

Behavioural, Motivational, and Coping Correlates of Problem Gambling Risk in a Sample of
Canadian University Students

by
Kaitlyn Obedzinski

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Department of Sociology and Criminology
University of Manitoba
Winnipeg

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Abstract

This study uses Ordinary Least Squares Multiple Regression to discover some of the factors that underlie problem gambling behaviours among emerging adults in Canada. The emerging adulthood transition period is wrought with new, and stressful experiences, which emerging adults may not yet have developed adaptive coping strategies to manage. This study uses General Strain Theory (Agnew, 1992; Greco & Curci, 2016), to uncover whether problem gambling behaviours are influenced by coping strategies and higher rates of perceived stress. This study also applies the Generality of Deviance (Mishra, Lalumiere & Williams, 2017), theory to understand if 'risky behaviours' co-occur in emerging adults. Emerging adults are given social leeway when engaging in risky behaviours, and such normalization of risk taking can heighten susceptibility to harmful behaviours and addiction. This study aims to better understand what motivations and behaviours in the lives of emerging adults can lead to problem gambling.

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Chapter One

Introduction

Gambling is a multi-billion-dollar industry in Canada (Canadian Gaming Association, 2017; ProblemGambling.ca, 2011). Gambling, for the majority of the population is a type of entertainment, with little harm or consequence in everyday life. However, for a minority of the population, gambling can be addictive, and have disastrous consequences. Internationally, the availability of gambling has increased, thus making it a growing public health concern (Hayatbakhsh, Clavarino, Williams, Bor, & Najman, 2013). Once illegal and stigmatized, gambling has become not only legal in Canada, but pervasive, readily accessible, and socially acceptable (Jacobs, 2004). Commonly, in a neoliberal context, problem gambling is framed as an individuals' lack of self-control (Cosgrave, 2010), however this study seeks to address some of the social factors and motivations which contribute to problem gambling behaviours.

In Canada, gambling is mandated provincially, with Manitoba and Saskatchewan having the highest rates of moderate risk and problem gamblers (Canadian Gaming Association, 2017; ProblemGambling.ca, 2011). University aged students (age 18-24) have some of the highest prevalence rates of gambling (Benson, Norman, & Griffiths, 2012), as well as some of the highest rates of problem gambling relative to any other age group (Neighbors, Lostutter, Cronce, & Larimer, 2002; ProblemGambling.ca, 2011; Lesieur, et al., 1991), an estimated four to eight times higher than the adult population (Lesieur, et al., 1991). Further, first year university students are more likely to be at-risk for problem-gambling than students in their fourth year of study (Benson, Norman, & Griffiths, 2012). In Manitoba, where this study was conducted, lottery, instant win, and scratch tickets are most the common forms of gambling played in this age group (ProblemGambling.ca, 2011). Although some researchers may view gambling as 'part

of the college experience' (Neighbors et al., 2002), there can be harmful consequences, which can extend beyond university life.

Consistent with the notion of gambling being a normal part of the college experience, it has been found that more than 70 per cent of university aged students gamble for money, enjoyment, social interaction, excitement, and to relieve boredom (Neighbors et al., 2002). A smaller number of students, 2.1 per cent, gamble as a way to cope with stress, and distract them from their everyday lives and problems (Neighbors et al., 2002). University-aged students are in a period of life known as 'emerging adulthood' (Sussman & Arnett, 2014), which is riddled with new and stressful experiences that emerging adults may not yet have developed adaptive coping strategies to manage. Therefore, experimentation with risky, often addictive, behaviours such as problem gambling are common during this transition period. To prevent these risky behaviours and maladaptive coping strategies from continuing beyond the period of emerging adulthood, it is crucial to understand what factors precipitate problem gambling, and uncover the nature of motivations for gambling, and problem gambling behaviours.

University-aged students have never known a Canada without legalized and normalized gambling. Because previous studies have indicated such alarming rates of problem gambling among this population, it is crucial that their motivations are better understood, so preventative measures can be put in place, and directed at those who are most 'at-risk' for developing a gambling problem. This study aims to address the relationship between university-aged problem-gamblers, and different coping strategies, by discovering how perceived stress functions as a precipitating factor for problem gambling. Furthermore, it seeks to address the motivations for university-aged gambling, and discover which motivations are most likely to lead to problem gambling behaviours.

The study will begin with a review of the literature surrounding problem gambling in Canada. The literature review will provide an overview of the history of gambling in Canada, and move through a discussion of early life indicators of problem gambling, the relationship between stress, coping, and problem gambling, and the influence of gender on problem gambling behaviours. It will also provide a discussion of the motivations that lead to problem gambling behaviours, followed by a discussion of ‘General Strain Theory’, and ‘Generality of Deviance’, which will provide the conceptual framework. Chapter three will outline the methodological approach used in this study, Ordinary Least Squares Regression. It will explain the Student Leisure and Well-Being Survey from which the data was collected, discuss the measures that were used, and highlight important demographic information. Chapter four will present the results of univariate, bivariate, and multivariate levels of analysis. Finally, chapter five will discuss the policy implications of these findings, the limits of this study, and suggestions for future research.

Chapter Two

Literature Review

Introduction

This literature review will proceed as follows, it will first provide a brief overview of the history of gambling in Canada, followed by a discussion of factors which influence gambling behaviours, including early life experiences, the university/college context, and gender differences. Next it will address the literature surrounding stress and coping strategies in relation to gambling, as well as motivations for gambling, before outlining the General Strain Theory of deviance, which will provide the conceptual framework that guides the research project. It will also discuss the ‘Generality of Deviance’ hypothesis, and move through a discussion of a life period known as emerging adulthood, which is often characterized by increased experimentation with ‘risky behaviours’ such as gambling. Finally, it will conclude with a discussion of the hypotheses that are to be tested.

A Brief History of Gambling in Canada

Gambling is a cultural and historical phenomenon, which varies from one society to another over time (Tepperman & Wanner, 2012). In its most basic form, gambling involves chance, and can involve some degree of strategy, with a focus on winning and losing (Tepperman & Wanner, 2012). It has in the past, often been viewed as a moral vice, or a problematic activity, which contradicted religious and economic ethics (Cosgrave & Klassen, 2001). In some cases, however, gambling was viewed as a productive aspect of society. Furthermore, gambling was viewed positively by some in Western societies as a source of income that served to redistribute wealth throughout the population, and reinforce social relations (Tepperman & Wanner, 2012).

In Canada, gambling has been a controversial topic for many years, and it was not until recently that it became fully legalized. “Changing social attitudes toward work, leisure, play, money and religion all played important roles in the legitimization of gambling” (Tepperman & Wanner, 2012, p. 21). Because Canada was built from immigration, gambling practices from all over the world influenced the moral compass of gambling in Canada. Gambling was frowned upon by the Protestant population, and was condemned racially against Chinese immigrants. Poor women and ethnic minorities were the focus of police crackdowns; however, gambling was seen as a sign of good character for upper-class white men (Tepperman & Wanner, 2012). The Catholic Church often turned a blind eye to the gambling behaviours of poor farmers, as it served not only as a pastime, but as a way to redistribute wealth in hard times (Tepperman & Wanner, 2012).

In recent years, gambling has moved from the margins of society into mainstream society. In 1985, Canadian provinces were granted exclusive right to legislate gambling, and once again, tolerance levels towards gambling increased (Tepperman & Wanner, 2012). Recent estimates put the past-year gambling prevalence rate for Canadians at over 75 per cent (ProblemGambling.ca, 2011), with 1 in 20 Canadians currently having or at risk of having a gambling problem (Tepperman & Wanner, 2012). The Indigenous Canadian population is particularly at risk for developing a gambling problem, with the risk further heightened for those living off-reserve (Tepperman & Wanner, 2012). In Canada, gambling is increasingly becoming a solitary activity, which provides not only entertainment, but the opportunity to display courage and luck (Tepperman & Wanner, 2012). Consistent with other neoliberal Western philosophies, “the capitalist world is populated by winners, losers, and bystanders” (Tepperman & Wanner, 2012, p. 33), thus encouraging the Canadian population to try their luck in the gambling market.

According to Cosgrave (2010), the gambling industry in Canada is a paradox characterized by contradictory front-end/back-end knowledge's. Front-end knowledge relates to the revenue produced by gambling which perpetuates the gambling business, and back-end knowledge pertains to the negative aspects of gambling, such as the personal and social costs of gambling addiction. At the front-end, gambling in Canada is not simply viewed as a pastime, but as “productive leisure” (Cosgrave & Klassen, 2001, p. 8), whereby gambling serves as entertainment which produces revenue for governmental and political agencies. Gambling serves as a way for government agencies to collect public spending at the leisure of the public, without exerting extra force or raising taxes (Cosgrave & Klassen, 2001). According to the Canadian Gaming Association website, gambling produces a total of \$16 billion annually, with \$8.7 going to charities and government agencies. On its’ website, the Canadian Gaming Association touts the ripple effect of creating 253,487 jobs in the areas of gaming, food and beverage, real estate, transportation, construction business and professional services and communications (Canadian Gaming Association, 2017). Furthermore, it boasts that 67.6 per cent of the Canadian population feel that casinos have improved their community, with only 13.1 per cent of the population stating that casinos have had a negative impact on their community (Canadian Gaming Association, 2017).

To manage the back-end knowledge, gambling agencies promote a public relations message that they are working to help problem gamblers (Cosgrave, 2010). For example, the Canadian Gaming Association (2017) asserts that it spends \$100 million annually on responsible gaming initiatives, to support academic research, education, awareness, and treatment for problem gamblers. However, problem gamblers are economically productive for Canadian society, accounting for one third of all gambling revenue (Tepperman & Wanner, 2012), thus

they are often viewed as a ‘risk to be managed’, rather than a ‘problem to be solved’ (Cosgrave, 2010). Due to economic productivity, the high rates of university-age problem gamblers, may be viewed as an asset to society. For example, even on informational websites designed to educate the gambling population, losses are referred to euphemistically as ‘Non-Wins’ (Addictions Foundation of Manitoba, 2017), which de-emphasizes the impact of losing.

Furthermore, with the help of media and gambling industry advertisements, gambling is glamourized and normalized (Tepperman & Wanner, 2012). Individuals with gambling problems are portrayed as irresponsible gamblers with poor self-control (Tepperman & Wanner, 2012; Cosgrave J. F., 2010). When responsible gambling is advertised as a personal responsibility, as it is in Canada, pressure is taken off the state to help those with gambling problems (Cosgrave J. F., 2010), thus allowing the neoliberal gambling market to flourish. As is evident, legalization was a long, complicated, and conflictual endeavour; however, the current generation of University students have never known a world without legal and pervasive gambling (Tepperman & Wanner, 2012). One consequence of legalized gambling “may be a higher incidence of compulsive or pathological gambling in the population” (Lesieur, et al., 1991, p. 518).

Early Life Experiences and University Correlates of Problem Gambling

It has been shown that individuals’ experiences in their early life can have an impact on their gambling behaviours later in life. For example, individuals who employ maladaptive coping strategies as youth, are more at-risk for developing problem gambling behaviours later in life (Dixon, et al., 2016). Young adults and adolescents are often exposed to specific strain events, and in addition, report experiencing more anger in response to the strain (Greco & Curci, 2016). Young adults and adolescents often face new experiences, such as starting university, starting or

changing jobs, or getting married, and have not yet developed effective coping strategies to handle these new situations.

Emerging adulthood can be one of the most deviant times in an individuals' life because of the different types of stressors experienced in such a short amount of time (Greco & Curci, 2016), thus, emerging adults may rely on maladaptive coping strategies, such as gambling behaviours. University students have been shown to employ a wide variety of coping strategies, however not all of them are effective, and “may potentially compromise psychosocial functioning” (Wolf, 1994, p. 13). High-intensity gambling behaviours are also correlated to other deviant, or risky behaviours which are often associated with youth and young adulthood, such as binge drinking, substance abuse, and unprotected sex (LaBrie, Shaffer, LaPlante, & Wechsler, 2003). Risky behaviours are often found to co-occur in young adults (LaBrie, et Al., 2003). This is especially true when individuals were socialized in a family that relied on maladaptive coping strategies, such as gambling and substance abuse (Greco & Curci, 2016). According to Social Learning Theory (Bandura, 1977), youth learn to replicate and preserve the behaviours they observe, therefore it has been found that youth often have their first experience gambling with family members (Gupta, Derevensky, & Manget, 2004). Consequently, it has been found that parental history of gambling, and problem gambling behaviours are important predictors of gambling among adolescents (Makela, 2000). In addition, adolescents and young adults with gambling problems exhibit an increase in delinquent behaviours, likely because young adults with gambling problems have little access to legitimate forms of money (Hayatbakhsh, et al., 2013).

Gambling has been found to create additional problems for university students, including “interference with relationships, job, and school” (Lesieur, et al., 1991, p. 521). Among the

university-aged population, binge drinking, and other alcohol related behaviours are the strongest risk correlates associated with problem gambling (LaBrie, Shaffer, LaPlante, & Wechsler, 2003). University students who gamble are more likely to consider partying to be an important aspect of their lives, and by extension, males who live in fraternities are more likely to be gamblers (LaBrie et al., 2003). Students were also more likely to gamble if they spent more than three hours a day watching television, and were more likely to gamble if they did not consider religion or art to be an important component of their lives (LaBrie et al., 2003). Furthermore, university respondents believed that engagement with art and religion were important protective factors against problem gambling (LaBrie et al., 2003). In addition, students who gamble are less likely to consider academics to be an important aspect of their lives, and are more likely to have a grade point average less than B+ (LaBrie et al., 2003). LaBrie et al. (2003), contrary to most, that found university problem gambling rates were the same, not higher, than the rest of the population, however the study was conducted prior to the rise of internet gambling.

Gambling can be viewed as a form of risk-taking, which can release feelings of exhilaration, and satisfy sensation seeking impulses (Powell, Hardoon, Derevenski, & Gupta, 1999). Therefore, it is not surprising to note that university-aged problem gamblers “reported significantly greater risk taking and sensation seeking behaviour than gamblers exhibiting no gambling problems” (Powell et al., 1999, p. 1173). Males tend to take more risks than females, however, female gamblers who score very high in sensation seeking and risk-taking behaviours are more likely to experience significant problems stemming from their gambling behaviours (Powell et al., 1999). Sensation seeking and risk-taking behaviours eventually begin to lose their appeal when individuals become familiar with them, and the behaviour becomes habituated (Powell et al., 1999). Thus, individuals who experience habituation of gambling behaviors may

feel the need to increase the frequency or intensity of their gambling behaviour to maintain the previous feelings of physiological arousal (Powell et al., 1999). In turn, this can perpetuate and intensify problem gambling behaviours.

University students, typically between the ages of 18 and 25, are in the period known as ‘emerging adulthood’ (Sussman & Arnett, 2014). It is a distinct period of life wherein individuals achieve relative autonomy from parental figures and teachers, and in the wake of this new independence begin an extended process of identity exploration (Dyson & Renk, 2006), untrammelled yet by the full burdens and responsibilities associated with adulthood (Sussman & Arnett, 2014). This is often an unstable period of life, leaving university students particularly vulnerable to negative life events and consequences, thus they are often given some leeway when it comes to following social norms (Sussman & Arnett, 2014). Experimentation with certain risky behaviours such as binge drinking, drugs, and gambling can be viewed as relatively normal behaviour in emerging adulthood (Lesieur, et al., 1991; Sussman & Arnett, 2014), which could explain why gambling rates are so much higher for the university population. Furthermore, emerging adulthood is also known for being a period of identity exploration (Sussman & Arnett, 2014). Emerging adults may utilize these risky behaviours as a way to make friends or impress their peers. As later hypothesized, this could be why social and enhancement motivations for emerging adults are so high. Motivations for gambling will be discussed further in this chapter. As most emerging adults mature, they may decrease their gambling behaviours after having learnt from their youthful mistakes (Lesieur, et al., 1991; Sussman & Arnett, 2014). In contrast, for a minority, emerging adulthood is a time where addictive behaviours develop and strengthen due to access and tolerance of these risky behaviours, thus perpetuating the behaviours into

adulthood (Sussman & Arnett, 2014). More research from longitudinal studies is needed to help verify if this is in fact the case.

Stress and Coping Strategies

One of the central independent variables for this study is stress. Stress can be defined as a change in one's environment, which strains resources and well-being, and can result in negative cognitive and emotional states (Lazarus, 1993). A stressful event is determined, in part, by the appraisal of resources and coping ability (So-kum Tang & Po Oei, 2011). This means that although the stressful event may be the same, the resources available to handle the stressor may influence the impact of the stressor itself. Dyson and Renk (2006), found that among university students, higher levels of stress are related to higher levels of depressive symptoms. When an individual experiences a stressful life event, and feels they do not have sufficient resources to cope, they may feel as if they have lost control. Consequently, it has been found that individuals who are highly stressed are more likely to gamble, because it provides them the illusion of control, and can also serve as a distraction from worry (So-kum Tang & Po Oei, 2011). Stress can trigger problem gambling, as well as maintain a gambling addiction (So-kum Tang & Po Oei, 2011). Excessive gambling is associated with increased stress, which affects not only the individual, but increases stress levels of their family members as well (Lesieur, et al., 1991). In contrast, Lightsey and Hulsey (2002), found that stress may not be directly linked to gambling among university students. Instead, the different coping strategies employed are more likely to influence gambling behaviours (Lightsey & Hulsey, 2002).

Coping has been found to mediate stress and health outcomes (Lazarus & Folkman, 1984), however, there are many ways individuals cope with stress. As conceptualized by the Coping Strategy Indicator (CSI) (Amrikhan, 1990), there are three fundamental strategies

individuals employ to manage stressful life events. These strategies are: Problem Solving, Seeking Social Support, and Avoidance. It has been shown that how individuals cope with stressful life events can be traced to their primal tendencies and behaviours (Amrikhan, 1990). The Problem Solving Strategy can be linked to a 'fight' response whereby individuals deal with their problems head on. The Avoidance Strategy is linked to the primitive 'flight' response whereby individuals seek to escape their problems (Amrikhan, 1990). Examples of the Problem Solving coping strategy include brainstorming solutions to problems, or planning a course of action before acting on impulse, whereas examples of Avoidance coping strategies include distracting yourself from the problem, or choosing to avoid people and spend more time alone. Lastly, "Seeking Support seems to tap a primal need for human contact in times of duress, for reason[s] beyond whatever material aid, advice or distraction that contact might provide" (Amrikhan, 1990, p. 1073). Examples of Seeking Social Support include letting your feelings or worries out to a friend, or accepting sympathy or understanding from others in a similar situation. Seeking Social Support and Problem Solving are generally better strategies for managing stress than Avoidance coping.

Researchers have found that more severe gamblers have experienced a greater amount of stressful or negative events (Bergevin, Gupta, Derevensky, & Kaufman, 2006; Stinchfield, 2004), and by extension, are more apt to use maladaptive forms of coping with this stress (Stinchfield, 2004). It was also found that severe gamblers had experienced more major negative life events, but not an increase of minor life events (Bergevin et Al., 2006). Further studies have revealed that more severe gamblers used more maladaptive forms of coping with stressful life events (Bergevin et al., 2006; Gupta, Derevensky, & Manget, 2004; Farrely, French, Ogeil, & Philips, 2007). Maladaptive coping strategies are not solution-focused, therefore typically

involve the emotion-oriented and avoidance-oriented coping strategies (Bergevin et al., 2006). Perceived stress and coping strategies have been linked to long-term health outcomes (Wolf, 1994). The avoidance coping strategy has been linked to higher depressive symptomatology among university students (Dyson & Renk, 2006).

Individuals who identify as having a gambling problem often refer to their gambling motivation as “gambling to escape” (Wood & Griffiths, 2007, p. 113), which results in ‘mood modification’. Mood modification includes the removal of aversive stimuli, such as a stressful event, and the presence of positive stimuli (Wood & Griffiths, 2007). Individuals who ‘gamble to escape’ note that gambling provides them with the ability to cope with negative psychological or psychosocial states, and provides distraction from their problems (Wood & Griffiths, 2007). It has been found that problem gamblers are often aware that they have problems with their decision-making abilities, and tend to avoid making decisions altogether (Phillips & Ogeil, 2011). According to the *Pathways Model* put forth by Blaszczynski and Nower (2002), individuals who have experienced traumatic life events, exhibit poor problem-solving and coping skills, and who gamble as a way to regulate negative mood states are consistent with ‘*Pathway 2: Emotionally Vulnerable Gamblers*’. Among both adults and adolescents, *Pathway 2* gamblers may be more resistant to change and treatment, thus perpetuating the gambling behaviour (Blaszczynski & Nower, 2002; Gupta, et al., 2013). It is also suggested that individuals who experience both physical and emotional stressors, and engage in emotion or avoidance coping strategies are more likely to be addicted to gambling (Gupta et al., 2004). Furthermore, it has been found that individuals who have a gambling problem are more likely to suffer from depression or anxiety (Hayatbakhsh et al., 2013; Stinchfield, 2004; Tepperman & Wanner, 2012;

Blaszczynski & Nower, 2002), potentially resulting from an increase in stressful life events and maladaptive coping strategies.

In contrast, an adaptive, positively associated coping strategy is task-oriented, or Problem Solving coping. More severe gamblers used less task-oriented coping than non-gamblers (Bergevin et al., 2006). In addition, individuals who use task-oriented coping strategies are also less impulsive, and in turn are less likely to be problem gamblers (Lightsey & Hulse, 2002). Per Bergevin et al. (2006), emotion coping is the only type of coping strategy that mediates the relationship between negative and stressful life events and gambling severity. Emotion-oriented coping may even promote high-risk behaviours such as gambling (Bergevin et al., 2006). In contrast, Farrelly et al. (2007) found that avoidant coping strategies are more likely to predict problem gambling.

There is evidence that some problem-gamblers increase their gambling activity when they experience increased stress or conflict in their daily lives (Wood & Griffiths, 2007). Furthermore, young adults who gamble to alleviate negative emotions are more likely to gamble alone (Quinlan, Goldstein, & Stewart, 2014), which is consistent with an avoidant coping style. Solitary gambling behaviours reflect isolation and social withdrawal, which can create a cycle of negative affect, which may further problem gambling behaviours (Quinlan, Goldstein, & Stewart, 2014). It could be suggested that people gamble alone, or gamble severely, because they are less tied to social norms (Hayatbakhsh et al., 2013). 'Desocializing' of the gambling act may also be a result of modern times, as promoted gambling activities have shifted from group oriented (race tracks), to individualistic (Electronic Gaming Machines) pass times (Bernhard & Preston, 2007). Moreover, youth problem gamblers are more likely to report poor family connections, and low perceived social support (Stinchfield, 2004). Youth problem gamblers are

more likely to feel alienated from family, friends, and their community (Stinchfield, 2004), therefore may be less likely to employ the Seeking Social Support coping strategy, and more likely to gamble alone. In contrast, individuals who gamble for social reasons are more likely to gamble with friends and family, thus reducing their risk for problem-gambling (Quinlan, Goldstein, & Stewart, 2014).

Stress not only can have an impact on gambling behaviours for the individual, but can also impact the family members of the problem gambler. According to Tepperman and Wanner (2012), familial stress due to problem gambling happens in stages. It begins with money problems, and lack of time spent with family and friends, and can gradually worsen to “deception, emotional withdrawal, negative health effects, and a lack of shared activities” (Tepperman & Wanner, 2012, p. 63). Therefore, there is evidence of a cyclical relationship between coping strategies, stress, and gambling behaviours, “a viscous circle was perpetuated whereby gambling to gain an escape from negative mood states created further problems and reinforced the need to escape further, through more gambling” (Wood & Griffiths, 2007, p. 114). It can be argued that problem-gambling is both a coping strategy, and a cause of the social and environmental triggers which can cause stress (Wood & Griffiths, 2007).

Gender

There is a gender divide amongst gambling, coping strategies and stress. Males are more likely to gamble than females (Gupta, Derevensky, & Manget, 2004; Lesieur, et al., 1991), and have different game preferences than females (Hayatbakhsh, et al., 2013). For example, males are more likely to play games of skill or knowledge, whereas females are more likely to play games of chance (Jacobs, 2004; Blaszczynski & Nower, 2002). Both men and women play electronic games equally (Jacobs, 2004). Males are also more likely to be severe gamblers than females

(Gupta et al., 2004), and often spend more money on gambling than females (Hayatbakhsh et al., 2013; Lesieur, et al., 1991). It has also been found that there are gender differences in risk-taking and impulsivity behaviours (Byrnes, Miller, & Schaffer, 1999), which could also be linked to a higher proportion of male problem-gamblers (Hayatbakhsh et al., 2013).

There is some debate in the literature about the reasons why men and women gamble. Hayatbakhsh et al. (2013) found that “male individuals have more social and emotional problems related to their gambling than do females” (p. 20), which is contrary to the findings of Powell, and colleagues (1999). Furthermore, Lesieur et al. (1991) found that females are more likely to ‘gamble to escape’ from problems, such a relationship problems and trauma, than their male counterparts. This study proposes to provide some answers for this debate.

Data collected by the Australian Addiction Research Institute indicated that 51 percent of all female gamblers, and 25 percent of female gamblers who feel they have a gambling problem report that they gamble as a way to reduce stress (Coman et al., 1997). However, more females than males report major life events, and “emotion-oriented coping is employed more by more severe male gamblers relative to other males, but not by more severe gamblers relative to other females” (Bergevin et al., 2006, pg.203). Although Dyson and Renk (2006), found that there are negligible differences in coping strategy among males and females, others have found that females are more likely to use emotion-based coping, and males are more likely to employ problem-focused coping (Lazarus & Folkman, 1984). Moreover, Eschenbeck, Kohlmann and Lohaus (2007), found that among adolescents, girls are more likely to use support seeking or problem-solving coping strategies, whereas boys were more likely to use avoidance coping. In addition, gender differences may also play a role in when gambling behaviours are initiated. Research has shown that males are more likely to begin gambling behaviours in their early

adolescents, whereas females will not often begin gambling behaviours until the mid-twenties to mid-thirties (Coman et al., 1997).

Motivations for Gambling

Although the gambling industry comprises a sizeable segment within the Canadian economy, most individuals do not gamble with this in mind. Instead, there are numerous personal and social reasons why individuals chose to gamble. As has been outlined previously, there is a considerable body of literature indicating individuals may gamble as a way to cope with stressful life events. Stewart and Zack (2008) adapted a drinking motivation index to develop a gambling motivation index, known as the 'Gambling Motives Questionnaire' (GMQ). The questionnaire measures three components of gambling motivations include, enhancement, social and coping. Enhancement motives refer to increasing positive emotions, or making oneself feel good, coping refers to reducing negative emotions and handling stress, and social refers to gambling with others, or to increase social affiliations (Stewart & Zack, 2008). The GMQ was later revised by Dechant (2014), to include a financial motive, which includes gambling for the purpose of making money, or chasing loses. The revised scale is known as the Gambling Motives Questionnaire-Financial (GMQ-F) (Dechant, 2014). It has been found that higher scores on any one of the four gambling motivations is linked to higher rates of problem gambling (Schellenberg, McGrath, & Dechant, 2016).

To date, there have been mixed results using the GMQ-F, as to what most commonly predicts problem gambling behaviour. In some instances, increased scores on the financial motivation component are found to indirectly relate to problem gambling, mediated through gambling frequency (Schellenberg, McGrath, & Dechant, 2016). Other researchers have found that problem gamblers are more likely to report machine gambling as both entertaining, and as a

way to earn income (Nower & Blaszczynski, 2010). Furthermore, social motivations were found to predict not problem gambling, but the amount of time spent gambling (Lambe, Mackinnon, & Stewart, 2015).

In the original study, Stewart and Zack (2008), found that enhancement motives most consistently predicted problem gambling behaviours. Furthermore, it has been found that coping motivations also predicted problem gambling behaviours (Nower & Blaszczynski, 2010), especially among women (Stewart & Zack, 2008). Schellenberg et al., (2008) also found that coping motivations are linked to problem gambling stating “that people who gamble in order to alleviate their negative emotions or to forget their everyday problems would be at a particularly strong risk of experiencing gambling related-harm” (p.12). In contrast, among emerging adults, it has been found that enhancement motives are most strongly linked to problem gambling behaviours, and that coping motivations have no influence on problem gambling (Lambe, Mackinnon, & Stewart, 2015). However, coping motivations influenced the amount of money gamblers spent, which could be an early indicator of problem gambling later in life (Lambe et al., 2015).

Theory

Much of the work surrounding gambling behaviours, stress, coping, and motivation strategies has been conducted from a psychological perspective. This study aims to complement this existing research by incorporating a sociological perspective, which includes analysing the social and motivational forces that influence problem-gambling behaviours in university-age students.

Excessive gambling is considered to be a type of behavioural addiction by the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), and is characterized by “the compulsive,

repetitive involvement in a rewarding activity that a person is unable to control or stop despite negative consequences to themselves and others” (Greco & Curci, 2016, p. 926). Gambling is included as a type of behavioural addiction because of its close relation to other substance abuse disorders (Greco & Curci, 2016). The General Strain Theory (GST) assumes that deviant behaviours are the consequence of strain events, (stressful life events), and the result of negative emotions (Agnew, 1992). For the purpose of this study, the deviant behaviour is problem gambling. According to Strain Theory, individuals experience strain when they cannot reach socially desirable goals, such as achieving monetary success. Adolescents and emerging adults, although may not experience monetary strain, because they may not have as many financial obligations as adults, “are concerned about the achievement of more immediate goals- such as good grades, popularity with the opposite sex, and doing well in athletics” (Agnew, 1992, p. 50). As put forth by Agnew (1992), three general types of strain which may affect an individual include: being prevented from achieving positively valued goals, removing stimuli that an individual values, and finally, presenting or threatening an individual with a negatively valued stimuli.

Managing or alleviating strain may be achieved through delinquency (Agnew, 1992), especially during emerging adulthood when these types of risky behaviours are expected and encouraged (Sussman & Arnett, 2014). In addition, delinquency may also be considered as a coping mechanism, as young adults may have taxed non-delinquent coping strategies (Agnew, 1992), or have not yet sufficiently developed non-delinquent coping strategies. With newly acquired autonomy, young adults are in a period of transition, and thus may not have the ability to effectively manage the amount and severity of stressors associated with emerging adulthood,

or may not know how to handle chronic stressors related to acquiring adult responsibilities. As a strategy to alleviate strain,

“gambling behaviours can be viewed as instrumental (a person under financial strain may gamble as a hoped solution to their financial circumstances) or as an escape from various strains and the resultant negative emotions that they fostered (indeed, the notion that pathological gambling is an effort by the individual to self-heal or self-medicate from stress)” (Eitle & Taylor, 2011, p. 6).

Therefore, gambling behaviours may serve as a strategy for coping with stressful life events.

Greco and Curci (2016) assessed the utility of GST to help explain gambling and substance abuse in a sample of university student and their families, and found that individuals who had experienced one or more strain events were more likely to engage in risky gambling, and substance abuse behaviours. They also tested the mediating effect of negative and depressive emotions on strain events and gambling, but found the mediation hypothesis was only “partially confirmed” (Greco & Curci, 2016, p. 931). Interestingly, this Greco and Curci (2016) concluded “that gambling is a coping strategy adopted/designed to deal with negative or stressful experiences” (p. 931). Most importantly, they found that young participants were exposed to more strain events than their older counterparts, and thus more frequently engaged in gambling behaviours (Greco & Curci, 2016). Participants in this study also decreased their gambling frequency when depressive emotions following negative life events decreased (Greco & Curci, 2016). Furthermore, a study conducted by Eitle and Taylor (2011), also confirmed the relationship between strain and gambling activities as a coping mechanism. Although similar to the study conducted by Greco and Curci, the current study aims to understand the role that coping strategies play in problem gambling behaviours in response to stressful live events, instead of the role played by negative and depressive emotions.

There is also evidence for the ‘Generality of Deviance’ (Mishra, Lalumiere, & Williams, 2017), whereby various antisocial risk behaviours, tend to co-occur in individuals. For example, these behaviours can include gambling, binge drinking, risky sexual behaviours, increased use of illicit drugs, and cigarette smoking. Individuals who have a “taste for risk” have higher involvement in these deviant behaviours, and “both a higher level of general gambling involvement and problem gambling tendencies were associated with impulsivity, sensation-seeking and low self-control” (Mishra, et al., 2017, p. 16). There is evidence that various ‘risky behaviours’- problematic gambling, increased frequency of cigarette smoking and drug use, engaging in risky sexual behaviours, binge drinking- are associated with increased levels of binge drinking among college students (Edgerton & Roberts, 2016; Walker, Clark, & Folk, 2010; Bhullar, Simons, Joshi, & Amoroso, 2012). Gambling behaviours among university students have also been associated with an increased likelihood of paying for sex (Walker et al., 2010). Therefore, because the social controls surrounding these behaviours in emerging adulthood are lowered, it is plausible that many of these deviant behaviours may co-occur for high-risk problem gamblers.

Hypotheses

A review of the existing gambling literature reveals gaps that need filling, and inconsistencies that need to be resolved. To begin, much of the literature has been proceeded from a theoretical framework informed by psychological constructs. The present research will use a sociological lens to look at some of the factors which influence problem gambling behaviours such as co-occurring risky behaviours, peer influence, and social motivations. Furthermore, it aims to discover sociologically informed prevention and treatment strategies that move beyond the individual to incorporate social forces. Importantly, Canadian research on the topic is limited, as

the vast majority of research has been conducted in the United States. Although findings drawn from American populations may hold true in Canada to some extent, this study will focus on Canadian university students as a unique population. Additionally, much of the literature is focused on youth or adolescents (the terms are often used interchangeably), aged 11-17. This data is useful to understand what influences youth to gamble, and what preventative measures should be put in place to prevent youth from gambling, as gambling is illegal in most Canadian jurisdictions for minors under the age of 19¹. This research will address a population that is less commonly studied in gambling literature: Canadian University students. University students are in a period of life known as emerging adulthood, which is linked to increases in risky behaviours such as gambling. Most previous studies (mostly American) have found that University students are more likely to be problem gamblers than the adult population (Leisure et al, 1991), LaBrie, and colleagues' (2003) results however, contradict this. The present research aims to resolve this inconsistency in the literature. I hypothesize that consistent with most gambling and emerging adulthood literature, problem gambling rates of university students will be higher than the general adult population.

There is a small body of literature that seeks to apply General Strain Theory (Agnew, 1992), to stress and problem gambling behaviours (Eitle & Taylor, 2011; Greco & Curci, 2016). This theory posits that deviant behaviours, such as problem gambling, result from stressful life events, which can produce negative and depressive emotions. There has been some support shown for the relationship between stressful life events and deviant behaviours (Eitle & Taylor, 2011; Greco & Curci, 2016), however the role of negative and depressive emotions cannot be

¹ 18 is the legal gambling age in the provinces of Alberta and Quebec, and in Manitoba where this study was conducted.

confirmed (Greco & Curci, 2016). There is a growing body of literature however studying the relationship coping, in particular, maladaptive coping, has on stress and deviant behaviours such as gambling. Research has indicated that stress and coping strategies are linked to problem gambling behaviours, however it is unclear in which direction the relationship moves. For example, many scholars have found that increased levels of stress, whether major, minor or chronic stressful events are more likely to lead to problem gambling (Lesieur, et al., 1991; Sokum Tang & Po Oei, 2011; Stinchfield, 2004). In contrast, Lightsey and Hulsey (2002), found that it is not the amount or type of stress which causes problem gambling, but instead how individuals cope with the stress. In addition, Gupta et al. (2004), and Bergevin et al. (2006) found that it is *both* stressful life events and maladaptive coping strategies that contribute to problem gambling behaviours. Emerging adults experience a multitude of changes in a relatively short period of time, and may not yet have developed appropriate coping methods to manage the strain and stress they are experiencing. Therefore, this study aims to discover what the link is between problem gambling behaviours, stressful life events, and coping mechanisms. I hypothesize, in accordance with ‘General Strain Theory’ (Agnew, 1992; Greco & Curci, 2016), that higher levels of perceived stress will be associated with higher rates of problem gambling. In addition, I hypothesize that maladaptive coping strategies such as avoidance coping, will be associated with increased problem gambling risk.

There are inconsistencies in the literature relating to gambling motivations, and problem gambling behaviours. When using the GMQ-F, some researchers have found that higher coping motivation scores are associated with greater risk of problem gambling (Nower & Blaszczynski, 2010; Schellenberg et al., 2016; Stewart & Zack, 2008). Stewart and Zack (2008) found that coping motivations were especially likely to lead to higher risk of problem gambling among

women. In contrast, others have found that coping motivations do not predict higher rates of problem gambling (Lambe et al., 2015). Enhancement motivations have been shown to increase problem gambling behaviours, and social and financial motivations have been linked to both increased frequency of gambling behaviours, and increased likelihood of problem gambling (Nower & Blaszczynski, 2010; Schellenberg et al., 2016; Stewart & Zack, 2008; Lambe et al., 2015). I hypothesize that (a) all four types of gambling motivations will be associated with higher risk of problem gambling, and (b), the association between coping motivations will be significantly stronger among female than male gamblers. In addition, I also hypothesize that respondents who have high motivation for gambling are more likely to be problem gamblers. Accordingly, higher scores on the coping, social, enhancement, and financial motivation subscales of the Gambling Motives Questionnaire-Financial (GMQ-F), will each be associated with higher PGSI scores.

In gambling literature, it has been consistently found that males are more likely to be problem gamblers than females, and males are more likely to gamble for longer periods of time, and spend more money. However, there is a debate in the literature surrounding stress, coping and gender. Hayatbakhsh et al. (2013) has found that males are more likely to suffer from emotional and social problems, which contributes to their gambling behaviours. In addition, males are more likely to be risk-takers, thus they are more likely to exhibit problem gambling behaviours. In contrast, Powell et al. (1999) found that females are more likely to suffer from emotional problems that contribute to their gambling behaviours. Furthermore, Lesieur et al. (1991), found that females are more likely to ‘gamble to escape’, thus using gambling as a coping mechanism for stress. Therefore, I hypothesize that females will employ more maladaptive coping strategies than males.

Lastly, in the literature pertaining to emerging adulthood, there is evidence that deviant behaviours may occur. In accordance with the ‘Generality of Deviance’ theory, it has been found by some scholars that ‘risky behaviours’ such as risky sexual relations, binge drinking, drug use, and cigarette smoking are associated with greater frequency and severity of gambling problems (Mishra et al., 2017; Bhullar et al., 2012). In accordance with the ‘Generality of Deviance’ (Mishra, Lalumiere, & Williams, 2017), I hypothesize that emerging adults who engage in risky behaviours are more likely to be at risk for a gambling problem. Accordingly, smoking cigarettes, regular illicit drug use, and engaging in risky sexual behaviours (unprotected or unplanned sexual relations) will each be associated with increased PGSI scores.

Furthermore, there is evidence that greater likelihood of drinking problems are associated with a greater likelihood of gambling problems (Edgerton & Roberts, 2016; Walker et al., 2010). Therefore, I hypothesize that excessive alcohol consumption will lead to an increased likelihood of problem gambling behaviours. In particular, I hypothesize that binge drinking in the last 30 days will be positively associated with higher PGSI scores, and that increased negative alcohol-related consequences as indicated by increased scores on the Rutgers Problem Alcohol Index (RAPI) will be positively associated with higher PGSI scores.

Summary of Hypotheses to be Tested

H1: Males will on average have higher Problem Gambling Risk Severity (PGSI) scores than females.

H2: Problem gambling rates will be higher for emerging adults than for the general adult population. That is, a greater proportion of emerging adults will be at-risk (score of 1 or more on the PGSI score) for problem gambling than in the general population.

H3: Higher levels of perceived strain events will lead to a greater likelihood of problem gambling. That is, the higher the Life Events Stress Scale (LESS) score, the higher the PGSI score.

H4: In accordance with GST (Agnew, 1992; Greco & Curci, 2016), emerging adults who more regularly employ maladaptive coping strategies are more likely to be problem gamblers. Accordingly, higher avoidance coping scores will be associated with higher PGSI scores.

H5: In accordance with the ‘Generality of Deviance’ (Mishra et al., 2017), emerging adults who engage in risky behaviours are more likely to be at risk for a gambling problem. Accordingly, smoking cigarettes, regular illicit drug use, and engaging in risky sexual behaviours (unprotected or unplanned sexual relations) will each be associated with increased PGSI scores.

H6: The excessive consumption of alcohol will lead to an increased likelihood of risk of problem gambling behaviours.

H6a: Binge drinking in the previous 30 days will be positively associated with PGSI scores.

H6b: Higher numbers of negative alcohol-related consequences, as measured by the Rutgers Alcohol Problem Indicator (RAPI), will be associated with higher PGSI scores.

H7: Respondents who have high motivation for gambling are more likely to be problem gamblers. Accordingly, higher scores on the coping, social, enhancement, and financial motivation subscales of the Gambling Motives Questionnaire-Financial (GMQ-F), will each be associated with higher PGSI scores.

H7a: The association between coping motivations and problem gambling will be significantly stronger among female than male gamblers.

Chapter Three

Method

Data

The Student Leisure and Well-Being Survey

The current study uses data from the Student Leisure and Well-Being Survey (SLWBS), which was administered in class to students enrolled in sections of either an Introduction to Sociology or an Introduction to Research Methods Course at the University of Manitoba 2014-15. The survey included questions about general demographics, mental health, personality, gambling behaviour, online gambling behaviour, and alcohol and drug use. Participation was voluntary, and the study was approved by the university's Psychology/Sociology Research Ethics Board. The sample for this study is comprised of those students who indicated having spent money gambling in their lifetime, and who filled out the revised second wave of questionnaires, which had been supplemented with additional risky behaviour questions (n=283).

Demographics

The SLWBS had a total of 1352 respondents. Comparison of the SLWBS sample to available institutional demographics (Table 1) suggests that – although there are slightly more females and emerging adults, and slightly fewer full time students in the SLWBS sample relative to the university in general – the data are reasonably representative of the general university population. Because nearly half of these students are in their first year of study, they have not yet established a University-based grade point average (GPA). Their self-reported High School letter grades were converted into a university GPA, and compiled together to establish a GPA. Using the compiled GPA, 26.8 per cent of students have an average of A+ or A, 45.3 per cent of

students have an average of B+ or B, 21.5 per cent finished with a C+ or C, and lastly, 3 per cent of students have a grade average of D or lower.

Table 1: Comparison of SLWBS Sample with University Population on key Demographic Characteristics

	SLWBS sample	University*
Female	65%	54%
Full- vs. part-time	82.6% vs. 17.4%	88.4% vs. 11.6%
International vs. Canadian Students	15.4 vs. 84.6%	15.1% vs. 84.9%
Ages 18-24	88.7%	77.3%

* provided by the Office of Institutional Analysis at the sampled university

When asked if they had ever spent or bet money on gambling before, 48.9 per cent of respondents answered ‘No’ (n=661), while 50.6 per cent of respondents answered ‘Yes’ (n=684). The number of students who answered ‘Yes’ to having gambled before is lower than the national estimates. Some of the other lifestyle attributes of the sample indicate that 69.7 per cent of respondents live with their parent or guardian, while 30.3 per cent do not. Nearly half of respondents are single, or not currently in a relationship (48.7 per cent), and just over one third of respondents have a boyfriend or girlfriend (37.4 per cent). Although 31.3 per cent of respondents did not know their parent/guardian household income, 15.8 per cent stated a household income less than \$49,000, 21.6 per cent indicated a household between \$50,000 and \$99,999, 15.9 per cent reported a household income of \$100,000-\$149,000, and lastly, 15.9 per cent indicated a household income of \$150,000 or more. When asked about individual income, more than three quarters (76 per cent) of respondents indicated they made less than \$15,000 per year. Furthermore, 64.3 per cent of the general population indicated working less than 15 hours per week, while 35.7 per cent reported working more than 15 hours per week.

The following is an analysis of the demographic information provided by respondents who indicated having gambled in their lifetime, and who completed the latter wave of the SLWBS survey, with the additional risky behaviour questions. The population studied for this analysis specifically targeted the gambling population (or any respondent who indicated 'Yes' to have spent or bet money on gambling before) of the second wave of the SLWBS survey. Of these respondents, the demographics are as follows. Of the 283 respondents who indicated they had gambled before, 44.9 per cent are male (n=127), and 55.1 per cent are female (n=156). Similar to all SLWBS respondents, 84.8 per cent of gamblers are between the ages of 18 and 24 (n=240), 13.8 per cent are older than 25 (n=39), and 0.4 per cent are younger than 18 years of age (n=1). To account for outliers, respondents over the age of 45 were recoded as 45 years of age, thus the mean age is 22.1, with a standard deviation of 5.51. Of respondents who gamble, 85.8 per cent are full-time students, while 12.6 per cent are part-time students. The compiled High School and University grades of gamblers compared the whole sample population show some differences. 23.3 per cent of gamblers received a High School average of A+ or A (compared to 26.8 per cent of the total population), 52.3 per cent of gamblers received a B+ or B (compared to 42.1 per cent of the total population), and 19.8 per cent of gamblers received a C+ or C average in high school. This indicates that gamblers may be more likely to have a lower grade point average than the total population.

When analyzing some lifestyle attributes of the study sample, just under half of gamblers are single (43.8 per cent) and 37.8 per cent have a boyfriend or girlfriend. Most respondents (83.7 per cent) indicated they are full-time students, while 14.5 per cent of respondents indicated they are part-time students. When indicating parent/guardian household income, 13.8 per cent reported less than \$50,000 per year, 20.5 per cent reported \$50,000-\$99,999 per year, 19.1 per

cent reported \$100,000-\$149,000 per year and 15.9 per cent reported a household income more than \$150,000 per year. When reporting on personal income, over two-thirds of gamblers indicate having a personal income of less than \$15,000 per year, while 13.7 per cent of gamblers indicated having an income between \$15,000-\$24,999 and, and 8.6 per cent indicated \$25,000-\$49,000 per year. Furthermore, 47.7 per cent of the gambling population works less than 15 hours per week, while 39.9 per cent report working more than 15 hours per week. Summarized demographic information can be found in Table 2.

Table 2: Demographics of Gambling Sample	
Item	Statistic
Sex	
Male	44.9%
Female	55.1%
Age	
17 or younger	0.4%
18-24	84.8%
25+	13.8%
Mean	21.5
SD	5.59
Current Relationship Status	
Single	43.8%
Have boy/girl friend	37.8%
Other	17.6%
Student Status	
Full time	83.7%
Part time	14.5%
Parents/Guardians Household Income	
\$0-\$49,999	13.8%
\$50,000-\$99,999	20.5%
\$100,000-\$149,000	19.1%
\$150,000+	15.9%
Grade Point Average	
D or lower (1-1.9)	1.4%

C (2-2.4)	6.0%
C+ (2.5-2.9)	13.8%
B (3-3.4)	27.2%
B+ (3.5-3.9)	25.1%
A/A+ (4.0-4.5)	23.3%
Employment	
Less than 15 hours per week	47.7%
More than 15 hours per week	39.9%

Measures

Dependent Variable- Problem Gambling Risk Level

The Problem Gambling Severity Index (PGSI) is a self-report problem gambling measure intended for use by the general public, as opposed to use in a clinical setting (Holtgraves, 2009). The PGSI is a subscale of the larger Canadian Problem Gambling Inventory (CPGI) (Holtgraves, 2009). In past studies, the PGSI is shown to have high internal validity (Boldero & Bell, 2012; Currie, Hodgins, & Casey, 2013; Holtgraves, 2009), and is psychometrically stronger than the South Oaks Gambling Screen (SOGS) to which its measurement techniques are comparable (Currie et al., 2013; Holtgraves, 2009). Containing only 9 questions, the PGSI is quick and simple to administer, and is a common measure used in Canada and Australia (Boldero & Bell, 2012). The respondents were asked to indicate if any of the problem gambling situations had occurred to them in the last 12 months.

The PGSI has twelve different components, nine of which are scored to identify problem gamblers (Boldero & Bell, 2012). Of the nine scored items, four of them (betting, tolerance, chasing and borrowing) indicate problem gambling behaviors, and the remaining five, (felt problem, criticized, felt guilty, health problem and financial problem) indicate the consequences of problem gambling (Holtgraves, 2009). For each item, respondents answer on a four-degree

Likert Scale ranging from 0=*Never*, to 3=*Almost Always* (Holtgraves, 2009). Together these measures are intended to inform the participant if they display qualities of a problem gambler. “For problem gamblers, the PGSI assess a single underlying problem gambling factor” (Boldero & Bell, 2012, p. 91). Raw PGSI scores range from 0-27. Raw scores can be categorized into risk levels. These category cut-offs, recommended by Currie and colleagues, (2013) consist of “‘*non-problem gamblers*’ (PGSI = 0), ‘*low-risk*’ (PGSI = 1–2), ‘*moderate-risk*’ (PGSI = 3–7), or ‘*problem-gambler*’ (PGSI > 7)”. In this study, the raw score version of the PGSI variable was skewed and extremely kurtosed. Bentler and Chou (1987) have argued that categorical variables that have at least 4 categories and are approximately normally distributed can be treated as continuous with little concern. Accordingly, given its near normal distribution (see Table 2.1) in this sample, the 4 category cut-offs will be treated as continuous.

Motivation for Gambling Indicators

The Gambling Motives Questionnaire- Financial (GMQ-F) (Dechant, 2014), is composed of 19 questions which respondents are instructed to answer using a four-point Likert Scale ranging from 0=*Never/Almost Never*, through 3=*Almost Always/Always*. The GMQ-F is designed to measure four distinct motivations for gambling behaviour. Coping motives involves gambling as a means to reduce negative emotions or handle stress, enhancement motives involve gambling to supplement positive emotions, social motives involve gambling to enhance your experience with others, and financial motives involves gambling for the purpose of making money (Schellenberg et al., 2016). Individuals can be placed in more than one category, and the higher their score, the more likely they are to employ that type of gambling motivation. This index has proved high validity and reliability in both emerging adult and adult populations (Dechant, 2014). Among emerging adults, there is some evidence that enhancement motives are linked to problem

gambling behaviours (Nower & Blaszczynski, 2010; Schellenberg et al., 2016; Stewart & Zack, 2008; Lambe et al., 2015).

The GMQ-F subscales are each normally distributed (see Table 3.1). The enhancement motivation ($\alpha = .888$), social gambling motivation ($\alpha = .895$), coping gambling motivation ($\alpha = .780$), and financial gambling motivation subscales ($\alpha = .767$), all had good internal reliability.

Coping Strategy Indicators

To measure how respondents cope with stressful life events, the Coping Strategy Indicator (CSI) was used (Amrikhan, 1990). The CSI consists of 33 questions designed to measure three fundamental strategies individuals employ to manage stressful life events. These strategies are: Problem Solving, Seeking Social Support, and Avoidance, each represented by 11 questions. Respondents were asked to indicate whether or not they had employed a coping strategy behavior by rating it on a Likert scale ranging from 0=*Never* to 3=*All of the time (very frequently)*. An important feature of the CSI, is that respondents can fall along more than one coping dimension, as individuals employ different types of coping strategies for different situations. For each category, respondents can have a score between 0-33. The higher the score, the more likely an individual is to regularly employ that type of coping strategy. The CSI subscales are normally distributed (see Table 3.1). The avoidance coping strategy ($\alpha = .876$), support seeking coping ($\alpha = .951$), and problem-solving coping ($\alpha = .927$), all had good internal reliability.

Stressful Life Events Indicators

Stressful life events were measured using a modified version of the Life Event Scale for Students (LESS) (Linden, 1984). The LESS is comprised of 36 items, of which, respondents are asked to

indicate whether the particular stressor has occurred in their life in the last 6 months, the original LESS assigned normative weights to each event (from 0-100- death of a parent) based on how much readjustment the stressful event would demand (Linden, 1984).

In the SLWBS, respondents were asked to indicate if a stressful event had occurred within the last 12 months, and provide a rating out from 0-100 indicating how stressful the event was for them. From the LESS, vacation with parents, and vacation alone/with friends were replaced with two 'other event, please specify' options, to allow students to indicate other stressors which were not present in the previous questions. Total perceived stress was computed from respondents' answers to 33 questions, to achieve a total perceived stress score. Therefore, individuals with higher total perceived stress scores report experiencing more life stress than individuals with lower scores. When using university students, the original LESS had a median score of 434, with extreme values ranging from 209 to 858 (Linden, 1984). The gambling population of the SLWBS indicated a median stress score of 222.39, with extreme scores ranging from 0-1890, and a standard deviation of 227.27. The perceived stress scores were slightly skewed at 2.36, and heavily kurtosed at 9.45. 11.3 per cent (n=77) indicated a perceived stress score of 0, and only 1.2 per cent (n=8) indicated a score greater than 1001. 34.6 per cent (n=237) of the gambling population indicated a score less than 100, and 40 per cent (n=274) indicated a perceived stress score between 101-300. 24 (3.5 per cent) respondents indicated they had experienced the death of a parent, with a median score of 85.6 (death of a parent is the given maximum score of 100 in the original LESS). Due to a high number of missing cases, a logarithmic transformation was conducted, however no significant changes were identified in preliminary bivariate and multivariate analyses. Thus, for the purpose of interpretability, the data was kept unlogged for the final analysis.

Alcohol-Related Problems

To assess respondent's likelihood of problem drinking, the Rutgers Alcohol Problem Index (RAPI) was used. Directed at youth and young adults, RAPI is a self-administered scale used to identify alcohol related problems (Light, et al., 2011). The scale uses twenty-three questions which are answered on a five-point Likert scale ranging from 0=*Never*, to 5=*More than 10 times* (Light, et al., 2011; Arterberry, Chen, Verges, Bollen, & Martens, 2016). The Likert scale represents the frequency to which each behaviour, problem or consequence has occurred within a specific length of time, or if it has ever occurred (Light, et al., 2011). Higher RAPI scores indicate having experienced more negative alcohol-related consequences. There are shorter, validated measures of RAPI, depending on the needs of the researcher (White & Labouvie, 1989). RAPI has been shown to be effective in both clinical and nonclinical settings (White & Labouvie, 1989). It also has high internal validity, and reliability (Arterberry et al., 2016). In the current sample of gamblers, RAPI scores were approximately normally distributed (see Table 3.1) and demonstrated good internal reliability ($\alpha=.893$). Other continuous variable distributions can also be seen in Table 3.1.

Control Variables

To assess religiosity, the 10-item Santa Clara Strength of Religious Faith Questionnaire (SCSRFQ) (Plante & Boccaccini, 1997) was used. In the current sample of gamblers, religiosity was approximately normally distributed and demonstrated good internal reliability ($\alpha=.981$). GPA was coded from either the high reported school average of students who had completed less than one year of university, or the reported GPA of university students in at least their second year of study. The GPA categories are found in Table 1. For the employment variable, working

more than 15 hours per week was coded as 0 indicating “full-time”. Working less than 15 hours per week was coded as 1, indicating “part-time”. To indicate relationship status, “single” was coded as 0, “in a relationship/married/common-law”, was coded as 1. To indicate student status, “full-time” students were coded as 0, and “part-time” was coded as 1.

Sex, and Risky Behaviour Variables

The distributions of hypothesized categorical variables can be found in Table 2.2. Cigarette use, risky sexual behaviour, drug use, and binge drinking were all coded as 0 for “no”, and 1 for “yes”. Risky sexual behaviour was computed by combining two variables, measures of unprotected and unplanned sexual relations ($\alpha = .71$). Respondents were asked whether, in the past 12 months, they had, while under the influence of alcohol, engaged in (a) unplanned sex or (b) unprotected sex with a person they had never met before. This when then coded as a dichotomous variable. Drug use was measured by indicating by using one or more of the following drugs in the previous 12 months: marijuana, cannabis or hashish, cocaine or crack, speed (amphetamines), ecstasy (MDMA), hallucinogens, PCP or LSD (acid), heroin, prescription drugs not prescribed by a doctor. Binge drinking was measured as 4 or more alcoholic drinks consumed in one sitting or session in the last 30 days for females, and 5 or more alcoholic drinks consumed in one sitting or session in the last 30 days for males. Control categorical variables were also coded into 0 and 1. To analyse the sex variable, males were coded as 0, females were coded as 1.

Analytical Procedures

This study used Ordinary Least Squares (OLS) Multiple Regression analysis. Several assumptions were assessed prior to conducting OLS regression (Miles & Shevlin, 2001). The

dependent variable, problem gambling risk level, is approximately normally distributed with a skewness of 1.88, a kurtosis of 2.99, thus a second OLS regression assumption, normal distribution of the dependent variable was met. All continuous predictor variables were approximately normally distributed (except Stress as discussed above). Furthermore, tolerance (near 1) and VIF (less than 2.5) collinearity statistics also indicated and that none of the variables were too highly correlated with one another (Allison, 1999).

Missing Data

The SLWBS indicated 22.7 per cent (n=301) of respondents were missing from the data set, when answering the CSI questions. Although Little's test was significant indicating that data were not MCAR, MVA analysis did not reveal any notable pattern of missingness. It is probable that the questions were not completed due to survey fatigue, as the CSI was located near the end of the survey. All variables in the prediction model were included in the imputation model and 20 data sets were generated.

Chapter Four

Results

Univariate Analysis

Univariate descriptive statistics are reported in Table 3.1, and Table 3.2. Looking first at the risky behaviour variables, less than one-third of respondents (27.9 per cent) indicated smoking cigarettes in the last 12 months, while majority of the sample (72.1 per cent) indicated that they do not smoke cigarettes. Nearly half of the sample (45.6 per cent) indicated having used some form of illegal drugs (marijuana, cannabis, hashish, cocaine, crack, speed, ecstasy, hallucinogens, PCP, LDS, heroin, prescription drugs not prescribed by a doctor), at least once in the last month, while 51.2 per cent indicated they had not engaged in illegal drug use. A small portion of gamblers indicated engaging in risky sexual behaviour (14.5 per cent), while 74.6 per cent of gamblers indicated they had not. Furthermore, binge drinking in the last 30 days, (having consumed 5 or more alcoholic beverages for men, and 4 or more beverages for women in one sitting) was reported by 69.7 per cent of gamblers. 30.3 per cent of gamblers indicate that they had not engaged in binge drinking in the last 12 months.

When looking at the raw PGSI scores, it is interesting to note that only 1 respondent received a score of 27, and no respondents received a score between 20 and 26. Non-Problem gamblers (n= 203) represent 71.1 per cent of the population, low-risk problem gamblers represent 19.1 per cent of the population, moderate-risk gamblers represent 6.7 per cent of the population, and problem gamblers represent 2.5 per cent of the population. When looking at the Coping Strategy Indicators (Amrikhan, 1990), support seeking coping has a mean of 14.4, problem solving coping has a mean of 15.6, and avoidance coping has a mean of 12.01. All three types of coping are normally distributed.

Variable	Mean	Std. Deviation	Skewness	Kurtosis
PGSI	0.40	0.72	1.88	2.99
RAPI	4.73	6.52	1.96	3.76
Religiosity	9.09	9.125	0.641	-0.698
Perceived Stress	240.77	211.42	2.76	15.12
Enhancement Gambling Motivation	4.03	3.35	0.84	0.24
Social Gambling Motivation	0.97	2.26	3.05	9.78
Coping Gambling Motivation	2.85	2.97	1.26	1.48
Financial Gambling Motivation	3.58	2.94	0.82	0.01

	Yes	No
Cigarette Use	27.9%	72.1%
Drug Use	45.6%	51.2%
Risky Sexual Behaviour	14.5%	74.6%
Binge Drinking	67.7	30.3%

Bivariate Analysis

Bivariate correlations are reported in Table 4. The independent variables included in the model are both control variables, indicators of ‘risky behaviours’ – risky sex (having engaged in unplanned or unprotected sexual relations), cigarette use, drug use, binge drinking, and the Rutgers Alcohol Problem Index (RAPI) – as well as religiosity, perceived stress, coping strategies (Avoidance, Support Seeking, Problem Solving) and gambling motivations (Coping,

Social, Enhancement, Financial). The control variables included in the correlation matrix are household income of parents, age, employment (working more or less than 15 hours per week), GPA, current relationship status, and student status (part-time or full-time). Sex is an important independent variable which was also included in the matrix.

When analyzing the control variables, there is a weak, negative correlation between sex and PGSI ($r = -.176$; $p < .001$). Males are more likely to be problem gamblers than females. Interestingly, perceived stress, relationship status, student status, importance of religion, parent's household income, age, number of hours worked per week, and GPA were not significantly correlated with PGSI scores.

The bivariate correlations between 'risky behaviours' and PGSI showed interesting results. Engaging in unplanned or unprotected sex is weakly correlated with higher PGSI scores ($r = .160$; $p < .001$). Smoking cigarettes is modestly correlated with higher PGSI scores ($r = .201$; $p < .001$). Drug use is weakly correlated with PGSI scores ($r = .142$; $p < .001$). Although illegal drug use is only weakly correlated with PGSI scores, it is interesting to note that it is correlated with all the other 'risky behaviours' included in the matrix. Illegal drug use is positively correlated with risky sexual behaviour ($r = .189$; $p < .001$), cigarette smoking ($r = .442$; $p < .001$), binge drinking ($r = .217$; $p = .001$), and scoring higher on the Rutgers Alcohol Problem Indicator ($r = .335$; $p < .001$). Reporting more negative alcohol-related consequences (RAPI) is moderately correlated with higher scores on the PGSI ($r = .285$; $p < .001$). Binge drinking is weakly correlated with higher scores on the PGSI ($r = .145$; $p < .001$). Thus, all of the 'risky behaviours' hypothesized are correlated with higher PGSI scores.

Unexpectedly, none of the coping strategies indicated by the CSI, including support seeking coping, avoidance coping, or problem-solving coping, are significantly correlated with

PGSI. In contrast, all of the gambling motivations, as indicated by the GMQ-F are all significantly positively correlated with PGSI. Coping motivations for gambling are strongly positively correlated with PGSI scores ($r = .482$; $p < .001$). Social motivations for gambling are strongly positively related to PGSI scores ($r = .471$; $p < .001$). Financial motivations for gambling are also strongly positively correlated with PGSI scores ($r = .552$; $p < .001$). Enhancement motivations for gambling are very strongly correlated with higher PGSI scores ($r = .609$; $p < .001$).

Table 4: Bivariate Correlations

Var.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	-																					
2	.482**	-																				
3	.471**	.544**	-																			
4	.552**	.518**	.466*	-																		
5	.160**	.085	.036	.151	-																	
6	.609**	.674**	.552*	.670	.159**	-																
7	-.054	-.123**	.028	-	-	-	-															
8	.201**	.204**	.154*	.237	.155**	.279**	-	-														
9	.145**	.106**	.058	.103	.148**	.165**	-	.221**	-													
10	.285**	.205**	.179*	.224	.273**	.269**	-	.352**	.215**	-												
11	-.003	-.056	-.047	-	.013	-.064	.060	.011	-.002	.012	-											
12	.016	-.026	-.002	-	-.074	-.014	.050	-.005	-.004	.012	.094	-										
13	-.064	-.028	-.031	-	-.041	-.047	-.054	-.061	-.051	-.017	.098**	.040	-									
14	.054	.046	.020	.091	.074	.098**	-	.074	.083	.005	-	-.047	-.008	-								
15	.040	.024	.097*	.083	-.004	.044	.007	.028	-.076	.065	-.035	.005	-.145**	-.009	-							
16	-.020	-.074	-.063	-	-.002	-.043	.106*	-.018	-.022	.039	.065	-.007	.079	-.027	.116**	-						
17	-.014	-.031	.022	.008	.069	-.029	.070	.099*	-.020	.088*	.097*	-.015	-.049	-.058	.294**	.287**	-					

18	-.062	-.037	-.006	-.005	-.069	-.008	.073	.008	-.120*	-.090*	-.083	-.073	.028	.032	.099*	.484**	.287*	-				
19	-.176**	-.203**	-.192*	.169**	.117**	.238**	.077	-.019	.050	-.015	.018	.115**	.043	.019	.140**	.241**	.164*	.008	-			
20	-.076	.038	-.046	.008	-.073	.035	-.004	.019	.066	-.006	-.159**	.008	.027	.001	.053	.036	.044	.032	.102*	-		
21	-.020	.034	.065	.036	.036	.039	-.037	-.003	-.006	.034	-.366**	-.031	-.115**	.143**	-.007	.003	.019	.075	.043	.129*	-	
22	.142**	.120**	.050	.144**	.189**	.215**	-.269**	.442**	.217**	.335**	.008	-.075	-.141**	.070	.102*	.095*	.081	.002	.029	.017	.019	-

Notes: PGSI; 2=Coping Gambling Motivation; 3=Social Gambling Motivation; 4=Financial Gambling Motivation; 5= Risky Sexual Behaviour; 6=Enhancement Gambling Motivation 7=Religiosity; 8=Cigarette Use; 9=Binge Drinking; 10=RAPI; 11=Age; 12=Household Income; 13=GPA; 14=Employment; 15=Perceived Stress; 16=Support Seeking Coping; 17=Avoidance Coping; 18=Problem Solving Coping; 19=Sex; 20= Relationship Status; 21=Student Status; 22=Drug Use
*p≤.05, **p≤.01

Multiple Regression Analysis

Missing data were dealt with via multiple imputation, all analyzed variables were included in the imputation model, and 20 imputed data sets were created. Three Ordinary Least Squares (OLS) Regression models were run using the imputed data and pooled estimates of all 3 models are reported in Table 5. SPSS does not pool standardized regression coefficients for regression analysis, thus, they were computed by hand.

Table 5: Multivariate Regression						
	Model 1		Model 2		Model 3	
	Coefficient (SE)	Standardized	Coefficient (SE)	Standardized	Coefficient (SE)	Standardized
Constant	.258 (.066)	--	.034 (.063)	---	.051 (.042)	--
Household Income	.004 (.004)	.04	.003 (.003)	.031	--	--
Age	-.001 (.048)	-.001	.027 (.037)	.025	--	--
Employment	.039 (.027)	.06	.006 (.021)	.008	--	--
GPA	-.015 (.010)	-.06	-.009 (.008)	-.035	--	--
Sex	-.119** (.028)	-.17	-.109* (.047)	-.155	-.103* (.047)	-.146
Relationship Status	-.017 (.013)	-.05	-.022 (.010)	-.070	--	--
Student Status	-.022 (.046)	-.02	-.044 (.036)	-.041	--	--
Religion	.001 (.001)	.03	.002 (.001)	.059	--	--
Enhancement Gambling Motivation	--	--	.036** (.006)	.314	.036** (.006)	.314
Social Gambling Motivation	--	--	.030** (.009)	.138	.033** (.008)	.152
Coping Gambling Motivation	--	--	.008 (.006)	.056	.007 (.006)	.049
Financial Gambling Motivation	--	--	.029** (.005)	.223	.028** (.005)	.215
Engaged in unplanned or	--	--	.026 (.036)	.025	.031* (.030)	.024

unprotected sexual relations						
Engaged in	--	--	.028 (.024)	.040	.018 (.024)	.025
Binge Drinking Cigarette Use	--	--	-.012 (.031)	-.014	-.008 (.031)	-.095
Rutgers Alcohol Problem Index	--	--	.007* (.002)	.108	.007* (.002)	.108
Illegal Drug Use	--	--	-.067 (.026)	.096	-.013 (.025)	-.018
Perceived Stress	--	--	-.001 (.000)	-.638	-.001 (.001)	-.001
Avoidance Coping	--	--	-.005 (.003)	-.101	-.005 (.003)	-.101
Support Seeking	--	--	.002 (.002)	.051	.002 (.002)	.050
Coping Problem Solving	--	--	-.002 (.002)	-.046	-.003 (.002)	-.047
Coping Gender x Coping Interaction	--	--	.007* (.003)	.176	.006* (.003)	.151
R ² Values	.211		.466		.452	

The first regression analysis was run with the control variables, to see if any of them had an impact on PGSI scores. Model 1 of the Regression Analysis can be found in Table 4. The variables included in the first regression model are household income, age, employment, GPA, sex, relationship status, student status, and religiosity. These variables account for 21.1 per cent of the variation in PGSI scores ($R^2 = .221$). Sex is the only sociodemographic variable in that is significant at the multivariate level of analysis ($\beta = -.119$; $p < .001$).

A second model regression analysis was conducted with all the control variables, interaction terms and hypothesized predictors included. The interaction was included to test whether sex moderates the relationship between gambling as the coping motive and problem

gambling risk. Model 2 can be found in Table 4. Together, these variables account for 46.6 per cent ($R^2 = .466$) of the variance in problem gambling risk level. In Model 2, a one standard deviation change in enhancement gambling motivation is associated with a 31.4 per cent ($\beta = .314$; $p < .001$) of a standard deviation change in problem gambling risk. A one standard deviation change in social gambling motivation is associated with a 13.8 per cent ($\beta = .138$; $p < .001$) of a standard deviation change in problem gambling risk. A one standard deviation change in financial gambling motivation is associated with a 22.3 per cent ($\beta = .223$; $p < .001$) of a standard deviation change in problem gambling risk. Coping is the only gambling motivation not statistically significant. A one standard deviation change in RAPI scoring is associated with a 10.8 per cent ($\beta = .108$; $p < .001$) of a standard deviation change in problem gambling risk. A one standard deviation change in sex is associated with a 15.5 per cent ($\beta = -.155$; $p < .001$) of a standard deviation change in problem gambling risk. When analysing the interaction between gender and coping motivation, the association between gambling to cope and problem gambling risk remains significantly stronger for females ($\beta = .176$; $p < .001$). That is, the association between gambling to cope and problem gambling is moderated by sex, with females who gamble to cope being significantly more at risk for problem gambling than males who gamble to cope.

Finally, a third Regression Model was run using just the hypothesized predictors. Model 3 can also be found in Table 4. The variables that are included in the OLS regression analysis are enhancement gambling motivation, social gambling motivation, coping gambling motivation, financial gambling motivation, having unplanned or unprotected sex, binge drinking, the Rutgers Alcohol Problem Index, cigarette smoking, illegal drug use, avoidance coping, support seeking coping, problem solving coping, and sex. The coping motivation x sex interaction term was also included in the final regression model. Together, these variables accounted for 45.2 per cent of

the variation in PGSI scores ($R^2 = .452$). The final regression model included only the hypothesized variables for several reasons. Due to the small sample size, ($n=283$) and the large number of variables (22) in the model, the control variables (which were insignificant at both the bivariate and multivariate levels) were removed from the final model in effort to improve statistical power.

Most of the gambling motivation variables are significant multivariate predictors of problem gambling scores. A one standard deviation change in enhancement gambling motivation is associated with a 31.4 per cent ($\beta = .314$; $p < .001$) of a standard deviation change in problem gambling risk score. A one standard deviation change in social gambling motivation is associated with a 15.2 per cent ($\beta = .152$; $p < .001$) of a standard deviation change in problem gambling risk score. A one standard deviation change in financial gambling motivation is associated with a 21.5 per cent ($\beta = .215$; $p < .001$) of a standard deviation change in problem gambling risk score. Once other variables are controlled for at the multivariate level, coping gambling motivation is no longer a statistically significant predictor of problem gambling risk. The only risky behaviours to remain statistically significant at the multivariate level are alcohol related problems, and unplanned or unprotected sexual relations. A one standard deviation change in RAPI scores is associated with a 10.8 per cent ($\beta = .108$; $p < .05$) of a standard deviation change in problem gambling risk score. Having engaged in risky sexual behaviour is associated with a 2.4 per cent ($\beta = .024$; $p < .05$) of a standard deviation change in problem gambling risk score. The interaction between gender and coping motivation was statistically significant in this model, with the association between gambling to cope and problem gambling risk being significantly stronger for females than males ($\beta = .151$; $p < .05$). The independent variable with the greatest effect on problem gambling risk level is enhancement motivation for gambling, thus individuals who are

more likely to gamble for enhancement reasons are more likely to have a higher score on the PGSI, and a more likely to have a gambling problem.

Although most studies have shown that university-aged students show higher rates of problem gambling relative to the general adult population, after conducting a t-test (Roberts, Edgerton, Peter, & Wilkinson, 2015), the results indicate that the null hypothesis of no differences in the problem gambling rates of emerging adults in this study (2.5%) and the general population (2.2%; Lesieur et al., 1991) cannot be rejected at the 0.05 level of significance ($t=.34$; $p<.05$). In addition, a t-test was also conducted to test if the emerging adults in this study (2.5%) had similar problem gambling rates to emerging adults in previously conducted studies. The results from this t-test also indicate that the null hypothesis of no differences in the problem gambling rates of emerging adults in this study, and emerging adults in previous studies (3.2%; Benson, Norman & Griffiths, 2012) cannot be rejected at the 0.05 level of significance ($t=-.67$; $p<.05$).

It is also worth noting that, although this study used a relatively small convenience sample of university students enrolled in sociology, the insignificant t-tests indicate that this sample is not dissimilar to previous non-clinical samples in which problem gambling was studied. This, combined with its relatively representative demographic profile (as compared to the university population from which it was selected) increase our confidence that the SLWBS is not an atypical sample of gamblers.

A significant regression sex coefficient ($\beta= -.155$, $p < .001$) indicates that males are more at risk for problem gambling than females, as predicted by Hypothesis 1. Hypothesis 2, stating that problem gambling rates will be higher for emerging adults than for the general adult

population is not supported. Hypothesis 3, stating that an increase in perceived stress will lead to an increase in PGSI scores is also not supported. Perceived stress was not statistically significant at any level of analysis. Hypothesis 4, stating that respondents who employ maladaptive coping strategies are more likely to have a higher score on the PGSI, is also not supported. None of the three types of coping (support seeking, avoidance, problem solving), are statistically significant predictors at either the bivariate or the multivariate level of analysis. Hypothesis 5, regarding risky behaviour and increased problem gambling risk among emerging adults is partially supported. At the bivariate level, all of the risky behaviours —smoking cigarettes, engaging in unplanned or unprotected sex, engaging in illegal drug use, binge drinking, negative alcohol-related consequences—were significantly related to problem gambling risk. At the multivariate level, only negative alcohol-related consequences (as indicated by higher RAPI scores), and risky sexual behaviour remained statistically significant predictors of problem gambling risk. Hypothesis 6b, increased RAPI scores will be associated with increased problem gambling risk is supported, while 6a, binge drinking will be associated with higher problem gambling risk, is not. The consumption of alcohol among emerging adults is somewhat related to risk of problem gambling. At the bivariate level, binge drinking (consuming 4 or more alcoholic drinks in one sitting for men, 5 or more drinks in one sitting for women) is correlated with increased problem gambling behaviours, however at the multivariate level of analysis, this relationship disappears. The number of negative alcohol-related consequences as indicated by increased RAPI scores is consistently correlated with increased problem gambling risk at all level of analysis. Therefore, it can be stated that the results indicate that as the number of reported alcohol related problems increase, so does problem gambling risk level.

Hypothesis 7, regarding gambling motivations is generally supported. At the bivariate level, all four types of gambling motivations are correlated with increased problem gambling risk. At the multivariate level, however, coping motivation is no longer significantly associated with problem gambling risk. In Model 2, enhancement gambling motivation, social gambling motivation, and financial gambling motivation are statistically significant predictors of problem gambling risk, and remained so when controls were removed in Model 3. Interestingly, the findings of 7a are mixed. Although coping motivations are not statistically significant to gambling, there was a significant sex difference, with the association between coping motivations and problem gambling being significantly stronger for female than male gamblers. This indicates that females who gamble to cope are at greater risk of developing a gambling problem than males who gamble to cope. Further research is needed to determine why this is the case.

Chapter Five

Discussion

This paper aimed to explore the multitude of factors which can influence problem gambling among emerging adults enrolled in university. Emerging adults have never known a Canada without legalized and destigmatized gambling, thus it is crucial to understand what factors influence problem gambling among a population to whom it is so accessible. Additionally, emerging adults are in a transitional period of life, and may not yet have developed adaptive coping mechanisms to handle the new stressors they face. Some attempts to manage these stressors may include use of maladaptive coping mechanisms such as engaging in risky behaviours. Because risky behaviours, such as gambling, are somewhat expected of this age group, it is important to recognize how best to manage these behaviours, and how to ensure they do not continue into adulthood.

Using data collected from the SLWBS survey in 2015, it is first interesting to note that just under half of respondents indicated that they had gambled in their lifetime, thus more than half of the sample had never gambled before. The number of gamblers is significantly lower than the national average, which is especially surprising as Manitoba has one of the highest rates of gambling in Canada. Consistent with all other literature however, of the individuals who have gambled in their lifetime, males are more at risk for problem gambling than females.

A main component of this study was uncovering the relationship between problem gambling behaviours, coping mechanisms, and stress. Unexpectedly, the results did not reveal any significant relationship between any of the coping strategies (avoidance, problem solving, or support seeking), and problem gambling, even at the bivariate level. It was hypothesized that

respondents who use maladaptive coping strategies such as avoidance coping are more likely to be problem gamblers, however this was not supported in the present sample. This may be because of the small sample size used, and the location of the Coping Strategy Indicator questions in the survey. The questions were located near the very end; thus, it is plausible that due to survey fatigue, many respondents did not answer the questions (or did not answer attentively) resulting in a high number of missing cases. Even using imputed data, there was still no relationship evident between coping strategies and problem gambling. It was also hypothesized that an increase in perceived stressful life events would lead to an increased likelihood of problem gambling. At the bivariate level, perceived stress was not correlated with increased problem gambling behaviours. However, perceived stress was correlated with social gambling motivations, and financial gambling motivations, which could be a direction for further research. At the multivariate levels of analysis, perceived stress was not a statistically significant predictor of problem gambling risk. Contrary to expectations, these results do not support Greco and Curci's (2016) General Strain Theory, which posits that individuals who experienced more stressful life events were more likely to engage in risky gambling behaviours. Further, maladaptive coping (avoidance coping) was not shown to influence problem gambling behaviours, as was suggested by GST (Greco & Curci, 2016).

This study found, at best, mixed support for Mishra et al.'s, (2017) 'Generality of Deviance' explanation of problem gambling, which holds that antisocial risk behaviours – including problem gambling- tend to co-occur in individuals. The deviant behaviours that were included in this study are problem gambling, problem drinking, binge drinking, illegal drug use, cigarette use, and unplanned or unprotected sexual relations. At all levels of analysis this study found a link between problem gambling and problem drinking. Individuals who are problem

gamblers report higher levels of alcohol-related problems. Contrary to the literature however, this study did not find a relationship between binge drinking and problem gambling. A lack of relationship could be the result of the wide, and varied definition of binge drinking found in the literature. The term binge drinking varies by sex, by the amount of alcohol consumed, and by the time frame in which the alcohol was consumed. At the bivariate level, all of the other risky behaviours surveyed showed a correlation with problem gambling – respondents were more likely to have a gambling problem if they smoked cigarettes, engaged in illegal drug use, engaged in binge drinking, showed an increase in negative alcohol-related consequences, and had engaged in unplanned or unprotected sexual relations, thus providing bivariate support for the ‘Generality of Deviance’. However, at a multivariate level of analysis, when just the hypothesized predictors were modelled with no controls, only unplanned or unprotected sexual relations and negative alcohol-related consequences were statistically significant predictors of problem gambling risk. Thus, with the exception of alcohol-related problems, and engaging in unplanned or unprotected sexual behaviours, this study shows modest support for the ‘Generality of Deviance’ when analyzing the co-occurrence of problem gambling with various other risky behaviours, (cigarette smoking, binge drinking, illegal drug use), and various sociodemographic controls.

This study also aimed to discover the motivations for gambling among emerging adults using the Gambling Motivations Questionnaire-Financial (Dechant, 2014). The motivations are enhancement motivation, social motivation, coping motivation, and financial motivation. It was hypothesized that individuals who have a high motivation for gambling are more likely to be problem gamblers. This was supported at all levels of analysis, with the exception of coping motivation. At the bivariate level of analysis, coping motivations for gambling were moderately

positively correlated with gambling, however, this relationship disappeared at the multivariate level of analysis. This is consistent with earlier results of this study, which indicated that general coping strategies are not correlated with problem gambling risk. This study found evidence that university students who gamble for enhancement reasons (to feel better about themselves or improve their image to others) are most likely to have a gambling problem, followed by individuals who gamble for financial reasons (to make money or chase losses), and lastly, individuals who gamble for social reasons (entertainment, spending time with friends or family).

Bernhard and Preston (2007) suggested that gambling is becoming ‘desocialized’, which may explain why gambling for social reasons is the least influential, statistically significant motivator, of problem gambling risk. Interestingly, although the gambling to cope motive was, overall, not a significant predictor of gambling risk, sex did moderate the relationship between coping motivation and problem gambling, indicating that women who gamble to cope are more at risk for problem gambling than men who gamble to cope. This could provide an opportunity for further research, to understand why women respond to strain events differently, and are more likely to use maladaptive forms of coping, such as gambling.

The results of this study add to our understanding of the complexity underlying the relationships between gambling motivations and problem gambling risk among university students. This study found that enhancement motivations were most likely to predict problem gambling, which is consistent with previous emerging adulthood studies conducted by Lambe et al., (2015), and Stewart and Zack (2008). This study also found a relationship between social and financial gambling motivations and problem gambling risk, which is contrary to Lambe, and colleague’s (2015) finding of correlation between social motivation and gambling. Although Nower and Blaszczynski (2010) found that coping motivation predicts problem gambling, the

present study is consistent with Lambe et al (2015), found no direct relation between coping motivation and problem gambling. Interestingly, there was evidence that gambling to cope was significantly more likely to increase problem gambling risk for females than males. It can be concluded therefore, that emerging adults gamble for a multitude of reasons, and with the exception coping motives (which were insignificant, yet moderated through sex), it appears to be the strength of motivation (quantity) rather than the type (quality) of motivation that predicts the risk of problem gambling.

Limitations

One of the major limitations in this project is the small sample size. The SLWBS survey was conducted in several waves using two different versions of the survey. The updated version of the survey included the additional risky behaviour questions regarding smoking cigarettes and unplanned or unprotected sexual relations. For the purpose of analysis, this study only analyzed data from respondents who had completed the updated version of the survey (with the additional 'risky' behaviour items), thus reducing the sample size from 684 gamblers, to 283 gamblers. Using a larger sample size with greater statistical power, would potentially yield different results, and may have revealed more variation in responses and significant associations that went undetected in the present study.

Also, due to sample size issues, other possibly important correlates of problem gambling were omitted, such as emotional problems - depression and anxiety - which may be related to the moderating effect of sex on gambling to cope and risk of problem gambling, as females are generally more at risk (relative to males) for comorbid emotional problems like depression and anxiety. In addition, this study was conducted using a university student convenience sample, thus due caution should be exercised when generalizing to the larger population. However, t-tests

indicated that this study indicated problem gambling rates similar to the problem gambling rates found in other emerging adults studies, thus the small sample size did not produce anomalous data. Further research may consider longitudinal studies, which would allow changes to be tracked over time as well as assessing temporal ordering of relationships. It would be interesting to see if emerging adults who exhibit problem gambling behaviours continue these behaviours into adulthood.

Finally, standard limitations when conducting self-report surveys also apply to this study. This includes respondents incorrectly following skip-pattern questions, survey fatigue, and response bias. Response bias is a particular limitation of this survey, given the sensitive nature of the risky behaviour questions. It is plausible that some of the risky behaviours, and problem gambling severity were underreported due to respondents dishonestly answering questions. Furthermore, respondents who may have a gambling problem may underreport on the PGSI, because they do not recognize the harm or consequences of their problem gambling behaviours.

Policy Implications

Despite the above limitations, the findings of this research have potential implications for policy focused on the prevention of gambling related problems among emerging adults in Canada. To begin, because emerging adulthood is often a period of identity exploration guided by peers, social influences and peer pressure can have a major influence on decision making. Coupled with an acceptance of relaxed social attitudes towards ‘risky behaviours’ in emerging adulthood, this can be a recipe for disaster. One of the most important predictors of problem gambling found in this study is enhancement motivation. This means that individuals who gamble to impress others,

or to improve their self-esteem are more likely to be at risk for a gambling problem. Impressing others through gambling may include betting higher stakes, gambling for longer periods of time, going 'all-in', or attempting to show others how you can 'beat the system'. These types of enhancement behaviours may lead to a greater likelihood of having a gambling problem. Thus, University campuses should provide education programs warning individuals of the impact peer pressure can have on gambling behaviours, and the risk of improving your self-esteem and self-image with the potential harmful consequences of problem gambling. In addition, social motivation, or gambling with friends and family or for entertainment is also highly predictive of problem gambling behaviours. This study also indicates that financial motivation is also highly predictive of problem gambling. Thus, emerging adults should be educated on gambling fallacies, such as 'it will pay out eventually' or developing strategies to 'beat the system'. Furthermore, emerging adults should be reminded that gaming centers are designed to make money, thus 'chasing loses' are rarely successful endeavours.

Next, the findings also indicate that men are more at risk for problem gambling than women, and that men are more likely to be problem gamblers than women, thus some prevention and educational programs should be directed specifically at men. However, because this study found that the association between gambling to cope and problem gambling risk is stronger for females, educational programs should also be directed at women to help them develop more adaptive coping strategies. University and College campuses should provide counselling and help centres for individuals who feel they may have a gambling problem, or are dealing with the consequences of a friend or family member who has a gambling problem. Campuses should also provide information on how to gamble responsibly, which may prevent problem gambling behaviours before they occur.

In addition, this research has shown that – consistent with Mishra et al’s (2017) ‘Generality of Deviance’ - alcohol-related problems are positively correlated with gambling-related problems. This is problematic in several ways. In addition to gambling, consuming alcohol is also largely considered to be ‘part of the college experience’. As is evident in this study, gambling-related problems and alcohol-related problems can co-occur in emerging adults, thus potentially exacerbating both problems, and complicating treatment. Of further concern, casinos in Canada now allow the sale of alcohol², allowing individuals to gamble while consuming alcohol. Although the change was made to increase revenue, gambling while intoxicated can lead to decisions one might not make while sober. Gaming establishments should ensure that they do not sell alcohol to anyone who is intoxicated. In addition, emerging adults should be educated of the dangers of drinking alcohol while gambling, and the impairment alcohol can have on gambling-related decisions.

Future Research

The findings of this research suggest opportunities for further research. To begin, because of the small sample size, a replication of this study using a larger sample would help to validate the results. A larger sample size may produce a larger variation of responses, and greater statistical power to detect potentially informative differences and/or relationships. Furthermore, this study revealed a gender difference in problem gambling risk. Gender differences were also significant at the bivariate level for all four types of gambling motivations, therefore separate path models for males and females may reveal interesting results, and help to further our understanding of nature of the relationship between gender and problem gambling. There is evidence that females

² In Manitoba, where this study was conducted, the consumption of alcoholic beverages throughout Casinos was legalized in 2013.

are more likely to experience negative and depressive emotions in response to strain events (Lesieur, et al., 1991; Powell et al., 1999), thus possibly providing an explanation for the moderating effect of sex and on gambling to cope and problem gambling risk.

Future research should also assess other measures of gambling behaviours such as types of gambling activity, frequency of gambling behaviours, and amount of money spent gambling. These factors, although briefly discussed in the literature review, were not included in the present study and may have an impact on severity of problem gambling risk. Although this research showed a bivariate correlation between ‘risky behaviours’ such as illegal drug use, smoking cigarettes, unplanned or unprotected sexual relations, binge drinking, and RAPI scores with problem gambling, future research could address why most of these behaviours (with the exception of RAPI scores) are no longer significant at the multivariate level. Again, a larger sample with more at-risk gamblers may reveal relationships – undetected in this study’s small sample – between such risky behaviours and problem gambling risk. Uncovering these relationships could potentially provide more support for the ‘Generality of Deviance’ (Mishra et al., 2017).

Conclusion

This study has aimed to discover some of the factors that underlie problem gambling behaviours among emerging adults in Canada. The study focused on emerging adults not simply because the study was conducted with University students, but because University-aged students were thought to have a higher risk of problem gambling, and because emerging adults are in an important transitional period of life (Shulenberg & Zarrett, 2006). This transition period is wrought with new, exciting, and stressful experiences, which emerging adults may not yet have

developed adaptive coping strategies to manage. Therefore, emerging adults are given some social leeway when it comes to engaging in ‘risky’ behaviours, and such normalization of risk taking can heighten susceptibility to harmful behaviours and addiction (Sussman & Arnett, 2014). Along with this, emerging adults are trying to balance these new experiences, while navigating their own personal identity and growth. During this transition period, peers are vital to identity discovery. In this regard, this study aimed to better understand what motivations and behaviours in the lives of emerging adults can lead to problem gambling.

Surprisingly, this study did not find that maladaptive coping strategies or level of perceived stress had any effect on problem gambling risk. In fact, contrary to most literature, none of the coping strategies measured by the Coping Strategies Indicator (Amrikhan, 1990), avoidance coping, problem solving coping, or support seeking coping, had any association with problem gambling risk. Therefore, the results of this study do not support ‘General Strain Theory’ (Agnew, 1992; Greco & Curci, 2016), and its explanation of problem gambling as a consequence of coping with stressful life events. In addition, perceived stress, and coping motivation for gambling were also not statistically significant to problem gambling. Coping motivation to gamble was however mediated by sex, with gambling to cope associated with greater problem gambling risk for women than for men.

This study did find that higher motivation for gambling can lead to higher risk of problem gambling. In particular, congruent with the notion of peer pressure and identity exploration, social and enhancement motivations were the strongest predictors of problem gambling risk. This is likely to be because of the influence of peers in social situations, social pressures to impress others, and the desire to boost one’s self-image. Financial motivation for gambling is also associated with gambling problems, and may be related to emerging adults higher risk-

taking tendencies. There are some risky behaviours which are correlated with problem gambling behaviours at the bivariate level including smoking cigarettes, illegal drug use, binge drinking, increased negative alcohol-related consequences, and unplanned or unprotected sexual relations. The co-occurrence of these risky behaviours with problem gambling provides limited support for the ‘Generality of Deviance’, which states that deviant behaviours often co-occur in emerging adults. These deviant behaviours are often considered ‘normal’ during the transition period of emerging adulthood. With the exception of increased negative alcohol-related consequences, and unplanned or unprotected sexual relations, in the present study, these relationships between problem gambling and risky behaviours disappear at the multivariate level, which suggests further research is required.

One of the most substantial findings from this study is the relationship between alcohol-related problems, and problem gambling risk. At all levels of analysis, an increase in alcohol-related problems was associated with a greater likelihood of exhibiting problem gambling behaviour. Both consuming alcohol and gambling are behaviours which are often referred to as ‘part of the college experience’, and can both be addictive (American Psychiatric Association, 2013), thus their co-occurrence may not be surprising, however the consequences can be dire. As one problem behaviour worsens, the other may worsen along with it. This is especially concerning as gaming centers in Canada now allow the sale and consumption of alcohol. Therefore, education and prevention programs on University and College campuses should address not only problem gambling, but problem drinking behaviours as well. Consistent with most previous research, male university students are at greater risk for problem gambling than females, thus education programs outlining responsible gambling strategies should be directed at men.

In conclusion, further research is needed to fully understand the factors that influence problem gambling risk in emerging adults. A larger sample size may uncover some relationships between coping, stress, and gambling behaviours. In addition, more research should be conducting on co-occurring risky behaviours in emerging adulthood to help prevent and/or reduce their negative consequences. The negative effects that can results from problem gambling can impact not only the gambler, but their families, their work, and their livelihoods. Special preventative attention should be paid to men, and those with co-occurring gambling and alcohol related problems. In addition, because gambling to cope was associated with increased risk of problem gambling for women, adaptive coping strategy education should be directed at women. All Canadians should be educated on the effects of problem gambling, and how to gamble responsibly, to recognize or prevent problem behaviours before they occur.

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