

**AN EXAMINATION OF THE DIFFERENTIAL COPING STYLES OF
ADOLESCENTS WITH GAMBLING PROBLEMS**

Report to the Ministry of Health and Long-Term Care, Ontario

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EXECUTIVE SUMMARY

This report presents the results of a study examining the relationship between gambling, life stress, and coping behaviors amongst adolescents. A secondary purpose of the study was to identify several risk factors that may be associated with youth gambling problems. A large sample of adolescents from Ontario, aged 11 - 20 (N = 2156), completed a questionnaire concerning their participation in gambling activities, high risk behaviours (e.g., substance and alcohol use, cigarette smoking), life stressors, coping strategies, and depressive symptomatology. The results from this study are intended to help provide valuable information that will be used to develop effective prevention programs and to inform clinical practice for adolescents with severe gambling-related problems.

Findings

- Despite the fact that most gambling is illegal for individuals under the age of 18 in the Province of Ontario, 63% of underage adolescents in grades 7 through 12 reported gambling on one or more activities in the past year. Of those adolescents reporting gambling, 23% reported gambling on a regular, weekly basis.
- Females were found to be less likely than males to gamble both on a regular and occasional basis. Within the current sample, 47% of females compared to 27% of males reported not gambling during the past year.
- The favorite gambling activities were reported to be the lottery, wagering on cards, games of skill, and sport betting. Male regular gamblers, those gambling weekly, most often bet on sporting events, cards, games of skill and the lottery, while regular female gamblers preferred playing cards and the lottery.
- Adolescents primarily reported gambling at their home (76%) or the homes of their friends (52%). Moreover, 40% of males and 19% of females reported gambling for money in school.
- Adolescent gamblers prefer to gamble with their friends (75%), siblings (47%), and parents (44%). It is interesting to note that despite the fact that juvenile gambling is illegal, many youth are participating in these activities with other family members. Developmentally, this pattern remains relatively constant, except for older males who express a stronger preference to gamble with their friends (91%) as well as report being more likely to gamble alone (22%).
- The predominant reasons cited for gambling was for enjoyment (74%), to win money (72%), and for excitement (63%). These reasons were similar for both males and females and across all the grades.
- In the current sample, 2.7% of adolescents were classified as probable pathological gamblers, 6.6% were classified as gamblers at-risk for developing severe gambling problems, 54.0% were classified as social gamblers, and 36.7% were classified as non-gamblers according to their frequency of play and the DSM-IV-MR-J criterion. Males comprised a significant proportion of both the at-risk and the probable pathological

groups in comparison to females (9% vs. 4% of at risk gamblers; 4% vs. 1.4% of probable pathological gamblers).

- The average age of onset of gambling was 11 years. Female probable pathological gamblers reported an average age of onset of 10 years while the age of onset for male probable pathological gamblers was 10.5 years. The mean age of onset of gambling was lowest amongst the probable pathological gamblers in comparison to the at-risk and social gamblers.
- Adolescent probable pathological gamblers reported more behaviour problems associated with their gambling activity than social gamblers and at-risk gamblers. They more frequently admitted gambling more than they want (65%), stealing money to support their gambling (50%), and gambling in excess (31%).
- Those adolescents with gambling problems were more likely to report experiencing feelings of dissociation. A higher percentage of both at-risk and probable pathological gamblers more often reported to go into a trance-like state, feel like a different person, experience blackouts, lose track of time, and feel as if they were 'outside themselves' when gambling. Moreover, despite an overall gender difference whereby males reported exhibiting these states significantly more often than females, those females classified as pathological gamblers reported similar patterns of dissociation as their male counterpart.
- Probable pathological gamblers (identified by the DSM-IV-MR-J) were more likely to underestimate the magnitude of their gambling difficulties.
- At least one fifth of adolescents, within each grade, reported engaging in gambling on a regular basis (i.e., at least once a week).
- Adolescent probable pathological gamblers were found to more likely use other addictive substances on a regular basis including drugs (43%), alcohol (52%), and cigarettes (36%).
- Amongst adolescent probable pathological gamblers, 16% reported having a mother with a gambling problem, 21% reported having a mother with an alcohol or drug problem, 27% reported having a father with a gambling problem, and 26% reported a father with an alcohol or drug problem. These rates were significantly higher than for all other adolescents.
- Non-gamblers scored significantly lower on a measure of arousal while at-risk and pathological gamblers had significantly elevated scores.
- Overall, females reported experiencing significantly more depressive symptomatology than males. Further, both male and female problem gamblers (i.e., the at-risk and probable pathological groups) scored significantly higher on depressive symptoms than both social and non-gamblers.
- Suicide ideation was reported more often for both the at-risk gamblers and probable pathological gamblers (26% and 28% respectively) than non-gamblers and social gamblers (14% and 16% respectively). The number of adolescents who reported actual

suicide attempts was also significantly higher for at-risk (10%) and probable pathological gamblers (14%) than non-gamblers (2%) and social gamblers (3%).

- The experience of major life events as well as minor daily hassles have been shown to contribute independently to the onset of various types of psychopathology (e.g., depression, addiction, conduct disorder). Within this study, both the at-risk and probable pathological gamblers reported a significantly higher number of major and minor life events occurring in the past year than the non-gamblers and social gamblers.
- In general, older adolescents (grades 11 & 12) reported significantly more major and minor life events occurring during the past year in comparison to younger adolescents (grades 7, 9, & 10). Younger adolescents, those in grades 7 and 8, also reported the occurrence of a significantly larger number of positive events.
- Significant differences were found between the level of gambling severity and the types of coping styles adolescents reported using. Non-gamblers and social gamblers reported using more task-oriented coping styles when confronted with adversities than either social gamblers or non-gamblers. Task-oriented coping is considered a more positive, adaptive form of coping when confronted with difficulties. Both at-risk gamblers and probable pathological gamblers employed more emotion-focused coping in comparison to social gamblers and non-gamblers.
- Adolescent gamblers in general (i.e., social gamblers, at-risk gamblers, and probable pathological gamblers) reported higher mean scores on the avoidant-oriented coping scale in comparison to non-gamblers.
- The oldest adolescents (grade 12) reported using avoidant strategies significantly more often than younger adolescents (grades 7 & 8).
- Males scored significantly higher on the emotion-oriented coping scale than females, however, no significant interactions were found between gender, grade, and level of gambling severity.

Future Directions

Adolescence has often been described as a stressful developmental period. The results of this research suggest a significantly large number of adolescents are experiencing many stressors, varying in magnitude, on a daily basis. Ineffective coping strategies, designed to reduce major and minor stressors, have been shown to negatively impact upon adolescent mental health and has been found to be related to engagement in a variety of high-risk behaviours. This finding suggests the need for development of effective mental health and risk-reduction prevention programs.

The large number of underage youth gamblers in general, and those with serious gambling problems, calls for more collaborative efforts between policy makers and law enforcement officials to enforce existing statutes prohibiting underage gambling. As well, a concerted public awareness campaign is necessary to help educate parents and school officials concerning the extent of adolescent problem gambling.

Youth gambling problems have been found not to exist in isolation. The more severe the gambling problem, the more likely youth were found to be engaged in other addictive behaviors including alcohol, drug and tobacco use. These youth remain at heightened risk for suicide ideation and suicide attempts as well as other mental health problems.

This research has empirically delineated several risk factors identified with youth gambling problems. The identification of these factors can best be realized when incorporated into the design of prevention and treatment programs. Targeting the development of effective coping strategies should be an integral protective factor buffering stress and minimizing mental health and behavioral problems.

Additional research funding aimed toward the identification of protective factors for youth gambling problems is warranted. Incorporating a risk factor model may help maximize our school-based prevention efforts and minimize youth gambling and mental health problems.

INTRODUCTION

Considerable knowledge has been gained over the past few years concerning gambling problems, yet the phenomenon of youth pathological gambling is still not clearly understood by researchers, clinicians, policy makers, educators, and parents. Gambling has been repeatedly shown to be a popular activity amongst children and adolescents, with a small but identifiable number of youth experiencing serious gambling problems. These gambling problems have been shown to result in increased delinquency, severed parental and familial relationships, poor school performance, and a number of anti-social behaviours.

While prior research has identified several predisposing variables that may place certain youth at heightened risk for the development of a serious gambling problem, our present state of knowledge is incomplete. Knowledge acquired from research efforts and clinical information obtained from youth gambling dependency treatment programs for adolescents strongly suggests that problem gamblers turn to gambling activities in an attempt to escape major life events and daily stressors (personal, social, familial, and academic).

The use of the stress-coping model for adolescent substance abuse has a long history (for reviews see Dickson, Derevensky & Gupta, in press; Wills & Filer, 1996). Adapting a stress-coping model in conjunction with Jacobs' *General Theory of Addictions* may help explain why certain youth remain vulnerable and at-risk for severe gambling problems in spite of repeated losses and concomitant personal, social and economic costs. As such, gambling may be conceptualized as a form of maladaptive coping.

This research seeks to extend our understanding of the coping strategies and adaptive behavioral styles employed by young problem gamblers. The relationship between coping styles, life stressors, depressive symptomatology, and adolescent gambling problems will be examined. The results of this research will provide valuable information for the subsequent development of effective primary, secondary and tertiary prevention programs.

RESEARCH GOALS

This research is predicated upon a transactional approach to better understand the development and maintenance of youth gambling problems. An underlying premise stems from ‘diathesis-stress’ models of vulnerability (Monroe & Simmons, 1991), including Jacobs’ General Theory of Addictions (Jacobs, 1986). It is generally assumed that youth with significant gambling and gambling-related problems exhibit less effective coping/adaptive behaviours. A crucial component of understanding this model involves an examination of the role of life stressors (that may have etiological influences in their own right) on the onset and/or maintenance of severe gambling problems amongst adolescents. This research examines the relationship between coping styles, life stressors, depressive symptomatology, and adolescent gambling problems.

The objectives of this research include:

- To empirically identify the differential roles that general coping skills and adaptive behaviours play in the development and maintenance of a gambling addiction.
- To examine gender and developmental differences in the coping strategies used as a function of the severity of gambling problems.
- To explore the relationship between major and minor life events with respect to severity of gambling involvement.
- To extend our understanding of the relationship between depression, coping styles, and life stressors on adolescent gambling problems and other high-risk behaviours.

LITERATURE

Youth Gambling Research: The Past 20 Years

The study of youth gambling began during the 1980s. Initially looking at the prevalence of youth gambling, these prevalence studies dominated the field and were conducted across large community samples of adolescents in various countries including Canada (e.g., Ladouceur & Mireault, 1988), the United States (e.g., Arcuri, Lester, & Smith, 1985; Lesieur & Klein, 1987; Volberg, 1983), and England (e.g., Griffiths, 1989). Current findings from prevalence studies continue to demonstrate relative consistency in the rate of youth gambling in general, as well as severity of youth gambling (Derevensky & Gupta, 2000). These studies report that between 4% - 8% of adolescents meet the criteria for pathological gambling (Derevensky & Gupta, 1996; Fisher, 1992; Gupta & Derevensky, 1998a; Jacobs, 2000; Shaffer & Hall, 1996, 2001; Wynne, Smith, & Jacobs, 1996), while another 10% - 15% of adolescents are at-risk for the development of problematic gambling behaviours (Gupta & Derevensky, 1998a; Shaffer & Hall, 1996, 2001; Wynne et al., 1996). Moreover, between 24% - 40% of all adolescents have been reported to engage in some form of gambling activity (e.g., playing cards for money, sports betting) on a weekly basis (Gupta & Derevensky, 1998a; Huxley & Carrol, 1992; Ladouceur & Mireault, 1988; Lesieur & Klein, 1987). In a comprehensive review of the current state of knowledge, the National Research Council's (1999) report for the National Gambling Impact Study Commission in the United States concluded that estimates of youth gambling range from 52% - 89%, with a median estimate of 73%. Recent meta-analyses suggest estimates of pathological gambling for adolescents range between 3.38% (for lifetime, level 3 gambling behaviour) and 4.80% (for past year, level 3 gambling behaviour) (Shaffer & Hall, 2001). Given these estimates, approximately 1.1 million youth in Canada and the United States between the ages of 12 and 17 exhibit pathological gambling behaviour and another 5.5 million have serious gambling related problems (Jacobs, 2000).

Correlates of Problem Gambling

Pathological gambling amongst adolescents has been shown to be highly associated with criminal activity (e.g., stealing from family, friends, and retail outlets), lying, cheating, increased delinquency, and antisocial behaviour (Griffiths, 1990a; Gupta & Derevensky, 1998a, 2000; Ladouceur, Dubé, & Bujold, 1994; Ladouceur & Mireault, 1988; Lesieur & Klein, 1987; Wynne et al., 1996). As well, adolescents identified as pathological gamblers are more likely to engage in other risk-taking behaviours including cigarette smoking, alcohol consumption, and drug use (Derevensky & Gupta, 1996, 1999; Fisher, 1993; Gupta & Derevensky 1998a, 1998b; Kusyszyn, 1972; Lesieur & Klein, 1987; Winters & Anderson, 2000).

Research has consistently suggested that gambling is more popular amongst males than females (Derevensky, Gupta & Della-Cioppa, 1996; Fisher, 1990; Govoni, Rucpich & Frisch, 1996; Griffiths, 1989; Gupta & Derevensky, 1998a; Ladouceur, Dubé & Bujold, 1994; NORC, 1999; NRC, 1999; Stinchfield, 2000; Stinchfield, Cassuto, Winters & Latimer, 1997; Volberg, 1994, 1996, 1998; Wynne, Smith & Jacobs, 1996), and males are more likely to exhibit more severe gambling-related problems (Gupta & Derevensky, 2000; Jacobs, 2000; Lesieur & Klein, 1987; Volberg & Steadman, 1989). Youth with severe gambling problems have been shown to score

higher on risk-taking and sensation seeking measures (Arnett, 1994; Breen & Zuckerman, 1996; Knowles, 1976; Marget, Gupta, & Derevensky, 1999; Derevensky & Gupta, 1996; Powell, Hardoon, Derevensky & Gupta, 1999; Zuckerman, 1979, 1994; Zuckerman, Eysenck & Eysenck, 1978), adolescent pathological gamblers have lower self-esteem compared with other adolescents (Gupta & Derevensky, 1998b), they have higher rates of depression (Gupta & Derevensky, 1998a, 1998b; Marget, Gupta & Derevensky, 1999), are at heightened risk for suicide ideation and suicide attempts (Gupta & Derevensky, 1998a), and have different personality profiles (Gupta & Derevensky, 1997b, 1998a; in press, Ste-Marie, 2001; Vitaro, Ferland, Jacques & Ladouceur, 1998). Still further, young adults with serious gambling problems have been shown to report poor general coping skills (Nower, Gupta & Derevensky, 2000).

A Theoretical Model for Understanding Gambling Problems

Jacobs (1986), in his *General Theory of Addictions*, attempted to provide a framework for understanding the biological and psychological basis for the development and maintenance of addictions. According to his theory, an important prerequisite is that individuals with an addiction are more likely to seek escape (dissociation) arising from some negative developmental and/or social experience(s) during childhood and early adolescence. These factors may include traumatic, stressful occurrences that convey feelings of worthlessness, inferiority, and rejection. The addictive behaviour(s) allows the individual to escape painful thoughts. Accordingly, the elimination of such unpleasant experiences, albeit for a short period of time, serves to maintain the dependency. Research has shown pathological gamblers to exhibit a greater number of dissociative behaviours; they are more likely to go into a trance-like state, lose track of time, and report feeling like a different person (Gupta & Derevensky, 1996; 1998b; Jacobs, 1988; Kuley & Jacobs, 1988; Martinez-Pina et al., 1991).

A stress-diathesis or vulnerability-stress model incorporates the effects of exposure to various types of life stressors that may have a significant influence on the etiology of different types of addictive behaviours. Is there a link between level of gambling involvement amongst adolescents and the experience of acute or chronic stressors during the onset of gambling activity? Given adolescence is a developmental period that is considered to be highly stressful, do adolescents with a severe gambling problem experience more stressors, or different types of stressors in comparison to those who are not at risk for the development of a gambling problem? Establishing a link between gambling activities, coping strategies, and life stress is essential when looking for etiological explanations of psychiatric disorders and may provide additional support for a general theory of addiction.

Adolescent Life-Stress: Implications for Youth Gambling

There is general agreement among health care practitioners, mental health practitioners, teachers, and parents that adolescence represents a period of heightened vulnerability resulting from the many age-related physiological and psychological transitions that typically occur during this developmental period. While many adolescents proceed through this developmental stage relatively unscathed, it is estimated that approximately twenty-five percent of adolescents experience major difficulties involving social rejections and pressures from peers, parents, school, and community that subsequently have a major impact upon their psychological well

being. These difficulties, coupled with other vulnerability or risk factors including biological/genetic predispositions, environmental influences, and emotional stability, can place an adolescent at heightened risk for addictive behaviours, health-related difficulties and/or engagement in excessive gambling and negative gambling related behaviours.

There is general consensus among researchers examining adolescent life-stress that there exists a positive link between the onset of various psychological and physical disorders and the presence of stressful life experiences. Research conducted with adults has demonstrated that severe life stress is related to onset and maintenance of major depression (Brown & Harris, 1978; Paykel, Myers, Dienelt, Klerman, Lindenthal, & Pepper, 1969), schizophrenia (Brown & Birley, 1968), anxiety disorders (Finlay-Jones & Brown, 1981), suicide ideation and suicide attempts (Paykel, 1978; Paykel, Prusoff, & Meyers, 1975), and physical illness (Kasl, Evans, & Neiderman, 1979; Meyer & Haggerty, 1962; Murphy & Brown, 1980). While the assessment of life stressors with adolescents is more limited, a similar link has been supported with respect to mood and personality disturbances (Compas, Ey, & Grant, 1993; Compas, Howell, Phares, Williams, & Giunta, 1989; Nolen-Hoeksema, Girgus, & Seligman, 1992; Watson & Tellegen, 1985; Williamson et al., 1995a). Moreover, several studies have also established that stressful life events of both major and minor magnitude are predictive of subsequent internalizing and externalizing problems in late childhood and adolescence (Compas et al., 1989; Hammen, Burge, & Adrian, 1991; Stanger, McConaughy, & Achenbach, 1992).

In both the adult and adolescent literature, there is an ongoing debate concerning the importance of stressors upon maladjustment. Stress is not a unitary phenomenon. Reactions amongst youth reflect the heterogeneity and variability with which individuals function. What is deemed *stressful* varies between individuals and is often dependent upon a different set of circumstances reflecting a number of dimensions (e.g., the nature of the stressors [acute vs. chronic] and the magnitude/severity of the stressors [minor daily hassles vs. more severe negative events or difficulties]) (Brown & Harris, 1978, 1989; Compas, 1987, Compas et al., 1993; Kanner, Coyne, Schafer, & Lazarus, 1981).

Lazarus and his colleagues have maintained that daily hassles likely have a stronger association with adaptive outcomes because they are more *proximal* measures of stress, as opposed to major life events, which are more *distal* (Kanner et al., 1981; Rowlison & Felner, 1989). Thus, major life events, which are more distal to the person's immediate life circumstance, may exert some of their impact through the exacerbation of more proximal stressors and demands (i.e., hassles) with which the person must attempt to cope (Rowlison & Felner, 1989).

The importance of studying minor daily hassles as a part of life-stress research gains added significance when examining the occurrence of daily irritants in relation to adolescents who are, or may be, at-risk for developing a gambling problem. Adolescents who display severe negative gambling-related behaviours are also more likely to exhibit higher scores on measures of arousal including sensation seeking and risk-taking behaviour (Arnett, 1994; Gupta & Derevensky, 1998a). In line with Jacobs' (1986) General Theory of Addictions, it makes sense to assume that if a physiological vulnerability exists, different types of stressors may affect psychological functioning differently depending on the nature of the dysregulation. One hypothesis is that because such daily hassles are relatively common, one might expect frequent exposure to this

type of event to influence the unstable arousal network for those individuals who are highly vulnerable (Depue & Monroe, 1986; Jacobs, 1982; Jacobs, 2000). Given that adolescents appear to be more susceptible to continued exposure to minor daily hassles in comparison to more acute or chronic types of stressors, the occurrence of minor hassles may well figure prominently in differentiating adolescents with severe gambling problems from their peers. This is not to suggest that major life events do not significantly contribute to indices of maladjustment (e.g., depressive symptomatology, drug/alcohol abuse, problem gambling). The stress-buffering hypothesis assumes that the negative effects of life stress are lessened under conditions of positive social support networks, high socio-economic status, or other types of positive influences or mediators (Cohen & Wills, 1995; Monroe & Simmons, 1991).

Coping Processes as a Mediator Between Life Stress and Youth Gambling Problems

For adolescents dealing with developmental changes, effective coping is especially important and has been conceptualized as a key mediator between negative life events and psychological well-being (Herman-Stahl, Stemmler, & Petersen, 1995). Effective coping may actually help decrease the effects of stress, while ineffective coping may exacerbate the effects of stress on adjustment. Currently, the two most popular models of coping include the model based on coping styles and the model based on coping processes (cf. Aldwin, 1994). These two models represent the relative importance of dispositional versus situational contributions in the choice of coping mechanisms (McCrae, 1992).

The coping process approach (Folkman & Lazarus, 1984) assumes that coping is flexible, involves active planning, and is responsive to environmental demands and personal preferences. Thus coping should be conceptualized as a dynamic and constantly changing process of person-environmental transaction in a stressful situation. Both cognitions (e.g., the individual's appraisal of the situation) and behaviours (e.g., what a person actually does) from a situation-specific perspective are reported (Ayers, Sandler, West, & Roosa, 1996). While the coping efforts may focus on altering one's environment (i.e., problem-focused coping) or emotions (i.e., emotion-focused coping), the majority of individuals utilize both types of strategies and adapt these strategies to fit specific stressful situations and achieve successful resolutions (Aldwin & Brustrom, 1997).

Protective and Risk Factors: The Use of Effective Coping Strategies

Research examining specific variables that may serve to act as buffers, mediators, or protective factors for problem gambling is a promising line of work (Dickson, Derevensky, & Gupta, in press). These factors, when present, may serve to delay the onset of a number of psychological disorders while protective factors appear to have a high association with positive adaptive outcomes (for a comprehensive review of our current knowledge of protective factors in the field of gambling, alcohol and drug use and a model for youth gambling prevention programs see Dickson et al., in press).

Coping skills appear to be highly predictive of an individual's inability to handle stress. Sharpe and Tarrier (1993) have postulated that the difference between individuals who can control their gambling lies in the employment of different coping skills.

Positive coping processes include the utilization of multiple problem and solution-focused strategies that allow the individual to consider multiple options in dealing with difficult problems (see Gupta & Derevensky, 2000 for their clinical applications). In contrast, faulty coping processes may include the use of a high number of emotion-focused responses to stressful situations that usually involve avoidance, rumination, and negatively centered affective strategies (Lazarus & Folkman, 1984; Endler & Parker, 1990). In this sense, poor coping skills may be viewed as a predisposing factor to the acquisition of problem gambling (Sharpe & Tarrier, 1993). This vulnerability can develop from an environmental deficit, whereby an individual has failed to learn appropriate coping skills or has acquired faulty coping skills.

The systematic study of coping as a risk/protective factor has not yet occurred in the field of youth gambling and thus represents a significant goal of the present study. While there has been some preliminary research examining the interaction between coping style and level of gambling involvement (Gupta & Derevensky, 2000; Marget et al., 1999), the importance of the role of social support networks and reoccurring life stress merits further examination.

Task-Oriented, Emotion-Oriented, and Avoidance Oriented Coping

If one adopts the hypothesis that coping style can act as a buffer between the occurrence of stressful life events and adjustment, then it is plausible to assume some coping strategies are more adaptive and result in more positive outcomes than others. Two coping dimensions have been identified and continue to attract much of the research attention: *emotion-focused* coping and *problem-focused* coping. The problem-focused coping dimension utilizes strategies that attempt to solve, re-conceptualize, or minimize the effects of a stressful situation. The emotion-focused dimension, alternatively, includes strategies that involve self-preoccupation, fantasy, or other conscious activities related to affect regulation (Parker & Endler, 1996). Almost all measures of coping over the past few decades include scales that assess these two dimensions. Avoidance-oriented coping is another dimension that has received considerable interest in the research forum. This dimension has been conceptualized as involving person-oriented and/or task-oriented responses (Endler & Parker, 1992). Strategies associated with this approach include seeking out other people (social diversion) or engaging in a substitute task (distraction).

There is consistent evidence that dimensions of active coping that include problem-solving in a stressful situation is related to lower mental health and substance use problems (Sandler, Wolchik, MacKinnon, Ayers, & Roosa, 1997). For example, both cross-sectional and longitudinal studies with children, adolescents, and adults found that active problem-focused coping strategies were related to lower emotional and behavioural problems and substance use (Ayers et al., 1996; Compass, Malcarne, & Fondacaro, 1988; Ebata & Moos, 1991; Seiffge-Krenke, 1990; Wills, 1986). Moreover, engagement in problem-focused strategies has also been related to several positive developmental outcomes such as self-efficacy, positive self-esteem, and perceived competence in multiple domains (Causey & Dubow, 1992; Wills & Hirky, 1996). Thus, in essence, the employment of problem-focused coping strategies may act as a buffer or protective factor against the potential harmful effects of environmental and/or physical stress.

Alternatively, avoidance coping and emotion-focused coping strategies have been shown to be related to higher mental health problems in children and adolescents (Ayers et al., 1996;

Glyshaw, Cohen, & Towbes, 1989; Holahan & Moos, 1987; Herman-Stahl et al., 1995; Sandler, Tein, & West, 1994; Wills, 1986). Cross-sectional studies (Ayers, 1991; Wills, 1986) have demonstrated the positive correlations between different types of avoidance coping styles and substance abuse, depression, and conduct problems. This relationship has also been validated by prospective studies (Herman-Stahl et al., 1995; Sandler et al., 1994; Wills, 1986). For example, Sandler and colleagues (1994), in their prospective analysis found that anxiety predicted higher avoidance coping, while avoidance coping did not prospectively predict anxiety. Avoidance coping was shown to partially mediate the positive relationship between negative events and anxiety, depression, and conduct problems.

There exist several hypotheses why the use of avoidance coping is seen as a maladaptive response to stress. These hypotheses are best explained by looking at the research dealing with substance use and alcoholism. Moreover, the research in this area, with respect to adolescents, can be applied to the area of youth gambling problems because of the similar overlap between the populations (Dickson, Derevensky & Gupta, in press; Gupta & Derevensky, 1998a, 1998b). Several theoretical models have suggested that substances such as cigarette smoking and alcohol use may serve as affect regulation mechanisms (Wills, 1986). The period of adolescence, especially during the initial stage (12 to 16 years), is a developmental period when many health-related behaviour patterns are established (cf. Wills, 1986) and a time of heightened risk for initiation of cigarette smoking, substance use, alcoholism, and more recently, problem gambling (Gupta & Derevensky, 2000).

Addiction research has supported the notion of looking at various addictions from a multidimensional perspective, emphasizing cognitive, psychosocial, and biological factors (Leventhal & Cleary, 1980; Shaffer & Hall, 2001). Research with youth gambling has already demonstrated the contribution of these multiple factors and has shown that adolescent pathological gamblers report difficulty with negative affect, arousal, cognitive distortions, and an increased use of drugs, alcohol, and cigarette smoking (Gupta & Derevensky, 1998a). It can be argued that engagement in an addiction may operate both to reduce negative affect and to increase positive affect. Thus, from a physiological perspective, engaging in substance use or gambling activity may serve the dual purpose of regulating physiological arousal systems and lessening, or blunting emotional vulnerability. An affect regulation model with respect to coping suggests that adolescents experiencing higher levels of negative affect may be more likely to engage in excessive gambling and/or substance use and that this likelihood would increase during periods of stress (Gupta & Derevensky, 2000). A prospective study by Wills (1986) shows evidence supporting this theory. It is not surprising that individuals with substance abuse problems demonstrate an avoidance-oriented coping style that often focuses on such strategies emphasizing daydreaming, helplessness, distraction, and diversion. These 'escapism' strategies reflect a dispositional style that may be consistent with research findings related to youth gambling. Adolescents involved in problem or pathological gambling activity report high comorbidity with other substance use (e.g., alcohol, drugs, cigarettes) (Winters & Anderson, 2000) and escape (Gupta & Derevensky, 1998a, 1998b). It is often hypothesized that gambling activity per se functions as a mechanism of escape for those individuals predisposed to develop an addiction. Gamblers show similar deficits in arousal mechanisms as substance abusers (Gupta & Derevensky, 1998b), and youth gamblers often report feelings associated with dissociative states that resemble the need to escape from reality through detachment from oneself, losing

track of time, and going into a trance-like state (Gupta & Derevensky, 1998a, 2000). Thus, for those individual's whose coping style is primarily avoidance in nature, and who may be vulnerable to various physiological and/or psychological disorder, gambling can be an attractive means of escape that also serves a dual process, to regulate emotion and arousal mechanisms.

The importance of studying this relationship is vital with respect to the development of various intervention and prevention efforts that are aimed at enhancing, changing, or teaching healthy adaptive coping efforts in the treatment of adolescent psychopathology (Compas, 1998) and as a general model for the prevention and harm-reduction of multiple adolescent risky behaviours (Dickson et al., in press). Programs have been designed that include interventions to (a) enhance coping for children with divorce-related stressors (Pedro-Carroll & Cohen, 1985); (b) prevent depression in youth by facilitating effective cognitive and behavioural coping strategies to deal with stress (Jaycox, Reivich, Gillham, & Seligman, 1994); (c) treat childhood anxiety disorders (Kendell et al., 1997); and (d) help adolescents with various substance use problems (MacKinnon, Johnson, Pentz, Dwyer, Hansen, Flay, & Wang, 1991; Pentz, 1985; Sussman, Dent, Stacy, Sun, Craig, Simon, Burton, & Flay, 1993). Research related to understanding internal coping mechanisms is crucial in the development of future prevention and intervention programs and efforts aimed at harm-reduction of gambling problems (Derevensky, Gupta, Dickson, & Deguire, 2001).

METHODOLOGY

Participants

Participants included 2156 adolescents (1092 males, 1063 females) from grade 7 through grade 12 (age range 11- 20 years-old, mean age of 14.43). Approval was requested and obtained from six school boards, with 8 high schools and 21 elementary schools agreeing to participate. These school boards were selected based upon their willingness to participate and represent a variety of regions from Ontario (see Appendix A). When school board approval was granted, individual schools were approached with a detailed proposal of the study. Schools were located in both rural and urban areas, and participants came from a variety of socio-economic and cultural backgrounds. The breakdown of the sample with respect to grade and gender is provided in Table 1 .

Table 1: Sample Distribution by Gender and Grade

Gender	N	Sample Distribution
Male	1092	50.7%
Female	1063	49.3%
Grade Levels		
Grade 7 (M age = 11.94)	412	19.1%
Grade 8 (M age = 12.99)	295	13.7%
Grade 9 (M age = 13.95)	398	18.5%
Grade 10 (M age = 14.96)	320	14.8 %
Grade 11 (M age = 15.98)	468	21.7%
Grade 12 (M age = 17.24)	263	12.2%

No student participated without parental permission. Participation was voluntary and all students were assured that they could withdraw from the study at any time. Students were given an opportunity to enter a draw for chances to win free movie or music gift certificates as an incentive to participate.

Procedure

Consent forms and a letter describing the purpose of the study were distributed to parents via the participating schools after school board approval. Informed consent was obtained from parents of all children prior to their participation in the study. Students who did not wish to participate, or whose parents did not authorize their child’s participation, did not complete the questionnaires. The measures were group administered to participants in classrooms and/or school cafeteria by several, trained research assistants. Groups ranged from 10-250 students depending on where the test administration took place (e.g., a classroom vs. school cafeteria). The number of research assistants during administration varied according to the group size (ranging from 1-4). Participants completed the questionnaire individually and were instructed that gambling is defined as an activity that involves an element of risk where money could be won or lost. Students were informed that all responses are anonymous and confidential, that their participation was voluntary and they could withdraw from the study at any time. Research assistants were present at all times to answer any questions or provide additional information.

All students were given the same general instructions prior to commencing the study. A pilot study designed to refine the questionnaire, eliminate any misconceptions and to determine the amount of time necessary to complete all the instruments was completed using approximately 80 students at a local high school in Montreal, Québec. Students required approximately 30-50 minutes to complete the questionnaire.

Measures

Gambling Activities Questionnaire (GAQ) (Gupta & Derevensky, 1996). The GAQ assesses four general domains related to gambling behaviour. *Descriptive information* including prevalence, types of activities, wagers, social milieu and support; *cognitive perceptions* of the amount of skill and luck involved in various gambling and non-gambling activities; *familial gambling and substance abuse history*; and *comorbidity* with other addictive and delinquent behaviours. Questions within each section domain are discrete, analyzed individually, and no cumulative scores are calculated (see Appendix B).

DSM-IV-MR-J (Fisher, 2000). This 12-item, 9 category instrument is a screen for pathological gambling during adolescence. It was modeled after the DSM-IV (APA, 1994) criteria for diagnosis of adult pathological gambling, and an earlier version, the DSM-IV-J (Fisher, 1992) has been used by several researchers and has been found to be the most conservative adolescent measure of pathological gambling (Derevensky & Gupta, 1996, 2000; Gupta & Derevensky, 1998a, 1998b; Marget et al., 1999; Powell et al., 1999; Volberg, 1998). The revised DSM-IV-J, the DSM-IV-MR-J (MR=multiple response, J=juvenile), was developed for use with adolescents that have gambled during the past year. To compensate for the lack of opportunity for probing, most of the questions in the revised instrument have been given four response options; “never,” “once or twice,” “sometimes,” or “often.” Each item endorsed is given a score of 1, with a total score of 4/9 or greater being indicative of severe gambling problems. The DSM-MR-IV-J assesses a number of important variables related to pathological gambling; progression and preoccupation, tolerance, withdrawal and loss of control, escape, chasing, lies and deception, illegal activities and family/school disruption.

Principle factor components analyses revealed that the scale is represented primarily by one general factor accounting for 33.3% of the variance. A second principle component factor explains a further 11% of the variance. The first factor shows positive correlations with the psychological states known to be associated with problem gambling and appears to be measuring the negative psychological dimensions including preoccupation, tolerance, loss of control, escape and chasing loses. The second factor is correlated with withdrawal symptoms experienced when trying to cut down on gambling and the antisocial/illegal behaviours associated with juvenile problem gambling including telling lies about the extent of gambling involvement, committing antisocial or illegal acts because of gambling (using school dinner money and stealing), arguing with family or friends because of gambling, and truancy from school to gamble. Factor 2 draws attention to the negative social consequences of juvenile problem gambling. Internal consistency reliability for this scale is acceptable, with Cronbach’s alpha being = 0.75 (although slightly lower than .78 for the original DSM-IV-J screen). The DSM-IV-J has been used by several researchers, and has been found to be the most conservative adolescent measure available of

pathological gambling (Derevensky & Gupta, 1996, 2000a; Gupta & Derevensky, 1998a, 1998b; Volberg, 1998). This screen requires approximately 5 minutes to complete.

The Arnett Inventory of Sensation Seeking – Intensity Subscale (AISS) (Arnett, 1994). The AISS is 20-item measure of sensation seeking consist of two subscales; novelty (10 items) and intensity (10 items). Studies examining the AISS in comparison to the Sensation Seeking Scale (SSS; Zuckerman et al., 1978) have shown the AISS to be more strongly related to risk behaviour than the SSS (Arnett, 1994). Moreover, the AISS does not represent a ‘forced choice’ format as used in the SSS but allows participants to indicate the extent to which an item describes them on a four point Likert scale ranging from ‘describes me very well’ to ‘does not describe me at all.’ The intensity subscale was used because of its high correlation with measures of arousal (Arnett, 1994; Gupta & Derevensky, 1998a; Powell et al., 1999). The internal reliability coefficient for the global scale is .70, with .64 for the intensity subscale. This subscale takes approximately 5 minutes to complete.

Adolescent Perceived Events Scale – Form B (APES) (Compass, Davis, Forsythe, & Wagner, 1987). The APES is used to assess cognitive appraisals of major and daily stressful events during adolescents. Form B is a 100-item (short form) instrument that is designed for use with young (junior high school age) to middle age adolescents (high school age). Adolescents are initially asked to indicate whether or not a specific event has occurred within the past 3months and past year. Students rate each event according to the level of stress and the impact the event has had on their life. Reliability is reported to be .76 to .89 and validity is estimated at .87 to .91. What is most appealing about the APES is that its items are based upon a variety of common life stress measures that assess different types of stressors. For example, the APES incorporates the most frequently reported major life events that appear on adolescent major life event measures (Johnson & McCutcheon, 1980; Newcomb, Huba, & Bentler, 1981; Swearington & Cohen, 1985), as well as those stressors that are classified as more typical daily hassles that have also shown significance in relation to maladjustment for this period of development (Rowlison & Felner, 1988) (see Appendix B).

Coping Inventory for Stressful Situations (CISS) (Endler & Parker, 1990). The CISS is a self-report measure assessing the coping behaviours adolescents employ in response to difficult, stressful, or upsetting situations. The CISS consists of 48 items, 16 items for each of the three scales: task-oriented, emotion-oriented, and avoidance-oriented coping. The avoidance scale has two subscales – distraction (8 items) and social diversion (5 items). The normative mean score for each of the subscales is 50 (SD = 10). The CISS has strong internal consistency (coefficient alphas for task, emotion, and avoidance subscales were reported to be .85 to .90 for males and .83 to .90 for females).

Reynolds Adolescent Depression Scale (RADS) (Reynolds, 1987). The RADS is a measure of depressive symptomatology that consists of 30 items. Items are worded in the present tense to tap into present symptom status. The RADS has high internal consistency (coefficient alphas range from .90 to .96), high test-retest reliability (.80), well-documented concurrent validity, and a clinical cutoff score of 77. This instrument is widely used amongst junior and senior high school students.

RESULTS

This section examines gambling participation for the entire community sample of adolescents. Information about eight different gambling activities was collected. It is important to note that participation in all legal forms of gambling activities is restricted for individuals under the age of 18 for lottery playing and bingo and 19 for casino playing in Ontario. The questionnaire inquired about the following gambling activities:

- Cards
- Sport wagers (including betting on sports pools and sporting events)
- Sport Lottery tickets (i.e., Pro-Line)
- Lottery Draws or Scratchcards
- Video Poker Machines/Arcade Games
- Bingo
- Slot machines
- Games of skill (e.g., pool, bowling, basketball)
- Other forms of gambling

Gambling Participation

The results indicated that a large majority of adolescents have engaged in a variety of gambling activities within the past year. The distribution of gambling involvement can be found in Table 2. Overall, 63.3% of the sample reported gambling within the past 12 months (53.5% females; 73% males), with almost a quarter of the sample engaging in such activities on a weekly basis (34.3% males, 12.2% females). It is important to note that while 36.6% of adolescents report not gambling at all, females account for a significant proportion of this group (46.5%).

Table 2: Level of Gambling Involvement

	Non Gambler^a	Occasional Gambler^b	Regular Gambler^c
Male (N=1092)	27.0%	38.7%	34.3%
Female (N=1063)	46.5%	41.3%	12.2%
Total (N=2151)	36.6%	39.9%	23.4%

^aNon-Gambler: an individual reporting 'never' to wagering on any activity in the past year.

^bOccasional Gambler: an individual reporting having wagered less than once a week on any activity in the past year.

^cRegular Gambler: an individual reporting having gambled once a week or more on any activity in the past year.

The distribution of gambling participation for each activity, by level of gambling frequency, is presented in Table 3. Almost half of the sample reported playing cards for money (43.3% when combining occasional and regular players) and represents a higher rate of participation than any of the other activities. This is not surprising given that cards are easily accessible and routinely

played by individuals of all ages. However, if one combines sports lottery playing and lottery tickets (draws, scratch tickets), the overall endorsement of lottery playing is 49.3%.

The most popular activities that students played on an occasional basis include cards (32.7%), lottery tickets (29.0%) (lottery draws and scratchcards), and games of skill (23.0%). It is important to note that respondents were asked to indicate all the activities they gambled on in the previous 12 months. If one adds the use of sports lottery tickets with regular lottery tickets (draws and scratch cards), 39.4% of all adolescents were found to play lottery products on an occasional basis, thus becoming the most highly endorsed activity in general for both males and females.

Looking at regular players only (once per week or more), playing cards remained the activity of choice (although boys show an equal participation rate in sports betting), followed by playing the lottery (9.9%) (combining draws, scratchcards & sports lotteries), sport wagers (9.1%), and betting on games of skill (8.5%).

Table 3: Participation in Gambling Activities for the Entire Sample

Gambling Activity	Level of Gambling Involvement					
	Gamble Occasionally ^a			Gamble Regularly ^b		
	Male	Female	Total	Male	Female	Total
Cards	40.3%	25.1%	32.7%	15.0%	6.1%	10.6%
Sport Wagers	28.9%	10.9%	20.0%	15.9%	2.1%	9.1%
Sport Lottery Tickets	15.3%	5.4%	10.4%	7.1%	0.6%	3.9%
Lottery Tickets	28.8%	29.1%	29.0%	7.9%	4.1%	6.0%
Video Games/ Video Poker	20.0%	7.1%	13.6%	7.2%	1.0%	4.1%
Bingo	19.2%	19.7%	19.5%	3.4%	1.1%	2.3%
Slot Machines	8.2%	5.2%	6.7%	1.7%	0.7%	1.2%
Games of Skill	32.3%	13.5%	23.0%	14.5%	2.4%	8.5%
Other ^c Forms of Gambling	10.7%	5.7%	8.2%	3.4%	0.9%	2.2%

^aOccasionally refers to participants who gamble on a specific activity less than once a week.

^bRegularly refers to participants who report gambling on a specific activity once a week or more.

^cOther forms of gambling reported include racetrack betting (10.7%), various casino type games (blackjack, roulette, craps) (10.7%), dice (throwing) (6.3%), and coin toss (5.8%).

There are distinct gender differences both within activities and between the levels of gambling involvement. Males significantly reported engaging in all gambling activities, except for occasional lottery play, more often than females. Specifically, males preferred betting on cards, $\chi^2(2, 2153) = 131.20, p < .001$, sport wagering, $\chi^2(2, 2155) = 277.28, p < .001$, purchasing sport

lottery tickets, $\chi^2(2, 2154) = 127.08$, $p < .001$, betting on video games, $\chi^2(2, 2152) = 139.06$, $p < .001$, playing slot machines, $\chi^2(2, 2153) = 13.67$, $p < .001$, and games of skill, $\chi^2(2, 2155) = 252.03$, $p < .001$. Both male and female regular gamblers reported betting on cards as their most frequently played gambling activity.

Female occasional gamblers preferred wagering on lottery activities (29.1%), followed by cards (25.1%) and bingo (19.7%). Male occasional gamblers preferred card playing more often than other activities (40.3%), followed by games of skill (32.3%), sport wagers, (28.9%) and lottery (draws & instant scratchcard tickets) (28.8%).

These findings are consistent with other research findings supporting gender differences in preferred gambling activities, with females showing a larger attraction to lottery type gambling (see Derevensky & Gupta, 2001, Ontario Ministry Report on Adolescent Lottery Playing).

Aside from gender differences, developmental changes may also account for the difference in activity preference. Younger adolescents are more likely to be gambling with cards and bingo, while a trend for older adolescents appears to be participation in sport lottery tickets, sport wagers, and slot machines. A complete distribution by gender and grade is provided in Table C1, Appendix C.

Where and With Whom Adolescents are Gambling

Retrospective studies of adult pathological gamblers suggest that onset of gambling problems begins early. Since most forms of gambling are illegal for underage youth in Ontario, it is useful to determine where and with whom these activities occur. Thus, in addition to inquiring about gambling activities, adolescents were also asked to identify the places they gambled and with whom they gambled (see Table 4).

Of interest is the finding that for the entire sample, a total of 76.0% of adolescents report gambling for money at home. Adolescents are also gambling at friends' homes (52.0%) and in school (31.1%). While the most common places of gambling are similar for males and females, a noteworthy finding is that males are significantly more likely to be gambling at the homes of their friends $\chi^2(1, 1359) = 31.88$, $p < .001$, and are twice as likely as females to be gambling in school $\chi^2(1, 1359) = 67.12$, $p < .001$. Males are also significantly more likely to be gambling at arcades, $\chi^2(1, 1358) = 7.74$, $p < .005$.

Table 4: Locations Where Adolescents Report Gambling: Distribution by Gender and Total Sample

	Total Sample (N=1359)	Male (N=792)	Female (N=566)
Home	76.0%	77.1%	74.3%
Friends**	52.0%	58.5%	42.9%
School**	31.1%	39.8%	18.9%
Arcades*	12.3%	14.4%	9.4%
‘Corner’ Store	7.3%	7.2%	7.4%
Bingo Halls	5.4%	4.4%	6.7%

Note. Adolescents were permitted to check more than one response.
Chi-square analyses * $p < .01$; ** $p < .001$

As can be seen in Table 4, approximately 40% of males reported gambling at school despite the fact that it is generally prohibited. The data suggests a need for greater awareness by both parents and educators.

From a developmental perspective, older adolescents are less likely to gamble at home. The percentage of youth reporting gambling at a friend’s home or at school was found to increase with age. Examining gender differences from a developmental perspective reveals that males consistently gambled more often at their friend’s home and at school than females. As can be seen in Table 5, this difference was apparent across all grades. Moreover, this trend intensified, as adolescents got older. In this sample, males in grade 12 were approximately 30% more likely than females to be gambling at their friends’ homes and in school.

Adolescents were further asked to indicate with whom they gambled. It is important to note that adolescents were able to select more than one response. The data presented in Table 6 reveals that 74.6% of adolescents reported gambling with peers. It is also noteworthy that 47.0% of youth reported gambling with their siblings and a similar proportion, 43.7% of adolescents, reported gambling for money with their parents. Other relatives were also indicated as often as parents (42.1%).

Table 5: Locations Where Adolescents Report Gambling: Developmental and Gender Differences

Grade Level	Gambling Venues					
	Home	Friends	School	Arcades	Corner Store	Bingo Halls
Grade 7						
Male (n=146)	85.6%	44.5%	24.0%	17.1%	6.2%	6.2%
Female (n=115)	86.1%	33.9%	7.8%	8.7%	3.5%	8.7%
Total (N=262)	85.9%	40.1%	16.8%	13.4%	5.0%	7.3%
Grade 8						
Male (n=91)	82.4%	45.1%	25.3%	14.8%	7.7%	9.9%
Female (n=109)	79.8%	40.4%	21.1%	6.4%	3.7%	4.6%
Total (N=200)	81.0%	42.5%	23.0%	9.5%	5.5%	7.0%
Grade 9						
Male (n=149)	75.8%	60.4%	34.9%	12.8%	4.7%	1.3%
Female (n=120)	70.0%	47.5%	19.2%	11.7%	7.5%	5.0%
Total (N=269)	73.2%	54.6%	27.9%	12.3%	5.9%	3.0%
Grade 10						
Male (n=115)	79.1%	62.6%	41.0%	14.5%	7.0%	3.5%
Female (n=68)	75.0%	42.6%	22.1%	11.8%	10.3%	5.9%
Total (N=183)	77.6%	55.2%	33.9%	13.7%	8.2%	4.4%
Grade 11						
Male (n=183)	71.0%	63.9%	56.3%	14.2%	6.6%	2.2%
Female (n=98)	67.3%	51.0%	24.5%	7.1%	9.2%	6.1%
Total (N=281)	69.8%	59.4%	45.2%	11.7%	7.5%	3.6%
Grade 12						
Male (n=108)	71.3%	72.2%	50.9%	13.9%	13.0%	6.5%
Female (n=56)	60.7%	42.9%	23.2%	12.5%	16.1%	12.5%
Total (N=164)	67.7%	62.2%	41.5%	13.4%	14.0%	8.5%

There are notable gender differences between males and females with respect to gambling partners. Males are significantly more likely to report gambling with their friends, $\chi^2(1,1358) = 58.27, p < .001$, while females are significantly more likely to report gambling with their siblings, $\chi^2(1,1358) = 5.78, p < .05$, as well as their parents, $\chi^2(1, 1358) = 14.33, p < .001$.

Developmentally, interesting trends are noted for the adolescents with respect to with whom they gamble (see Table 7). Gambling with friends is highly endorsed across all age groups, and this trend increases with age, ranging from 58.2% for younger children (grades 7 and 8) to 86.0% (grades 11 and 12).

Table 6: With Whom Adolescents Gamble: Gender Differences

	Total Sample (N=1358)	Male (N=792)	Female (N=565)
Friends**	74.6%	82.2%	63.9%
Siblings*	47.0%	44.2%	50.8%
Parents**	43.7%	39.4%	49.7%
Other Relatives	42.1%	40.4%	44.4%
Alone	12.6%	13.5%	11.3%
Strangers**	6.8%	9.1%	3.7%

*p<.05; **p<.001

When examining the gambling behaviour with family members (i.e., parents, siblings, and other relatives), the reverse trend appears with the younger participants being more likely to gamble with family members (parents, siblings, relatives).

A closer examination of developmental trends by gender highlights important differences with respect to gambling with family members. There is much less developmental variability for female gambling patterns. The percent of females gambling with family members remains relatively stable, independent of grade level. In contrast, males demonstrate a consistent decrease in gambling with family members across all three categories (parents, siblings and relatives). For example, between grades 7-12, the range for males gambling with siblings goes from a high of 51.7% to a low of 37.0%; for parents, the range was from a high of 53.1% to a low of 23.1%; and for relatives, the range was from 51.7% to a low of 26.9%. These findings strengthen the fact that different gambling patterns may emerge for males and females from a relatively early age.

Another interesting finding presented in Table 7 is the fact that older males are more likely to gamble alone, and that by 18 years of age, they are gambling alone as frequently as they are gambling with their parents (22.2% and 23.1% respectively).

Table 7: With Whom Adolescents Gamble: Developmental Differences

Grade Level	With Whom Adolescents Gamble					
	Friends	Siblings	Parents	Relatives	Alone	Strangers
Grade 7						
Male (n=145)	62.1%	51.7%	53.1%	51.7%	9.7%	2.8%
Female (n=115)	53.0%	54.8%	57.4%	47.8%	8.7%	2.6%
Total (N=261)	58.2%	53.3%	55.2%	50.2%	9.2%	2.7%
Grade 8						
Male (n=91)	73.6%	48.4%	46.2%	54.9%	9.9%	4.4%
Female (n=108)	59.6%	54.1%	46.8%	48.6%	13.0%	1.8%
Total (N=200)	66.0%	51.5%	46.5%	51.5%	11.6%	3.0%
Grade 9						
Male (n=150)	84.7%	48.0%	37.3%	37.3%	10.7%	9.3%
Female (n=120)	62.5%	50.0%	50.0%	41.7%	13.3%	5.8%
Total (N=270)	74.8%	48.9%	43.0%	39.3%	11.9%	7.8%
Grade 10						
Male (n=115)	87.8%	38.3%	37.4%	30.4%	13.9%	7.8%
Female (n=67)	61.2%	52.2%	47.8%	35.8%	13.4%	6.0%
Total (N=182)	78.0%	43.4%	41.25	32.4%	13.7%	7.1%
Grade 11						
Male (n=183)	91.8%	41.0%	37.7%	41.0%	15.3%	15.3%
Female (n=98)	77.6%	48.0%	46.9%	42.7%	6.1%	2.0%
Total (N=281)	86.8%	43.4%	40.9%	45.9%	12.1%	10.7%
Grade 12						
Male (n=108)	90.7%	37.0%	23.1%	26.9%	22.2%	12.0%
Female (n=56)	76.8%	41.1%	46.4%	42.9%	16.1%	5.4%
Total (N=164)	86.0%	38.4%	31.1%	32.3%	20.1%	9.8%

Reasons for Gambling

The preferred reasons for gambling are presented in Table 8. The top three reasons cited for gambling participation are similar for both males and females. Similar to other studies on youth gambling, the predominant reasons endorsed for gambling participation are for enjoyment (73.9%), to win money (71.7%), and for excitement (63.1%). The primary reason cited for the ‘other’ category was boredom. Approximately 5% of the respondents who selected this category indicated that they participated in gambling activities as a way to “pass the time.” It is interesting to note that 3% of the responses comprising the category ‘other,’ consisted of responses that gambling was a way to “spend time with family members.”

Table 8: Reasons for Gambling: Distribution by Gender

Reasons for Gambling	Total Sample (N=1359)	Male (N=794)	Female (N=564)
Enjoyment	73.9%	74.2%	73.4%
Win Money	71.7%	76.1%	65.6%
Excitement	63.1%	66.4%	58.5%
Make/Be With Friends	11.6%	12.9%	9.9%
Relaxation	11.1%	14.5%	6.4%
Loneliness	2.1%	2.4%	1.6%
Feel Older	4.4%	5.2%	3.2%
Escape Problems	3.6%	4.0%	3.0%
Unhappiness	3.2%	3.5%	2.7%
Other	8.9%	9.8%	7.6%

Note: Respondents were able to select multiple reasons.

Gambling Problems Amongst Youth

Recently, Fisher (2000) revised the DSM-IV-J, creating the DSM-IV-MR-J (modified, revised juvenile version) to account for qualitative differences in responding. While the items in the original version were scored in a dichotomous manner (yes or no), the new version adds a qualitative dimension (see questions 12-20 on the questionnaire, Appendix B). As such, this new version likely promotes even more stringent guidelines for classification.

Based upon the frequency of gambling and performance on the DSM-IV-MR-J, adolescents were categorized into four groups:

- *Non-Gambler* – No gambling in the past year;
- *Social Gamblers* – DSM-IV-MR-J score of 0 or 1;
- *At-Risk Gamblers* – DSM-IV-MR-J score of 2 or 3;
- *Probable Pathological Gamblers* – DSM-IV-MR-J score of 4 or greater.

Results presented in Table 9 show that 36.7% of adolescents were classified as non-gamblers, 54.0% as social gamblers, 6.6% as at-risk gamblers, and 2.7% as probable pathological gamblers. Combining the at-risk and probable pathological gamblers, 9.3% of adolescents were found to be experiencing a considerable number of gambling related problems.

Table 9: Gambling Severity by Gender

	Non Gambler	Social Gambler	At-Risk Gambler	Probable Pathological Gambler
Male (n=1091)	27.0%	59.9%	9.3%	3.8%
Female (n=1060)	46.6%	48.0%	4.0%	1.4%
Total (N=2151)	36.7%	54.0%	6.6%	2.7%

When examining the gender differences in both the at-risk and probable pathological gambler groups, the percentages of males and females falling into these categories represent the typical distribution one would expect based on other youth gambling studies (e.g., males are three times more likely than females to be classified as probable pathological gamblers).

The distribution of adolescents by gambling severity within each grade level is presented in Table 10. A relatively consistent distribution pattern was found at each grade. The oldest participants (grade 12) reported the highest number of gambling-related problems, with 9.2% being “at-risk” and 3.8% meeting the criteria for probable pathological gambling.

Table 10: Gambling Severity Classification by Grade Level

	Non Gambler	Social Gambler	At-Risk Gambler	Probable Pathological Gambler
Grade 7 (n=411)	35.8%	56.4%	5.1%	2.7%
Grade 8 (n=295)	32.2%	59.0%	7.5%	1.4%
Grade 9 (n=398)	32.2%	57.5%	8.3%	2.0%
Grade 10 (n=320)	42.2%	50.0%	5.3%	2.5%
Grade 11 (n=466)	39.9%	50.9%	5.6%	3.6%
Grade 12 (n=262)	37.4%	49.6%	9.2%	3.8%

GAMBLING SEVERITY

It is important to acknowledge that results obtained from the probable pathological group are based on a small sample size (N=58) and thus results for this group should be interpreted with caution due to the margin of error based on small cell sizes. However, meaningful conclusions can still be drawn about the prevalence and characteristics of probable pathological adolescent gamblers despite this caveat. Moreover, this group of probable pathological gamblers is a significantly larger group than has typically been found in other studies due to the large sample size. As well, the use of the DSM-IV-MR-J incorporates the most stringent criteria for classifying youth as probable pathological gamblers. Thus, it is likely that these adolescents are truly pathological gamblers.

Age of Onset of Gambling

Adolescents were asked to indicate the age at which they first began gambling. While adolescents reported starting to gamble from as early as age 2 (a rare occurrence), the mean age of onset reported by adolescents is 11.05 years old. A comparison of the age of onset of gambling by gambling severity is presented in Table 11.

Table 11: Age of Onset of Gambling by Gambling Severity and Gender

Gambling Severity Groups	Age Began Gambling					
	Male			Female		
	M	SD	n	M	SD	n
Social Gambler	11.13	2.51	602	11.08	2.58	454
At-Risk Gambler	10.74	3.06	95	11.20	2.74	41
Probable Pathological Gambler	10.51	3.12	39	9.93	2.97	14
Overall Mean for Gambling Sample	11.05	2.63	1245	11.05	2.63	1245

Results indicate that probable pathological gamblers reported beginning to gamble at an earlier age than either the at-risk gamblers or social gamblers. Moreover, both the male at-risk gamblers and probable pathological gamblers had mean ages of onset that were slightly lower than the overall sample mean. Interestingly, it is the female probable pathological gamblers that reported the lowest mean age of onset (9.93 years old), although the difference is only a half-year.

Gambling Participation

It is important to note that over 60% of the at-risk gamblers do so on a weekly basis and a large portion of them are experiencing behavioural difficulties associated with their gambling involvement. The same is true for the probable pathological gamblers, but to a larger degree. Eighty-three percent of those adolescents classified as probable pathological gamblers (n=48) report gambling on a weekly basis. Many are experiencing significant difficulty controlling their

gambling and report stealing money to finance their losses and gambling activities (see Table 12).

Table 12: Negative Behaviours Associated With Problem Gambling

	Do you gamble more than you want to?	Have you stolen money to gamble?	Do you think you gamble too much?
Social Gambler	9.8%	2.2%	2.1%
At-Risk Gambler	40.1%	13.3%	14.0%
Probable Pathological Gambler	64.9%	50.0%	31.0%

It is interesting to note that as gambling severity increases, so do adolescents' reports of gambling more than they desire, stealing money to finance their gambling, and thinking that they gamble too much. A full 50% of probable pathological gamblers report stealing money to gamble. This is a key finding that highlights the magnitude of severe gambling involvement. While a large majority of the at-risk and probable pathological gamblers admit to gambling more than they want (indicating difficulty in trying to cease or limit their gambling), only 14% of the at-risk group and 31% of the probable pathological gamblers think they gamble excessively.

Developmentally, older students were much more inclined to believe that they were gambling more than they would like (26.8% in grade 12 as compared to 11.4% in grade 7). The data presented in Table 13 suggests few developmental differences, with the exception being that students in grade 7 were least likely to steal money to support their gambling behaviour.

There were significant gender differences associated with gambling-related behavioural difficulties. Males were more likely than females to report gambling more than they like, $\chi^2(1, 358) = 44.30$, $p < .001$, were more inclined to steal money to gamble, $\chi^2(1, 1361) = 6.83$, $p < .01$, and thought they gambled too much, $\chi^2(1, 1360) = 5.28$, $p < .05$. This difference was consistent for all males independent of age (see Table 13).

Dissociation

Adolescents who reported having gambled in the past 12 months answered a series of questions related to dissociative behaviours when gambling. Research on gambling, with adults and youth, has consistently shown that when gambling severity increases, individuals likely detach from "the present" and experience blackouts, lose track of time, and feel as if they are 'outside' themselves. These dissociative experiences are fundamental to Jacobs' General Theory of Addictions, suggesting that gambling participation serves as an escape mechanism from stressful events with which an individual is having difficulty coping (Jacobs, 1988). Indication of experiencing dissociative states may be a good predictor of future problem gambling, and may be indicative of current difficulties with adaptive coping skills.

Table 13: Negative Behaviours Associated With Problem Gambling by Gender and Grade Level

Grade Level	Do you gamble more than you want to?	Have you stolen money to gamble?	Do you think you gamble too much?
Grade 7			
Male (n=147)	16.3%	2.7%	5.4%
Female (n=115)	5.2%	1.7%	0.0%
Total (n= 262)	11.4%	2.3%	3.1%
Grade 8			
Male (n=91)	13.2%	9.9%	4.4%
Female (n=109)	5.5%	1.8%	3.7%
Total (N=201)	9.0%	5.5%	4.0%
Grade 9			
Male (n=149)	18.8%	7.3%	3.3%
Female (n=119)	8.4%	5.8%	5.0%
Total (n=268)	14.2%	6.7%	4.15
Grade 10			
Male (n=116)	16.4%	6.8%	2.6%
Female (n=68)	5.9%	4.4%	2.9%
Total (n=186)	12.4%	5.9%	2.7%
Grade 11			
Male (n=182)	26.4%	7.1%	9.3%
Female (n=98)	7.1%	4.1%	2.0%
Total (n=280)	19.6%	6.0%	6.8%
Grade 12			
Male (n=108)	31.5%	8.3%	7.4%
Female (n=56)	17.9%	3.6%	5.4%
Total (n=164)	26.8%	6.7%	6.7%
Overall Gender			
Male	20.8%	6.8%	5.7%
Female	7.6%	3.5%	3.0%
Total	15.3%	5.4%	4.5%

The reported dissociation by the three groups of gamblers is presented in Table 14. It is interesting to note that social gamblers *never* or *rarely* experience a trance-like state (97.6%), feel like a different person (95.2%), experience blackouts (98.9%), lose track of time (87.1%), or feel ‘outside themselves’ (98.2%) while gambling. In contrast, adolescent probable pathological gamblers demonstrate the opposite effect reporting the highest ratings of dissociation, especially in terms of losing track of time and feeling like a different person. Those who report dissociating regularly when gambling primarily consist of the probable pathological gamblers, with at-risk gamblers being more likely to report “losing track of time” than any other type of dissociation.

Table 14: Frequency of Dissociation According to Gambling Severity Levels

	Never	Rarely	Occasionally	Regularly
Do you go into a trance-like state?				
Social Gambler	86.5%	11.1%	1.7%	0.6%
At-Risk Gambler	55.2%	31.5%	11.2%	2.1%
Probable Pathological Gambler	28.8%	36.8%	15.8%	17.5%
Do you feel like a different person?				
Social Gambler	80.8%	14.4%	4.2%	0.6%
At-Risk Gambler	55.9%	29.4%	11.2%	3.5%
Probable Pathological Gambler	33.3%	7.0%	24.6%	35.1%
Do you experience blackouts?				
Social Gambler	97.3%	1.6%	0.4%	0.7%
At-Risk Gambler	83.9%	10.5%	2.1%	3.5%
Probable Pathological Gambler	63.2%	5.3%	10.5%	21.1%
Do you lose track of time?				
Social Gambler	60.4%	26.7%	10.7%	2.2%
At-Risk Gambler	32.9%	28.0%	26.6%	12.6%
Probable Pathological Gambler	15.5%	15.5%	31.0%	37.9%
Do you feel you are "outside yourself"?				
Social Gambler	90.7%	7.5%	1.3%	0.5%
At-Risk Gambler	68.5%	20.3%	8.4%	2.8%
Probable Pathological Gambler	36.8%	19.3%	26.3%	17.5%

^aRegularly is referred to as "all the time" in the questionnaire.

The distribution of reported dissociation (on an occasional and regular basis), by gender, as a function of gambling severity is presented in Table 15. The results strongly support the fact that type and frequency of dissociation is strongly linked to level of gambling severity. The results also clearly suggest that female probable pathological gamblers report experiencing dissociative states as often, and in some cases, more so than males despite the fact that females, as a whole, report these states less often than males (Jacobs, 1988).

Table 15: Dissociation When Gambling: Gender Differences

	Do you go into a trance-like state?		Do you feel like a different person?		Do you experience blackouts?		Do you lose track of time?		Do you feel "outside yourself"?	
	Occ ^a	Reg ^b	Occ	Reg	Occ	Reg	Occ	Reg	Occ	Reg
Social Gambler										
Male	2.8%	0.9%	5.8%	0.9%	0.5%	0.9%	12.4%	2.6%	1.8%	0.6%
Female	0.4%	0.2%	2.2%	0.2%	0.4%	0.4%	8.5%	1.6%	0.6%	0.4%
At-Risk Gambler										
Male	13.9%	3.0%	10.9%	4.0%	2.0%	5.0%	26.7%	11.9%	8.9%	3.0%
Female	4.8%	0.0%	11.9%	2.4%	2.4%	0.0%	26.2%	14.3%	7.1%	2.4%
Probable Pathological Gambler										
Male	19.0%	19.0%	21.4%	35.7%	11.9%	16.7%	28.6%	38.1%	28.6%	19.0%
Female	7.1%	14.3%	28.6%	35.7%	7.1%	35.7%	40.0%	33.3%	21.4%	14.3%

^aOcc = Occasional; ^bReg = Regular

Self-Evaluation

Students were asked to rate themselves on a 7 point Likert scale (1 = non gambler, 7 = pathological gambler) as to how they viewed themselves in relation to their gambling behaviours. These ratings are presented with respect to gender, grade, and gambling severity in Tables 16 and 17. Despite reporting increased delinquent behaviours (stealing, lying, skipping school, etc.), a large percentage of those classified as probable pathological gamblers rated themselves as having few, if any, problems associated with their gambling behaviour. As well, while adolescents admit gambling more than they want, they frequently fail to acknowledge that they gamble excessively.

Table 16: Self-Perception Ratings in Comparison to Actual Gambling Classification

Gambling Groups based upon DSM-IV-MR-J Classification	Self-Classification			
	Non Gambler ^a	Social Gambler ^b	Problem Gambler ^c	Pathological Gambler ^d
Social Gambler	20.9% (n=242)	75.7% (n=876)	3.2% (n=37)	0.3% (n=3)
Some Problem Gambler	2.8% (n=4)	71.7% (n=102)	24.5% (n=35)	1.4% (n=2)
Probable Pathological Gambler	0.0%	37.9% (n=22)	32.8% (n=19)	29.3% (n=17)

^aNon-Gambler is equal to a rating of 1 on the scale.

^bSocial Gambler is equal to a rating of 2 or 3 on the scale.

^cProblem Gambler is equal to a rating of 4 or 5 on the scale.

^dPathological Gambler is equal to a rating of 6 or 7 on the scale.

It is important to note that the classification used is strictly related to the self-rating scale (i.e., how adolescents view themselves from non gambler to pathological gambler) and is not to be confused with the classification system used to empirically group adolescents into the gambling severity groups referred to previously (i.e., social gamblers, at-risk gamblers, and probable pathological gamblers), using the DSM-IV-MR-J criteria.

While probable pathological gamblers were accurate with respect to the fact that they did not view themselves as ‘non-gamblers,’ they tended to underestimate their level of gambling involvement. For example, 37.9% of adolescents in the probable pathological gambler group rated themselves as social gamblers (i.e., they assigned themselves a rating of 2 or 3 on the Likert scale). A further 32.8% viewed themselves as problem gamblers. Only 29.3% of adolescents in the probable pathological gambler group correctly classified their level of gambling involvement according to the DSM-IV-MR-J. Similarly, only 24.5% of at-risk gamblers correctly classified themselves as such, while 71.7% rated themselves as social gamblers. Hence, the majority of adolescents who are at-risk for the development of severe difficulties associated with their gambling behaviour may not actually recognize the severity of their problems. This may explain why they are unlikely to present for treatment.

There are gender differences with respect to the accuracy of the self-ratings and actual distribution according to the DSM-IV-MR-J score. For example, in Table 17, for non-gamblers, females in all grades were more likely than males to rate themselves as non-gamblers. Males on

the other hand were more likely to rate themselves as social gamblers or problem gamblers. As a whole, the sample tended to underestimate the severity of gambling since only 1.6% (n=22) of the gambling sample classified themselves as pathological (this is in comparison to the 2.7% (n=58) classified by the DSM-IV-MR-J). The total sample also tended to overestimate their classification of social and non-gambler (n=1250) as opposed to the 1162 adolescents who were classified within these two categories on the DSM-IV-MR-J.

Table 17: Adolescents' Self-Perceptions of Gambling Problems by Gender and Grade Level

Grade Levels	Self-Classification			
	Non Gambler ^a	Social Gambler ^b	Problem Gambler ^c	Pathological Gambler ^d
Grade 7				
Male (n=145)	15.2%	73.8%	9.7%	1.4%
Female (n=116)	20.7%	74.2%	5.1%	0.0%
Total (n= 261)	17.6%	74.0%	7.6%	0.8%
Grade 8				
Male (n=91)	13.2%	78.1%	6.6%	2.2%
Female (n=109)	24.8%	74.3%	0.9%	0.0%
Total (n= 201)	19.9%	75.7%	3.0%	1.5%
Grade 9				
Male (n=149)	10.1%	79.2%	9.4%	1.3%
Female (n=119)	32.8%	61.3%	4.2%	1.7%
Total (n= 268)	20.1%	71.3%	7.1%	1.5%
Grade 10				
Male (n=117)	12.0%	76.9%	9.4%	1.8%
Female (n=68)	38.2%	57.3%	1.5%	2.9%
Total (n= 187)	22.5%	69.0%	6.4%	2.1%
Grade 11				
Male (n=183)	6.6%	82.0%	8.2%	3.2%
Female (n=98)	26.5%	70.4%	3.0%	0.0%
Total (n= 281)	13.5%	78.0%	6.4%	2.2%
Grade 12				
Male (n=147)	7.4%	77.8%	13.0%	1.8%
Female (n=115)	37.5%	57.1%	3.6%	1.8%
Total (n= 262)	17.7%	70.7%	9.7%	1.8%
Gender				
Total Males (n = 793)	10.5% (n = 83)	78.2% (n = 620)	9.2% (n = 73)	2.2% (n = 17)
Total Females (n = 566)	28.8% (n = 163)	67.2% (n = 380)	3.2% (n = 18)	0.9% (n = 5)
Total Sample (N = 1360)	18.1% (n = 249)	73.6% (n = 1001)	6.7% (n = 91)	1.6% (n = 22)

^aNon-Gambler is equal to a rating of 1 on the scale.

^bSocial Gambler is equal to a rating of 2 or 3 on the scale.

^cProblem Gambler is equal to a rating of 4 or 5 on the scale.

^dPathological Gambler is equal to a rating of 6 or 7 on the scale.

GAMBLING, ALCOHOL & DRUG USE

Gambling research with both adults and youth has shown that gambling behaviour is often accompanied by drug and/or alcohol use and abuse (Abbott & Volberg, 1996; Derevensky & Gupta, 1996, 1998b). Specifically, adolescent studies conducted in Quebec have shown that a larger percentage of probable pathological gamblers smoked cigarettes, consumed alcohol, and engaged in substance use on a regular basis in comparison to non gamblers and social gamblers.

This research assessed drug and alcohol use amongst adolescents and perceived drug and alcohol use of family members. A strong link has been consistently demonstrated between level of gambling involvement and having a father whom they perceive to have a serious gambling problem (Gupta & Derevensky, 1998b). It is important to note, however, that responses regarding parental gambling, drug, and alcohol problems are based upon adolescents' perceptions and may not reflect actual use or the severity of the problem since no corroborative evidence was gathered. As such, these results should be interpreted with caution.

An overview of drug, alcohol, cigarette, and gambling involvement for the entire sample can be seen in Table 18. The data suggests that children as young as grade 7 are partaking in gambling activities on an occasional basis similar to older adolescents. No significant developmental differences between the percentages of youth gambling occasionally across grade levels were found. This was in stark contrast to the increase in drug and alcohol use as well as cigarette smoking (appears to plateau at grade 9) as children got older. In contrast, gambling patterns were established early and remained relatively constant across grade levels.

With respect to regular gambling use (defined as once a week or more), 21% - 27% of the sample reported gambling on a regular basis. Again, this percentage remains relatively constant across grade levels in comparison to regular drug, alcohol, and cigarette use. Moreover, the percentage of adolescents reporting gambling is substantially higher than alcohol and drug use as well as smoking in grades 7-11. It was only when adolescents reached grade 12 (approximately 17-18 years of age) did alcohol and cigarette use surpass gambling on a regular basis.

Table 18: A Comparison of Drug, Alcohol, Cigarette, and Gambling Involvement by Grade and Frequency of Use

	Occasional Involvement ^a						Regular Involvement ^b					
	Gr. 7	Gr. 8	Gr. 9	Gr.10	Gr.11	Gr.12	Gr. 7	Gr. 8	Gr. 9	Gr.10	Gr.11	Gr.12
Cigarette	1.7%	8.8%	11.9%	12.2%	10.0%	9.2%	1.7%	2.3%	7.8%	11.9%	16.8%	34.7%
Alcohol	9.2%	25.1%	35.8%	37.9%	44.0%	46.6%	1.7%	3.1%	7.3%	11.3%	19.3%	28.6%
Drug^c	1.0%	4.5%	9.7%	15.9%	26.7%	33.0%	0.9%	1.4%	6.1%	16.2%	16.9%	21.7%
Gambling	63.3%	67.7%	64.8%	55.9%	58.1%	61.6%	23.1%	21.2%	22.9%	21.0%	25.3%	26.6%

^aOccasional involvement comprises 'less than once a week.'

^bRegular involvement comprises 'once a week or more' and 'everyday.'

^cThe drug category includes the use of any of the specific drugs mentioned in the questionnaire including uppers, downers, and hallucinogens.

To assess the relationship between level of gambling involvement and other addictive behaviours, analyses were conducted to directly compare the number of adolescents at-risk for gambling-related problems with the use of other substances. The distribution of the sample engaging in drug, alcohol, and cigarette use on an occasional or regular basis is presented in Table 19.

Table 19: Addictive-Related Behaviours by Gambling Severity

	Non Gambler (n=789)	Social Gambler (n=1161)	At-Risk Gambler (n=143)	Probable Pathological Gambler (n=56)
Drugs				
Non User	91.6%	76.7%	61.5%	37.5%
Occasional use	4.2%	12.1%	16.8%	19.6%
Regular Use	4.2%	11.3%	21.7%	42.9%
Alcohol				
Non User	1.3%	50.1%	30.8%	23.2%
Occasional Use	23.1%	38.4%	42.0%	25.0%
Regular Use	5.6%	11.5%	27.3%	51.8%
Cigarettes				
Non User	89.1%	76.8%	58.0%	50.0%
Occasional Use	4.8%	10.3%	17.5%	12.5%
Regular Use	6.1%	12.8%	24.5%	35.5%

As illustrated in Table 19, there is a high degree of concordance between excessive gambling participation and the engagement in other potentially addictive behaviours. Those individuals who have serious gambling problems are also more likely to engage in substance use than their peers. This finding is consistent with previous research. It is interesting to note that 91.6% of the non-gamblers also refrain from the ingestion of substances.

An interesting finding related to parental drug, alcohol, and gambling problems can be observed when analyzing the distribution according to gambling group severity. Table 20 depicts the percentage of parents who are perceived as experiencing difficulties with drugs, alcohol, and gambling, by level of gambling severity.

The relationship between perceived parental substance/gambling problems and gambling problems in youth suggests that probable pathological gamblers are more likely to perceive a parent as having a gambling, alcohol or drug problem. This data is highly suggestive that one risk factor for gambling problems may be related to parental mental health (i.e., non addictive behaviours).

Table 20: Percentage of Parental Gambling, Drug, or Alcohol Problems by Gambling Severity

	Mother with gambling problem	Mother with drug/drinking problem	Father with gambling Problem	Father with drug/drinking problem
Non Gambler (n=789)	0.8%	1.1%	1.8%	2.2%
Social Gambler (n=1162)	0.8%	0.8%	2.8%	4.0%
At-Risk Gambler (n=143)	8.4%	2.1%	4.9%	5.6%
Probable Pathological Gambler (n=58)	15.5%	20.7%	20.7%	25.9%

Arousal

The Intensity subscale of the Arnett Inventory of Sensation Seeking is reported to be highly correlated with arousal mechanisms and is often found to correlate positively with levels of gambling involvement. High scores on this measure are indicative of individuals considered to be high sensation seekers and reflect the need to seek out thrill and excitement (Arnett, 1994).

Significant group differences were found with respect to gambling severity level and mean arousal scores, $F(3, 2061) = 56.83, p < .001$, with post hoc analyses indicating that significant differences were found for probable pathological gamblers in comparison to social and non-gamblers. Specifically, probable pathological and at-risk gamblers’ mean arousal scores (29.51 and 28.31 respectively) were greater than the mean arousal scores of social gamblers (26.32) and non-gamblers (23.60). There was no significant difference between the mean score for the probable pathological gamblers and the at-risk gamblers ($p = .27$). The mean AISS scores are presented in Table 21.

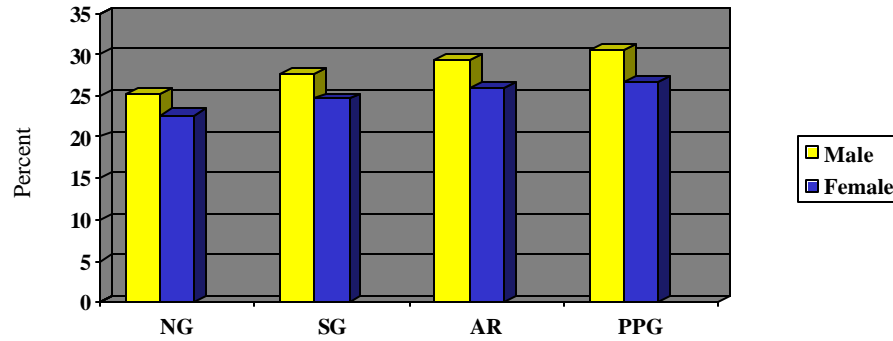
Table 21: Mean Scores on Arousal Items by Level of Gambling Severity

	Mean Score for Intensity Subscale of AISS	
	<u>M</u>	SD
Non Gambler	23.60	4.41
Social Gambler	26.32	4.62
At-Risk Gambler	28.31	4.34
Probable Pathological Gambler	29.51	4.98
Total Sample	25.54	4.81

Possible range of scores is 10-40

While significant gender differences were noted on this subscale whereby females obtained consistently lower scores than males within each of the three groups of gambling severity, $F(1, 2061) = 60.66, p < .001$, a similar trend was found for both males and females such that the higher the level of gambling involvement, the higher the mean AISS Intensity subscale score (see Figure 1 for an illustration of this trend).

Figure 1: Mean AISS Scores by Gender Across Gambling Severity Groups



NG: Non Gambler
SG: Social Gambler
AR: At-Risk Gambler
PPG: Probable Pathological Gambler

Reasons for Gambling

It is interesting to note the primary reasons given for engaging in gambling activities according to gambling severity level. Table 22 presents the distribution of responses according to the reasons why adolescents report gambling. While the top three reasons reported for the gambling severity groups remain the same as for the entire gambling sample as a whole, interesting findings appear for the probable pathological group.

In addition to reporting gambling to win money, for enjoyment, and excitement, probable pathological gamblers are also more likely to indicate that they gamble to relax (31.0%), to make or be with friends (31.0%), to feel older (31.0%), and to escape problems (29.3%). Probable pathological gamblers endorse all reasons more frequently than the other groups. Their reasons suggest difficulties with arousal, dissociation, depression, and the need to escape.

Table 22: Reasons for Gambling

	Social Gambler	Some Problem Gambler	Probable Pathological Gambler
Enjoyment	71.9%	81.1%	86.2%
Win Money	68.9%	88.1%	87.9%
Excitement	60.8%	74.1%	82.8%
Make/Be With Friends	10.5%	16.8%	31.0%
Relaxation	9.5%	16.1%	31.0%
Other^a	8.8%	10.6%	20.7%
Feel Older	2.6%	8.4%	31.0%
Escape Problems	1.7%	8.4%	29.3%
Unhappiness	1.8%	4.9%	25.9%
Loneliness	1.0%	2.8%	20.7%

GAMBLING, DEPRESSION, LIFE STRESS AND COPING AMONG ADOLESCENTS

Preliminary research (Marget, Gupta, & Derevensky, 1999) suggests that adolescents who are experiencing gambling problems utilize less effective coping strategies in stressful situations. Moreover, Marget et al. suggested that youth with serious gambling problems employ coping styles that involve a higher use of emotion-focused, distraction, and avoidance coping. This finding seems to fit well with clinicians who have suggested that gambling, for individuals with severe gambling problems in particular, serves both as a means of escape from personal stress as well as a way of maintaining an optimal level of arousal. Research evidence suggests that the way an individual deals with stressful events in his/her surroundings can help either protect or exacerbate negative influences. Hence, adaptive coping skills may act as a buffer to the development of psychopathology. In turn, maladaptive coping styles may result in increased difficulties in a multitude of personal, social and emotional areas. Despite a propensity towards a maladaptive coping style, it has been argued that the use of positive, adaptive coping strategies

can be effectively taught and used to buffer some of the negative consequences of engaging in high-risk behaviour. This section will examine the relationship between adolescent gambling severity, depression, life stress and coping mechanisms.

Depression

Scores on the Reynolds Adolescent Depression Scale (RADs) were divided into three separate categories: *Low Depressive Symptomatology* (total score 30 - 59), *Moderate Depressive Symptomatology* (total score 60 – 75; 1-1½ standard deviations above the mean), and *High Depressive Symptomatology* (total score ≥ 76; greater than 1½ standard deviation above the mean) (clinical depression) are presented in Table 23.

Table 23: Depressive Symptomatology by Grade Level and Gender

	Low Depressive Symptomatology	Moderate Depressive Symptomatology	High Depressive Symptomatology
Grade 7			
Male (n=161)	67.1%	24.2%	8.7%
Female (n=169)	65.1%	26.0%	8.9%
Total (N=331)	65.9%	25.4%	8.8%
Grade 8			
Male (n=97)	77.3%	14.4%	8.2%
Female (n=142)	59.2%	30.3%	10.6%
Total (239)	66.5%	23.8%	9.6%
Grade 9			
Male (n=144)	64.6%	23.6%	11.8%
Female (n=122)	46.7%	32.8%	20.5%
Total (N=266)	56.4%	27.8%	15.8%
Grade 10			
Male (n=117)	52.1%	26.5%	21.4%
Female (n=118)	51.7%	27.1%	21.2%
Total (N=235)	51.9%	26.8%	21.3%
Grade 11			
Male (n=183)	63.9%	22.4%	13.7%
Female (n=190)	42.1%	36.8%	21.1%
Total (N=373)	52.8%	29.8%	17.4%
Grade 12			
Male (n=119)	47.1%	36.1%	16.8%
Female (n=97)	41.2%	39.2%	19.6%
Total (N=216)	44.4%	37.5%	18.1%
Gender			
Male (n=821)	62.1%	24.6%	13.3%
Female (n=838)	51.6%	31.9%	16.6%
Total (N=1660)	56.7%	28.3%	14.9%

Percentages do not always add up to 100% as some participants did not classify their gender.

The distribution of Reynolds Adolescent Depression Scale scores by both age and gender are presented in Table 23. Overall, for the entire sample, the distribution of scores supports past research examining gender differences for this age population such that more females, in general, fall within the moderate depressive category $\chi^2(1, 469) = 9.01, p < .001$ with a larger proportion

of males falling within the low depressive symptomatology category, $\chi^2(1, 942) = 6.46, p < .05$. No significant gender differences were found between males and females within the high depressive symptomatology category.

From a developmental perspective, the percentage of youth with high depressive symptomatology scores increases from grade 7 and peaks at grade 10. Moderate depressive symptomatology scores are more variable across grade levels, but tend to increase with age.

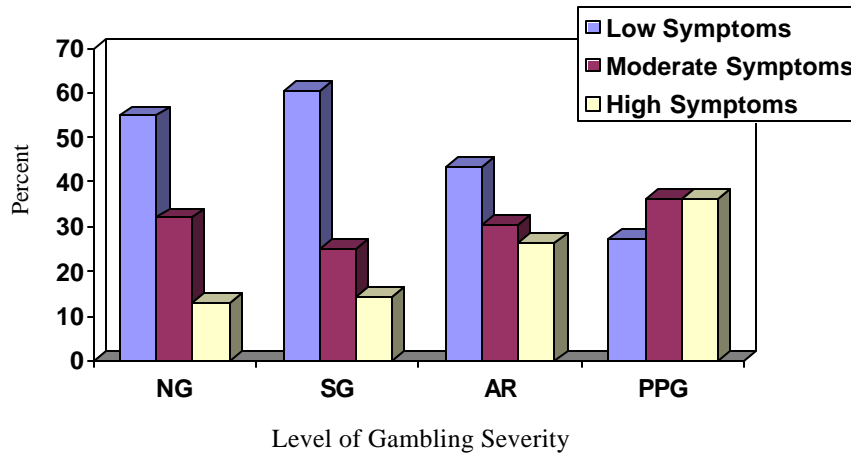
The distribution of RADS scores by gambling severity and gender is presented in Table 24. A clear positive linear trend can be seen between scores of high depressive symptomatology and level of gambling severity.

Table 24: Depressive Symptomatology According to Gambling Severity and Gender

	Low Depressive Symptomatology	Moderate Depressive Symptomatology	High Depressive Symptomatology
Non Gambler			
Male (n=230)	60.9%	27.0%	12.2%
Female (n=398)	51.5%	34.9%	13.6%
Total (N=628)	54.9%	32.0%	13.1%
Social Gambler			
Male (n=500)	66.4%	22.4%	11.2%
Female (n=396)	53.5%	28.5%	18.2%
Total (N=896)	60.6%	25.1%	14.3%
At-Risk Gambler			
Male (n=68)	45.6%	29.4%	25.0%
Female (n=31)	38.7%	32.3%	29.0%
Total (N=99)	43.4%	30.3%	26.3%
Probable Pathological Gambler			
Male (n=22)	27.3%	36.4%	36.4%
Female (n=10)	30.0%	30.0%	40.0%
Total (N=33)	27.3%	36.4%	36.4%

Figure 2 illustrates the percentage of adolescents experiencing low, moderate, and high levels of depressive symptomatology as a function of gambling severity. As can be seen, the percentage of youth reporting high depressive symptomatology increases with their level of gambling problems.

Figure 2: Low, Moderate, and High Depressive Symptomatology and Gambling Severity



NG: Non Gambler
 SG: Social Gambler
 AR: At-Risk Gambler
 PPG: Probable Pathological Gambler

It is important to note that gender differences do not account for the high proportion of scores in depressive symptoms within the probable pathological group $F(3, 1655) = .377, p = .77$. A summary of the mean RADS scores according to gambling severity level and gender is presented in Table 25.

Table 25: Distribution of RADS Scores by Gambling Severity and Gender

	Non Gambler		Social Gambler		At-Risk Gambler		Probable Pathological Gambler	
	<u>M</u>	SD	<u>M</u>	SD	<u>M</u>	SD	<u>M</u>	SD
Male	57.15	15.10	55.77	14.77	63.83	14.64	69.36	16.89
Female	59.71	14.72	59.69	16.69	66.87	16.36	68.80	18.41

Suicide Ideation and Suicide Attempts

Adolescents who experience severe gambling difficulties have been reported to have more suicidal ideation and more attempts (Derevensky & Gupta, 1999; Marget et al., 1999). Given the multitude of problems that appear to coexist for these adolescents, and given their high depression scores, this is not a surprising finding. Thinking about suicide is not uncommon for adolescents in general while actual suicide attempts are not as frequent. Suicide attempts have also been linked to maladaptive coping styles and for some adolescents suicide is perceived to be a viable way of escaping life’s problems.

The distribution of adolescents who have reported thinking about suicide and those who report having made actual attempts is presented in Table 26. Overall, females report thinking about

suicide significantly more often than males, $\chi^2(1, 2136) = 25.08, p < .001$, and were more likely to report having made suicide attempts, $\chi^2(1, 2136) = 5.45, p < .02$.

Table 26: Adolescents' Reports of Suicide Ideation and Actual Attempts: Gender Differences

	Have you ever thought about attempting suicide?	Have you ever attempted suicide?
Male (n=1092)	12.5%	2.4%
Female (n=1063)	20.4%	4.1%
Total (N=2156)	16.4%	3.2%

Developmentally, there is an increasing linear trend noted between grade level and suicide ideation. This trend is, in general, similar for both males and females. Similarly, the older students report making more suicide attempts.

Table 27: Adolescents' Reports of Suicide Ideation and Actual Attempts: Developmental Differences

	Have you ever thought about attempting suicide?	Have you ever attempted suicide?	Have you sought help for drinking, drugs, gambling, smoking problems?
Grade 7			
Male (n=202)	8.4%	2.5%	0.0%
Female (n=205)	6.8%	1.5%	0.5%
Total (N=407)	7.8%	1.9%	0.2%
Grade 8			
Male (n=120)	7.5%	0.8%	0.8%
Female (n=173)	17.3%	4.1%	0.6%
Total (N=293)	13.3%	2.7%	0.3%
Grade 9			
Male (n=204)	9.3%	1.5%	0.5%
Female (n=188)	23.4%	3.7%	1.0%
Total (N=392)	16.1%	2.6%	0.8%
Grade 10			
Male (n=163)	16.0%	3.0%	0.6%
Female (n=154)	19.5%	2.6%	0.6%
Total (N=317)	17.7%	2.8%	0.6%
Grade 11			
Male (n=241)	13.7%	2.1%	2.1%
Female (n=224)	30.4%	6.7%	0.9%
Total (N=465)	21.7%	4.3%	1.5%
Grade 12			
Male (n=153)	20.9%	4.6%	4.5%
Female (n=109)	28.4%	7.5%	1.8%
Total (N=262)	24.0%	5.8%	3.4%

Reports of suicide ideation and attempts by gambling severity are presented in Table 28. A clear relationship can be seen between suicide ideation, suicide attempts and the degree of gambling problems experienced. Approximately one quarter of all probable pathological gamblers (27.6%)

and at-risk gamblers (25.9%) report having thoughts of suicide, with 14.3% of probable pathological gamblers and 9.8% of at-risk gamblers reporting having made a suicide attempt.

Table 28: Suicide Ideation and Suicide Attempts by Gambling Severity

	Have you ever thought about attempting suicide?	Have you ever attempted suicide?
Non Gambler	14.1%	2.2%
Social Gambler	16.3%	2.7%
At-Risk Gambler	25.9%	9.8%
Probable Pathological Gambler	27.6%	14.3%

Figure 3: Suicide Ideation

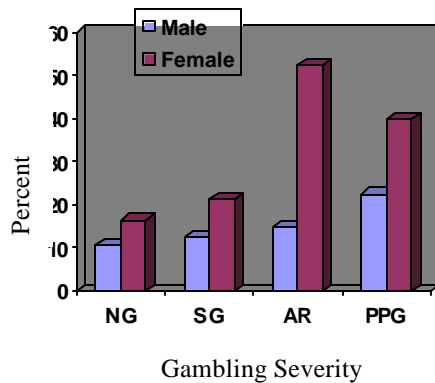
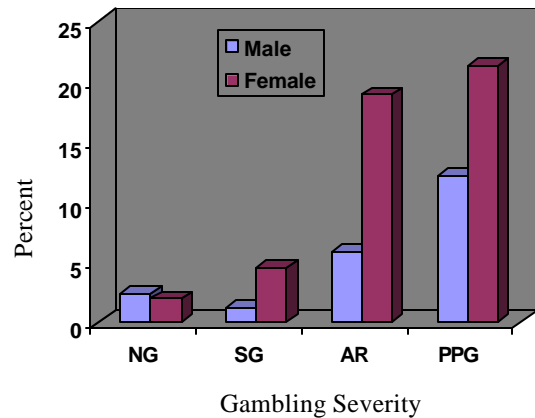


Figure 4: Suicide Attempts



NG: Non Gambler
 SG: Social Gambler
 AR: At-Risk Gambler
 PPG: Probable Pathological Gambler

The gender differences by gambling severity are further highlighted in Figures 3 and 4. Females within the at-risk and probable pathological gambler groups were the most likely to report experiencing suicidal ideation and making suicide attempts.

Life Stress, Coping and Gambling Severity

Preliminary research has suggested a relationship between poor coping styles and problem gambling. However, little is known about the inter-relationship concerning life stressors, coping strategies and severity of gambling problems amongst adolescents. Do youth who develop gambling problems experience more major and minor stressors or do they employ less effective

coping strategies? The results previously presented suggest that youth exhibiting severe gambling problem behaviour are more likely to score higher on depression inventories, are at an increased risk for attempting suicide, and are more heavily involved in drug and alcohol consumption.

The Adolescent Perceived Event Scale – Form B (APES) (see pages 7-10 in the questionnaire, Appendix B) consists of a 100 life events. For this study, 99 events were included (several school boards requested removal of the item, *making love/sexual intercourse, losing virginity*). The 99 life events were divided into 40 major events (events that cause a severe disruption in the adolescents' lives and involve marked stress, for example, the death of a parent), 37 minor daily events (less severe stressors that are considered to be more frustrating irritants that occur frequently during one's daily routines, for example, failing a school exam or not being invited to a party), 11 neutral events (events that are neither uniquely negative or positive in nature, for example, discussions with parents, talking on the phone), and 11 positive events (events that have a clear positive benefit for the individual or a 'significant other,' such as helping someone or receiving good grades). The distribution of the events into the major, minor, and positive categories was based upon the different stress inventories that were used to develop the APES (Compas et al., 1987; Johnson & McCutcheon, 1980; Rowlison & Felner, 1988; Swearingen & Cohen, 1985).

The analyses for the coping styles (CISS) compared adolescents on three coping scales (i.e., Task-Oriented, Emotion-Oriented, and Avoidance-Oriented coping styles). It is important to note that the Avoidance scale consists of two subscales, dividing the items into those assessing a preferred way of dealing with stressful events through Distraction and those using Social Diversion as a coping strategy. Analyses are performed using both the complete Avoidance scale and the two subscales. Coping scales are scored according to T-scores ($M=50$, $SD=10$), and have been covaried for gender and age (see the manual for the CISS for more details).

A 3 x 2 x 5 multivariate analysis of variance (MANOVA) was performed including Group, Gender, and Grade as fixed variables and the APES and CISS as dependent variables. Initial analyses using the four gambling severity groups did not reveal statistically significant differences between the probable pathological gamblers and the at-risk gamblers on the dependent variables. Moreover, there were no gender or grade differences between these two groups. As such, the results of the MANOVA (univariate results are reported in their respective sections) presented in Table 29 used three gambling groups, combining the at-risk gamblers with the probable pathological gamblers. SPSS MANOVA (Version 9.0) was used for the analysis with the Type III sequential adjustment for nonorthogonality.

Table 29: Multivariate Results for the APES and CISS

Effect	Value	F	df	p	Observed Power
Group Wilks' Lambda	.912	8.17	(14, 2434)	<.001	1.00
Grade Wilks' Lambda	.940	2.15	(35, 6100)	<.001	.99
Gender Wilks' Lambda	.949	9.41	(7, 1216)	<.001	1.00
Group x Grade Wilks' Lambda	.942	1.05	(70, 8554)	.37	.99
Group x Gender Wilks' Lambda	.991	.756	(14, 2434)	.72	.50
Grade x Gender Wilks' Lambda	.981	.669	(35, 6100)	.93	.63
Group x Grade x Gender Wilks' Lambda	.955	.799	(70, 8554)	.89	.93

There were no significant Group x Grade, Group x Gender, or Gender x Grade interaction effects. Moreover, the three-way interaction, Group x Grade x Gender, was also not significant, thus allowing for the comparison of the three gambling severity groups without the need to control for either gender or grade.

Group Differences on the Life Stress and Coping Measures

The means and standard deviations for the four life event categories are presented in Table 30. Univariate analyses revealed a significant difference between groups by gambling severity for both the total number of major events, $F(2, 1258) = 22.19, p < .001$, and minor events, $F(2, 1258) = 17.17, p < .001$, experienced within the past year. No significant differences were found between gambling severity groups and the number of neutral events, $F(2, 1258) = 11.22, p = .07$, or the number of positive events, $F(2, 1258) = 9.30, p = .14$, reported within the past year.

Table 30: Mean Number of Life Events by Level of Gambling Severity

Life Event Category	Non Gamblers		Social Gamblers		At-Risk Gamblers		Probable Pathological Gamblers		Combined Group Means ^a	
	<u>M</u>	SD	<u>M</u>	SD	<u>M</u>	SD	<u>M</u>	SD	<u>M</u>	SD
Major Events	7.46	5.32	8.98	5.88	11.91	7.33	14.27	10.34	12.71	8.31
Minor Events	11.75	6.55	12.64	6.74	16.02	7.18	15.76	8.85	15.38	7.33
Neutral Events	7.26	2.06	7.34	2.14	7.67	2.05	6.51	2.40	7.35	2.21
Positive Events	8.12	2.31	7.88	2.31	7.43	2.34	6.63	2.68	7.21	2.46

^a combined at-risk and probable pathological gambling groups

A series of Tukey HSD pairwise comparisons showed that with respect to the major life event category, the combined at-risk and probable pathological gamblers yielded the highest mean scores on this category, which differed significantly from both the social gamblers ($\underline{M} = 8.89$) and the non-gamblers ($\underline{M} = 7.46$) ($p < .001$). For the category of minor life events, the combined

at-risk and probable pathological group reported significantly higher mean scores than either the social gamblers ($M = 12.64$) or non-gamblers ($M = 11.75$) ($p < .001$). Social gamblers differed significantly from non-gamblers on the number of major events reported ($p < .001$). Social gamblers and non-gamblers did not differ significantly on the number of minor events reported.

Significant main effects for group were also found between the gambling severity groups for *task-oriented coping*, $F(2, 1258) = 4.91$, $p < .008$, *emotion-oriented coping*, $F(2, 1258) = 5.23$, $p < .005$, and *avoidance-oriented coping*, $F(2, 1258) = 9.59$, $p < .001$. Post hoc analyses (Tukey HSD, pairwise comparisons) revealed the following significant differences between groups: with respect to *task-oriented coping* the combined at-risk and probable pathological gamblers yielded significantly lower scores on this scale in comparison to non-gamblers ($p < .005$). Social gamblers also scored significantly lower on this scale than the non-gamblers ($p < .002$). On the *emotion-oriented coping*, the combined at-risk and probable pathological gamblers yielded significantly higher scores than both social gamblers and non-gamblers ($p < .001$). No significant differences were found between the social gamblers and non-gamblers. On the *avoidance-oriented coping* scale, significant differences were found between the combined at-risk and probable pathological group and the non-gamblers, with the at-risk/probable pathological gambling group yielding significantly higher scores on this scale ($p < .001$). The social gamblers also scored significantly higher on this scale in comparison to the non-gamblers ($p < .001$). Irrespective of level of gambling severity, all gamblers used *avoidance-oriented coping* significantly more often than non-gamblers. Distribution of the mean coping scores for each scale by gambling severity groups are presented in Table 31 and distribution of the combined mean coping scores can be found in Table 32 .

Since the *avoidance-oriented* scale is divided into two subscales (distraction and social diversion), it is interesting to see if a significant difference occurs between groups on these subscales. In general, scores for all groups on the distraction subscale were higher than on the social diversion subscale score $t(1666) = 17.38$, $p < .001$ (see Table 31). A one way analysis of variance was conducted for each of the subscales by level of gambling severity. Significant main effects for group were found between the gambling severity groups for the distraction oriented subscale $F(2, 1729) = 12.42$, $p < .001$ and the social diversion subscale $F(2, 1833) = 9.53$, $p < .001$. Post hoc analyses (Tukey HSD, pairwise comparison) revealed the following significant differences between groups: the combined at risk/probable pathological gambling group yielded significantly higher scores on the distraction subscale in comparison to non gamblers ($p < .001$) and social gamblers ($p < .01$). Social gamblers yielded significantly higher scores than non gamblers on this subscale ($p < .002$). With respect to social diversion, the combined at risk/probable pathological gambling group yielded significantly higher scores than non gamblers ($p < .001$) and social gamblers yielded significantly higher scores than non gamblers on this subscale ($p < .003$). No differences were found between the combined at risk/probable pathological gambling group and the social gamblers ($p = .093$). Despite the fact that all groups utilized distraction coping more than social diversion coping, the combined at risk/probable pathological gambling group did report using distraction strategies to a larger degree than either social and non gamblers.

Table 31: Mean T-Scores for Coping Scales by Gambling Groups and Gender

	Non Gambler			Social Gambler			At-Risk Gambler			Probable Pathological Gambler		
	<u>M</u>	SD	N	<u>M</u>	SD	N	<u>M</u>	SD	N	<u>M</u>	SD	N
Task-Oriented												
Male	53.1	10.0	217	51.1	9.5	450	50.8	9.4	60	49.5	9.7	26
Female	52.8	9.6	372	50.5	9.6	394	47.5	10.4	32	56.3	5.9	10
Total	52.9	9.8	589	50.8	9.6	844	49.6	9.8	92	51.4	9.2	36
Emotion-Oriented												
Male	49.7	11.8	216	49.9	10.7	471	55.7	11.1	62	56.7	11.7	21
Female	47.8	11.0	389	47.3	10.8	403	51.9	9.4	32	56.3	12.4	8
Total	48.5	11.3	874	48.7	10.8	874	54.4	10.6	94	56.6	11.6	29
Avoidance-Oriented												
Male	50.8	10.6	224	53.6	9.7	480	56.4	9.8	62	53.5	12.0	22
Female	51.6	10.7	387	53.3	10.1	403	54.9	8.1	34	56.7	11.7	9
Total	51.3	10.7	611	53.5	9.8	883	55.9	9.2	96	54.5	11.7	31
Distraction Subscale												
Male	51.6	10.4	231	53.9	9.7	506	57.4	9.7	71	55.7	11.4	27
Female	52.8	9.7	413	54.1	8.9	434	54.9	8.4	35	56.7	9.8	12
Total	52.4	10.0	644	54.0	9.3	940	56.6	9.3	106	56.0	10.7	39
Social Diversion Subscale												
Male	49.1	9.9	249	50.9	9.1	542	53.1	8.3	27	49.7	9.1	27
Female	48.3	9.1	442	49.1	9.1	450	51.2	7.9	38	49.7	9.0	11
Total	48.6	9.4	691	50.1	9.1	992	52.5	8.1	65	49.7	8.9	38

Note. The normative mean score for each of the CISS subscales is 50, with a standard deviation of 10.

Table 32: Combined Mean T-Scores for Coping Scales

	Task-Oriented		Emotion-Oriented		Avoidance-Oriented		Distraction Subscale		Social Diversion Subscale	
	<u>M</u>	SD	<u>M</u>	SD	<u>M</u>	SD	<u>M</u>	SD	<u>M</u>	SD
Combined Group Scores^a	50.13	9.67	54.94	10.88	55.54	9.92	56.42	9.71	51.77	8.46

^a combined at-risk and probable pathological gambling groups

Developmental Differences on the Life Stress and Coping Measures

Univariate analyses revealed a significant main effect for grade for the total number of major life events, $F(5, 1258) = 2.51, p < .028$; the total number of minor life events, $F(5, 1258) = 3.40, p < .005$; and the total number of positive life events, $F(5, 1258) = 16.60, p < .004$. The total number of neutral events did not yield significant developmental differences, $F(5, 1258) = 1.08, p = .365$. Post hoc analyses (Tukey HSD pairwise comparisons) revealed the following significant differences between grades: older adolescents (grades 11 & 12) report the occurrence of more major events occurring in the past year in comparison to adolescents in grades 7, 9, and 10 ($p < .01$); younger pre-adolescents (grade 7) report a significantly lower number of minor events; and older adolescents (grade 11 and 12) report a significantly higher number of minor events ($p < .001$). Regarding positive events, younger children in grades 7 and 8 report significantly more of these events in comparison to children in all the other grades (see Table 33 below for the distribution of means by grade level).

Table 33: The Distribution of Mean Scores by Grade for Life Event Categories

Grade	Major Life Events		Minor Life Events		Positive Life Events		Neutral Life Events	
	<u>M</u>	SD	<u>M</u>	SD	<u>M</u>	SD	<u>M</u>	SD
Grade 7	7.94	6.12	10.03	6.04	8.12	2.20	6.96	2.21
Grade 8	9.25	6.58	12.56	6.82	8.59	1.93	7.56	1.99
Grade 9	8.60	5.76	12.27	6.41	7.87	2.19	7.40	1.97
Grade 10	8.51	5.95	12.01	6.28	7.63	2.53	7.23	2.23
Grade 11	9.22	6.11	13.27	6.89	7.74	2.40	7.40	2.10
Grade 12	10.15	6.21	13.62	7.00	7.47	2.64	7.34	2.19

A significant developmental main effect for coping was found on the avoidance scale of the CISS, $F(5, 1258) = 2.20, p < .05$, with post hoc comparisons highlighting the fact that older adolescents (grade 12) use avoidant strategies significantly more often than both pre-adolescents in grade 7 and grade 8. This difference is apparent when examining the means for the distraction coping subscale (see Table 34).

Table 34: Distribution of Mean CISS Scores by Grade

	Grade 7		Grade 8		Grade 9		Grade 10		Grade 11		Grade 12	
	<u>M</u>	SD	<u>M</u>	SD	<u>M</u>	SD	<u>M</u>	SD	<u>M</u>	SD	<u>M</u>	SD
Task-Oriented	51.5	9.5	50.5	10.3	51.4	9.0	52.4	9.7	51.6	10.0	51.9	9.8
Emotion-Oriented	46.3	11.3	46.8	11.4	49.7	10.9	51.0	11.8	49.8	10.2	51.4	10.4
Avoidance-Oriented	52.3	9.7	51.5	10.7	53.0	9.8	52.5	10.6	53.3	10.6	54.4	10.1
Distraction Subscale	52.6	9.1	51.8	9.6	53.3	9.0	53.4	9.2	55.1	10.3	55.2	10.2
Social Diversion Subscale	49.9	9.3	48.2	9.8	50.4	9.4	49.5	9.7	49.4	8.6	50.7	8.6

Gender Differences on Measures of Life Stress and Coping

A significant main effect for gender was found for all categories of life events. The univariate analyses, means and standard deviations for the four life event categories by gender are presented in Table 35.

Table 35: Mean Life Event Scores for Males and Females

Life Event Category	Male		Female		Total		Univariate F(1, 1258)
	<u>M</u>	SD	<u>M</u>	SD	<u>M</u>	SD	
Major Life Events	8.31	6.35	9.13	5.80	8.72	6.09	15.79*
Minor Life Events	11.47	6.76	13.70	6.75	12.60	6.84	31.23*
Positive Life Events	7.28	2.24	8.53	2.03	7.91	2.33	29.73*
Neutral Life Events	6.82	2.26	7.78	1.85	7.31	2.12	29.41*

Note. Values enclosed in parentheses represent standard deviations.

* p < .001

It is interesting that females reported a significantly higher number of life events on all categories. While statistically significant, the number of events is not all that different between males and females. This gender difference does not appear to be related to gambling severity or grade level. As found in the MANOVA, there were no statistically significant interactions between any of the fixed variables affecting life event scores. Univariate analyses on the coping scales examining gender differences did not reveal any statistically significant differences for the Task-Oriented scale, $F(1, 1258) = .009$, $p = .925$ or the Avoidance-Oriented scale, $F(1, 1258) = .778$, $p = .378$. There was, however, a significant difference between males and females on the Emotion-Oriented scale, $F(1, 1258) = 6.63$, $p < .01$. Post hoc analyses demonstrated that males exhibited significantly higher mean scores on the Emotion-Oriented scales than females (50.5 vs. 47.8 respectively). Similar to the findings on the life stress measures, there were no significant interactions between gender, grade level and gambling severity.

SUMMARY AND CONCLUSIONS

The main purpose of this study was to assess the various coping styles and life stressors of adolescents who are experiencing difficulties with gambling activities. This information is necessary to guide effective clinical practice and to help determine which adolescents may be at risk for the development of severe gambling related problems. Another purpose of the study was to better understand the potential risk factors associated with gambling and their concomitant negative behaviours.

The results confirm that significant numbers of adolescents in Ontario are gambling, that these activities are generally socially acceptable and conducted in collaboration with parents, siblings, and relatives, and that a large percentage of adolescents are gambling at school, as well as at home. A small proportion of adolescents in Ontario are experiencing severe difficulties as a result of their gambling behaviour. Moreover, there is also a significant number who are beginning to show difficulties with gambling and may represent a group at-risk for developing more severe gambling problems. Adolescents, like studies examining adults, report gambling for excitement, to win money and for the enjoyment.

With the increased number of gambling venues throughout Ontario, as well as the inherent social acceptability of engaging in this activity in comparison to other unsanctioned youth activities such as drugs, alcohol, and tobacco smoking, the number of youth who are gambling is likely to increase. As a result, while a number of adolescents currently have a severe gambling problem many more are at risk and likely to develop problems. As such, increased efforts aimed at minimizing the negative impact resulting from excessive gambling are strongly recommended.

Despite the fact that gambling is illegal for people under the age of 18 in the Province of Ontario for lottery playing and bingo, and 19 for other forms of gambling including casinos, 63% of underage adolescents in grades 7 through 12 reported gambling for money within the past year. Of those, 23% reported gambling on a regular weekly basis. Males were found to gamble more often and have more gambling related problems than females. Playing cards, lottery, sports wagers and wagering on games of skill were the activities of choice for both regular and occasional gamblers.

Adolescent gamblers report gambling at home (76%) and at the homes of their peers (52%), while 40% of males reported gambling in school. The fact that many adolescents report gambling with other adults suggests that gambling is a socially acceptable form of entertainment with few negative consequences. This research, consistent with results from other studies (e.g., Gupta & Derevensky, 1997), has demonstrated that most adolescents' first exposure to gambling related activities began at home with parents, grandparents, and other relatives. These findings highlight the necessity to increase parental awareness of the inherent risks involved for youth who engage in such activities. By the time male adolescents enter grade 12, 90% report gambling more with their friends than with family members. Females, however, continue to consistently gamble with family members.

Using the DSM-IV-MR-J criteria to assess degree of gambling severity, 2.7% of the total sample was classified as probable pathological gamblers (scores of ≥ 4), with 6.6% being classified as at-risk for the development of significant gambling problems (scores of 2-3). Fifty-four percent of the sample was classified as social gamblers (score of 0-1). A series of youth gambling studies directly comparing different assessment instruments found the DSM-IV-J (Fisher, 1992), the former version of this screening instrument, to be the most conservative measure of adolescent gambling problems (Derevensky & Gupta, 2000). While the current prevalence rates in this study are lower than typically found in the literature (see Jacobs, 2000), with a recent Ontario study reporting estimated prevalence for severe youth gambling problems to be 5.8% with another 7.5% presumed to be at-risk (Adalf, & Ialomiteanu, 2000), youth problem gambling is of considerable concern, a conclusion also drawn by the National Research Council in the U.S. (1999). The newly revised version, DSM-IV-MR-J (Fisher, 2000) represents the most conservative measure to date, identifying the fewest individuals with significant gambling problems. Despite lower prevalence rates, these numbers still pose a legitimate concern.

More males were identified as having significant gambling problems (3.8% probable pathological gamblers, 9.3% at-risk gamblers) than females (1.4% probable pathological gamblers, 4.0% at-risk gamblers). The distribution of adolescents based on level of gambling involvement was found to be relatively consistent across all grade levels (7 to 12). Despite the fact that fewer females reported difficulties with gambling activities, they reported the earliest onset of gambling activity (age 10 for probable pathological gamblers) in comparison to their male counterparts (10.5 years). The average age of onset reported across for all adolescents currently gambling was age 11. This is consistent with retrospective studies of adult pathological gamblers who report onset of gambling problems to have begun at approximately 10 years of age (Custer, 1982; Dell, Ruzicka, & Palisi, 1981; Gupta & Derevensky, 1998a; Wynne et al., 1996).

Behavioural difficulties associated with problem gambling remain a serious concern. More than 60% of adolescents with severe gambling problems reported that they gambled more than they like and 50% reported stealing money to finance their losses. On a self report measure, only a third of probable pathological gamblers indicated they gambled in excess. A common finding in youth gambling research is that adolescents experiencing gambling-related difficulties do not present for treatment. There is a wide gap between the numbers of youth who are experiencing gambling difficulties versus those who actually seek help. Probable pathological gamblers were found to more likely classify themselves as social gamblers and at-risk gamblers.

Adolescents with gambling problems were found to more likely report experiencing dissociation when gambling (i.e., feeling like a different person, losing track of time, going into a trance-like state, experiencing blackouts, and feeling outside themselves). Gender differences revealed that males experienced these states in general more often than females. However, no gender differences were found for dissociative experiences among probable pathological gamblers. This is consistent with the past research that suggests many similarities between males and females with severe gambling problems.

Despite the fact that gambling can be an addictive behaviour similar to cigarette smoking, alcohol consumption, and illicit drug use, adolescents of all ages report gambling on an occasional basis significantly more often than any of the other illegal activities. At least one fifth

of adolescents within each grade are reporting regular engagement (i.e., at least once a week) in gambling activities. For younger adolescents (grades 7, 8, & 9), regular use of other risk-taking behaviours is significantly less with an average of 3.9% reporting regular cigarette use, 4.0% reporting regular alcohol use, and 2,8% reporting regular drug use.

Adolescents with severe gambling problems were also more likely to use other addictive substances on a regular basis (once a week or more), including drugs (43%), alcohol (52%), and tobacco (36%). Moreover, there was substantial overlap between their own use of these substances and their reports of parental use of substances and gambling problems. Adolescent probable pathological gamblers reported a disproportionately high number of parents having either a gambling and/or substance abuse problem [mother with a gambling problem (16%), drinking or drug problem (21%); father with a gambling problem (21%), drinking or drug problem (26%)]. These results are significantly higher than for the overall mean of the entire sample.

Youth gambling can be conceptualized as a form of risk-taking behaviour. Past research with adolescents has also shown a relationship between the severity of gambling problems, risk-taking and sensation seeking (see Gupta & Derevensky, 1998b). From a physiological perspective, several theories have emphasized that an underlying cause of an addiction is related to difficulties in regulating one's arousal system. Both at-risk gamblers and probable pathological gamblers reported higher mean scores on the Intensity subscale of the Arnett Inventory of Sensation Seeking (28.31 and 29.51 respectively) in comparison to the overall mean on this measure (25.54) with non-gamblers scoring significantly lower on this measure (23.60) in comparison to the overall mean.

Recent empirical research on youth gambling has shown that adolescents with gambling problems are more likely to report feelings of depression (Gupta & Derevensky, 1998a, 1998b, 2000). While female adolescents typically exhibit more signs of depression, both male and female probable pathological gamblers similarly exhibited elevated scores, indicative of depressive symptomatology. Still further, a greater percentage of these probable pathological gamblers reached clinical levels of depression as compared to social gamblers or non-gamblers.

Suicide ideation was reported more often for both the at-risk gamblers and probable pathological gamblers (26% and 28% respectively) than non-gamblers and social gamblers (14% and 16% respectively). Similar results were found for reported suicide attempts, with 10% of at-risk gamblers and 14% of probable pathological gamblers revealing a suicide attempt in comparison to 3% of social gamblers and 2% of non-gamblers.

Some developmental differences were found with respect to the number of major and minor life events experienced within the past year. In general, older adolescents (grades 11 and 12) reported significantly more major events in the past year than younger adolescents (grades 7, 9, and 10) and more minor life events. Children in grade 7 also reported significantly more positive events occurring in the past year. The period of middle to late adolescence appears to be a vulnerable period of development with respect to both the degree and number of stressors that these young adolescents face. The extent to which adolescents can effectively cope with their increased levels

of stress may have a significant impact on their experiences with high-risk behaviours such as gambling, substance use, and mental health problems.

Excessive gambling may in and of itself represent a maladaptive means of coping with typical daily or major life stressors. Preliminary findings by Marget, Derevensky and Gupta (2000), using a relatively small sample, have suggested that adolescent probable pathological gamblers appeared to exhibit more maladaptive coping strategies. These strategies emphasized the use of avoidance and distraction as opposed to more direct task-oriented coping. The current research confirms previous preliminary findings that adolescents with more severe problematic gambling problems reported using more maladaptive coping styles to resolve stressful situations. For example, non-gamblers and social gamblers reported using more task-oriented coping styles when confronted with adversities than either at-risk or probable pathological gamblers. Task-oriented coping is considered a more positive, adaptive form of coping when an individual is confronted with difficulties as it is action-oriented and involves direct attempts to address the stressor. Both at-risk gamblers and probable pathological gamblers were found to have employed more emotion-focused coping in comparison to social gamblers and non-gamblers. This type of coping style typically involves emotional reactions such as getting angry, frustrated, and anxious.

Adolescent gamblers (i.e., social gamblers, at-risk gamblers, and probable pathological gamblers) in general reported higher mean scores on the avoidant-oriented coping scale in comparison to non-gamblers. Similarly, they reported employing techniques of distraction when confronted with stressful situations. Both the avoidant and distraction (a subset of the avoidant scale) infers a more passive unwillingness to deal with adversity. Hence, such individuals are more likely to distract themselves with other activities (e.g., gambling, substance use) that enable them to escape from the reality of their personal and social environment.

It is important to note that the use of avoidant - or emotion-focused coping can be advantageous, under certain highly stressful situations (e.g., major life events). However, individuals with effective coping styles have learned to use adaptive behaviours, such as applying different strategies dependent upon the situational demands. Probable pathological gamblers and at-risk gamblers were found to utilize maladaptive coping strategies.

Future Directions

Adolescence has often been described as a stressful developmental period. The results of this research suggest a significantly large number of adolescents are experiencing many stressors, varying in magnitude, on a daily basis. Ineffective coping strategies, designed to reduce major and minor stressors, have been shown to negatively impact upon adolescent mental health and have been found to be related to engagement in a variety of high-risk behaviours. This finding suggests the need for the development of effective mental health and risk-reduction prevention programs.

The large number of underage youth gamblers in general, and those with serious gambling problems, calls for more collaborative efforts between policy makers and law enforcement officials to enforce existing statutes prohibiting underage gambling. As well, a concerted public

awareness campaign is necessary to help educate parents and school officials concerning the extent of adolescent problem gambling.

Youth gambling problems have been found not to exist in isolation. The more severe the gambling problem, the more likely youth were found to be engaged in other addictive behaviours including alcohol, drug and tobacco use. These youth remain at heightened risk for suicide ideation and suicide attempts as well as other mental health problems.

This research has empirically delineated several risk factors identified with youth gambling problems. The identification of these factors can best be realized when incorporated into the design of prevention and treatment programs. Targeting the development of effective coping strategies should be an integral protective factor buffering stress and minimizing mental health and behavioural problems.

Additional research funding aimed toward the identification of protective factors for youth gambling problems is warranted. Incorporating a risk factor model may help maximize our school-based prevention efforts and minimize youth gambling and mental health problems.

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APPENDIX A

Geographic Distribution

Geographic Distribution

<i>School Board</i>	N	%
York Region District	1287	60.2%
Niagara Catholic District	303	14%
Dufferin-Peel District	50	2.4%
Durham-Catholic District	26	1.2%
Grand-Erie District	72	3.4%
Thunder Bay-Catholic District	408	18.9%
TOTAL SAMPLE	2156	

APPENDIX B

Questionnaire: GAQ, DSM-IV-MR-J, AISS (Intensity Subscale), APES, CISS, RADS

GAQ-OC

Grade: _____ Age: _____

Sex: _____M _____F

Please note that all information is confidential.

1) Please check the following types of gambling (**for money**) you have done in the past 12 months. Please mark only one answer for each item.

- | | never | less than
once a
week | once a
week or
more | |
|----|--------------|--------------------------------------|------------------------------------|--|
| a) | _____ | _____ | _____ | play cards |
| b) | _____ | _____ | _____ | wager on sports (i.e. sports pools) with friends |
| c) | _____ | _____ | _____ | purchase sports lottery tickets (pro-line) |
| d) | _____ | _____ | _____ | purchase lottery tickets or scratch tickets |
| e) | _____ | _____ | _____ | wager on video games or video poker for money |
| f) | _____ | _____ | _____ | play bingo |
| g) | _____ | _____ | _____ | play slot machines |
| h) | _____ | _____ | _____ | wager on sports, pool, bowling, other games of skill |
| i) | _____ | _____ | _____ | another form of gambling not listed above
Please list _____ |

? IF YOU HAVE ANSWERED “NEVER” TO ALL THE CATEGORIES IN THE ABOVE QUESTION, YOU HAVE FINISHED COMPLETING THIS SECTION OF THE QUESTIONNAIRE. PLEASE GO TO QUESTION 21. THANK YOU! IF YOU HAVE ANSWERED ‘LESS THAN ONCE’ FOR EVEN ONE ITEM, PLEASE CONTINUE WITH QUESTION #2.

2) Approximately how old were you when you started to gamble for money? _____

3) When you gamble, with whom do you gamble? (You can have more than one answer)

- | | |
|------------------|----------------------------|
| _____ alone | _____ my parents |
| _____ my friends | _____ my brother or sister |
| _____ strangers | _____ other relatives |

4) Where do you gamble? (You can have more than one answer)

- | | |
|--------------------------------------|--|
| <input type="checkbox"/> at home | <input type="checkbox"/> at school |
| <input type="checkbox"/> at friends | <input type="checkbox"/> in arcades |
| <input type="checkbox"/> bingo halls | <input type="checkbox"/> in depanneurs |
| other (please list) _____ | |

5) Do you ever gamble more than you want to? yes no

6) Have you ever stolen money to gamble? yes no

7) Do you think you gamble too much? yes no

8) Why do you gamble? (you can have more than one answer)

- for enjoyment
- to relax
- for excitement
- to be with or make new friends
- because I'm unhappy
- to escape from problems of home and school
- because I'm lonely
- to feel older
- to win money
- other, please list _____

9) How would you rate yourself?

1	2	3	4	5	6	7
non gambler		social gambler		problem gambler		pathological gambler (severe problem, difficulty stopping)

10) When you gamble, how often do you go back another day to win back money you lost?

- never
- some of the time (less than half the times you lost)
- most of the time (more than half the time you lost)
- all the time

11) **When gambling:**

never rarely occasionally all the time

a. Do you go into a trance-like state?

b. Do you feel like a different person?

c. Do you experience blackouts?

- | | | never | rarely | occasionally | all the time |
|-----|--|--------------|---------------|---------------------|---------------------|
| d. | Do you lose track of time? | _____ | _____ | _____ | _____ |
| e. | Do you feel as though you're "outside" yourself, or "watching yourself"? | _____ | _____ | _____ | _____ |
| 12) | In the past year how often have you found yourself thinking about gambling or planning to gamble?
Never_____ Once or Twice_____ Sometimes_____ Often_____ | | | | |
| 13) | During the course of the past year have you needed to gamble with more and more money to get the amount of excitement you want?
Yes_____ No_____ | | | | |
| 14) | In the past year have you ever spent <u>much</u> more than you planned to on gambling?
Never_____ Once or Twice_____ Sometimes_____ Often_____ | | | | |
| 15) | In the past year have you felt bad or fed up when trying to cut down or stop gambling?
Never_____ Once or Twice_____ Sometimes _____ Often_____ Never tried to cut down_____ | | | | |
| 16) | In the past year how often have you gambled to help you escape from problems or when you are feeling bad?
Never_____ Once or Twice_____ Sometimes_____ Often_____ | | | | |
| 17) | In the past year, after losing money gambling, have you returned another day to try and win back money you lost?
Never_____ Less than half the time _____ More than half the time _____ Every Time_____ | | | | |
| 18) | In the past year has your gambling ever lead to:
<i>Lies to your family</i>
Never_____ Once or Twice_____ Sometimes_____ Often_____ | | | | |
| 19) | In the past year have you ever taken money from the following <u>without permission</u> to spend on gambling:
<i>School dinner money or fare money?</i>
<i>Money from your family?</i>
<i>Money from outside the family?</i>
Never_____ Once or Twice_____ Sometimes_____ Often_____ | | | | |
| 20) | In the past year has your gambling ever led to:
<i>Arguments with family/friends or others?</i>
<i>Missing school?</i>
Never_____ Once or Twice_____ Sometimes_____ Often_____ | | | | |

21) Who currently lives at home with you? (circle your answers):

mother	father	stepmother	stepfather	sister	brother
stepsister	stepbrother	halfsister	halfbrother	grandparent(s)	

22) To your knowledge does your mother (or stepmother) have a gambling problem? yes no

23) To your knowledge does your mother (or stepmother) have a drinking/drug problem? yes no

24) To your knowledge does your father (or stepfather) have a gambling problem? yes no

25) To your knowledge does your father (or stepfather) have a drinking/drug problem? yes no

26) Please check the following activities you have done in the **past 12 months**. Please mark only one answer for each.

never	less than	once a	every day
	once a	week or	
	week	more	

a) consume alcohol/beer

b) use "upper" drugs (speed, cocaine, ecstasy)

c) use "downer" drugs (marijuana, hashish, tranquilizers)

d) use hallucinatory drugs (acid, LSD)

e) smoke cigarettes

27) Have you ever sought professional help for a drinking, smoking, drug, or gambling problem?

yes no

If yes, what type of problem? _____

28) Have you ever thought about attempting suicide?

yes no

29) Have you ever attempted suicide?

_____yes _____no

30) Do you have a close friend you confide in and discuss your problems with?

_____yes _____no

31) If yes, how many close friends do you have?

1 2-4 5-7 8+

32) Keeping in mind your closest friend, please rate how much you confide in this person.

1	2	3	4	5
not very often	somewhat often	most often	almost always	always

33) Do you have a close relative (parent, sibling) you confide in and discuss your problems with?

_____yes _____no

34) If yes, please rate how much you confide in this relative?

1	2	3	4	5
not very often	somewhat often	most often	almost always	always

35) Please see the chart below and fill in the corresponding number (to the best of your knowledge).

- a) Father's highest level of education _____
 b) Mother's highest level of education _____

Chart:

- 1= less than 7th grade
- 2= junior high (grade 7, 8, Secondary 1, 2)
- 3= partial high school (grade 9, 10, Secondary 3, 4)
- 4= high school graduate (grade 11, 12, Secondary 5)
- 5= partial college (i.e., minimum 1 year/finished college/specialized training)
- 6= standard university graduation (i.e. B.A)
- 7= graduate professional training (graduate degree i.e., M.A., MBA, Ph.D)

36) What is your father's occupation? _____

37) What is your mother's occupation? _____

For each item listed below, indicate which response best applies to you. A scale is given below where 1=Describes me very well and 4=Does not describe me at all.

 Describes me very well	 Describes me somewhat	 Does not describe me very well	 Does not describe me at all
When the water is very cold, I prefer not to swim even if it is a hot day.	 	 	
When I listen to music, I like it to be loud.	 	 	
I stay away from movies that are said to be frightening or highly suspenseful.	 	 	
If I were to go to an amusement park, I would prefer to ride the roller coaster or other fast rides	 	 	
I would never like to gamble with money, even if I could afford it.	 	 	
I like a movie where there are a lot of explosions and car chases.	 	 	
In general, I work better when I'm under pressure.	 	 	
It would be interesting to see a car accident happen.	 	 	
I like the feeling of standing next to the edge on a high place and looking down.	 	 	
I like the feeling of standing next to the edge on a high place and looking down.	 	 	
I can see how it must be exciting to be in a battle during a war.	 	 	

EVENTS IN YOUR LIFE

On the next page is a list of things that sometimes happen to people. For each of the events that has happened in your life during the last year, put an **X** in the space next to it, under the Yes column. If that thing has not happened to you in the *last 12 months*, leave the space next to it blank.

For each of the things you check under Yes, move to the second set of columns and check whether you see that event as a Good event or a Bad event. Finally, indicate how much you feel the event has changed or has affected your life by checking one of the spaces in the third set of columns (i.e., no effect, some effect, moderate effect, and great effect).

HERE'S AN EXAMPLE. Number 1 on the next page says 'Moving to a new home'. If this has happened to you within the last 12 months put an **X** under Yes, otherwise, leave it blank. If you did put an **X** under Yes, check whether you saw moving as a good or bad event, and finally indicate how much the effect had on your life.

An Examination of the Differential Coping Styles of Adolescents with Gambling Problems

	Yes	Type of event		Impact/effect of event on your life			
		Good	Bad	No effect	Some effect	Moderate effect	Great effect
1. Hobbies or activities (watching tv, reading, etc.)							
2. Doing things/spending time with family members							
3. Spending time/talking with boyfriend/girlfriend							
4. Marriage or becoming engaged							
5. Dating or doing things with people of opposite sex							
6. Feeling pressured by friends							
7. Family members, relatives, step-parents moving in or out of house							
8. Helping other people							
9. Fight with or problems with a friend							
10. Restrictions at home (having to be in at certain time, etc.)							
11. Death of a family member							
12. Family member becoming pregnant or having child							
13. Attending school							
14. Hospitalization of a family member or relative							
15. Falling in love or beginning a relationship with boy/girlfriend							
16. Poor relationship between family members and friends							
17. Doing poorly on an exam or paper							
18. Talking or sharing feelings with friends							
19. Being around people who are inconsiderate/offensive							
20. Arrest of a family member							
21. Getting in trouble or being suspended from school							
22. Hassles, arguments, or fights with other students or peers							
23. Financial troubles or money worries							
24. Getting bad grades or progress reports							
25. Having bad classes or teachers							
26. Emotional worries (feeling depressed, moody, angry, etc.)							
27. Going to church							
28. Meeting new people							

An Examination of the Differential Coping Styles of Adolescents with Gambling Problems

	Yes	Type of event		Impact/effect of event on your life			
		Good	Bad	No effect	Some effect	Moderate effect	Great effect
29. Parent getting married							
30. Friend getting married or engaged							
31. Friend getting separated or divorced							
32. Having few or no friends							
33. Arguments or fights between parents							
34. Getting good grades or progress reports							
35. Having good classes or teachers							
36. Drinking or drug use							
37. Understanding classes/homework							
38. Change in relationship with boy/girlfriend							
39. Change in relationship with family member(s)							
40. Change in relationship with friend(s)							
41. Pressures or expectations by parents							
42. Visiting a parent that doesn't live with you							
43. Having plans fall through (not going on a trip)							
44. Visiting with relatives							
45. Going to parties, dances, concerts							
46. Making love or sexual intercourse							
47. Friends getting drunk or drug use							
48. Not attending your high school prom							
49. Death of a relative							
50. Obligations at home							
51. Spending time alone							
52. Family member or relative having emotional problems							
53. Friend or family member recovering from illness or injury							
54. Arguments or problems with boy/girlfriend							
55. Something bad happens to a friend							
56. Change in privileges or responsibilities at home							

An Examination of the Differential Coping Styles of Adolescents with Gambling Problems

	Yes	Type of event		Impact/effect of event on your life			
		Good	Bad	No effect	Some effect	Moderate effect	Great effect
57. Change in health of family member or relative							
58. Change in health of a friend							
59. Change in number of friends (make new friends or lose friends)							
60. Parents discover something you didn't want them to know							
61. Becoming (or making) pregnant or having child							
62. Brother/Sister getting engaged or married							
63. Brother/Sister getting separated or divorced							
64. Not spending enough time with family members or friends							
65. School or career change of family member (drops out of school, gets job, etc.)							
66. Advancing a year in school							
67. Living with only one parent							
68. Talking on the phone							
69. Discussions with parent(s)							
70. Homework or studying							
71. Taking care of younger brother(s)/sister(s)							
72. Problems or arguments with parents, siblings, or family members							
73. Problems or arguments with teachers or principal							
74. Spending time at home							
75. Changes in alcohol or drug use							
76. Making honor roll or other school achievement							
77. Applying to/waiting to hear from colleges							
78. Negative feelings or worry about appearance							
79. Negative feelings or worry about personal health or fitness							
80. Doing household chores							
81. Something good happens to a friend							
82. Alcohol or drug use of family members/relatives							
83. Breaking up with or being rejected by boy/girlfriend							

An Examination of the Differential Coping Styles of Adolescents with Gambling Problems

	Yes	Type of event		Impact/effect of event on your life			
		Good	Bad	No effect	Some effect	Moderate effect	Great effect
84. Death of a friend							
85. Family move							
86. Losing virginity							
87. Parent loses job							
88. Attending your high school prom							
89. Returning to school after time off							
90. Parents getting divorced							
91. Not getting along with parents of friends							
92. Doing well on an exam or paper							
93. Spending time/relaxing/going out with friends							
94. Friend(s) move away or you move away from friends							
95. Getting punished by parents							
96. Being in love or having a relationship							
97. Not having a boyfriend or girlfriend							
98. Friend having emotional problems							
99. Friend becoming pregnant or having a child							

Instructions: The following are ways people react to various difficult, stressful, or upsetting situations. Please circle a number from 1 to 5 for each item, where 1 is not at all and 5 is very much. Indicate how much you engage in these types of activities when you encounter a difficult, stressful, or upsetting situation.

	Not at all					Very much				
1. Schedule my time better	①	②	③	④	⑤					
2. Focus on the problem and see how I can solve it	①	②	③	④	⑤					
3. Think about the good times I've had	①	②	③	④	⑤					
4. Try to be with other people	①	②	③	④	⑤					
5. Blame myself for putting things off	①	②	③	④	⑤					
6. Do what I think is best	①	②	③	④	⑤					
7. Become preoccupied with aches and pains	①	②	③	④	⑤					
8. Blame myself for having gotten into this situation	①	②	③	④	⑤					
9. Window shop	①	②	③	④	⑤					
10. Outline my priorities	①	②	③	④	⑤					
11. Try to go to sleep	①	②	③	④	⑤					
12. Treat myself to a favorite food or snack	①	②	③	④	⑤					
13. Feel anxious about not being able to cope	①	②	③	④	⑤					
14. Become very tense	①	②	③	④	⑤					
15. Think about how I have solved similar problems	①	②	③	④	⑤					
16. Tell myself that it is really not happening to me	①	②	③	④	⑤					
17. Blame myself for being too emotional about the situation	①	②	③	④	⑤					
18. Go out for a snack or meal	①	②	③	④	⑤					
19. Become very upset	①	②	③	④	⑤					
20. Buy myself something	①	②	③	④	⑤					
21. Determine a course of action and follow it	①	②	③	④	⑤					
22. Blame myself for not knowing what to do	①	②	③	④	⑤					
23. Go to a party	①	②	③	④	⑤					
24. Work to understand the situation	①	②	③	④	⑤					
25. "Freeze" and don't know what to do	①	②	③	④	⑤					
26. Take corrective action immediately	①	②	③	④	⑤					
27. Think about the event and learn from my mistakes	①	②	③	④	⑤					
28. Wish that I could change what had happened or how I felt	①	②	③	④	⑤					
29. Visit a friend	①	②	③	④	⑤					
30. Worry about what I am going to do	①	②	③	④	⑤					
31. Spend time with a special person	①	②	③	④	⑤					
32. Go for a walk	①	②	③	④	⑤					
33. Tell myself that it will never happen again	①	②	③	④	⑤					
34. Focus on my general inadequacies	①	②	③	④	⑤					
35. Talk to someone whose advice I value	①	②	③	④	⑤					
36. Analyze my problem before reacting	①	②	③	④	⑤					
37. Phone a friend	①	②	③	④	⑤					
38. Get angry	①	②	③	④	⑤					
39. Adjust my priorities	①	②	③	④	⑤					
40. See a movie	①	②	③	④	⑤					
41. Get control of the situation	①	②	③	④	⑤					
42. Make an extra effort to get things done	①	②	③	④	⑤					
43. Come up with several different solutions to the problem	①	②	③	④	⑤					

	Not at all	Very much			
44. Take some time off and get away from the situation	①	②	③	④	⑤
45. Take it out on other people	①	②	③	④	⑤
46. Use the situation to prove that I can do it	①	②	③	④	⑤
47. Try to be organized so I can be on top of the situation	①	②	③	④	⑤
48. Watch TV	①	②	③	④	⑤

Listed below are some sentences about how you feel. Read each sentence and decide how often you feel this way. Decide if you feel this way: almost never, hardly ever, sometimes, or most of the time. Fill in the circle under the answer that best describes how you really feel. Remember, there are no right or wrong answers. Just choose the answer that tells how you usually feel.

	Almost never	Hardly ever	Some- times	Most of the time
1. I feel happy	①	②	③	④
2. I worry about school	①	②	③	④
3. I feel lonely	①	②	③	④
4. I feel my parents don't like me	①	②	③	④
5. I feel important	①	②	③	④
6. I feel like hiding from people	①	②	③	④
7. I feel sad	①	②	③	④
8. I feel like crying	①	②	③	④
9. I feel like no one cares about me	①	②	③	④
10. I feel like having fun with other students	①	②	③	④
11. I feel sick	①	②	③	④
12. I feel loved	①	②	③	④
13. I feel like running away	①	②	③	④
14. I feel like hurting myself	①	②	③	④
15. I feel that other students don't like me	①	②	③	④
16. I feel upset	①	②	③	④
17. I feel life is unfair	①	②	③	④
18. I feel tired	①	②	③	④
19. I feel I am bad	①	②	③	④
20. I feel I am no good	①	②	③	④
21. I feel sorry for myself	①	②	③	④
22. I feel mad about myself	①	②	③	④
23. I feel like talking to other students	①	②	③	④
24. I have trouble sleeping	①	②	③	④
25. I feel like having fun	①	②	③	④
26. I feel worried	①	②	③	④
27. I get stomachaches	①	②	③	④
28. I feel bored	①	②	③	④
29. I like eating meals	①	②	③	④
30. I feel like nothing I do helps anymore	①	②	③	④

APPENDIX C

Supplemental Table

APPENDIX C1

Table C1: Participation in Gambling Activities by Grade and Gender

Gambling Activities																									
		Cards			Sport Wagers			Sport Lottery Tickets			Lottery Tickets			Video Games/ Poker			Bingo			Slot Machines			Pool/Bowling/ Games of Skill		
Grade		NP ^a	OP ^b	RP ^c	NP	OP	RP	NP	OP	RP	NP	OP	RP	NP	OP	RP	NP	OP	RP	NP	OP	RP	NP	OP	RP
7																									
Male	(n=204)	45%	39%	16%	63%	24%	14%	87%	8%	5%	66%	28%	6%	71%	21%	8%	66%	28%	6%	92%	6%	3%	56%	29%	15%
Female	(n=207)	67%	26%	7%	87%	11%	2%	95%	5%	0%	69%	28%	3%	89%	9%	2%	73%	26%	1%	96%	4%	0%	80%	17%	3%
Total	(N=412)	55%	33%	12%	75%	17%	8%	91%	6%	2%	68%	28%	5%	80%	15%	5%	70%	27%	4%	94%	5%	1%	68%	23%	9%
8																									
Male	(n=120)	43%	43%	15%	57%	28%	15%	81%	18%	2%	58%	36%	7%	74%	18%	8%	68%	27%	6%	95%	5%	0%	55%	37%	8%
Female	(n=175)	59%	37%	5%	82%	16%	2%	94%	6%	1%	66%	30%	4%	90%	9%	2%	73%	26%	1%	98%	2%	.6%	82%	14%	3%
Total	(N=295)	52%	39%	9%	72%	21%	8%	88%	9%	3%	63%	32%	5%	83%	13%	4%	71%	26%	3%	97%	3%	0%	71%	23%	5%
9																									
Male	(n=205)	50%	40%	11%	53%	30%	17%	81%	14%	5%	67%	28%	5%	74%	20%	5%	80%	18%	2%	90%	8%	2%	49%	37%	14%
Female	(n=193)	67%	26%	7%	86%	11%	3%	95%	4%	1%	62%	35%	3%	92%	7%	2%	78%	20%	2%	91%	7%	2%	86%	10%	4%
Total	(N=398)	58%	33%	9%	69%	21%	10%	88%	9%	3%	64%	32%	4%	83%	13%	4%	78%	19%	2%	91%	7%	2%	67%	24%	9%
10																									
Male	(n=165)	51%	40%	8%	56%	24%	21%	77%	14%	9%	72%	22%	5%	75%	19%	7%	85%	13%	2%	90%	6%	4%	57%	26%	17%
Female	(n=154)	77%	20%	3%	91%	7%	3%	95%	5%	.6%	69%	27%	4%	94%	5%	.6%	85%	15%	0%	92%	8%	0%	91%	7%	2%
Total	(N=319)	64%	30%	6%	73%	15%	11%	86%	9%	5%	71%	25%	5%	84%	12%	4%	85%	14%	1%	91%	7%	2%	73%	17%	10%
11																									
Male	(n=243)	39%	41%	20%	51%	33%	16%	72%	18%	10%	58%	29%	12%	69%	23%	8%	81%	17%	3%	89%	10%	1%	49%	34%	17%
Female	(n=225)	72%	21%	7%	88%	11%	1%	93%	7%	.4%	71%	25%	4%	94%	6%	0%	84%	15%	1%	95%	4%	.5%	87%	12%	.5%
Total	(N=468)	55%	31%	13%	69%	23%	9%	82%	13%	5%	65%	28%	8%	81%	15%	4%	82%	16%	2%	92%	7%	1%	67%	24%	8%
12																									
Male	(n=154)	44%	38%	18%	52%	33%	14%	67%	22%	11%	57%	32%	11%	75%	18%	7%	84%	15%	1%	85%	14%	.6%	55%	32%	13%
Female	(n=109)	73%	21%	6%	89%	8%	3%	92%	6%	2%	61%	30%	9%	93%	6%	.9%	85%	14%	1%	90%	8%	1%	78%	21%	1%
Total	(N=263)	56%	31%	13%	68%	23%	10%	77%	16%	7%	59%	31%	10%	83%	13%	5%	84%	14%	1%	87%	12%	1%	65%	27%	8%

Note. Percentages do not necessarily equal 100 as they were rounded to the nearest whole number.

^aNP = Never played that particular activity.

^bOP = Occasionally plays that activity (i.e., less than once per week).

^cRP = Regularly plays that activity (i.e., once a week or more).