

Le jeu problématique chez les adolescents : perceptions des risques
et des bénéfices

Adolescent Problem Gambling: Evaluating Perceived Risks and Benefits

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RÉSUMÉ

Selon les théories de la cognition sociale, le choix d'adopter un comportement à risque peut refléter, dans une certaine mesure, l'importance des attentes positives et négatives qui y sont associées. Cette étude examine les attentes de 1 013 élèves de 12 écoles secondaires, âgés entre 12 et 18 ans, au regard des conséquences potentielles de la participation aux jeux d'argent. Les élèves ont complété des questionnaires évaluant la fréquence et la sévérité de leurs habitudes de jeu, d'une part, et l'impact de leurs attentes face à leur participation, d'autre part. L'objectif de cette étude était de développer un questionnaire, le *Gambling Expectancy Questionnaire (GEQ)*, qui pourrait être utilisé ultérieurement pour identifier les attentes les plus fréquentes chez les adolescents, en fonction de variables comme l'âge et le sexe des participants et leur niveau de participation aux jeux d'argent. Le questionnaire devait également permettre d'identifier les différences au niveau des attentes entre les groupes de joueurs non problématiques et problématiques, tant chez les garçons que les filles.

Résultats

ÉTAPE 1 – Le développement du questionnaire *Gambling Expectancy (GEQ)*

- Une analyse en composantes principales a permis de réduire le nombre d'items de 48 à 23 et de les regrouper au sein de cinq variables, composées chacune de trois à huit items. Les 23 items retenus expliquent 67 % de la variance totale. Chacune des cinq variables représente l'une des cinq échelles du GEQ.
- La première variable, *Plaisir/Excitation*, explique 19 % de la variance. Les items regroupés sur cette échelle sont ceux traitant des bénéfices associés au jeu, soit le plaisir, l'excitation et le divertissement.
- La deuxième variable, *Préoccupation avec le jeu*, explique 17% de la variance. Les items regroupés sur cette échelle reflètent davantage les conséquences négatives associées à la préoccupation avec le jeu, au plan cognitif, affectif et social.
- La troisième variable, *Estime de soi*, explique 11 % de la variance. Elle regroupe les items en lien avec les bénéfices associés au fait de se sentir en contrôle, accepté par les pairs et le fait d'éprouver un sentiment de puissance.
- La quatrième variable, *Impact émotionnel*, explique 11 % de la variance et elle est associée aux émotions négatives ressenties face à la participation au jeu (culpabilité, honte et perte de contrôle).
- La cinquième variable, *Argent*, explique 9 % de la variance. Les items de cette échelle sont liés aux avantages financiers de la participation aux jeux d'argent.

PHASE II – Utilisation du *GEQ* pour prédire l'appartenance à une catégorie de joueurs

Des analyses de régressions logistiques ont été conduites séparément pour les sujets masculins et féminins afin de prédire l'appartenance à l'une ou l'autre des catégories de joueurs (niveau d'implication dans le jeu).

- Dans l'ensemble, 70,3 % des adolescents ont indiqué avoir participé à des jeux d'argent au cours des 12 mois précédant l'enquête (82,4 % garçons et 61,3 % des filles). En ce qui concerne le niveau d'implication dans le jeu, 5 % des élèves sont considérés comme des *joueurs pathologiques probables* (JPP), 11 % des joueurs à risque (JÀR) et 54 % des *joueurs sociaux* (JS).
- Les taux de joueurs pathologiques probables et de joueurs à risque sont plus élevés chez les participants masculins (9,3 % et 18,3 %, respectivement) que féminins (1,9 % et 5,3%, respectivement). Des résultats similaires sont notés en lien avec la variable âge; les élèves plus âgés présentent des taux plus élevés de jeu pathologique (6,5 %) et de jeu problématique (11,5 %) que les élèves plus jeunes (2,8 % et 9,7%, respectivement).
- Comparativement aux non joueurs et aux joueurs sociaux, les joueurs pathologiques probables et les joueurs à risque ont obtenus des résultats plus élevés sur les items des échelles *Plaisir/Excitation*, *Estime de soi* et *Argent*. Les joueurs sociaux ont des scores plus élevés sur les échelles de *Plaisir/Excitation* et *Argent* que les non joueurs.
- Les non joueurs ont des scores plus élevés sur l'échelle *Impact émotionnel* que les joueurs sociaux, les joueurs à risque et les joueurs pathologiques probables. Les non joueurs obtiennent également des scores plus élevés aux items de l'échelle *Préoccupation*, comparativement aux joueurs sociaux. Et, sur cette même échelle, les joueurs pathologiques probables obtiennent des scores plus élevés que les joueurs sociaux et les joueurs à risque.
- Les élèves plus âgés ont des scores plus élevés sur les items de l'échelle *Plaisir/Excitation* comparativement aux élèves plus jeunes qui obtiennent des résultats plus élevés sur l'échelle *Impact émotionnel*. Un effet d'interaction est noté entre les variables sexe et âge pour l'échelle *Plaisir/Excitation*, suggérant que les filles plus âgées perçoivent davantage l'impact positif du jeu, notamment le plaisir.
- Les résultats d'une analyse de régression logistique (méthode « *stepwise* ») soulignent l'indépendance des échelles *Plaisir/Excitation*, *Estime de soi*, *Argent* et *Préoccupation* qui permettent de prédire correctement l'appartenance à la catégorie de joueurs (NJ, JS, JÀR, JPP). L'analyse de régression a également permis de classer correctement 72 % des sujets, avec notamment 39 % des joueurs problématiques qui sont correctement classifiés.
- Chez les filles, l'attente de gains financiers (*Argent*) est la seule variable qui permet de prédire l'appartenance à une catégorie de joueurs. Cependant, aucune fille n'a pu être classée correctement lors de l'utilisation de l'équation de régression logistique.

Conclusion

Selon les résultats de cette étude, les attentes de ces élèves face à leur participation au jeu varient en fonction de leur niveau d'implication : les non joueurs, les joueurs sociaux, les joueurs à risque et les joueurs pathologiques probables n'anticipent donc pas les mêmes conséquences, positives ou négatives. Notamment, les joueurs pathologiques probables anticipent à la fois des conséquences négatives et positives. Chez les sujets de sexe masculin, les attentes varient entre ceux qui jouent excessivement (JÀR et JPP) et les autres. Il semble cependant que les attentes des sujets féminins ne varient pas en fonction du niveau d'implication dans le jeu.

Bien que la majorité des messages de prévention porte leur attention presque exclusivement sur les risques associés à la participation à des comportements à risque, les résultats de cette étude suggèrent que la connaissance des risques n'est peut-être pas ce qui permet de prédire les comportements. Les messages de prévention devraient également viser les attentes et les croyances positives des jeunes envers les jeux d'argent. Au même titre, les interventions devraient elles aussi cibler les attentes positives des jeunes, telles le plaisir et l'excitation, la possibilité de gains (argent) et l'estime de soi, et ce, dans le but de les amener à rechercher ces bénéfices dans la pratique d'activités moins risquées.

Les résultats de cette étude, bien qu'exploratoire, soulignent l'importance de considérer les attentes des jeunes lors de l'évaluation de leur niveau d'implication dans les jeux d'argent. Les recherches ultérieures devraient tenter d'identifier de quelle manière ces construits s'insèrent dans le cadre conceptuel du modèle bio-psycho-social.

EXECUTIVE SUMMARY

In keeping with social cognition theories, an individual's decision to engage in a high-risk behaviour may, to a certain extent, reflect the salience of its positive and negative outcomes. This study sought to explore the positive and negative outcomes that adolescents anticipate from gambling participation. The sample consisted of 1,013 students aged 12-18, from 12 high schools in Montreal and 1 high school in Ontario. Participants completed questionnaires that assessed both the frequency and severity of their gambling behaviour, as well as the perceived risks and benefits associated with gambling. The aim of the study was to develop a *Gambling Expectancy Questionnaire* (GEQ), which could then be used to identify the positive and negative outcome expectancies that are most salient to adolescents, across age, gender and gambling severity. It also sought to identify which specific outcome expectancies best differentiate between non-problem and problem gambling groups, for both males and females.

Research Findings

PHASE I – *Gambling Expectancy Questionnaire Development*

- A principal component analysis (PCA) was used to reduce 48 items representing 11 risk and benefit themes into a smaller number of variables. The five factors retained, comprised of 23 items, accounted for 66.8% of the overall variance in GEQ item scores, with 3 to 8 items loadings on each factor. Each factor became a scale on the resulting GEQ.
- The first factor, labeled Enjoyment/Arousal, accounted for 18.9% of the variance in item scores. Variables that loaded onto the first factor mainly reflected the gambling benefits of enjoyment, arousal and entertainment.
- The second factor accounted for 16.9% of the variance in item scores. Items that loaded highly on this factor reflected the gambling risks of cognitive, affective and social preoccupation with gambling. This factor was termed Over-Involvement.
- The third factor, Self-Enhancement, accounted for 11.3% of the variance in item scores. This factor reflected the gambling benefits of feeling in control, feeling powerful, and feeling more accepted by peers.
- The fourth factor accounted for 10.8% of the variance in item scores. This factor reflected negative emotions (guilt, shame, loss of control) as a result of gambling and it was labeled Emotional Impact.
- The fifth factor, titled Money, accounted for 8.9% of the variance in item scores. This factor reflected the benefit of financial gain as a result of gambling.

PHASE II – Using the GEQ to Predict Group Membership

- Overall, 70.3% of adolescents reported having gambled with money over the past 12 months, (82.4% males, and 61.3% females). In terms of the severity of gambling behaviour, 5.0% of youth were classified as Probable Pathological Gamblers, 10.9% of the sample was classified as At-Risk Gamblers, and 54.4% were considered to be Social Gamblers.
- Males had higher rates of probable pathological gambling (9.3%) and at-risk gambling (18.3%) than females (1.9% and 5.3% respectively). Similarly, the rates of probable pathological gambling (6.5%) and at-risk gambling (11.5%) were higher among older adolescents than among younger adolescents (2.8% and 9.7% respectively).
- Probable Pathological Gamblers and At-Risk Gamblers endorsed items on the Enjoyment/Arousal, Self-Enhancement and Money scales more highly than Social Gamblers and Non-Gamblers. Social gamblers endorsed the Enjoyment/Arousal and Money scales more positively than Non-Gamblers.
- Non-Gamblers endorsed the Emotional Impact scale more highly than Social Gamblers, At-Risk Gamblers and Probable Pathological Gamblers. Non-Gamblers also endorsed the Over-Involvement scale more highly than Social gamblers. Probable Pathological Gamblers scored significantly higher on the Over-Involvement scale than Social Gamblers and At-Risk Gamblers.
- Older adolescents endorsed the Enjoyment/Arousal scale more highly than younger adolescents. Younger adolescents showed higher scores on the Emotional Impact scale. An interaction between gender and age on the Enjoyment/Arousal scale suggested that older females perceived more fun from gambling than younger females.
- Using stepwise logistic regression, the GEQ scales of Enjoyment/Arousal, Self-Enhancement, Money and Over-Involvement were found to be independent and non-redundant predictors of problem gambling group membership. This logistic regression equation classified 72% of all cases correctly, with 39% of problem gamblers being properly classified.
- Among females, a positive expectancy of Money was the only significant predictor of problem gambling group membership. Unfortunately, using this logistic regression equation, all female problem gamblers were inappropriately classified.

Conclusions

According to the results found using the GEQ and DSM-IV-MR-J, adolescents have different outcome expectancies based on their gambling severity. Of interest, Probable Pathological Gamblers highly anticipate both the positive and negative outcomes of gambling. For males, outcome expectancies were found to be a relatively strong predictor of problem gambling. For

females, on the other hand, outcome expectancies had less predictive value. Despite obvious differences in the expectancy models for both male and female problem gamblers, positive outcome expectancies were the strongest predictors of severity of gambling problems.

Although prevention messages often focus exclusively on the risks inherent in high-risk behaviours, the results of this study suggest that it is not merely the knowledge of these risks that predicts gambling behaviour. Therefore, prevention messages must also address adolescents' positive beliefs about gambling. Similarly, therapeutic interventions address positive expectancies of enjoyment/arousal, money and self-enhancement, in an effort to guide adolescents to seek out related benefits from other, less harmful, activities.

Although the utility of outcome expectancies has been explored in this study, research in this area is in its early stages. As an exploratory study, this research highlights the importance of examining outcome expectancies in the prediction of gambling problems. Future research must identify how these constructs fit into the larger bio-psycho-social framework.

INTRODUCTION

Gambling as a High-Risk Behaviour

It is known that many adolescents experiment with high risk behaviours, such as drug use, tobacco use, alcohol use and increased unprotected sexual activity. Recent prevalence estimates suggest that 44% of 16-17 year-olds have smoked marijuana while 14% of 15-17 year-olds are daily smokers (Statistics Canada, 2003). In Québec, approximately 69% of high school students have consumed alcohol, with 63% of these students reporting at least one episode of heavy drinking (Institut de la statistique du Québec, 2003). Reviews of research also suggest that youth are participating in another form of high-risk behaviour on a more frequent basis than they are engaging in alcohol, drug or tobacco use. Approximately 80% of youth have gambled in their lifetime (National Research Council, 1999; Shaffer & Hall, 1996). While the majority of these adolescents do not suffer any serious or long-term consequences as a result of their gambling behaviour, a proportion of youth (approximately 4-6%), become over-involved in gambling activities and eventually develop significant gambling-related problems (Derevensky & Gupta, 2000, 2004; Shaffer & Hall, 1996), with another 10-15% of adolescents considered at-risk for developing a gambling problem (Derevensky & Gupta, 2000; Shaffer & Hall, 1996). These rates are particularly alarming when considering that the prevalence data for probable pathological gambling in youth are considerably higher than rates of pathological gambling in the general adult population (1-3%) (Derevensky, Gupta & Winters, 2003; National Research Council, 1999). After an extensive review of adolescent prevalence studies, the National Research Council (1999) concluded that the mean prevalence rate for adolescent pathological gambling (5%), is likely three times higher than the prevalence rates (1.5%) for adults.

The consequences of adolescent problem gambling extend far beyond any financial repercussions. Adolescents with gambling problems are more likely to become involved in delinquent behaviour, damage their relationships with family and friends and perform poorly at school (Gupta & Derevensky, 1997; Ladouceur & Mireault, 1988; Wynne, Smith & Jacobs, 1996). Emerging research on adolescents suggests that suicide attempts (Garnefski & De Wilde, 1998; Langhinrichsen-Rohling, Rohde, Seeley, & Rohling, 2004), suicide ideation (Gupta & Derevensky, 1998; Nower, Gupta, Blaszczyński & Derevensky, 2004), and suicide proneness (Langhinrichsen-Rohling et al., 2004) are all higher in adolescent pathological gamblers compared to their peers. As risk-takers, these youth are also at increased risk for developing other addictions; problem gamblers tend to show higher rates of substance use compared to non-problem gamblers (Winters & Anderson, 2000; Winters, Stinchfield & Fulkerson, 1993).

Common Determinants of Gambling Problems

Given the negative psychological, social and economic consequences associated with gambling problems, it is essential to identify the factors that contribute to problem gambling behaviour among youth. What is attracting young people to gambling activities and why do some develop problems when others do not? Jessor's (1998) *Adolescent Risk Behaviour Model* conjectures that engagement in high risk behaviours is determined by an interplay between psychosocial instigators (i.e., risk factors) and controls (i.e., protective factors) which lead to health/life-compromising outcomes. These risk and protective factors interact in and across various domains – biology, social environment, perceived environment, personality and behaviour (Jessor, 1998).

Thus, various biological, cognitive, and social factors may place an adolescent at greater risk for serious involvement in any and all types of high risk-behaviours. The specific common determinants or risk factors associated with high risk behaviour among youth are well documented. For example, a general propensity towards deviance, sensation-seeking, deviant peers, poor family and peer relationships, psychosocial maladjustment, low self-esteem, academic problems and poor attachment to institutions have been found (Jessor, 1998; Johnston, O'Malley, Schulenberg & Bachman, 2001).

Problem gambling among youth appears to fit the model of high-risk behaviour proposed by Jessor (1998), as it shares common determinants. In fact, Dickson, Derevensky and Gupta (2002) adapted Jessor's model to include additional risk and protective factors of adolescent pathological gamblers. Frequent gambling problems among males often falls within a larger constellation of antisocial behaviours characterized by impulsivity and peer deviance (Gupta & Derevensky, 1998a; Derevensky & Gupta, 2004; Stinchfield, 2000, 2004). Adolescents with gambling problems may also engage in acts of physical violence, vandalism, shoplifting as well as frequent and heavy use of alcohol and drugs. Girls who frequently engage in gambling report increased alcohol use and engagement in antisocial behaviour (Stinchfield, 2000). Similarly, a high proportion of youth with gambling problems report poor family connectedness and low perceived social support (Hardoon et al., 2002). Moreover, adolescents with pathological gambling problems report more depression than other adolescents (Gupta & Derevensky, 1998; Langhinrichsen-Rohling et al., 2004). Problem gambling in early adolescence is considered a gateway to other dangerous behaviours in later youth and adulthood; most likely due to the interpersonal and intrapersonal determinants these behaviours share (Langhinrichsen-Rohling, 2004). In keeping with these characteristics, Vitaro, Wanner, Ladouceur, Brendgen and Tremblay (2004) recently suggested two trajectories to problem gambling (i.e., Chronic High, Late Onset gambling), which are similar to trajectories discussed in the delinquency, alcohol and drug literature.

Specific Determinants of Gambling Problems

The common determinants of gambling, however, cannot fully explain why adolescents gamble excessively, just as they cannot fully explain why other youth develop drug problems or alcohol problems. These distal predictors do not fully explain why there are more adolescents engaged in gambling activities than in other high-risk activities, such as alcohol, drug or tobacco use (Gupta & Derevensky, 1998). In other words, there must be specific reasons why an adolescent engages in gambling behaviour. Social cognitive models of health behaviour (e.g., *Health Belief Model*, Becker, 1974; *Theory of Planned Behaviour*, Ajzen, 1991) place importance on proximal predictors of behaviour, specifically the subjective cognitions related to behaviour choice. As Osgood et al. (1988) suggest, each individual high-risk behaviour, whether it is gambling, substance use, tobacco use, or unprotected sex, likely has its own specific determinant. As detailed in the substance use literature, these specific determinants often include the perceived risks and benefits of a behaviour, personal, peer and public disapproval, perceived role model behaviour and accessibility (Johnston, 2003). Perceived benefits, ease of accessibility, and general social and parental acceptance are seen as factors that encourage involvement, whereas perceived risks and disapproval are conceptualized as limiting participation. The influence of risk

and protective factors (i.e., common determinants) is thought to be mediated through these behaviour specific-cognitions (Fishbein & Ajzen, 1975).

While previous research in the gambling field has explored the importance of such factors as accessibility, availability and acceptance in the context of youth gambling (e.g., Felsher, Derevensky & Gupta, 2004; Gupta & Derevensky, 1997; Gupta & Derevensky, 1998; Winters, Stinchfield & Kim, 1995; Wynne, et al., 1996), little research has explored adolescents' beliefs about the consequences of gambling behaviour. Specifically, adolescents' perceived risks of gambling have yet to be explored within the context of youth gambling. In keeping with social cognition theories, an individual's decision to engage in a specific behaviour may, to a certain extent, reflect the salience of its positive and negative outcomes.

Outcome Expectancies: Implications from Drug and Alcohol Research

Findings from drug and alcohol research validate the importance of understanding the role of outcome expectancies in adolescents' decisions to engage in high risk behaviour. Perceptions of the harmfulness of a drug tend to be a leading indicator of future changes in use among young people. In many cases, shifts in the perceived risk of a drug, as recorded by the National Institute on Drug Abuse's large-scale *Monitoring the Future* surveys, have preceded inflections in actual use (Johnston, 2003). Similarly, there is a moderately strong correlation between the degree to which a substance is seen as dangerous and the percentage of the youth population that use it (Johnston, O'Malley & Bachman, 2001). Trends in perceived risks associated with a particular behaviour have been touted as playing an important role in the decline of marijuana use in the 1980s and its increase in the 1990s (Johnston, 2003). Adolescents who view less risk of addiction to drugs are more likely to report experimentation and problems with drug use (Goldberg & Fischhoff, 2000).

In comparison, findings from alcohol studies, one of the most active areas of expectancy research, suggest that perceived benefits are more heavily implicated in decisions to use alcohol. Beliefs about the beneficial effects of alcohol have been shown to be an important predictor of teen alcohol consumption (Goldberg, Harlpern-Felsher & Millstein, 2002). Goldberg et al. (2002) suggest that perceived benefits of alcohol use represents the strongest predictor of actual drinking among adolescents, above and beyond other factors, such as the perceived risks of alcohol consumption, age of child, and experience. Similarly, among college students, positive outcome expectancies have been shown to play an integral role in the maintenance of alcohol use, and they have been used to predict how serious an individual's involvement in a high-risk activity may become (Brown, Christiansen & Goldman, 1987; Fromme & D'Amico, 2000; Goldberg & Fischhoff, 2000; Leigh & Stacy, 1993; Stacy et al., 1990). The more positive one's expectations of the outcome of drinking behaviour, the more heavily one drinks, and the greater the likelihood for alcohol-related problems (Fromme & D'Amico, 2000). Similarly, positive expectancies have been shown to discriminate between non-problem and problem drinkers (Fromme & D'Amico, 2000).

The specificity of these perceived risks and benefits is also important. While global positive and negative constructs alone have been insufficient in their predictive ability (Leigh & Stacy, 1993), discrete risks and benefits have been found to successfully discriminate between drinking groups

and effectively predict future alcohol consumption (Fromme & D'Amico, 2000; Leigh & Stacy, 1990). In particular, beliefs about changes in social behaviour, relaxation, increased arousal, improved cognitive and motor abilities (Fromme & D'Amico, 2000), sexual enhancement, and overall enjoyment (Leigh & Stacy, 1993) have been cited as important predictors of alcohol use. Similarly, hangover, sickness, financial cost and problems in school have been identified as specific risks associated with drinking behaviour (Stacy et al., 1990).

In sum, the global beliefs that an adolescent holds about the consequences of their behaviour have been found to predict whether or not an adolescent chooses to engage in a high-risk activity. Research suggests that there exists a differential impact of perceived risks and benefits in the decision-making of adolescents. Perceived risk, specifically those of personal harm, play a significant role in drug use (Johnston, 2003; Johnston, O'Malley & Bachman, 2001). On the other hand, discrete categories of perceived benefits have been shown to be a better predictor with respect to alcohol use (Fromme & D'Amico, 2000; Goldberg et al., 2002; Leigh & Stacy, 1993; Stacy et al., 1990).

Related Findings on Gambling Motives and Risks

While the predictive utility of perceived risks and benefits has been examined within the alcohol and drug literature, related research in the field of gambling has largely focused on gambling motives. Gupta and Derevensky (1998) reported that adolescent gamblers primarily endorse enjoyment (79.5%) as their purpose for gambling, followed by a desire to make money (61.9%), and for excitement (59.4%). Other motives, including social involvement (12.4%), relaxation (7.6%), escape (3.5%), to feel older (2.6%), to alleviate depression (2.3%) and to deal with loneliness (1%) were also reported. In a study by Neighbours, Lostutter, Crouse and Larimer (2002), in which college students ranked their top five reasons for gambling, money, enjoyment, social, excitement and boredom motives accounted for more than 70% of all responses. Monetary gain accounted for 22.1% of all motives, enjoyment for 18.4%, social reasons for 13.3%, excitement for 9.8% and boredom for 7.9%. Other motives listed, in order of their importance, consisted of winning, conformity, competition, risk-taking, interest, skill, escape/coping, chasing, luck, drinking, and challenge. Similarly, an examination of the *most important* reasons for gambling among college-age students found that approximately 84% of respondents suggested money, enjoyment, social and excitement as primary incentives to gamble (Neighbours et al., 2002). Overall, research findings suggest that individuals gamble for a variety reasons. In particular, money, enjoyment, excitement, and social reasons are often cited as primary motivators, and thus may be conceptualized as being strong perceived benefits of gambling for older adolescents and young adults (Gupta & Derevensky, 1998; Neighbours et al., 2002).

Adolescents' beliefs regarding the risks of gambling remain generally unknown. As previously discussed, public opinion in regards to the risks of gambling is not well defined, nor is it well informed. The prevailing belief is that gambling is a mode of entertainment and that it has very few negative consequences (Winters et al., 2004). However, the diagnostic criteria for gambling problems (i.e., DSM-IV) speak to the harm related to pathological gambling behaviours: significant financial losses, preoccupation and chasing behaviour, cognitive and emotional turmoil, relational disruptions among friends and family members, stealing and other criminal acts, etc. (APA, 1994; Fisher, 2000). While the risks of gambling are extremely salient to researchers and clinicians, it is

likely that they are perceived quite differently among adolescents. An exploration of the salience of these risks for adolescents is therefore critical. Furthermore, there is currently no instrument to assess these cognitions (perceived risks and benefits) and their value in understanding adolescent gambling behaviour.

Developing a Gambling Expectancy Questionnaire

By extrapolating from the gambling literature, as well as from the adolescent alcohol and drug literature, it seems reasonable to assume that adolescent perceptions about the risks and benefits of gambling may encompass a diverse array of discrete biological, psychological and social outcomes. From a bio-psycho-social perspective, the perceived benefits of gambling may include biological and arousal-related benefits (e.g., excitement, boredom, interest), cognitive and mood-related benefits (e.g., desire to win, enjoyment, coping, escape) and social benefits (e.g., money/power, conformity, autonomy) (Griffiths & Delfabbro, 2001). In contrast, the reality that gambling may be a costly activity, that it can promote negative feelings and thoughts, and that it can take a toll on one's relationships with friends and family members may be recognized by adolescents as well.

In order to assess the influence of outcome expectancies on gambling behaviour, it is necessary to develop a gambling expectancy instrument that effectively represents both the positive and negative consequences of gambling on an adolescent's behaviour, mood and emotions. Considering the success with which alcohol expectancy instruments have delineated the positive and negative outcome expectancies of adolescent drinking behaviour (i.e., *Alcohol Expectancy Questionnaire-Adolescent Version*, Brown, Christiansen & Goldman, 1987; *Comprehensive Effects Of Alcohol*, Fromme, Stroot & Kaplan, 1993; *Outcome Expectancy Questionnaire*, Leigh & Stacy, 1993), a youth gambling expectancy questionnaire should incorporate the key features of previous expectancy measures used in alcohol research, in keeping with themes found in the current gambling literature. The outcome expectancy scales used in alcohol research (AEQ-A, Brown et al., 1987; CEOA, Fromme et al, 1993; OEQ, Leigh & Stacy, 1993) are presented in Table 1. Many of the gambling expectancy themes (i.e., excitement, enjoyment, social enhancement, escape, social and emotional impairments, cognitive difficulties) are similar to those found in alcohol expectancy measures. The development of a gambling expectancy questionnaire will allow for an assessment of the consequences that adolescents associate with gambling. In turn, it will facilitate an exploration of the predictive utility of expectancy models in a youth gambling context.

Table 1: A Comparison of Scales Used in Alcohol Expectancy Instruments

	Positive Expectancy Scales	Negative Expectancy Scales
Alcohol Expectancy Questionnaire – Adolescent Version <i>(Brown et al., 1987)</i>	<ul style="list-style-type: none"> • Changes in Social Behaviour • Relaxation & Tension Reduction • Enhanced Sexuality • Increased Arousal • Improved Cognitive and Motor Abilities • Global Positive Changes 	<ul style="list-style-type: none"> • Cognitive and Motor Impairments
Comprehensive Effects of Alcohol <i>(Fromme et al., 1993)</i>	<ul style="list-style-type: none"> • Sociability • Tension Reduction • Liquid Courage • Enhanced Sexuality 	<ul style="list-style-type: none"> • Impairment • Risk and Aggression • Self-Perception
Alcohol Expectancy Questionnaire <i>(Leigh & Stacy, 1993)</i>	<ul style="list-style-type: none"> • Social Gains • Fun • Tension Reduction/ Negative Reinforcement • Enhanced Sexuality 	<ul style="list-style-type: none"> • Social Problems • Emotional Problems • Physical Problems • Cognitive/Performance Difficulty

PRINCIPAL AIMS

This study seeks to identify links between positive and negative outcome expectancies, gender, age and severity of gambling behaviour. It is expected that youth gambling outcome expectancies will differ between those who gamble excessively, those who are able to gamble responsibly and those who choose not to gamble at all. Similarly, these behaviour-specific cognitions may predict gambling severity, in terms of social gamblers and problem gamblers.

Specifically, the principal aims of this research include:

Phase I

- The development of a psychometrically-sound *Gambling Expectancy Questionnaire* (GEQ), consisting of discrete risks and benefits, which can subsequently be used to assess adolescent outcome expectancies of gambling participation.

Phase II

- The use of the GEQ to identify which positive and negative outcome expectancies are most salient to adolescents, across age, gender and gambling severity.
- The identification of the specific outcome expectancies that best predict the severity of gambling behaviour.
- The determination of whether predictive models of outcome expectancy vary as a function of gender.

METHODOLOGY

Participants

Participants consisted of 1,013 students (males = 432, females = 581) from grades 7 to 11 (age range = 11-18; mean age = 14.77 years, $SD = 1.52$). Males represented 42.6% of the sample, while females represented 57.4% of the sample. The distribution of the sample with respect to grade level and age is provided in Table 2. The majority of these students resided in the Greater Montreal area, with approximately 6% of the sample being obtained in the Ottawa area. The majority (99.1%) of the sample was 17 years of age or younger, and therefore, these adolescents were prohibited by law to gamble on provincially-regulated games. Only .9% of the sample was of legal age to participate in provincially-controlled gambling activities.

Table 2: Sample Distribution by Grade Level

Sample Distribution			
Grade	<i>N</i>	%	Mean Age
7	152	15.0	12.3
8	145	14.3	13.4
9	183	18.1	14.5
10	282	27.8	15.5
11	251	24.8	16.5
Total	1013		14.4

Approval was requested and obtained from four school boards in the Greater Montreal area for participation in this study. Individual high schools were then approached with a detailed proposal once school board approval was granted. In total, nine public high schools approved their students' participation in the study. In addition, three private schools in Montreal and one private school in Ottawa also approved their students' involvement in the study. The 13 schools that participated in the survey were located in both urban and suburban areas, and participants varied considerably in terms of socio-economic and cultural backgrounds.

Procedure

Once individual schools approved the participation of their students in the study, consent forms and a letter describing the principle aims of the study were distributed to parents. Informed consent was sought from all adolescents prior to their participation in the study. Students were informed that they could discontinue participation at any time, and that all responses were confidential and anonymous.

The questionnaire was group-administered to participants in classrooms and/or conference rooms by several trained research assistants. Students were given a brief description of the types of questions that would be asked as well as instructions regarding the completion of the

questionnaire. Students were also given a definition of gambling to keep in mind when they responded (“Gambling is any activity that you play in which you are putting money, or something of monetary value, at risk since winning and/or losing is based on chance”). Research assistants were present to answer questions and concerns. Participants were debriefed regarding the aims of the study after the administration of questionnaires was complete.

Measures

Gambling Activities Questionnaire - Adapted (GAQ) (Gupta & Derevensky, 1996) (Appendix A). The GAQ is designed to assess four general domains related to gambling behaviour: descriptive information including prevalence, types of activities, frequency of gambling, amount wagered and social factors; cognitive perceptions about the amount of skill and luck involved in various gambling and non-gambling activities; familial gambling such as parental gambling behaviour; and co-morbidity with other addictive and delinquent behaviours. For this study, a modified version of the GAQ was employed that included descriptive information regarding the frequency of gambling behaviour across various types of activities.

DSM-IV-MR-J (Fisher, 2000). This 12-item, 9-category instrument is a screen for pathological gambling during adolescence. The DSM-IV-MR-J (MR = multiple response, J = juvenile) was developed for use with adolescents that have gambled over the past year. It assesses a number of important variables related to pathological gambling: progression, preoccupation, tolerance, withdrawal and loss of control, escape, chasing losses, deception, illegal activity and family/school disruption. Endorsement of at least 4 out of the 9 categories is indicative of a gambling problem.

Gambling Expectancy Items (Appendix B). Forty-eight items, referring to the multi-faceted consequences of gambling, were presented in questionnaire-form to students. Derived from the gambling and alcohol literature, these risk and benefit items addressed the psychological, physiological and behavioural outcomes associated with gambling involvement. Among statements considered to be benefits of gambling, items were created pertaining to one of 7 themes which were empirically supported in the literature: *money* ($\alpha = .78$), *mood enhancement/enjoyment* ($\alpha = .87$), *excitement/arousal* ($\alpha = .80$), *boredom* ($\alpha = .64$), *social interaction* ($\alpha = .62$), *escape/tension reduction* ($\alpha = .82$) and *independence/autonomy* ($\alpha = .82$). Among the risk statements, items pertained to one of 4 themes, created based on knowledge of adolescent gambling awareness, consequences associated with excessive gambling and developmental concerns: *financial cost* ($\alpha = .86$), *negative emotions* ($\alpha = .85$), *preoccupation* ($\alpha = .90$), and *relational disruptions* ($\alpha = .84$). A 7-point Likert scale, ranging from 1 (*No chance*) to 7 (*Certain to happen*), was employed to capture a wide range of expectancy strength. These items were pilot-tested for readability with a sample of 10 students (mean age = 16). The items and their related themes served as the foundation for the development of the *Gambling Expectancy Questionnaire* (GEQ).

RESULTS

PHASE I: DEVELOPMENT AND ANALYSIS OF THE QUESTIONNAIRE

Data Analyses

The 48 gambling expectancy items were included in a principal components analysis (PCA) to reduce the items to a smaller number of variables. A Varimax rotation was used to simplify factors by maximizing the variance loadings across variables, with the spread in the factor loadings being maximized (Tabachnick & Fidell, 1996). Principal components analyses were performed with expectancy items being removed until the criterion of simple structure was met. In addition, correlations between items were observed in order to further reduce the linearity between factors. Cronbach alphas were then calculated as an index of internal reliability for each factor/scale of the resulting *Gambling Expectancy Questionnaire* (GEQ).

Principal Components Analyses

All 48 gambling expectancy items were entered into the first PCA. The Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) was estimated as .93, a value deemed excellent by Kaiser (1974). The principal components analysis extracted 7 factors with eigenvalues > 1 . An examination of the rotated component matrix identified 17 items that loaded roughly equally (within .20 of each other) on more than one factor. These items were removed to avoid ambiguity in the interpretation of the factors (Tabachnick & Fidell, 1996).

A second PCA was performed using the 31 items that remained. This PCA extracted 5 factors with eigenvalues > 1 . Examination of the rotated component matrix identified 2 items that loaded roughly equally (within .20 of each other) on more than one factor and 1 item that minimally loaded on one factor ($< .50$). These 3 items were removed from the analysis. A third PCA was run on the remaining 29 items, once again resulting in a 5 factor model. Six additional items were removed from the model because their presence inflated correlations between scales.

A final PCA was performed on the remaining 23 items, confirming a final model consisting of 5 factors. The five factors retained accounted for 66.8% of the overall variance in GEQ item scores, with 3 to 8 loadings on each factor. The overall solution has a simple structure (Tabachnick & Fidell, 1996) and the final Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) was estimated as .90. The rotated principal components matrix is presented in Table 3.

Based on the rotation sums of squares loadings, the first factor accounted for 18.9% of the variance in item scores. Variables that loaded onto the first factor mainly reflected the gambling benefits of enjoyment, arousal and entertainment. This factor was labeled Enjoyment/Arousal. The second factor accounted for 16.9% of the variance in item scores. Items that loaded highly on this factor reflected the gambling risks of cognitive, affective and social preoccupation with gambling. This factor was termed Over-Involvement. The third factor accounted for 11.3% of the variance in item scores. This factor reflected the gambling benefits of feeling in control, feeling powerful, and feeling more accepted by peers; it was labeled Self-Enhancement. The fourth factor accounted for 10.8% of the variance in item scores. This factor reflected negative emotions (guilt, shame, loss of control) as a result of gambling and it was labeled Emotional Impact. Finally, the fifth factor accounted for 8.9% of the variance in item scores. This factor reflected

the benefit of financial gain as a result of gambling and was labeled Money. A correlation matrix of the five factors is provided in Appendix C.

Table 3: Rotated Component Matrix for Included Items on the GEQ

GEQ Items	Component				
	1	2	3	4	5
I have fun	.736				
I feel more relaxed	.634				
I stop being bored	.744				
I feel excited	.790				
I spend time with people I like	.615				
I feel a rush	.575			.371	
I enjoy myself	.701				
I have a good time	.704				
I only want to spend time with people who gamble		.718			
I feel like gambling all of the time		.835			
I want to gamble more and more		.864			
I get hooked		.853			
I'm not able to stop		.774			
My friends and classmates think I'm cool			.715		
I feel powerful			.757		
I feel in control			.703		
I'm more accepted by people			.717		
I feel guilty				.834	
I feel in over my head				.815	
I feel ashamed of myself				.738	
I make a profit	.414				.742
I win money					.812
I get rich					.754

1 = Enjoyment/Arousal, 2 = Over-Involvement, 3 = Self-Enhancement, 4 = Emotional Impact, 5 = Money

Internal Consistency

Cronbach alpha coefficients were calculated for each of the five factors: Enjoyment/Arousal ($\alpha = .86$), Over-Involvement ($\alpha = .91$), Self-Enhancement ($\alpha = .81$), Emotional Impact ($\alpha = .85$), Money ($\alpha = .78$). Each of these inter-item alpha coefficients represent adequate to good internal reliability (Cronbach, 1951). Examination of frequencies revealed a significantly positive skew for Self-Enhancement, Over-Involvement and Emotional Impact. However, the transformations applied to these distributions (logarithmic and square root transformations) could not establish univariate normality.

The Gambling Expectancy Questionnaire

From the 48 gambling expectancy items representing 11 benefit and risk themes which were originally presented to participants - money, excitement/arousal, enjoyment, boredom, social interaction, independence and escape/tension reduction, financial costs, preoccupation, negative emotional effects, relational disruptions - five scales emerged: Enjoyment/Arousal, Self-Enhancement, Money, Over-Involvement and Emotional Impact. The resulting five scales in the 23-item GEQ reflect three positive outcome expectancies and two negative outcome expectancies, scored on a 7-point Likert scale. The following describes the themes represented by each of the five GEQ scales. The items of the *Gambling Expectancy Questionnaire* are presented in Table 4.

Table 4: Gambling Expectancy Questionnaire Items

Positive Outcome Expectancies			Negative Outcome Expectancies	
<i>Enjoyment/Arousal</i>	<i>Self-Enhancement</i>	<i>Money</i>	<i>Over-Involvement</i>	<i>Emotional Impact</i>
<ul style="list-style-type: none"> • I have fun • I feel more relaxed • I stop being bored I feel excited • I spend time with people I like • I feel a rush • I enjoy myself • I have a good time 	<ul style="list-style-type: none"> • My friends and classmates think I'm cool • I feel powerful • I feel in control • I'm more accepted by people 	<ul style="list-style-type: none"> • I make a profit • I win money • I get rich 	<ul style="list-style-type: none"> • I only want to spend time with people who gamble • I feel like gambling all the time • I want to gamble more and more • I get hooked • I'm not able to stop 	<ul style="list-style-type: none"> • I feel guilty • I feel as in over my head • I feel ashamed of myself

PHASE II: USING THE GEQ TO PREDICT GROUP MEMBERSHIP

Data Analyses

The prevalence of gambling participation among adolescents was analyzed using inferential statistics. For these analyses, the age variable was recoded into two categories: younger adolescents (11-14 years, $n = 391$) and older adolescents (15-18 years, $n = 617$). A 2 (gender) x 4 (DSM groups) x 2 (age) factorial Analysis of Variance was performed in order to assess group

differences on the five scales of the GEQ: Enjoyment/Arousal, Self-Enhancement, Money, Over-Involvement and Emotional Impact. The Dunnett's C Post Hoc test was used to compare mean differences between students based upon four gambling categories: non-gamblers, social gamblers (DSM-IV-MR-J = 0-1), at-risk gamblers (DSM-IV-MR-J = 2-3) and probable pathological gamblers (DSM-IV-MR-J = 4-9). Since one factorial ANOVA was performed for each scale (total = 5), the alpha level was set at $p < .01$ for each analysis. Non-parametric tests were used to validate the findings of the univariate analyses due to the non-normal distributions of the five GEQ scales. The Kruskal-Wallis statistic was used to test differences based on the severity of gambling problems, and a two-sample Kolmorov-Smirnov test was used for gender and age variables.

In order to identify which outcome expectancies differentiate youth who gamble with no associated difficulties from those who develop gambling problems a stepwise logistic regression analysis was performed using the five scales of the GEQ to predict group membership: social gambler (DSM-IV-MR-J = 0-1) or problem gambler (at-risk gamblers and PPGs, DSM-IV-MR-J = 2-9).

Prevalence Findings

Of the total adolescent sample, 70.3% of adolescents reported having gambled with money over the past 12 months. Of those participants who reported gambling, more males (82.4%) reported gambling than females (61.3%). Based upon gambling behaviour and the DSM-IV-MR-J criteria, 5.0% of youth met the criteria for probable pathological gambling (scores of = 4), 10.9% of the sample were considered at-risk for pathological gambling (scores of 2-3), and 54.4% were considered to be social gamblers (scores of 0-1). While more males gambled than females, they also exhibited a higher prevalence of gambling-related problems; the rates for probable pathological gambling (9.3%) and at-risk gambling (18.3%) among males were greater than those for females (1.9% and 5.3% respectively). Similarly, the rates of probable pathological gambling (6.5%) and at-risk gambling (11.5%) among older adolescents were higher than those of younger adolescents (2.8% and 9.7% respectively). Gambling participation rates are reported in Table 5.

Table 5: Gambling Participation Rates for Total Sample, Grouped by Gender and Age

	Non-Gambler	Social	At-Risk	PPGs
Male	17.6%	54.9%	18.5%	9.3%
Female	38.7%	54.0%	5.3%	1.9%
Ages 11-14	35.5%	51.9%	9.7%	2.8%
Ages 15-18	26.1%	55.9%	11.5%	6.5%
Total Sample	29.7%	54.4%	10.9%	5.0%

Social Gambler: DSM-IV-MR-J score 0-1

At-Risk gambler: DSM-IV-MR-J score 2-3

Probable Pathological Gambler: DSM-IV-MR-J score = 4

Factorial ANOVA among DSM Gambling Groups, Gender and Age Groups

Significant main effects of gambling severity were found on all scales of the GEQ: Enjoyment/Arousal, $F(3, 986) = 23.29, p < .01$; Self-Enhancement, $F(3, 986) = 5.70, p < .01$; Money, $F(3, 986) = 18.34, p < .01$; Over-Involvement, $F(3, 986) = 4.99, p < .01$; and Emotional Impact, $F(3, 986) = 26.21, p < .01$. These significant group differences, based on gambling severity, were also found using non-parametric tests.

On each of the three positive expectancy scales, PPGs and at-risk gamblers endorsed items on the Enjoyment/Arousal, Self-Enhancement and Money scales more highly than social gamblers and non-gamblers. Similarly, social gamblers endorsed the Enjoyment/Arousal and Money scales more positively than non-gamblers. In terms of negative expectancies, non-gamblers endorsed the Emotional Impact scale more highly than social gamblers, at-risk gamblers and PPGs; non-gamblers also endorsed the Over-Involvement scale more highly than social gamblers. Probable pathological gamblers differed significantly from social gamblers and at-risk gamblers in their endorsement of the Over-Involvement scale. Mean scores on the Dunnett's C Post Hoc results are summarized in Table 6.

Table 6: DSM Gambling Group Differences on the Five Scales of the GEQ

	1. Non-Gamblers		2. Social Gamblers		3. At-Risk Gamblers		4. PPGs		Post Hoc
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Enjoyment/Arousal*	3.97	1.25	4.55	1.12	5.09	.93	5.40	.99	4, 3 > 2 > 1
Self-Enhancement*	2.78	1.27	2.88	1.28	3.36	1.16	3.59	1.41	4, 3 > 1, 2
Money*	3.27	1.12	3.66	1.11	4.27	1.16	4.59	1.25	4, 3 > 2 > 1
Over-Involvement*	2.89	1.63	2.47	1.45	2.58	1.27	3.58	1.49	4 > 2, 3 1 > 2
Emotional Impact*	4.18	1.68	2.97	1.60	2.72	1.48	3.00	1.80	1 > 2, 3, 4

* $p < .01$

A significant main effect of gender was found for Enjoyment/Arousal, $F(1, 986) = 16.89, p < .01$; Money, $F(1, 986) = 12.28, p < .01$; and Emotional Impact, $F(1, 986) = 16.74, p < .01$. Gender differences were also significant using non-parametric statistics. Males were found to have endorsed the two positive expectancy scales, Enjoyment/Arousal and Money, more positively than females. On the negative expectancy scale of Emotional Impact, however, females reported higher scores than males. Table 7 provides the means for both males and females on all scales.

Table 7: Gender Differences on the Five Scales of the GEQ

	Male		Female	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Enjoyment/Arousal*	4.78	1.16	4.26	1.19
Self-Enhancement	2.96	1.33	2.92	1.25
Money*	3.92	1.24	3.46	1.09
Over-Involvement	2.46	1.36	2.81	1.60
Emotional Impact*	2.71	1.58	3.74	1.69

* $p < .01$

Developmentally, statistically significant differences were found among adolescents for Enjoyment/Arousal, $F(1, 986) = 8.94, p < .01$; and Emotional Impact, $F(1, 986) = 12.58, p < .01$. These developmental differences were also found using non-parametric tests. Older adolescents endorsed the positive expectancy scale of Enjoyment/Arousal more highly than younger adolescents, who were more perceptive of the negative outcome of Emotional Impact (see Table 8 for age differences).

A significant interaction between gender and age was found on the Enjoyment/Arousal scale, $F(1, 986) = 20.73, p < .01$. As well, a significant difference was found between female adolescents aged 11-14 years and those aged 15-18 years. Older females ($M = 4.61$) endorsed items significantly more highly on the Enjoyment/Arousal scale than younger females ($M = 3.82$).

Table 8: Developmental Differences on the Five Scales of the GEQ

	Ages 11-14		Ages 15-18	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Enjoyment/Arousal*	4.13	1.29	4.71	1.09
Self-Enhancement	2.88	1.34	2.97	1.26
Money	3.50	1.26	3.76	1.11
Over-Involvement	2.66	1.60	2.66	1.46
Emotional Impact*	3.69	1.81	3.05	1.61

* $p < .01$

Stepwise Logistic Regression Analyses

Stepwise logistic regression was used to identify the subset of scales of the GEQ which together provided the best prediction of category membership; social or problem gambler. Separate stepwise logistic regression analyses were performed for males and females, because of their distinct behavioural characteristics. The subject variable of age was included in the analysis because some developmental differences were observed in the univariate analyses. The age variable was entered into the analysis as its own block and was forced in at step 1, while the remaining predictor variables were entered into the logistic regression analysis in a stepwise manner.

For males, the results of the stepwise logistic regression indicated that the GEQ scales of Enjoyment/Arousal, Self-Enhancement, Money and Over-Involvement (presented in their order of entry into the regression equation) were independent and non-redundant predictors of

gambling group membership. The Hosmer-Lemeshow goodness-of-fit statistic indicated that the model fit was adequate, $\chi^2(8, N = 354) = 9.12, p = .33$. Variables remaining in the equation are summarized in Table 9. Expectancies of Enjoyment/Arousal proved the largest predictor; males endorsing items positively on the Enjoyment/Arousal scale were about 1.6 times more likely to be problem gamblers. On the Money and Self-Enhancement scales, males who endorsed items positively were respectively, 1.5 and 1.3 times more likely than their peers to be problem gamblers. High scores on the negative expectancy scale of Over-Involvement also served as a predictor of problem gambling, with males endorsing Over-Involvement as a probable outcome being 1.3 times more likely to be problem gamblers. The resulting logistic regression equation classified 72% of cases correctly. Thirty nine percent ($n = 46$) of problem gamblers were properly classified (see Table 10). The classification ability of the model is commendable considering that that no psychosocial risk variables (Dickson et al., 2002; Jessor, 1998) were included.

Table 9: Stepwise Logistic Regression Predicting Gambling Severity among Male Gamblers

	Odds Ratio	95% C.I.	<i>p</i>
Age (2 category)	1.31	.76 - 2.25	.339
Enjoyment/Arousal	1.64	1.22 – 2.20	.001
Self-Enhancement	1.25	.99 – 1.57	.062
Money	1.45	1.15 – 1.83	.002
Over-Involvement	1.34	1.10 – 1.63	.004

Emotional Impact was not a significant predictor and therefore was not entered in the stepwise logistic regression

Table 10: Classification Table for Stepwise Logistic Regression Model for Male Gamblers

Observed	Predicted		Percentage Correct (%)
	Social Gambler	Problem Gambler	
Social Gambler	209	27	88.6
Problem Gambler	72	46	39.0
Overall %			72.0

Social gambler = Social gambler on DSM-IV-MR-J; (scores 0-1)

Problem Gambler = At-Risk gamblers + PPGs on DSM-IV-MR-J (scores = 2)

The analysis was repeated for females, and the results are presented in Table 11. For females, an expectancy of Money was the only significant predictor of problem gambling group membership. Females who scored highly on the Money scale were 1.5 times more likely to belong to the problem gambling group. The Hosmer-Lemeshow goodness-of-fit statistic was non-significant, $\chi^2(8, N = 351) = 13.47, p = .10$, suggesting adequate goodness-of-fit. Despite 88% of the cases being classified correctly, however, this logistic regression model resulted in all problem gamblers being inappropriately classified. Therefore, for females, the predictive value of outcome expectancies is very low. This may well be accounted for by the very small number of female problem gamblers.

Table 11: Stepwise Logistic Regression Predicting Gambling Severity among Female Gamblers

	Odds Ratio	95% C.I.	<i>p</i>
Age (2 category)	.90	.46 – 1.73	.744
Money	1.47	1.08 – 2.09	.016

DISCUSSION

The primary goals of this study were to (a) develop a comprehensive instrument to measure youth gambling outcome expectancies; (b) to examine which types of positive and negative outcome expectancies were most salient for adolescents, across gambling severity, gender and age; and (c) to investigate the utility of outcome expectancies in the prediction of gambling problems among adolescents. The predictive utility of outcome expectancies had been previously examined within the drug and alcohol literature (Brown et al., 1987; Fromme & D’Amico, 2000; Goldberg & Fischhoff, 2000; Goldberg et al., 2002; Leigh & Stacy, 1993, Stacy et al., 1990). Given the commonalities found in the risk and protective factors of alcohol use, drug use and gambling behaviour (Dickson et al., 2002), there was a need to explore adolescent gambling outcome expectancies.

Prevalence of Gambling

The prevalence findings of this study were in keeping with previous prevalence estimates (Derevensky & Gupta, 2004; NRC, 1999; Shaffer & Hall, 1996). Within the total adolescent sample, 70.3% of adolescents reported gambling in the past year. Approximately 5% of youth met the diagnostic criteria for probable pathological gambling on the DSM-IV-MR-J. Similarly, 10.9% of youth were considered at-risk for problem gambling, while 54.4% of youth were viewed as social gamblers. As expected, more males than females participated in gambling activities over the course of the past year, with more males gambling excessively than females. Finally, there were higher rates of problem gambling among older adolescents (ages 15-18) than among younger ones (ages 11-14), a finding that was not unexpected as gambling problems are a progressive disorder and that older adolescents may have less difficulty accessing provincially-regulated gambling. As youth gain greater access to gambling opportunities and have more gambling experiences, more problems are likely to develop.

Scale Construction

The original 48 gambling expectancy items used to develop the *Gambling Expectancy Questionnaire* (GEQ) touched upon a diverse array of bio-psycho-social outcomes empirically related to gambling involvement. While alcohol expectancy scales were used as a template (AEQ-A, Brown et al., 1987; CEOA, Fromme et al, 1993; OEQ, Leigh & Stacy, 1993), gambling items were chosen based on the clarity with which they depicted the target theme, as well as their consistency with related items. Items reflecting seven gambling benefit themes - money, excitement, enjoyment, boredom, escape/tension reduction, social interaction, and independence, were originally selected based on their endorsements as gambling motives in both adolescent and adult gambling studies (Gupta & Derevensky, 1998a; Neighbours et al., 2002; Platz & Millar, 2001). Similarly, items reflecting four gambling risk themes – financial cost, negative emotional

effects, preoccupation and relational disruptions - were used as they denoted the recognized signs of problem gambling (APA, 1994). Of the 48 items entered into the original factor analyses, 23-items were retained and included in the final GEQ.

The three positive expectancy scales of the resulting GEQ reflect a combination of the benefit themes originally suggested to participants. In keeping with previous research (Gupta & Derevensky, 1998a; Neighbours et al., 2002), adolescents rated Money as a distinct positive outcome of gambling. The complexity of items found within the Enjoyment/Arousal and Self-Enhancement scales, however, suggest that other positive outcome expectancies of gambling are not as discrete. The Enjoyment/Arousal scale includes items denoting enjoyment, excitement, boredom, escape/tension reduction, and social interaction. The structure of the Enjoyment/Arousal scale suggests that adolescents may view gambling as a socially acceptable form of entertainment, an activity that holds the potential to stimulate high levels of excitement while simultaneously relieving stress as a form of escape. Adolescents perceived gambling as a diversion from the tediousness of daily life. Moreover, gambling activities served to facilitate social interactions with friends and/or family. The Self-Enhancement scale includes items reflecting potential outcomes of social gains as well as independence. The composition of the Self-Enhancement scale suggests that adolescents perceived gambling as providing an opportunity to feel good about themselves and to prove their own importance, either by impressing others, and/or by establishing autonomy from others. The Self-Enhancement scale represents a new way of viewing gambling from an adolescent perspective, one that was not fully identified in previous research with adolescent and college-age samples (Gupta & Derevensky, 1998a, Neighbours et al., 2002, Platz & Millar, 2001)

The two negative outcome expectancy scales represent both the cognitive- behavioural risks associated with gambling as well as its emotional risks. The Over-Involvement scale includes items originally conceptualized as representing the themes of preoccupation and relational disruptions. The scale generally reflects a loss of control over gambling, behaviourally, psychologically and socially. In comparison, the Emotional Impact scale consists of items representing the negative emotions resulting from excessive gambling. The scale reflects the toll excessive gambling may take on an individual's emotional well-being, sense of self and mental health (Potenza, Kosten & Rounsaville, 2001).

Surprisingly, adolescents did not perceive the financial costs of gambling as a discrete negative outcome expectancy category. Items reflecting the risk of losing money loaded approximately equally on all negative outcome expectancy scales at the outset of the analyses and were therefore removed. These analyses suggest that adolescents may perceive the risk of losing money as being parallel to the cognitive, behavioural and emotional risks of gambling. Intuitively, the financial cost of gambling is a negative outcome, yet the results of the factor analysis suggest that it may not be distinct from other types of negative gambling outcomes. Similar conclusions can be made for items targeting the risk of relational problems. Items reflecting the loss of trust and approval from family and friends loaded equally across the negative outcome expectancy scales; the items failed to fall within one scale. One can propose that although adolescents perceive the negative impact that gambling can have on one's relationships with family and friends, it is also encompassed within other negative gambling outcomes.

The resulting *Gambling Expectancy Questionnaire* includes many of the same themes found in alcohol expectancy scales (AEQ-A, Brown et al., 1987; CEOA, Fromme et al, 1993; OEQ, Leigh & Stacy, 1993). Adolescents expect similar positive outcomes from gambling as they do from drinking alcohol - social interactions and peer acceptance, entertainment, relaxation, as well as increased arousal and excitement. Likewise, they also perceive comparable negative outcomes: emotional and social problems, cognitive and behavioural difficulties. In contrast, money and independence outcomes were found to be specific to gambling activities.

The GEQ provides us with a better understanding of how adolescents perceive both the positive and negative outcomes of gambling behaviour. Although some of the original risk and benefit themes are not included within the final instrument, the clustering of items within each scale represents the complexity of adolescents' outcome expectancies. For example, adolescents do not simply perceive excitement in gambling, nor do they discretely perceive the potential for social interactions or enjoyment. Instead, as demonstrated by the Enjoyment/Arousal scale, they perceive a complex combination of positive outcomes that are related to each other and cannot be teased apart. Therefore, not only are the internal and empirical validities of the measure intact, but the external validity of the GEQ is strong as well.

Outcome Expectancies and Gambling Severity

The significant differences found between gambling groups on each of the five scales of the *Gambling Expectancy Questionnaire* suggest that gambling outcomes are perceived quite differently by those who gamble excessively, those who gamble responsibly, and those who do not gamble at all. Within the total sample, PPGs and at-risk gamblers endorsed items on each of the three positive expectancy scales more highly than social gamblers and non-gamblers. They more heavily anticipated pleasure and excitement from gambling (Enjoyment/Arousal), they were more likely to expect feeling good about themselves as result of gambling (Self-Enhancement), and they were more likely to anticipate winning money from gambling participation (Money) than those who gambled less excessively or not at all. Compared to non-gamblers, social gamblers perceived significantly more enjoyment and arousal as a result of their gambling. They also reported financial gains from gambling as being more likely than non-gamblers. In sum, the positive outcomes/benefits of gambling were more salient for adolescents who gambled than for those who did not, possibly resulting in their maintenance of this behaviour.

The findings for negative outcome expectancies, however, reflect different patterns of endorsement. Probable pathological gamblers were more likely to expect to lose control of their gambling (Over-Involvement) than social gamblers and at-risk gamblers. One can surmise that the probable pathological gamblers' relatively high score on this scale represents their awareness of their own preoccupation with gambling; they perceive the risk of over-involvement in gambling because they are currently experiencing similar negative gambling-related consequences. Yet non-gamblers did not differ significantly from probable pathological gamblers on the Over-Involvement scale. Non-gamblers were also more likely to anticipate negative emotional consequences to gambling (Emotional Impact) than social gamblers, at-risk gamblers and PPGs. It seems unintuitive that PPGs and non-gamblers could have something in common (i.e., their negative outcome expectancies of Over-Involvement). However, in one case, this perception of risk may have developed as a result of personal experience, while in the other it

may be a deterrent to experimentation. In comparison, at-risk gamblers and social gamblers appear to be less aware of this risk, despite their own gambling behaviour.

The results of these analyses underscore one important point - positive outcomes are ultimately most likely anticipated by youth who are currently experiencing gambling-related problems. Despite suffering negative consequences associated with their excessive gambling (i.e., spending increasing amounts of money to gain excitement, spending more money than planned, chasing losses, lying to family members, truancy, conflict, etc.), problem gamblers continue to expect (and likely perceive) benefits from gambling. Evidently, the benefits of gambling are clear, considerable and encouraging to these adolescents. Interestingly, these are the same adolescents who are most likely to anticipate becoming preoccupied with gambling as well.

How is it possible that adolescents who gamble excessively simultaneously anticipate positive outcomes while also anticipating negative ones? An explanation may be found in the immediacy assumption, a theory commonly cited within the alcohol literature (Goldberg et al., 2002; Stacy et al., 1990). The immediacy assumption conjectures that positive outcomes are more immediate and therefore more powerful in influencing behaviour than are long-term negative outcomes. Feeling good, getting excited, being entertained, socializing with friends (Enjoyment/Arousal), impressing others, feeling in control (Self-Enhancement) and making money (Money) are all short-term benefits of gambling. They have the potential to occur soon after a decision to gamble has been made. In contrast, feeling guilty (Emotional Impact), becoming preoccupied, and not being able to stop one's gambling behaviour (Over-Involvement) are all delayed costs. Despite recognizing and experiencing the negative consequences of gambling, PPGs may believe that the potential benefits outweigh the potential costs of gambling because of their temporal characteristics. This decision-making process may be further hampered by impulsivity, as studies have shown PPGs to demonstrate elevated levels of impulsivity (Blaszczynski, Steel & McConaghy, 1997; Nower, Derevensky & Gupta, 2004; Vitaro, Arseneault & Tremblay, 1999; Vitaro et al., 2004) as well as of sensation-seeking (Gupta & Derevensky, 1998b; Nower, Derevensky & Gupta, 2004; Powell et al., 1999). Moreover, a low level of deferment of gratification appears to be an important risk factor of pathological gambling (Parke, Griffiths, & Irwing, 2004). Hence, probable pathological gamblers may be unable to resist the urge to gamble when the potential benefits of gambling are immediate and great.

Overall Gender and Developmental Differences

Although males exhibited higher rates of problem gambling than females, significant gender differences existed on the GEQ above and beyond those of gambling severity. Males were more likely to expect that gambling would provide both pleasurable (Enjoyment/Arousal) and money-making opportunities (Money) than females. In contrast, females were more perceptive of the risk of emotional upheaval (Emotional Impact) than males. These findings, to a certain extent, may explain prevalence estimates that show a greater proportion of males participating in gambling activities than females. Females' anticipation of more negative emotional outcomes associated with gambling may loom larger than beliefs about enjoyment and financial gain in their decisions to gamble.

Young adolescents anticipated greater negative emotions resulting from gambling. In contrast, older adolescents reported a greater likelihood of positive outcomes, specifically those of enjoyment and excitement, from gambling. Young adolescents typically have had less experience with gambling. As they proceed through adolescence and gain greater access to gambling opportunities and venues, they may become more aware of the diversionary benefits of gambling. Similarly, as they fail to experience negative consequences, their expectancies regarding the emotional risks of gambling may weaken. This increasing awareness of the positive outcomes of gambling appears to be greatest for girls, as represented by the significant interaction between gender and age on the Enjoyment/Arousal scale.

The Utility of Outcome Expectancies in the Prediction of Problem Gambling

Since significant differences existed among gambling groups on the positive and negative outcome expectancy scales of the GEQ, an investigation of the predictive utility of these outcome expectancies was therefore of importance. Stepwise logistic regression analyses were used to determine which outcome expectancies distinguished problem gamblers (at-risk gamblers and PPGs) from social gamblers. Based on the results of these analyses, one can conclude that the value of using outcome expectancies to predict gambling severity may differ considerably for males and females.

For males, outcome expectancies were found to be a relatively strong predictor of problem gambling. Male problem gamblers were characterized by greater outcome expectancies of Enjoyment/Arousal, Self-enhancement, Money and Over-involvement than their non-problem gambling counterparts. High scores on these GEQ scales indicated problem gambling; the higher an individual scored on these scales, the more likely he was a problem gambler. The percentage of problem gamblers correctly classified by these outcome expectancies was surprisingly high (39%), considering that no psychosocial variables (Derevensky & Gupta, 2004; Dickson et al., 2002; Jessor, 1998; Stinchfield, 2004) were included in the model. That four related social-cognitive variables could predict such a proportion of problem gamblers, in the absence of risk and protective factors, is a substantial finding, as the prediction of problem gambling is difficult (Derevensky & Gupta, 2004). In fact, it is proposed that the accuracy in predicting male problem gambling would likely increase when psychosocial variables and outcome expectancies are considered together. Moreover, these findings advocate for the use of the GEQ in combination with other screening measures for both prevention and treatment initiatives, particularly among males.

While a combination of four outcome expectancies was found to predict problem gambling for males, only the expectancy of Money served as predictor for females. High scores on the Money scale indicated problem gambling for females. Unfortunately, as a predictor, money expectancy scores failed to distinguish problem gamblers from social gamblers. The inaccuracy of classification is likely due in part to the small number of female problem gamblers in the sample. As a result, the value of outcome expectancies with respect to female gambling has yet to be confirmed. Based on these results, the use of the GEQ as a screening instrument may do little to facilitate the identification of female problem gamblers.

The Strength of Positive Outcome Expectancies

Despite obvious differences in the expectancy models of both male and female problem gamblers, in both cases, positive outcome expectancies (i.e., Enjoyment/ Arousal and Money for males, as well as Money for females), were the strongest predictors of gambling severity. Overall, positive expectancies were found to be better predictors of gambling severity than negative expectancies, a finding consistently evident in alcohol expectancy studies (Brown et al., 1987; Fromme & D'Amico, 2000; Goldberg et al., 2002; Leigh & Stacy, 1993, Stacy et al., 1990). Although both male and female problem gamblers were aware of the risks of gambling, these risks were less influential in predicting their behaviour. These findings suggest that knowledge of negative outcomes *alone* fails to deter excessive gambling.

Although problem gamblers may be viewed as presently experiencing the negative consequences of excessive gambling, they are likely experiencing positive outcomes as well, albeit temporarily and often inconsistently. According to the encoding specificity principle (Tulving, 1983), positive outcomes such as enjoyment, excitement, and financial gains are likely initially encoded during previous gambling episodes but are enhanced each time these memories are retrieved (Stacy et al., 1990).

Implications for Prevention

In light of these findings, adolescent decision-making may seem irrational, as they likely engage in gambling behaviour despite an acute awareness of its risks. However, from an alternative perspective, adolescents can be viewed as making rational decisions, with the positive outcomes weighing heavily in their decision-making (Goldberg et al., 2002). Youth gambling prevention messages might best focus on how adolescents can obtain related benefits in safer ways.

Although prevention messages often focus exclusively on the risks inherent resulting from a high-risk behaviour, alcohol research suggests that it is not the knowledge of these risks that is most predictive of their behaviour. Instead, an individual's perceptions of the positive outcomes of high risk behaviour seem far more important. Moreover, the strength of risk messages may diminish over time as adolescents experience the positive outcomes of gambling, in the absence of negative ones. As discussed by Goldberg et al. (2002), initiatives that focus solely on the risks may cause the messenger and message to lose both credibility and influence on future health decisions.

It is critical that prevention messages inform adolescents about how the short-term benefits of gambling can turn into long-term costs. This idea of "perceiving the risks in the benefits" has been discussed as a major prevention issue within the alcohol and drug literature as being able to perceive how positive outcomes may be dangerous is considered to serve as a protective factor (Goldberg & Fischhoff, 2000; Goldberg et al., 2002). In turn, expectancy challenge interventions (which highlight the risks while undermining the anticipation of related benefits) have been used to educate both children and adolescents about the effects of alcohol. To date, these interventions have been successful in decreasing alcohol use in youth (Darkes & Goldman, 1993) and appear to reduce the likelihood of early alcohol use among children (Cruz & Dunn, 2003).

Implications for Treatment

Although the clinical portrait of adolescent problem gamblers is much more complex than aspirations of monetary gain and erroneously positive beliefs (Gupta & Derevensky, 2004), it may be beneficial to use gambling expectancy scales to assess treatment effectiveness. It is important that clinicians help adolescents perceive the chain reactions that initiate and maintain these expectancies over time (Gupta & Derevensky, 2004). Adult cognitive-behavioural interventions highlight both the perceived benefits and costs of gambling as part of a treatment plan to enhance motivations to change (Hodgins & Makarchuk, 1997). The study's findings promote the use of such strategies with adolescents. Similarly, therapeutic interventions may aim to address positive expectancies of enjoyment/arousal, money and self-enhancement, in an effort to guide adolescents to seek out related benefits from other, less harmful, activities.

Conclusions

This study is the first to identify the positive and negative outcome expectancies that adolescents associate with gambling. As an exploratory study, it has established a role for examining outcome expectancies in the prediction of gambling problems, while also emphasizing their potential place in the development of prevention and treatment initiatives. Although the utility of outcome expectancies has been explored in this study, research in this area is in its early stages. Both the structure and the content of the GEQ must be validated by additional samples of adolescents. Future research should aim to develop a comprehensive model delineating direct and mediational links between outcome expectancies, gambling severity and other psychosocial risk and protective factors.

Youth gambling is a complex issue, as it is influenced by a number of biological, psychological and social-cognitive factors; it is a multidimensional activity that cannot be explained by one single theory (Derevensky & Gupta, 2004; Griffiths & Delfabbro, 2001). Although the findings and implications of this study warrant consideration, future research must identify how outcome expectancies fit into the larger bio-psycho-social framework.

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APPENDIX A

Gambling Activities Questionnaire – Adapted (Gupta & Derevensky, 1996)

All information is confidential and anonymous.

For ALL of the following questions, please fill in the marks like this: M (not like : ⊗ or ⊙ or v)

1. Gender: **F** Male **F** Female
2. Grade: 7 8 9 10 11 CEGEP
 F **F** **F** **F** **F** **F**
3. Age: 11 12 13 14 15 16 17 18 19 20 or older
 F **F** **F** **F** **F** **F** **F** **F** **F** **F**

SECTION A: In the **PAST 12 MONTHS**, how often have you played each of the following games **FOR MONEY?**

	Never	Less than once a month	1 – 3 times a month	Once a week or more
Lottery (scratch cards, 6/49, draws).....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Horse racing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sports betting (Mis-o-Jeu)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bingo.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Slot machines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Electronic gaming machines (video poker, VLT, Pokies)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Casino.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Poker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Internet gambling.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stock market	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify below)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

APPENDIX B

Gambling Expectancy Items

Note: The following items are shown as they were presented to participants, in a questionnaire format. A list of the items, organized by theme, is also provided.

Le jeu problématique chez les adolescents : perceptions des risques et des bénéfices
 Adolescent Problem Gambling: Evaluating Perceived Risks and Benefits

SECTION C: Please complete; if you do not gamble, just answer based on what you think would happen if you did gamble.

WHEN I GAMBLE, HOW LIKELY IS IT THAT...	No chance	Very Unlikely	Unlikely	Neither Likely nor Unlikely	Likely	Very Likely	Certain to Happen
1. I have fun.....	F	F	F	F	F	F	F
2. I become more relaxed	F	F	F	F	F	F	F
3. I am surrounded by similar people	F	F	F	F	F	F	F
4. I stop being bored.....	F	F	F	F	F	F	F
5. I become distracted from my life	F	F	F	F	F	F	F
6. I only want to spend time with people who gamble	F	F	F	F	F	F	F
7. I escape all of my problems	F	F	F	F	F	F	F
8. I feel excited.....	F	F	F	F	F	F	F
9. I spend more money than I want to.....	F	F	F	F	F	F	F
10. I spend time with people I like	F	F	F	F	F	F	F
11. I make a profit	F	F	F	F	F	F	F
12. I become anxious or tense.....	F	F	F	F	F	F	F
13. My parents do not approve.....	F	F	F	F	F	F	F
14. I deal with boredom.....	F	F	F	F	F	F	F
15. I feel independent.....	F	F	F	F	F	F	F

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16. I feel a rush.....	F	F	F	F	F	F	F
17. I feel guilty.....	F	F	F	F	F	F	F
18. I feel in over my head.....	F	F	F	F	F	F	F
WHEN I GAMBLE, HOW LIKELY IS IT THAT...	No chance	Very Unlikely	Unlikely	Neither Likely nor Unlikely	Likely	Very Likely	Certain to Happen
19. I feel like gambling all of the time.....	F	F	F	F	F	F	F
20. I take my mind off of my problems	F	F	F	F	F	F	F
21. I lose friends	F	F	F	F	F	F	F
22. I want to gamble more and more	F	F	F	F	F	F	F
23. I get hooked	F	F	F	F	F	F	F
24. I spend time with my family and friends.....	F	F	F	F	F	F	F
25. I shut the world out.....	F	F	F	F	F	F	F
26. I forget things I want to forget.....	F	F	F	F	F	F	F
27. I lose the trust of my family and friends.....	F	F	F	F	F	F	F
28. All I think about is gambling	F	F	F	F	F	F	F
29. I feel sad or depressed.....	F	F	F	F	F	F	F
30. I feel ashamed of myself.....	F	F	F	F	F	F	F
31. I enjoy myself	F	F	F	F	F	F	F

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32. I win money	F	F	F	F	F	F	F
33. I get a thrill out of gambling	F	F	F	F	F	F	F
34. My friends and classmates think I'm cool.....	F	F	F	F	F	F	F
35. I have no money left	F	F	F	F	F	F	F
36. I feel powerful	F	F	F	F	F	F	F
37. I feel in control.....	F	F	F	F	F	F	F
38. My family becomes upset.....	F	F	F	F	F	F	F
WHEN I GAMBLE, HOW LIKELY IS IT THAT...	No chance	Very Unlikely	Unlikely	Neither Likely nor Unlikely	Likely	Very Likely	Certain to Happen
39. I lose all my money	F	F	F	F	F	F	F
40. I get rich.....	F	F	F	F	F	F	F
41. I spend more money than I should.....	F	F	F	F	F	F	F
42. I feel like my own person	F	F	F	F	F	F	F
43. I become stressed.....	F	F	F	F	F	F	F
44. I feel good	F	F	F	F	F	F	F
45. I'm not able to stop.....	F	F	F	F	F	F	F
46. I'm more accepted by people.....	F	F	F	F	F	F	F
47. I have a good time	F	F	F	F	F	F	F
48. I pass time	F	F	F	F	F	F	F

GAMBLING EXPECTANCY ITEMS (Organized by theme)

Benefit Themes

Money

1. I get rich
2. I win money
3. I make a profit

Enjoyment

1. I enjoy myself
2. I have fun
3. I feel good
4. I have a good time

Excitement/Arousal

1. I feel a rush
2. I get a thrill out of gambling
3. I feel excited

Boredom

1. I will pass time
2. I will deal with boredom
3. I will stop being bored

Social Interactions

1. I spend time with friends and family
2. I am surrounded by similar people
3. I spend time with people I like
4. I feel more accepted by people
5. My friends and classmates think I am cool

Escape/Tension Reduction

1. I feel more relaxed
2. I take my mind off of my problems
3. I escape my problems
4. I shut the world out
5. I am distracted from my life
6. I forget things I want to forget

Independence/Autonomy

1. I feel independent
2. I feel in control
3. I feel powerful
4. I feel like my own person

Risk Themes

Financial Costs

1. I lose all my money
2. I spend more money than I want to
3. I spend more money than I should
4. I have no money left

Negative Emotional Effects

1. I feel ashamed of myself
2. I feel guilty
3. I feel sad or depressed
4. I feel anxious or tense
5. I feel stressed

Preoccupation/Loss of Control

1. I want to gamble more and more
2. All I think about is gambling
3. I get hooked
4. I'm not able to stop
5. I feel in over my head
6. I want to gamble all the time

Relational Disruptions

1. My family get upsets
2. I lose friends
3. I lose the trust of my friends/family
4. I only want to spend time with people who gamble
5. My parents do not approve

APPENDIX C

Correlation Matrix for the 5 Factors of the *GEQ*

Table 12: Correlation Matrix for the 5 Factors of the GEQ

	Enjoyment/Arousal	Self-Enhancement	Money	Over-Involvement	Emotional Impact
Enjoyment/Arousal	1	.479**	.495**	.186**	-.177**
Self-Enhancement	.479**	1	.432**	.441**	.155**
Money	.495**	.432**	1	.120**	-.166**
Over-Involvement	.186**	.411**	.120**	1	.498**
Emotional Impact	-.177**	.155**	-.166**	.498**	1

** Correlation is significant at the .01 level (2-tailed), $N = 1004$.