in sports betting [in Canada], you almost always get a fairer game with an illegal bookmaker than you do betting with the provincial government [Pro-Line]". To review, currently with Pro-Line, one must win three games. Pro-Line does not offer betting on individual competitions, partly because betting on a single sporting event is technically illegal under the Criminal Code of Canada. In contrast, illegal bookmakers only require that you win one game. As a result, the odds of winning are increased, and because there is no limit to what one can wager, the payouts are larger betting illegally. The study's results indicating no need for bookmakers, therefore, is interesting.

Gambling Involvement Inside of a Casino

In relation to gambling at any type of a casino, including illegal or charity casinos, the results showed that a majority of the research participants (56.0%) had done so in the past year. When respondents reported casino gambling, the most popular responses were betting money on coin slot machines or video lottery terminals (VLTs), playing blackjack, and playing roulette. By contrast, the most infrequent gambling activities played inside of a casino included playing poker, craps, and keno. These results may suggest that inside a casino, chance-based gambling activities with the exception of blackjack, are more popular than skill-based gambling activities among the study's respondents. The significance of this finding will be discussed in combination with findings from "Gambling Involvement Outside of a Casino", later on in the chapter.

To review, games of "skill" commonly stress the ability of contestants to surmount obstacles and opponents to achieve victory. In contrast, games of "chance" consist of those games where the outcome is rendered completely independent of the player and where winning is the result of luck as opposed to triumph over an opponent (Caillois, 1961). Games such as roulette, dice, or the purchasing of lottery tickets are fundamentally chance-based games, while games such as poker, blackjack, or betting on sports are considered skill-based games. A classification of all gambling activities can be found in Appendix B.

Gambling Involvement Outside of a Casino

Contrary to the findings of chance-based gambling inside a casino, the research participants of this study reported frequently engaging in skill-based gambling outside of a casino. It was found that 21.0% bet or spent money on games of skill such as pool,

bowling, or darts, 33.0% played sports lotteries like Sport Select, 43.0% bet on cards or board games with family or friends, and 55.0% bet or spent money on sports pools in the past 12 months. The high rates of skill-based gambling evidenced here, particularly sports gambling activities, are consistent with Weiss and Loubier's (2008) theory of a "positive expectation of winning" among athletes. Weiss and Loubier have long argued that athletes are likely to gamble on sport because they [athletes] believe that picking winners involves a certain sport knowledge/skill to which the layperson is not privy, resulting in a perceived "competitive advantage" over non-athletes and a subsequent "positive expectation of winning". Furthermore, although it may simply be an illusion of control, an alternative explanation afforded by Weiss and Loubier (2010) showing increased sport gambling among athletes, may be that some characteristics learned through participating in sport (i.e., competitiveness, risk-taking, aggressiveness) enhance one's perception that they can be successful when gambling... "[i]t seems that athletes believe they have the skill to be winners whether on the field or in other areas of their lives" (p. 517).

The results of the current study showed infrequent participation in chance-based gambling activities outside of a casino. The results revealed that only three respondents, which equated to only nine percent (9.0%), spent any time gambling (outside of a casino) on bingo, keno, craps, and VLTs combined.

Gambling Duration

The most time invested in gambling among the research participants was reported to be with horse races and games of skill (pool, bowling, or darts), both averaging at least two hours (120 minutes) each time respondents bet. This was followed with playing poker in a casino (average of 107 minutes), coin slot machines or VLTs (average of 61

minutes), blackjack (50 minutes), and roulette (40 minutes). Respondents also agreed to playing sports pools an average of 45 minutes, and Sport Select (Pro-Line) an average of 15 minutes each time they played. There was then a significant drop in time spent on other forms of gambling (i.e., bingo, keno, craps).

While the nature of the gambling activity (i.e., it takes less than two minutes to purchase a lottery ticket versus time spent at a race track) may be the predictor of duration, it is interesting to note that with the exception of VLTs inside of a casino, skill-based gambling activities (i.e., betting on horse races, betting on games of skill, playing poker, sports lotteries, sports pools) required more time from the respondents than chance-based gambling activities (i.e., keno, craps, or VLTs outside of a casino). Whether or not more time spent on a particular gambling activity equated to higher levels of problematic gambling among the study's respondents justifies further study, however according to Wiebe et al. (2001), for most gambling activities, as the frequency of gambling increases, the likelihood of experiencing problems increases.

“Out of Pocket” Spending

This portion of the survey inquired about “out of pocket” spending in a typical month on various gambling activities.

Spending Inside of a Casino

As noted in the previous section, blackjack was reported to be the second most popular betting action inside a casino. However, blackjack was found to be the gambling activity where research participants were spending more than other games, at a value of \$100 in a typical month. In total, 12.0%, or four research participants, were doing so. Also inside of a casino, 4.0% (two research participants) spent between \$100 and \$200 on

VLTs in a typical month, and 3.0% (two research participants) spent the same on roulette in a typical month. The most “out of pocket” money spent inside of a casino was on poker. In total, 4.0% (two research participants) spent between \$200 and \$500 on poker inside a casino in a typical month.

Spending Outside of a Casino

With the exception of 6.0%, or two research participants, who spent between \$100 and \$200 on Sport Select in a typical month, not one respondent (0.0%) spent more than \$100 in a typical month on horse racing, games of skill, sports pools, or on a bookie. This finding comes in spite of earlier results which show higher frequencies and more time spent among these gambling activities when compared to most others. These results may suggest that higher gambling involvement among this study’s research participants does not necessarily equate to more money being spent. This finding contrasts the work of Wiebe, et al. (2001) who found that among most of the general population in Ontario, there is a strong relationship between gambling involvement and money spent on gambling as well as the connection between money spent and gambling related problems. The results of the current study may also suggest that some forms of skill-based gambling, which are often thought to possess elements of risk-taking and competition, are instead played for fun, recreation, or “bragging rights” among current and former Canadian student-athletes.

The most potentially expensive gambling activity performed outside of a casino was betting on the internet. In total, 8.0%, or three research participants, spent between \$200 and \$500 gambling online in a typical month. This was followed by 6.0% (two research participants) who spent between \$100 and \$200 on Sport Select in a typical

month. There was then a significant drop in spending on other forms of gambling. The results of the current study yielded that not one respondent spent more than \$100 on lottery tickets, daily lottery tickets, instant win or scratch tickets, raffle or fundraising tickets, horse races, bingo, keno, craps, games of skill, sports pools, arcade or video games, or bets with a bookie, in a typical month.

The results on “out of pocket” spending may suggest that the identified population is only at a small risk for developing problem gambling. According to Wiebe, et al. (2001), on average [across Ontario adults], non-problem gamblers spend \$43.36 a month, at risk gamblers spend \$96.77, moderate risk gamblers spend \$568.88, and those with severe gambling problems spend an average of \$865.41 on all gambling activities in a month. The results of the current study revealed that not one participant (0.0%) reported betting more than \$500 a month on any gambling activity in a typical month, and only very few (5.8%) bet over a \$100 a month on any gambling activity.

“Largest Amount of Money Spent”

The single largest amount of money spent in any one day (\$500) was shared among three gambling activities: betting on the internet, playing poker inside a casino, and playing blackjack inside a casino. This was followed by money spent playing VLTs inside a casino (\$200), and money spent buying raffle or fundraising tickets (\$100). VLTs inside of a casino were also identified as the gambling activity with the widest range of most money ever spent in any one day (\$25 to \$200). There was then a significant drop in large amounts of money spent. For instance, the next largest amount of money spent in any one day was on sports lotteries, sports pools, and games of skills at no more than \$100. Finally, with the exception of one respondent who submitted \$60, no

more than \$30 was ever spent on lottery tickets, daily lottery tickets or instant win/scratch tickets in any given day. These results may suggest that the research participants in this study are more likely to make larger bets on games of skill rather than on games of chance, and with the exception of the internet, these bets would be made inside of a casino (i.e., poker, blackjack). In comparison to the general population in Ontario, analysis revealed that none of the findings regarding large amount of money spent seemed to be “out of the ordinary”.

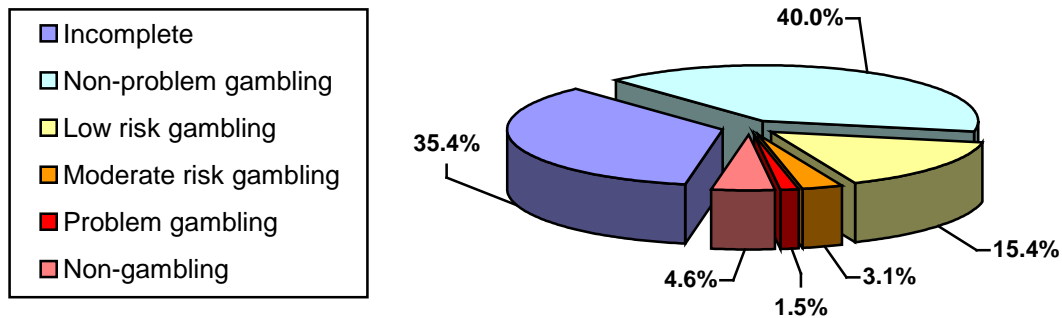
Problem Gambling Assessment

This section of the CPGI is designed to determine gambling classifications of respondents (Ferris & Wynne, 2001). It is comprised of twelve questions, nine (9) of which are scored to best reflect the dimensions of problem gambling behaviour. Within this section, there are five (5) questions that address problem gambling in the same way that other, clinically-based measures (i.e., DSM) have often measured problem gambling, four (4) questions that address the consequences of gambling, and three (3) non-scored questions which were included because of their strong sense of importance among stakeholders.

The results from the nine (9) scored items revealed 23 incomplete responses, 26 respondents who scored 0 on the CPGI, 10 respondents who scored between 1 and 2.5 on the CPGI, 2 respondents who scored between 3 and 7.5 on the CPGI, 1 respondent who scored between 8 and 27 on the CPGI, and 3 respondents who did not score at all. As mentioned earlier, due to the limited response rates, current and former student-athletes had to be grouped into one pool. Survey respondents were classified into one of six groups (incomplete, non-problem gamblers, low risk gamblers, moderate risk gamblers,

problem gamblers, and non-gamblers). The following pie-chart provides a breakdown of the gambling classifications of the study's respondents.

The Gambling Classifications of Current and Former Canadian University (Varsity) Student-Athletes



Specifically, the chart shows that 40.0%, or 26 of the survey respondents, were classified as “non-problem gamblers”. These participants responded “never” to most of the indicators of behavioural problems (i.e., chasing or escalation of betting to maintain excitement). These participants may not have experienced any adverse consequences of gambling, and did not agree with the distorted cognition items (i.e., you’re more likely to win after a loss).

Second, the chart shows that 15.4%, or 10 of the respondents, were classified as “low risk gamblers”. Not unlike “non-problem gamblers” these participants responded “never” to most of the indicators of behavioural problems, and they had an understanding of gambling odds. However, it is possible that frequent gambling with heavy involvement in terms of time and money exists as a “professional” gambler could fit into this category.

Third, the chart shows that 3.1%, or 2 of the respondents, were classified as “moderate risk gamblers”. Respondents in this group responded “never” to most of the indicators of behavioural problems, but had one or more “sometimes” responses. These gamblers may be at risk if they are heavily involved in gambling and if they respond

positively to at least two of the correlates of problem gambling. This group will also be unlikely to have experienced any adverse consequences from gambling.

Fourth, the chart shows that 1.5%, which equated to only one respondent, classified as “problem gamblers”. This respondent may have experienced adverse consequences from their gambling, and may have lost control of their behaviour. This respondent was more likely to endorse the cognitive distortion items (i.e., you are more likely to win after you lose).

Fifth, the chart shows that 4.6%, or 3 of the respondents, were classified as “non-gamblers”. These respondents have not gambled at all in the past 12 months, and skipped through the majority of the section.

Finally, the chart shows that 35.4%, or 23 of the respondents, did not answer all of the necessary nine (9) scored items that are needed to group an individual into a gambling classification category.

Wiebe, et al. (2001) measured gambling and problem gambling among a population of Ontario adults and found that 69.8% classified as non-problem gamblers in the past year (none reporting problems from their gambling). The authors also found that 16.8% classified as non-gamblers, having spent no money on gambling activities in the past year. By contrast, as evidenced above, the results of the current study show a significantly lower number (40.0%) classified as non-problem gamblers and a significantly lower number (4.6%) classified as non-gamblers. This may suggest a higher propensity for problem gambling among the study’s respondents. However, upon further analysis, it does not appear that the research participants in the current study experienced any more gambling related problems than those in the general population. The results of

the current study showed very similar results with Wiebe, et al. in terms of at risk gamblers, moderate risk gamblers, and problem gamblers.

With that being said, there is reason to believe that the gambling “classifications” of this study’s research participants may not represent a true depiction of how gambling is affecting them. For instance, only 4.6% (3 respondents total) in the current study were classified as “moderate risk gamblers” or “problem gamblers”, yet 19.0% (7 respondents total) bet or spent more money than they wanted to on gambling, 15.0% (6 respondents total) “sometimes” bet more than they could really afford to lose, 14.0% (5 respondents total) “sometimes” lied to family members or significant others to hide gambling, 13.0% (5 respondents total) “sometimes” needed to gamble with larger amounts of money to get the same feeling of excitement, 11.0% (4 respondents total) “sometimes” went back another day to win back money lost, and 5.0% (2 respondents total) wanted to stop gambling but did not think they could. Furthermore, even though it may have only been one participant, 3.0% of the respondents admitted that they were borrowing money for gambling purposes, that gambling was causing them health related problems, and that gambling was causing them and their family financial problems.

Correlates

This section of the CPGI mostly diverted from the purposes of the current study (most of the questions were not related to gambling) and due to the low response rate, the results will not be discussed in detail. This section was part of the survey, however, and quantitative review may reveal that some of the findings could have implications for future study on the gambling behaviours of student-athletes, both current and former. For instance, the results revealed that 19.0%, or 13 respondents, either “agreed” or “strongly

agreed” that after losing many times in a row, you are more likely to win. Another 14.0% (8 respondents) “didn’t know”. In addition to this, 37.0%, or 22 respondents, either “agreed” or “strongly agreed” that you could win more if you used a certain system or strategy. Another 20.0% (12 respondents) “didn’t know”. These results show high rates of false or cognitively distorted beliefs among this study’s research participants concerning randomness and probabilities while gambling. This identifies a potential concern. Evidence suggests that the more severe a gambling problem, the more likely it is that the gambler holds a false belief that the odds of winning change depending on previous outcomes of a game or by using a betting system (Wiebe et al., 2001).

In addition, it was found in this study that an overwhelming majority of respondents (current and former student-athletes combined) who were determined to be at-risk for problematic gambling behaviour admitted to using alcohol and drugs while gambling, as well as gambling while drunk or high. The results in this section also showed that 5.0%, or 2 research participants, felt that they may have had an alcohol or drug problem in the past 12 months (i.e., 17.0% had the urge to have an alcoholic drink when something painful happened in their life). Furthermore, 8.0%, or three research participants, felt seriously depressed in the past 12 months. These results may support the link between substance abuse and gambling. Weiss (2010) suggested that while it is found that gambling and substance use (i.e., drug, alcohol) go hand in hand across all segments of the population, it is perhaps especially so for college student-athletes.

Demographics

The final section of the survey inquired about participant demographics. This was the only section of the CPGI that was modified from the original (as developed by Ferris

& Wynne, 2001). The other sections (Section 1 – Section 3) were left intact as a design that would generate data in the current study that could be compared to other studies using the CPGI. In terms of the modifications to this section, a number of questions were dropped from the original instrument. These modifications were made to allow for a more straight-forward approach to the investigation of the study's hypotheses. Any questions that worked well in the Canadian context were kept. The modifications that were made are bolded in Appendix A.

Demographics and Correlates to Problem Gambling

After analyzing the results, the average (mean) age of the research participants who completed the online survey was $\bar{x}= 37.7$ years of age. The eldest respondent was born in 1944 (*max= 67* years of age). The youngest respondent(s) was/were born in 1992 (*min= 19* years of age). At the time of the survey, 51.0% of the respondents were married, no respondents were divorced or separated. Almost 38.0% of the respondents had one or more people under the age of 18 living with them. Also at the time of the survey, almost 60.0% of the respondents were employed full-time (30 or more hours/week). Employment and annual income varied greatly among the participants. Only 10% were identified as “retired”.

This next section allowed for the comparison of current student-athletes and former student-athletes overall. In general, the analysis revealed that a large majority of the respondents classified as “low-risk” gamblers were identified as students working part-time who had never been married. This was found by linking a participant's gambling classification with their demographic information. This study's findings on “low-risk” gamblers are similar to findings in the Ontario general public. Wiebe, et al.

(2001) found that “at-risk” problem gamblers tend to be disproportionately young (between the ages of 18 and 24), unattached males. Unfortunately, due to the limited number of respondents who classified as moderate risk or problem gamblers, no correlates were detected between marital status, job status, or annual income and problematic gambling tendencies.

Betting on Sports

A question which was added to the survey inquired about betting on sports, a skill-based gambling activity. It was found that almost half (47.2%) of the combined research participants who agreed to gambling on sports, bet on football when they did gamble; 30.6% by way of the National Football League (NFL). The Canadian Football League (CFL), Canadian Interuniversity Sport (CIS), and the National Collegiate Athletic Association (NCAA) were the other identified leagues. Ice hockey (22.2%) was the second most popular response with the National Hockey League (NHL) being the only league identified. Basketball (18.1%) was the third most popular response with 76.8% of those respondents betting on “amateur” basketball (NCAA) as opposed to professional, the National Basketball Association (NBA). Major League Baseball (MLB) (8.3%), golf (The Master’s) (2.8%), and soccer (The English Premier League) (1.4%) were the remaining sports and leagues identified.

These findings appear to be consistent with research suggesting that athletes are more likely to gamble on something with which they are comfortable and have spent a majority of their lives doing (Weiss and Loubier, 2010). However, these findings are more likely to be associated with the opportunity to gamble on these sports.

Results to Hypotheses

Sub-problem 1:

To review, in addition to providing simply baseline results for a population that has received very little attention in Canada, one purpose of the current study was to investigate current and former student-athlete participation in chance-based and skill-based gambling. After conducting the survey and analyzing the data, the results show on the whole, that both current and former Canadian student-athletes participate in chance-based gambling as much or more than skill-based gambling. This finding is in direct contrast to what was hypothesized based upon the most relevant literature. This finding contrasts the work of Weiss and Loubier (2008, 2010) who found that skill-based gambling activities, particularly sports gambling, are more common than chance-based gambling activities among athletes, especially former athletes.

Sub-problem 2:

A second purpose of the current study was to identify the potential risk of problem or pathological gambling behaviour among survey respondents. After conducting the survey and analyzing the data (using the CPGI User Manual, Ferris & Wynne, 2001) the results show that the potential risk of problem or pathological gambling behaviour may be higher among current student-athletes when compared with former student-athletes. This finding is in direct contrast to what was hypothesized based upon most relevant literature. This finding is perhaps the study's most significant finding.

Although the results of the current study coincide with Bourn's (1998) findings (Bourn collected data from participants from two NCAA Division III colleges [n=432] in the Midwest and concluded that student-athletes are more susceptible to pathological

gambling than both non-athletes and former athletes), the results of the current study contrast more recent research (Weiss & Loubier, 2008, 2010) on the gambling habits of current and former athletes.

Motivated in part by Curry and Jiobu's (1995) theory that active athletes who internalize competitive motivations may only begin to feel this "internal competitiveness" after their formal playing days are over (once the threat of possible sanctions has lessened and income has increased), Weiss and Loubier (2008) investigated the possibility of a "delayed competitive effect" among athletes who might later emerge as pathological gamblers. To review, Weiss and Loubier posed the question of whether former athletes who no longer have the sporting event to maintain their desire for competition will turn to gambling in general and possibly, specifically sport gambling, to fulfill those missing needs (p. 3). After conducting their research, Weiss and Loubier (2008) found that former athletes had higher frequencies of skill-based gambling than both current and non-athletes. They also found that former athletes obtained higher mean scores on the South Oaks Gambling Screen (SOGS) (an instrument used to identify potential problematic gambling behaviour) than both current athletes and non-athletes. Their findings indicated that delayed competition might arise in the form of elevated gambling tendencies among former athletes. Although the results can only be described and not interpreted, the disparity of the results between the current study and those of Weiss and Loubier's (2008) may suggest that former Canadian student-athletes are less likely to develop a "delayed competitive spirit" (resulting in an increased rate of problematic gambling) when compared with their American cohorts. While it is far beyond the scope of this study to determine if this is accurate, there is room for discussion that former Canadian

student-athletes are less likely to identify as athletes once their competitive playing careers are over (when compared with their American cohorts), and are therefore less likely to gamble on sport, and less likely to develop problems related to gambling. This may be true because the average Canadian student-athlete in Canadian Interuniversity Sport (CIS) is far less glorified than their American counterpart in the NCAA. While the CIS is often overshadowed by academics, the NCAA functions in a highly commercialized environment with constant media attention.

Results to Predictions

To help qualify the study's sub-problems three predictions were made.

Prediction 1:

P1: Former student-athletes will have higher rates of involvement in types of gambling that require greater elements of skill than current student-athletes.

After conducting the survey and analyzing the results, former student-athletes were found to have lower rates of involvement in types of gambling requiring skill, including sport gambling, when compared with current student-athletes. After interpreting the results, only 16.7% of former student-athletes played a sports lottery at least once in the past 12 months, while 54.5% of current student-athletes had done so. Furthermore, while 45.9% of former student-athletes had bet money on sports pools at least once in the past 12 months, over 50.0% of current student-athletes had done so. These findings were not expected as they contrast the literature (Weiss & Loubier, 2008) suggesting that former athletes are more likely than current athletes to gamble on games of skill. Similar results were discussed in sub-problem 1.

Prediction 2:

P2: Both current and former student-athletes will more frequently gamble on the sport in which they currently play, or once played at the post-secondary level, over any other form of gambling.

As predicted, both current and former student-athletes were found to more frequently gamble on the sport in which they currently play, or once played at the post-secondary level, over any other form of gambling. These findings are consistent with research suggesting that athletes are more likely to gamble on something with which they are comfortable and have spent of a majority of their lives doing (Weiss and Loubier, 2010).

Prediction 3:

P3: Both current and former student-athletes will place their largest bets on the sport in which they currently play, or once played at the post-secondary level, over any other form of gambling.

Whether or not current or former student-athletes place their largest best on the sport in which they current play, or once played at the post-secondary level, over any other form of gambling, went beyond the reach of the study's findings. This was due to an oversight in Section 5 of the study's modified instrument.

Conclusion

Despite the inability to draw statistical inferences from the results of the current study, the findings are still of significance. In particular, the data provides not only a point of reference for future studies on the gambling habits of a unique population, but also helps to answer general questions which have received very little attention in

Canada: what are the gambling habits of current and former Canadian student-athletes, and what is their propensity for problematic gambling?

Delimitations: Post Survey

The most notable delimitation of the current study was the use of an online survey. Online surveys tend to garner lower response rates than that of other research methods such as telephone interviews, focus groups, or one-on-one interviews. In an attempt to prevent a low response rate, the identified participants were sent an original invitation to participate in the current study followed by two reminders. There were substantial reasons to participate in the current study which were made known to potential respondents (i.e., the information they would provide could have implications on future research, they could shed some light on two questions that have received very little attention in Canada, they would have the chance to win a gift of appreciation, etc.).

Limitations: Post Survey

The most notable limitation of this study was the small sample size. To review, the pool of potential study participants was estimated to be around 700 total student-athletes, however, the actual pool identified was less than half (292 total student-athletes). A small sample size combined with a lower response rate (28.8%) did not provide sufficient responses to conduct an analysis of variance (ANOVA), as used in other previous similar studies. Furthermore, the limited sample size did not allow for the comparison of gambling behaviour across age and athletic status.

A second notable limitation of this study that may have implications for future research on student-athlete gambling behaviour is the shortcomings of the instrument. While the CPGI is a valid and reliable instrument for examining gambling behaviour in

the general population, it proved to be cumbersome (and perhaps repetitive) for many of the current study's respondents. For instance, following the "gambling involvement" portion of the survey, which is the instrument's first question, the responses dropped off dramatically for the remainder of the section. In fact, at one point, total responses were less than half of the responses for the portion of the survey on gambling involvement. However, it seems the portion of the survey that asks participants about the largest amount of money they spent on various gambling activities is particularly sensitive. The absence of responses was as high as 37.0% for some questions in that portion of the survey.

A final notable limitation has to do with the truthfulness of responses of the participants, in particular, the current student-athletes who were surveyed. There is reason to surmise that these individuals would be less likely to admit an activity that could be, in some form, detrimental to their status as a student-athlete. However, all attempts were made to address this concern. Surveys could be completed at a computer of the respondent's choice, anonymity was assured, and participants were aware that the researcher was not affiliated in any way with the athletic department of the institution under investigation.

The Nature of the Problem

Currently, those who work in the gambling field struggle with how to best achieve representative samples of the population, and how to best measure problem and pathological gambling. For instance, while the Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV) (often considered the 'gold standard' in identifying problem gambling) considers problem gambling an impulse control disorder,

there is research which suggests that if problem gambling can be effectively treated as an addiction (as opposed to an impulse control disorder) it should follow approaches used to address other addictive behaviours such as drinking, smoking, or drug use. Although this has important implications in terms of prevention and intervention strategies there are conflicting ideas about how to treat problem gambling. Furthermore, according to Neighbors, Lostutter, Crouse, and Larimer (2002), the majority of research on gambling is based on implicit and explicit disciplinary assumptions and only focuses on adolescents and those who have been clinically diagnosed as being a problem or pathological gambler. Neighbors et al. suggested that because theories relating to gambling behaviour largely focus on problem or pathological gamblers, research has failed to address non-problematic gamblers. The authors suggest that a variety of perspectives (i.e., cognitive, psychological, environmental, social) are required to adequately examine gambling motivations. Finally, researchers in the gambling field have also long struggled with instrument completion rates. This comes in spite of various problem gambling screening instruments that have demonstrated good results in terms of reliability and validity. A further limitation often encountered by researchers is a participant's reluctance to expose their gambling history.

The following chapter, CHAPTER V, is the final stage of the current study. Conclusions for the current study are provided within this chapter and future recommendations are made based on findings in the literature and the study's results.

CHAPTER V

SUMMARY, CONCLUSIONS & RECOMMENDATIONS

Summary

This study explored the gambling behaviour of current and former Canadian varsity male student-athletes and addressed two questions which have received very little attention: what are the gambling habits of current and former Canadian student-athletes and what is their propensity for problematic gambling? To the researcher's knowledge, this would be the first documented study to have examined the gambling behaviour of Canadian student-athletes, both current and former. The results yielded insufficient responses to conduct a comparative analysis of variance (ANOVA) across age and athletic status. As such, descriptive statistics were utilized to report and discuss the study's findings. The results revealed that while a large majority of the respondents gambled in the past year (95.4%), very few classified as "problem gamblers" (1.5%). With that being said, there is reason to believe that the gambling "classifications" of this study's research participants may not represent a true depiction of how gambling is affecting them. For instance, almost 20.0% of the study's respondents bet or spent more money than they wanted to on gambling, 15.0% "sometimes" bet more than they could really afford to lose, 14.0% "sometimes" lied to family members or significant others to hide gambling, 11.0% "sometimes" went back another day to win back money lost, and 5.0% wanted to stop gambling but didn't think they could. An additional significant finding of this study was that former student-athletes were found to have lower rates of involvement in types of gambling requiring skill, such as sports gambling, when compared with current student-athletes. This finding contrasts Weiss and Loubier's

(2008) theory of a “delayed competitive effect” among former student-athletes resulting in higher rates of problematic gambling. In all, the results seem to suggest that respondent gambling behaviour more closely resembles that of the general population (Ontario adults) as opposed to the behaviour of their American student-athlete cohorts; however, future study is required.

Finally, a great deal was found out by not finding out. In other words, the lack of participation and the lack of responses in the current study may suggest that gambling is a sensitive issue. This identifies a major concern for future researchers in terms of generating response rates and the truthfulness of those responses. Recommendations that may help to mitigate these problems are offered later on in this chapter.

Conclusion

In all, the completion of this study has complemented previous research and has contributed to the essentially non-existent body of knowledge on Canadian student-athlete gambling behaviour. However, the real value of this study lies in the provision of baseline data for the evaluation of future trends. It is hoped that the findings of the current study will be used in combination with those from future similar studies to establish trends in student-athlete gambling behaviour and to better understand their propensity for problematic gambling. The eventual goal is to develop a body of knowledge that will allow Canadian policy makers to more effectively view student-athlete gambling behaviour. It is believed that future studies of a similar nature could heighten awareness of the potential for problem gambling and in return aid organizations wishing to adjust or implement gambling prevention programs. In turn, the development

of such programs could help to foster a social setting that is more proactive than reactive when organizational members place themselves at risk.

Future Recommendations Based on the Results of the Current Study

In Canada, student-athlete involvement in gambling and problem gambling has been overlooked. It is only recently that gambling and associated behaviour with gambling has garnered the attention of a number of key interest groups. This includes for example, sport administrators, sport government officials, mental health and addiction experts, behaviour analysts, sport sociologists, and sport psychologists. As such, a primary recommendation based on the small sample size of the current study is to conduct a similar future study with a larger pool of participants. Additional studies should also consider the gambling tendencies of athletes in a variety of sports (i.e., individual versus team sport) from various Canadian universities. The examination of gambling tendencies (i.e., administering a survey) is recommended during the athletic (sport) season and to be endorsed by the coach/coaches to ensure high response rates. This would ultimately assist in a more accurate and better understanding of Canadian athlete gambling tendencies.

The gambling tendencies of female student-athletes should also be considered. While it is argued that gambling is more often a part of male culture than it is a part of female culture, there is reason to believe the gender gap may be closing. Despite a general consensus in the literature that males exhibit greater risk-taking behaviours than females, place higher wagers than females, and dominate the gambling industry in terms of participation (Hardoon & Derevensky, 2001), there is evidence that now points to an increasing number of women who gamble and who claim to have gambling-related

problems (van Ingen, 2008). Wenzel and Dahl (2008) conducted the first study that included a review of literature on women and pathological gambling. After comparing the findings in the various studies, Wenzel and Dahl noted that there is only moderate evidence that the prevalence of pathological gambling is higher in men than in women. These findings contrast with earlier work performed by Hardoon and Derevensky (2001), who found that gambling is twice as prevalent amongst males when compared to females, and the work of Stuhldreher, Stuhldreher, and Forrest (2007) who found that gambling and problems with gambling were more frequent among men than women, regardless of venue. Assessing male and female gambling behaviour separately could prove instrumental in developing appropriate prevention and treatment strategies. Throughout the literature there seems to be an almost clear dichotomy between men and women when it comes to preferences for gambling activities. Adams, Sullivan, Horton, Menna, and Guilmette (2007) found that the types of gambling engaged in by males and females may reflect more casual gambling on the part of females (i.e., instant game, bingo, raffles) and/or limited skills (i.e., slots) than gambling that has more organized rules or knowledge to engage in it (i.e., dice, blackjack, or skill games), which attracts greater male participation. Wenzel and Dahl (2008) also found that women tended to have a higher preference for, and therefore played, games of chance (i.e., slot machines, bingo, and video games), while men played and preferred games of skill (i.e., sports games, racing, cards, gambling on the stock market). According to researcher James Weaver and his colleagues, while women in particular immerse themselves in brain-engaging digital environments (i.e., chance-based video lottery terminals) as a means of self-distraction, literally to “take their minds off” their worries (Reuters, 2009), men immerse themselves

in high risk activities (i.e., sports betting) as a means to show their superiority over lesser males (Rupcich, 2009).

The current study was limited to male student-athletes from one sport within one university. Research across various sports (both male and female) and various Canadian universities could help to identify the influence of location and particular demographical patterns or trends that would inevitably be of interest to educational institutions, researchers, and policy makers alike. Future studies should also investigate Canadian student-athlete gambling motivation. This may assist in the understanding of gambling behaviour among a population that has been largely neglected in the past. An important task for future researchers is to conduct longitudinal studies examining the relationship between gambling behaviour and associated problems over time. This may help to better establish the underlying role of gambling problems.

Based on the growing research which shows that former American student-athletes have the highest rates of sports gambling participation and the highest rates of problem and pathological gambling among any segment of the population (Weiss & Loubier, 2010), and Weiss and Loubier's (2008) theory of "delayed competitive effect" resulting in increased rates of pathological gambling among former athletes, an additional recommendation is to explore the sports gambling tendencies of former Canadian student-athletes specifically. Conducting such a study may help to draw attention to a potentially vulnerable segment of the population. In turn, this may ultimately provide a foundation for colleges and universities to develop educational programs that will assist their athletes with a healthy disengagement from their role as an athlete in competitive sport.

Despite some shortcomings of the Canadian Problem Gambling Index (CPGI) (Ferris & Wynne, 2001) in the current study, the CPGI has merit, and should be utilized in the future to extend research on gambling behaviour, in Canada and elsewhere. However, like the current study, the CPGI should be modified specifically for the population under investigation. This may require some portions of the survey to be re-worded to reflect less intrusive language for particularly vulnerable segments of the population, or portions of the survey (i.e., gambling activities offered) to better suit a particular area or location. Another recommendation would be to include “golf” into the games of skill category (pool, bowling, and darts are previously included). Adding “\$0”, or “no money spent”, as opposed to “under \$100” as the lowest category of spending would provide more accurate information on money spent on various gambling activities. A final recommendation regarding survey design is to have future researchers (undertaking similar studies) consider the potential strength of focus groups or one-on-one interviews when collecting data. This may ultimately provide a more thorough snapshot of the landscape surrounding gambling and problem gambling. However, to improve the credibility of data (i.e., truthfulness, accuracy), future researchers might consider attending Gamblers’ Anonymous (GA) meetings. It is here where future researchers would likely find honesty from athletes and former athletes regarding problematic gambling, which could potentially provide extremely valuable anecdotal information on a problem area that has been largely neglected in Canada.

Based on the results of the current study that offer a slight connection between gambling problems and substance abuse (i.e., drugs and alcohol), an additional recommendation is to have college and university administrations combine any substance

abuse programs/presentations/lectures with information on problem gambling.

Furthermore, it is important that those designing gambling prevention and intervention programs integrate new research. In planning these educational processes, administrators should be attentive to future patterns (i.e., gambling is growing at an unprecedented rate, student-athletes are especially vulnerable). In addition, it is recommended that such presentations include information on the real odds of success in gambling since the study's results revealed that a significant number of respondents had mistaken beliefs concerning randomness and probabilities while gambling.

Lastly, based on the extremely scarce research (on the gambling habits of Canadian student-athletes), it would be reasonable to conclude that student-athlete gambling behaviour is a low priority issue among Canadian universities and Canadian Interuniversity Sport (CIS). This seems especially so when gambling is compared to other university social issues such as smoking, alcohol, and/or drug use. With that being the case, the results of the current study (as well as the literature of the gambling behaviour of American student-athletes) suggest that Canadian student-athletes are likely experiencing problems related to their gambling habits, and thus deserve greater attention from a number of key interest groups. This includes researchers, sport administrators, sport government official, addiction experts, behaviour analysts, and the Canadian Interuniversity Sport (CIS), formerly known as the CIAU (Canadian Interuniversity Athletic Union).

Currently, CIS has no formal rules or regulations in respect to gambling (see Appendix D), and though individual CIS schools may be providing resources to their players on the dangers of gambling, it is not commonly known or seen. In contrast, the

NCAA sponsors educational programs that provide assistance to college campus administrators by conducting sports wagering workshops; the NCAA has been involved in educating high school student-athletes on the addictiveness and dangers of sports betting; the NCAA produces a booklet in partnership with the National Endowment for Financial Education entitled, “Don’t Bet On It”, aimed at educating students about the dangers of sports wagering; and the NCAA assists in the broadcasting anti-sports wagering on public service announcements. Furthermore, the NCAA created Bylaw 10 of the Division I Manual (see Appendix E).

According to the CIS (“www.universitysport.ca/e/pol_proc/index.cfm”), it is their mission to enrich the educational experience of the athlete through a national sport program that fosters excellence. Indeed, the first recognized value of the CIS is to provide an environment which provides for the achievement of the academic and athletic potential of the participant. It is therefore the recommendation of the researcher that if CIS wishes to endorse their mission and values, attention be given to gambling policy and prevention efforts like those of the NCAA.

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APPENDICES

Appendix A

“The Canadian Problem Gambling Index (CPGI): A Modified Version”

THE CANADIAN PROBLEM GAMBLING INDEX: A MODIFIED VERSION

Section 1

First, I would like to ask you some questions about activities in which you may participate.

People bet money and gamble on many different things including buying lottery tickets, playing bingo, or card games with their friends. I am going to list some activities that you may have bet on with money.

Please answer the following questions as truthfully and thoroughly as possible.

1a. In the past 12 months, how often did you bet or spend money on lottery tickets such as the 649, Super 7, or POGO? (**response categories for a. repeated for b. through w.**)

(Please check the proper corresponding box)

- | | |
|--|---|
| <input type="checkbox"/> Daily | <input type="checkbox"/> Between 1-5 times/year |
| <input type="checkbox"/> 2 to 6 times/week | <input type="checkbox"/> Never |
| <input type="checkbox"/> About once/week | <input type="checkbox"/> "I do not gamble" |
| <input type="checkbox"/> 2-3 times/month | <input type="checkbox"/> Don't know |
| <input type="checkbox"/> About once/month | <input type="checkbox"/> Refuse |
| <input type="checkbox"/> Between 6-11 times/year | |

b. In the past 12 months, how often did you buy daily lottery tickets like Pick 3?

**** If “never” to all gambling, or “do not gamble” at least twice, skip to #17.**

c. In the past 12 months, how often did you buy instant win or scratch tickets like break open, pull tab, or Nevada strips?

d. In the past 12 months, how often did you buy raffle or fundraising tickets?

e. In the past 12 months, how often did you bet on horse races (i.e., live at the track and/or off-track)?

f. In the past 12 months, how often did you play bingo?

Casino gambling:

In the past 12 months, have you gambled at any type of casino including illegal or charity casinos?

(Please check the proper corresponding box)

- Yes [go to 1g]
 No [go to 1i]
 "I do not gamble", don't know, refuse [go to 1m]

g. In the past 12 months, how often did you bet or spend money on coin slot machines or video lottery terminals (VLTs) in a casino? (VLTs = coins are not dispensed)

h. In the past 12 months, how often did you play poker in a casino?

i. In the past 12 months, how often did you play blackjack in a casino?

j. In the past 12 months, how often did you play roulette in a casino?

k. In the past 12 months, how often did you play keno in a casino?

- l. In the past 12 months, how often did you play craps in a casino?
- m. In the past 12 months, how often did you play VLTs other than at casinos?
- n. In the past 12 months, how often did you play a sports lottery like Sport Select (i.e., Pro Line, Over/Under, Point Spread)?
- o. In the past 12 months, how often did you bet or spend money on sports pools?
- p. In the past 12 months, how often did you bet on cards, or board games with family or friends?
- q. In the past 12 months, how often did you bet or spend money on games of skill such as pool, bowling, or darts?
- r. In the past 12 months, how often did you bet on arcade or video games?
- s. In the past 12 months, how often did you gamble on the Internet?
- t. In the past 12 months, how often did you bet on sports with a bookie?
- u. In the past 12 months, how often did you personally invest in stocks, options, or commodities markets? (This does NOT include mutual funds, or RRSPs)

2. How many...

a. minutes do you normally spend each time you buy lottery tickets like the 649, Super 7 or POGO? **(response categories for a. repeated for b. through v.)**

(If appropriate, please enter exact time spent in text box and check "minutes" or "hours" accordingly)

minutes hours

- More than 8 hours
- Don't know
- Refuse

- b. minutes do you normally spend each time you buy daily lottery tickets like Pick 3?
- c. minutes do you normally spend each time you buy instant win or scratch tickets like break open, pull-tab or Nevada strips?
- d. minutes do you normally spend each time on raffle or fundraising tickets?
- e. hours do you normally spend each time you bet on live horse races at the track and/or off track?
- f. hours or minutes do you normally spend each time you play bingo?
- g. hours or minutes do you normally spend each time you play coin slot machines or video lottery terminals (VLTs) in a casino?
- h. hours or minutes do you normally spend each time you play poker in a casino?
- i. hours or minutes do you normally spend each time you play blackjack in a casino?
- j. hours or minutes do you normally spend each time you play roulette in a casino?
- k. hours or minutes do you normally spend each time you play keno in a casino?
- l. hours or minutes do you normally spend each time you play craps in a casino?
- m. hours or minutes do you normally spend each time you play VLTs other than at casinos?
- n. minutes do you normally spend each time you play a sports lottery like Sport Select (i.e., Pro Line, Over/Under, Point Spread)?
- o. hours or minutes do you normally spend each time you play sports pools?

p. hours or minutes do you normally spend each time you play cards or board games with family or friends?

q. hours or minutes do you normally spend each time you bet on games of skill such as pool, bowling or darts?

r. hours or minutes do you normally spend each time you bet on arcade or video games for money?

s. hours or minutes do you normally spend each time you gamble on the Internet?

t. minutes do you normally spend each time you bet on sports with a bookie?

u. hours or minutes do you normally spend evaluating stocks, options, or commodities each time you invest?

3. How much money, not including winnings, do you spend on...

Clarification: Spending that is out of pocket. This does not include money won and THEN spent.

a. lottery tickets like the 649, Super 7 or POGO in a typical month? **(response categories for a. repeated for b. through w.)**

(Please check the proper corresponding box)

Less than \$100

\$100-\$200

\$200-\$500

More than \$500

Don't know

Refuse

b. daily lottery tickets like Pick 3 in a typical month?

c. instant win or scratch tickets like break open, pull tab or Nevada strips in a typical month?

d. raffle or fundraising tickets in a typical month?

e. live horse races at the track and/or off track in a typical month?

f. bingo in a typical month?

g. coin slot machines or video lottery terminals (VLTs) in a typical month?

h. poker in a casino in a typical month?

i. blackjack in a casino in a typical month?

j. roulette in a casino in a typical month?

k. keno in a casino in a typical month?

l. craps in a casino in a typical month?

m. VLTs other than at casinos in a typical month?

n. sports lotteries like Sport Select (or, Pro Line, Over/Under, Point Spread) in a typical month?

o. sports pools in a typical month?

p. cards, or board games with family or friends, in a typical month?

q. games of skill such as pool, bowling or darts in a typical month?

r. arcade or video games in a typical month?

s. gambling on the Internet in a typical month?

t. sports with a bookie in a typical month?

u. How much money, INCLUDING profits from earlier investments, do you spend on stocks, options, or commodities in a typical month?

4. In the past 12 months, what is the largest amount of money you ever spent on...

a. lottery tickets like the 649, Super 7 or POGO in any one day?

(If appropriate, please enter amount in text box) **(response categories for a. repeated for b. through w.)**

\$

Don't know

Refuse

b. daily lottery tickets like Pick 3 in any one day?

c. instant win or scratch tickets like break open, pull tab or Nevada strips in any one day?

d. raffle or fundraising tickets in any one day?

e. live horse races at the track and/or off track in any one day?

f. bingo in any one day?

g. coin slot machines or video lottery terminals (VLTs) in any one day?

h. poker in a casino in any one day?

i. blackjack in a casino in any one day?

j. roulette in a casino in any one day?

k. keno in a casino in any one day?

l. craps in a casino in any one day?

m. VLTs other than at casinos in any one day?

n. sports lotteries like Sport Select (or Pro Line, Over/Under, Point Spread) in any one day?

o. sports pools in any one day?

p. cards or board games with family or friends in any one day?

q. the outcome of games of skill such as pool, bowling or darts in any one day?

r. arcade or video games in any one day?

s. gambling on the Internet in any one day?

t. sports with a bookie in any one day?

u. How much money, INCLUDING profits from earlier investments, do you spend on stocks, options, or commodities in any one day?

****If you do not gamble, skip to # 18.**

Section 2

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

THINKING ABOUT THE LAST 12 MONTHS...

5. Have you bet more than you could really afford to lose?

Would you say never, sometimes, most of the time, or almost always? **(response categories for 5. repeated for 6. through 16.)**

(Please check the proper corresponding box)

- Never
- Sometimes
- Most of the time

- Almost always
- Don't know
- Refuse

6. Still thinking about the last 12 months, have you needed to gamble with larger amounts of money to get the same feeling of excitement?
7. When you gambled, did you go back another day to try to win back the money you lost?
8. Have you borrowed money or sold anything to get money to gamble?
9. Have you felt that you might have a problem with gambling?
10. Has gambling caused you any health problems, including stress or anxiety?
11. Have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?
12. Has your gambling caused any financial problems for you or your household?
13. Have you felt guilty about the way you gamble or what happens when you gamble?
14. Have you lied to family members or others to hide your gambling?
15. Have you bet or spent more money than you wanted to on gambling?
16. Have you wanted to stop betting money or gambling, but didn't think you could?

Section 3

Next, I will attempt to explore some of your beliefs about gambling, as well as any early experiences you have had with gambling or betting using money.

For each of the following, could you please tell me if you strongly agree, agree, disagree, or strongly disagree? **(response categories for 17. repeated for 18.)**

17. After losing many times in a row, you are more likely to win.

(Please check the proper corresponding box)

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don't know
- Refuse

18. You could win more if you used a certain system or strategy.
19. Do you remember a big win when you first started gambling?

(Please check the proper corresponding box) **(response categories for 19. repeated for 20. through 31.)**

- Yes
- No
- Don't know
- Refuse

20. Do you remember a big loss when you first started gambling?
21. Has anyone in your family EVER had a gambling problem?

22. Has anyone in your family EVER had an alcohol or drug problem?

****If you do not gamble, skip to # 25.**

23. IN THE LAST 12 MONTHS, have you used alcohol or drugs while gambling?

24. In the last 12 months, have you gambled while drunk, or high?

25. In the last 12 months, have you felt you might have an alcohol or drug problem?

****If you do not gamble, skip to # 27.**

26. In the last 12 months, if something painful happened in your life, did you have the urge to gamble? (Includes doing as well as having the urge)

27. In the last 12 months, if something painful happened in your life, did you have the urge to have an alcoholic drink? (Includes doing as well as having the urge)

28. In the last 12 months, if something painful happened in your life did you have the urge to use drugs or medication? (Includes doing as well as having the urge)

29. Still thinking about the last 12 months, have you been under a doctor's care because of physical or emotional problems brought on by stress?

30. Have you felt seriously depressed?

****If non-gambler, skip to section 4.**

31. Have you seriously thought about or attempted suicide as a result of your gambling?

Section 4

Finally, I would like to ask you some basic background questions. Like all your other answers, this information will be kept strictly confidential.

32. In what year were you born?

(Please enter your birth year in the text box below)

Year of birth is 19 . Don't know Refuse

33. Are you currently...

(Please check the proper corresponding box)

- Married
- Living with a partner
- Widowed
- Divorced
- Separated
- Never married
- Don't know
- Refuse

****Question # 34. has been REMOVED from the original CPGI (Ferris & Wynne, 2001) to better reflect the purposes of the current study.**

****Question # 35. REMOVED.**

36. What is your present job status?

(Please check only one box)

- Employed full-time (30 or more hrs/week) [go to # 37.]
- Employed part-time (less than 30hrs/week) [go to # 37.]
- Unemployed (out of work but looking for work) [go to # 37.]
- Student - employed part-time or full-time [go to # 37.]
- Student - not employed [go to # 38b.]
- Retired [go to # 38b.]
- Homemaker [go to # 38b.]
- Other – Please specify in the text box below.

[go to # 38b.]

- Don't know [go to # 38b.]
- Refuse [go to # 38b.]

37. What type of work do you currently do (or, do you do when you are employed)?

(Please specify your job title in the text box below)

- Don't know
- Refuse

****Question # 38a. REMOVED.**

38b. Could you please tell me approximately how much income you and other members of your household received in the year ending December 31st, 2010, before taxes? Please include income from all sources such as savings, pensions, rent, and unemployment insurance as well as wages.

(Please check the proper corresponding box)

- Less than \$20,000
- Between \$20,000 and \$30,000 (\$29,999.99)
- Between \$30,000 and \$40,000
- Between \$40,000 and \$50,000
- Between \$50,000 and \$60,000
- Between \$60,000 and \$70,000
- Between \$70,000 and \$80,000
- Between \$80,000 and \$90,000
- Between \$90,000 and \$100,000
- Between \$100,000 and \$120,000
- Between \$120,000 and \$150,000
- More than \$150,000
- Don't know
- Refuse

39. How many people under 18 years-of-age currently live with you?

(Please enter number in the text box below)

Don't know Refuse

****Question # 40. REMOVED.**

****Question # 41. REMOVED.**

****Question # 42. REMOVED.**

Section 5

****Section 5 has been ADDED to the original CPGI (Ferris & Wynne, 2001) to better reflect the purposes of the current study.**

Please answer the following questions to the best of your ability:

1. Do you currently coach a team or an individual in an organized league (i.e., NFL, CFL, CIS)?

(Please check the appropriate box)

Yes No

2. Do you currently compete in an organized league on an organized team (i.e., NFL, CFL, CIS)?

Yes No

If you responded "yes", are you currently a CIS student-athlete?

Yes No

3. If you bet on sport(s), which sport(s) do you bet on?

***Please specify the sport(s) (i.e., football, basketball, baseball, hockey, etc.) and which leagues (i.e., CIS, NCAA, NFL, NBA, MLB, NHL, etc.) you bet on below in the text box.*

I do not bet on sports.

Betting on sports (a.k.a. "sport gambling, sports betting, sports wagering") is believed to be an activity that entails predicting the outcome of a sporting event by means of a wager [real or virtual] (Smith, 1990; Claussen & Miller, 2001).

This includes friendly wagers, betting on games of skill (i.e., pool, darts), sports lotteries/pools, head-to-head sports betting, and wagering on national pastimes by means of drafts or fantasy leagues, online or in person.

Thank you very much for your participation in my study. Your time and consideration is greatly appreciated.

Appendix B

A Classification of Gambling Activities

“Chance-based” gambling activities

- Lottery tickets such as the 649, Super 7, or POGO
- Daily lottery tickets such as Pick 3
- Instant win or scratch tickets such as break open, pull tabs, or Nevada strips
- Raffle or fundraising tickets
- Bingo
- Coin slot machines or video lottery terminals (VLTs)
- Roulette
- Keno
- Craps
- *Cards or board games*

“Skill-based” gambling activities

- Betting on horse races
- Poker
- Blackjack
- Sports lotteries such as Sport Select (i.e., Pro-Line, Over/Under, Point Spread)
- Sports pools
- Games of skill such as pool, bowling, or darts
- Arcade or video games
- *Cards or board games*

Appendix C

Research Ethics Board (REB) Approval / TCPS Certificate

Office of the Research Ethics Board



Today's Date: March 24, 2011
Principal Investigator: Mr. Phillip Wick
REB Number: 29098
Research Project Title: REB# 11-071: A Qualitative Assessment of the Gambling Habits of current and former Varsity athletes
Clearance Date: March 23, 2011
Project End Date: June 30, 2011
Milestones:
Renewal Due-2011/06/30(Pending)

This is to inform you that the University of Windsor Research Ethics Board (REB), which is organized and operated according to the Tri-Council Policy Statement and the University of Windsor Guidelines for Research Involving Human Subjects, has granted approval to your research project on the date noted above. This approval is valid only until the Project End Date.

A Progress Report or Final Report is due by the date noted above. The REB may ask for monitoring information at some time during the project's approval period.

During the course of the research, no deviations from, or changes to, the protocol or consent form may be initiated without prior written approval from the REB. Minor change(s) in ongoing studies will be considered when submitted on the Request to Revise form.

Investigators must also report promptly to the REB:

- a) changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study;
- b) all adverse and unexpected experiences or events that are both serious and unexpected;
- c) new information that may adversely affect the safety of the subjects or the conduct of the study.

Forms for submissions, notifications, or changes are available on the REB website: www.uwindsor.ca/reb. If your data is going to be used for another project, it is necessary to submit another application to the REB. We wish you every success in your research.

Pierre Boulos, Ph.D.
Chair, Research Ethics Board

c.c. Dr. Margery Holman, Supervisor, Kinesiology

This is an official document. Please retain the original in your files.



Certificate of Completion

This is to certify that

Philip A. Wick

*has completed the Interagency Advisory Panel on Research Ethics'
Introductory Tutorial for the
Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS)*

Issued On: **October 22, 2010**

Appendix D

Canadian Interuniversity Sport (CIS) Sport Bylaws

Below are the titles of the nine Canadian Interuniversity Sport bylaws (revised September 2010) as found on the CIS website under the tab “about CIS”. These bylaws can be accessed online at http://static.psb.in.com/g/w/mtj8vc2l0rz40y/1_2010-11_Policies_title_page-_Index-_Vision-.pdf.

Notice there is no bylaw concerning gambling or sports wagering activities, illegal or otherwise, under bylaw 90 (“conduct and enforcement”), whereabouts such a by-law would likely reside if it existed. Furthermore, upon additional review, there is no information whatsoever on sports wagering definitions, sanctions, exceptions, or disciplinary actions in any of the CIS’s bylaws, policies, or procedures.

Bylaws:

10. MEMBERSHIP
20. CANADIAN INTERUNIVERSITY SPORT PROGRAMS
30. MARKETING AND COMMUNICATIONS
40. ELIGIBILITY
50. ATHLETIC SCHOLARSHIPS / (FINANCIAL) AWARDS
60. HONOURS
70. HUMAN RESOURCES
80. ADMINISTRATION
90. CONDUCT AND ENFORCEMENT
 - 90.10 Drug Education and Doping Control
 - 90.20 Harassment and Discrimination Policy
 - 90.30 Complaints, Investigation and Discipline Policy
 - 90.40 Appeals Policy
 - 90.50 Alternative Dispute Resolution
 - 90.60 Code of Ethics
 - 90.70 Relief from CIS Policies

Appendix E

National Collegiate Athletic Association (NCAA) Sports Gambling Regulations

NCAA Manual Provisions:

Below are the relevant portions of Bylaw 10 as published in the 2010-2011 NCAA Division I Manual effective August 1, 2010. Identical legislation exists in NCAA Divisions II and III. These provisions can be found in the latest version of the NCAA Manual which can be accessed online on the NCAA's website, at <http://www.ncaa.org/> within the "Legislation & Governance" area under "Rules and Bylaws" or at <http://www.ncaapublications.com/productdownloads/D1111.pdf> (beginning on page 50).

Provisions from NCAA Bylaw, Article 10: Ethical Conduct

10.02 DEFINITIONS AND APPLICATIONS.

10.02.1 Sports Wagering. Sports wagering includes placing, accepting or soliciting a wager (on a staff member's or student-athlete's own behalf or on the behalf of others) of any type with any individual or organization on any intercollegiate, amateur or professional team or contest. Examples of sports wagering include, but are not limited to, the use of a bookmaker or parlay card; Internet sports wagering; auctions in which bids are placed on teams, individuals or contests; and pools or fantasy leagues in which an entry fee is required and there is an opportunity to win a prize.

10.02.2 Wager. A wager is any agreement in which an individual or entity agrees to give up an item of value (e.g., cash, shirt, dinner) in exchange for the possibility of gaining another item of value.

10.3 SPORTS WAGERING ACTIVITIES.

The following individuals shall not knowingly participate in sports wagering activities or provide information to individuals involved in or associated with any type of sports wagering activities concerning intercollegiate, amateur or professional athletics competition: (Adopted: 4/26/07 effective 8/1/07)

- (a) Staff members of an institution's athletics department;
- (b) Nonathletics department staff members who have responsibilities within or over the athletics department (e.g., chancellor or president, faculty athletics representative, individual to whom athletics reports);
- (c) Staff members of a conference office; and
- (d) Student-athletes.

10.3.1 Scope of Application. The prohibition against sports wagering applies to any institutional practice or any competition (intercollegiate, amateur or professional) in a sport in which the Association conducts championship competition, in bowl subdivision football and in emerging sports for women. (Adopted: 4/26/07 effective 8/1/07)

10.3.1.1 Exception. The provisions of Bylaw 10.3 are not applicable to traditional wagers between institutions (e.g., traditional rivalry) or in conjunction with particular contests (e.g., bowl games). Items wagered must be representative of the involved institutions or the states in which they are located. (Adopted: 4/26/07 effective 8/1/07)

10.3.2 Sanctions. The following sanctions for violations of Bylaw 10.3 shall apply:
(Adopted: 4/27/00 effective 8/1/00, Revised: 4/26/07 effective 8/1/07)

(a) A student-athlete who engages in activities designed to influence the outcome of an intercollegiate contest or in an effort to affect win-loss margins ("point shaving") or who participates in any sports wagering activity involving the student-athlete's institution shall permanently lose all remaining regular-season and postseason eligibility in all sports.
(Revised: 4/26/07 effective 8/1/07)

(b) A student-athlete who participates in any sports wagering activity through the Internet, a bookmaker or a parlay card shall be ineligible for all regular-season and postseason competition for a minimum period of one year from the date of the institution's determination that a violation occurred and shall be charged with the loss of a minimum of one season of eligibility. If the student-athlete is determined to have been involved in a later violation of any portion of Bylaw 10.3, the student-athlete shall permanently lose all remaining regular season and postseason eligibility in all sports. (Revised: 4/26/07 effective 8/1/07)

10.4 DISCIPLINARY ACTIONS.

Prospective or enrolled student-athletes found in violation of the provisions of this regulation shall be ineligible for further intercollegiate competition, subject to appeal to the Committee on Student-Athlete Reinstatement for restoration of eligibility. (See Bylaw 10.3.2 for sanctions of student-athletes involved in violations of Bylaw 10.3.) Institutional staff members found in violation of the provisions of this regulation shall be subject to disciplinary or corrective action as set forth in Bylaw 19.5.2.2 of the NCAA enforcement procedures, whether such violations occurred at the certifying institution or during the individual's previous employment at another member institution.
(Revised: 1/10/90, 4/27/00 effective 8/1/00, 4/26/07 effective 8/1/07)

Appendix F

Recommended Future Areas of Study Based on the Literature

Online Gambling

In July of 2010, British Columbia became the first North American jurisdiction to allow online gambling. Since that time a number of other provinces in Canada have taken an interest and are looking to follow in the footsteps of British Columbia. Those opposed to the legalization of online gambling have argued that while casinos provide jobs and direct benefits to communities, online gambling has no redeeming value. Opponents have also suggested that online gambling has led to more economic ruin than any other form of wagering, and that problem gambling is three to four times higher among online gamblers than others who go to casinos or play lotteries because online gambling enables people with gambling addictions to indulge in secret. However, perhaps Dr. Jeff Derevensky, a significant contributor to gambling research, said it best when he noted that cash-strapped governments are the most addicted to gambling. Currently, there are between 400,000 and 500,000 Ontarians gambling \$400 million yearly on offshore websites like “PokerStars” and “PartyGaming” (Benzie, 2010).

Investigating the impact of legalizing online gambling in Canadian provinces, especially on computer-savvy college and university students, is a recommended future area of study. Such research may assist provincial governments in their decision to legalize online gambling, and may help identify segments of the population that are vulnerable to online gambling.

A second recommended future area of study is to investigate the ambiguity surrounding the legality of online gambling, and what impact it has on gambling patrons.

Today, there is great uncertainty about what constitutes an act of gambling and whether or not online gambling is legal. For example, some state and federal law enforcement officials have declared that all online gambling is illegal, yet fewer than 25 people have ever been prosecuted in the United States for online gambling (Rose, 2006). According to Rose, it is the duty of gambling operators to make sure that they are not violating the law. However, recently gambling websites (i.e., “www.pokerstars.net”, “www.sportsinteraction.com”) have simply added disclaimers such as ‘we cannot check the laws of every state and country in the world. It is the responsibility of you, the player, to determine whether it is legal to place a bet’, shifting the onus back to the individual bettors.

Adding to the problem, a number of offshore online gambling sites that are out of the reach of North American jurisdiction continue to operate despite various prohibition acts from both federal and state legislation. For example, “www.pokerstars.net”, the world’s largest poker site, is a licensed and registered legal business located on the Isle of Man in the British Isles, while “www.sportsinteraction.com”, the first online sportsbook licensed and regulated in North America, is overseen and regulated by the Kahnawake Gaming Commission. The Kahnawake Mohawk Territory is an Indian reserve on the south shore of the St. Lawrence River in Quebec, Canada. These gambling sites remain legal where they exist despite the fact internet sport betting is illegal under the United States federal Wire Wager Act (1994) and all internet gambling is illegal under many state’s laws (Columbia Encyclopedia, 2008). Furthermore, research has shown there is little that North American authorities can do to stop offshore operations. In fact, the World Trade Organization ruled in 2004 that the United States cannot apply its laws to

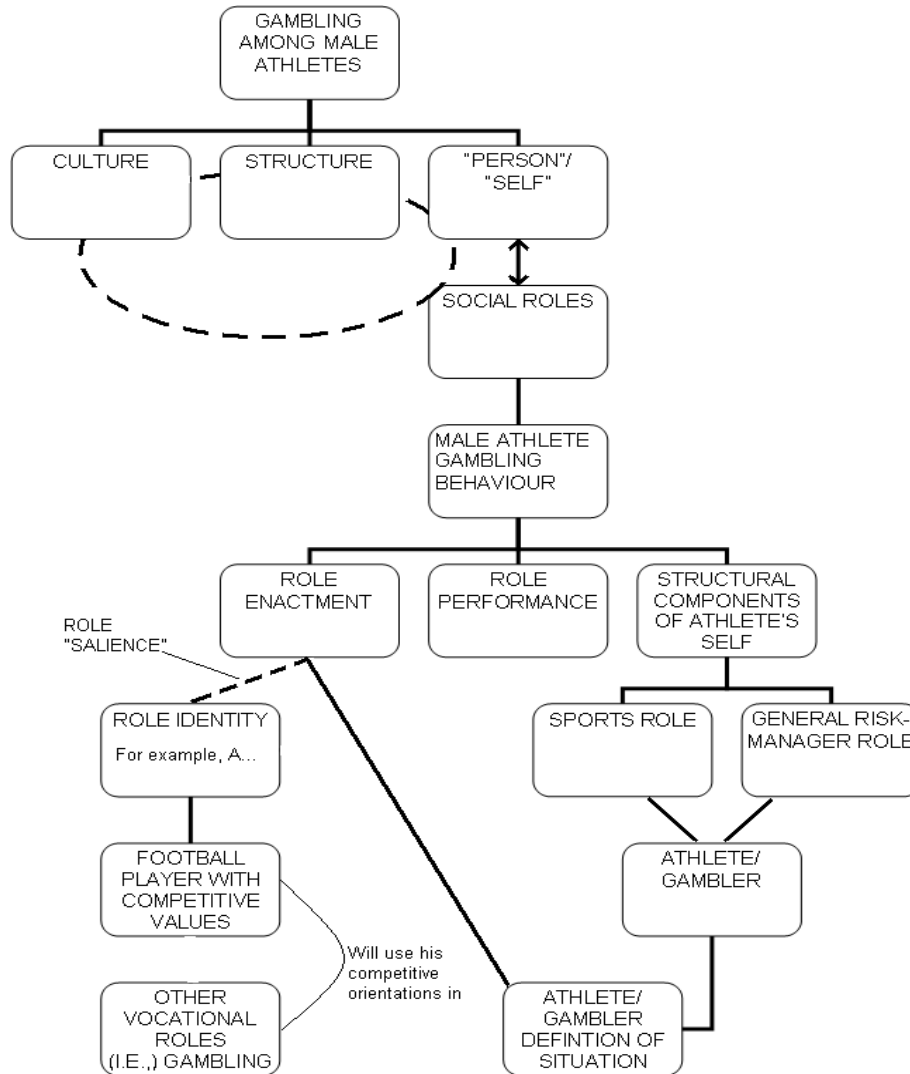
foreign internet gambling operations. Unfortunately, it is likely that gambling patrons will continue to assume that online gambling is legal if they fail to be prosecuted (Rose, 2006).

Therefore, investigating the ambiguity of online gambling may help to create awareness surrounding the shortcomings of the current online gambling legislation in North America and around the world. This, in return, may assist in the development of new legislation or policy which better addresses the concerns of online gamblers.

Male Athletic Socialization

A third recommended area of future study is the male athletic socialization process and how it may relate to gambling participation. Building on Turner's (1978) theory of the "*role-person merger*", Markle (2003) suggested that gambling among male athletes, for sociologists, might be investigated at three levels of analysis: culture, structure, and the person. However, it is the "person" or "self" that is constructed through social roles that link the person to culture and social structure, and thus, it is the level of investigation most needed to understand male athlete gambling behaviour. Arguing that an individual is best described in terms of "roles", Markle suggested that male athlete gambling behaviour be conceptualized either in terms of role enactment or role performance, and as structural components of the "self". According to Markle, one might conceptualize a "sports role" and a "general risk-manager role" as structural components of the self. For example, a male athlete might define himself as both an athlete and a gambler and he might feel more or less favourably about himself in different roles and situations. However, because one's definition of a situation provides cues as to whether or not to enact a role as an expression of one's identity, "role salience" must be

considered. Role salience implicates the probability of role enactment in different situations. For example, one might hypothesize that a “salient” sports role identity (i.e., football player), with competitive win-at-all-costs value orientations, will carry on in to other situations, such as vocational roles and choices (i.e., gambling) (Markle, 2003).



Understanding male athlete gambling tendencies identified by Markle (2003): Flowchart drafted by study's author.

Assuming that overlapping motives could help in the explanation of gambling behaviour, Curry and Jiobu (1995) developed a model of gambling among athletes which involved the importance of socialization for internalizing motive statements. Borrowing from Zurcher (1983), Curry and Jiobu theorized that if a motive is to have a pronounced effect on behaviour, it must be internalized as part of the “self” (p. 22). Based on Zurcher’s theory, Curry and Jiobu suggested that a motive, such as competition, can find its behavioural expression in sport participation, as well as in the ephemeral [short-lived] role of betting on sport. Furthermore, accepting Turner’s (1978) argument that as self-involvement with a role increases, behaviour defining the role should increase correspondingly, Curry and Jiobu hypothesized that self-involvement with the role of an athlete may act to increase gambling participation, and especially if gambling is seen as part of the sports world. After conducting their study, the authors found that self-involvement with the role of an athlete does not necessarily act to increase gambling participation, however whether or not a “salient” sports role identity (i.e., football player), with competitive win-at-all-costs value orientations, will carry on in to other situations, such as vocational roles and choices (i.e., gambling) should be given greater attention because of the similarities between sport and gambling.

Some believe that North American boys are socialized in a context where they are bombarded, usually by those whom they trust (well-meaning parents and friends) with clues on what not to do (a young boy does not act like a stereotypical girl or a homosexual male) and what to do (a young boy plays sports and likes girls). As a result, and because young boys are taught not to question their elders and what it means to be a man, they are often left on their own in dealing with becoming a man. According to Klein

(1990), the central theme in constructing masculinity and how to be a “man” is through the competition for success and power, which ultimately creates a context whereupon violence and aggression (or dominance and control) seem normal or “natural”. Frey (1991) has also suggested that “... it [risk taking] has been very much a part of the definition of what is masculine, particularly if risk action was taken in the pursuit of success, achievement, and upward mobility” (p. 140). Henceforth, if competitiveness, violence, and risk-taking are important in creating masculinity, the sport, according to Klein, is the ideal social field for boys to become men ...“sport is often the first social institution that young males come into contact with in which they can develop such status and characteristics usually reserved for men” (p. 4).

According to Curry and Jiobu (1995), sport was at one time seen as a means to improving the physical fitness and competitive edge of young American males entering World War I, and again during World War II and the Korean conflict. As a result, traditional military characteristics expected of males such as toughness, discipline, risk-taking, aggression, winning, competition and teamwork have transferred into the motivations associated with sport. Today, sports such as football and hockey are mediated spectacles that provide an important context in which traditional conceptions of masculinity are communicated.

Interestingly, like sport, gambling, particularly sports gambling, is a similar social field reflective of masculinity where competitiveness, aggression, and risk-taking are valued. According to Curry and Jiobu (1995)... “athletic socialization typically includes an explicit and continuous emphasis on competition, long felt to be one of the primary motives for gambling” (p. 2), and according to Carroll (2003), gambling just like sport,

remains “a tonic for men seeking alternative ways to confirm their manliness” (p. 183). However, unlike sport, according to Carroll (2003), as long as there has been gambling in America, there have been opposing attitudes and feelings about the true meaning of manhood linked to gambling in American society. While some argue manhood represents the values of “hard work, steady achievement, and familial and religious responsibility”, not often found in gambling, others linked masculinity with “risk-taking and all-male camaraderie”, two highly celebrated aspects of gambling (p. 183). Similarly, Morton (2003) explains in her book, *At odds: Gambling and Canadians, 1919-1969*, that dominant twentieth-century ideals of what it meant to be “masculine” held that men were constantly negotiating between the virtues of “daring, courageous, and audacious” while at the same time striving to be “stable, dependable, and responsible” (p. 69).

Presently, however, it is much easier to argue that the relationship between hard work and financial prosperity is increasingly unclear and some of the older meanings of manhood such as being “stable” or “responsible” are not often celebrated in today’s culture. With that being said, research is recommended on examining the potential links between motivations behind sport and motivations behind gambling.

Sport Gambling Policy

Korn and Murray (2001) sought to examine the gambling policies in intercollegiate athletics in Ontario. Specifically, the research was designed to provide an introductory and descriptive account of gambling and sports wagering awareness, policies and practices at universities in Ontario. The purpose of the study was threefold: to survey Ontario university Athletic Directors and Coaches in selected sports on their knowledge, attitudes and beliefs about gambling and gambling related problems among

student-athletes; to document gambling policies in athletic departments at all universities; and to describe any prevention and intervention practices for gambling problems among student-athletes and athletics. The universities under investigation were Brock, Carleton, Guelph, Lakehead, Laurentian, McMaster, Nipissing, Ottawa, Queen's, RMC, Ryerson, Toronto, Trent, Waterloo, Western, Laurier, Windsor, and York. Seventeen out of 18 (95%) of the universities agreed to be part of the study. The study sample consisted of Athletic Directors and Coaches from basketball (male and female), swimming (male and female), volleyball (male and female), football (male), and hockey (male and female). Eighty out of 125 (65%) of the Athletic Directors and Coaches agreed to be part of the study. In addition, seven key informant interviews were performed to provide a non-university perspective to college athletics and gambling activities. Key informants selected had backgrounds related to sports and/or gambling. The study was quantitative (surveys administered by trained interviewers) and qualitative in nature (a combination of face-to-face and telephone interviews).

In response to the authors' first purpose of the study, the results revealed that 100% of the Athletic Directors and Coaches had little or no knowledge of student-athlete gambling linked to intercollegiate athletics. In addition to this, gambling by student-athletes on intercollegiate athletics and in general was not perceived to be problematic at universities in Ontario. Responses indicated that while the Athletic Directors and Coaches acknowledged gambling was an issue in the United States, Canada did not experience similar problems. Responses from the survey indicated that Canada did not experience similar problems because there is not as much money at stake, and there are

no betting lines on Canadian intercollegiate sports as compared to the United States (NCAA).

In response to the second purpose of the study, the results revealed that the majority of respondents (86%) indicated that no policies for student-athlete gambling on intercollegiate athletics existed. Furthermore, all Athletic Directors indicated that no gambling policies existed for athletic department staff. Finally, and in response to the third purpose of the study, the majority of respondents (96%) indicated that they either were not aware of any prevention activities or that none existed. Results suggested that lack of awareness by Athletic Directors and Coaches should not be interpreted as absence of problems, but rather that gambling is not currently identified by Athletic Directors and Coaches as an issue in student-athletes. Overall, Athletic Directors and Coaches considered gambling a low priority issue when compared to other university social issues (i.e., smoking, alcohol, drugs), and therefore it was in competition for time, money and intervention. Results were consistent across universities and variations between schools were not reported. Size of school, sport profile, and intercollegiate athletics reputation did not have an effect on awareness levels in Athletic Directors or Coaches or presence of problems among student-athletes.

Of concern, more than ten years after this study was conducted, the OUA (Ontario University Athletics) and the CIS (Canadian Interuniversity Sport), the governing body for university sports in Canada, formerly known as the CIAU (Canadian Interuniversity Athletic Union), still have no formal rules or regulations in respect to sport gambling (see Appendix E). This finding has led to the recommendation that more research is needed on

the pervasiveness of gambling in Canada, particularly across college and university campuses.

The Extent of Sports Gambling Among Athletes in Ontario

In 2001, Glen Markle and Peter Donnelly were awarded a 'Level I' research award in the amount of \$5,000.00 from the Ontario Problem Gambling Research Centre (OPGRC) to search and review the literature in field of Sports Sociology/Psychology relating to problem gambling. Based upon their findings from the literature, Markle and Donnelly (under the auspices of the Centre for Sport Policy Studies with the Faculty of Physical Education and Health at the University of Toronto), were granted \$179,250.00 (May 29th, 2001 Solicitation) to conduct, "A Preliminary Investigation of the Extent of Sports Gambling Among Young Athletes in Ontario". The study was to focus on male athletes involved in football, basketball, ice hockey, and soccer in educational institutions in Ontario. The researchers were to survey a random selection of 1,000 students at the high school, college, and university level using a version of the Canadian Problem Gambling Index (CPGI) (Ferris & Wynne, 2001). The study sought to answer four primary questions. First, what is the extent, frequency and degree of student-athlete sport gambling in Ontario? Two, how does this compare with youth gambling in general in Ontario? Three, how does this compare with young athlete sport gambling in the United States? Finally, what steps should be taken if young athlete sport gambling proves to be of concern in Ontario? Unfortunately, after some communication with Erika Veri Levett, the OPGRC Grants Officer and other staff at the OPGRC's head office, it was found that the project was cancelled. The reason cited by the OPGRC was "lack of progress", likely

due to the untimely passing of principal investigator, Glen Markle. To the researcher's knowledge, no similar study has been attempted before or since.

Although the results of the current study can provide a very preliminary look at the gambling habits of a subpopulation of Canadian varsity student-athletes and alumni, the results cannot be generalized. As such, it is the final recommendation of this study that Markle and Donnelly's (2001) proposed study be attempted once more in an attempt to protect Canadian Interuniversity Sport's (CIS) most valued members, their student-athletes.

VITA AUCTORIS

Philip Andrew Wick was born 1985 in Orangeville, Ontario. He graduated from Norwell District Secondary School located in Palmerston, Ontario in 2003. From there he went on to obtain a Sports and Recreation Administration diploma from Lambton College in 2006. He then transferred to the University of Windsor where he received an Honors Bachelor of Human Kinetics in 2008. He is currently a candidate for a Masters degree in Human Kinetics from the University of Windsor. He hopes to graduate in the fall of 2011 and plans to one day pursue his Ph.D. in sport sociology.