

The Effect of Research Compensation in the Form of Cheques on Gamblers' Cash-in Behaviour

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Abstract

A view that is commonly held by Research Ethics Board members is that offering money as research compensation has the potential to unduly influence or even coerce subjects into participating in studies. Because money is the core resource of gambling activity, gamblers with financial needs might show an increased propensity to take part in research that offers financial compensation. We hypothesized that pathological gamblers at electronic gambling machines in venues outside of casinos would tend to cash in their compensation cheque faster than non-pathological gamblers would. The current results support this hypothesis. It is therefore necessary to understand gamblers' motivations related to research activities and the ways in which the research context can sustain rational decision making when gamblers consider taking part in scientific studies.

Keywords: gambling, compensation, ethics, undue influence, payment of research participants

Résumé

Les membres du Comité d'éthique de la recherche sont d'avis qu'une somme d'argent offerte en guise de compensation pourrait influencer indûment les sujets ou les forcer à participer à des études. Puisque l'argent est une ressource de base pour le jeu, les joueurs n'ayant pas les moyens financiers pourraient se montrer plus enclins à

prendre part à des travaux de recherche offrant une compensation financière. Nous avons émis l'hypothèse que les joueurs compulsifs utilisant des appareils de jeu électroniques dans des endroits à l'extérieur des casinos auraient tendance à encaisser leur chèque de rémunération plus rapidement que le feraient les joueurs non pathologiques. Les résultats actuels viennent étayer cette hypothèse. Il faut donc comprendre les motivations des joueurs en ce qui concerne les activités de recherche et les conditions dans lesquelles le contexte de recherche peut assurer une prise de décisions rationnelles lorsque ceux-ci envisagent de participer à des études scientifiques.

Introduction

Giving money to research subjects to enhance participation is frequently seen as a practice giving rise to ethical dilemmas (Klitzman, 2013). The perception of unduly influencing subjects to participate in research leads Research Ethics Board (REB) members to question the validity of consent. In studies performed in the United States, Klitzman (2013) and Largent, Grady, Miller, and Wertheimer (2013) reported results showing that undue influence is often equated by REB members with coercion.¹ This view might lead them to overemphasize the risk that subjects face when confronted with financial benefits derived from research participation.

This concern is even more acute in research on addictions, especially gambling, because of the apprehension that the practice of giving financial means to participants might encourage addictive behaviour. Because money represents a core resource and a pursued goal in gambling, compensating gamblers with money is sometimes regarded as being similar to offering psychoactive substances to addicted individuals. This interpretation relies heavily on a paternalistic disease model concerned with the notion that addicted individuals cannot act as free agents capable of rational choice when they are confronted with an object related to addiction (Fisher, 2011; Tucker & Vuchinich, 2000). Although intuitively appealing, this reasoning lacks empirical support. People with addictions have decreased autonomy for rational decisions when they experience withdrawal or intoxication; however, this does not imply a permanent state of inability to give free and informed consent when faced with their drug of choice (Carter & Hall, 2008). By contrast, results from studies that gave drugs to drug-addicted participants and followed these participants over time did not show iatrogenic effects linked to this practice (Carter & Hall, 2013). Studies focusing on substance-addicted participants' perspectives on research ethics emphasized that participants perceived themselves as

¹The terminology used to refer to an ethical committee differs from one country to another. For instance, Institutional Review Board is mostly used in the United States (U.S. Department of Health and Human Services, 2010) and Research Ethics Committee is mostly used in the United Kingdom (Health Research Authority, 2015) and Australia (Guillemin, Gilliam, Rosenthal, & Bolitho, 2012).

personally autonomous and claimed responsibility for their choices (Fisher, 2011; Slomka, McCurdy, Ratliff, Timpson, & Williams, 2007).

There is however, some evidence suggesting that gamblers with limited resources have a tendency to spend freshly acquired money on gambling-related activities. Weinbach and Paul (2008) had access to public data on attendance and wagering volume at a Wisconsin racetrack. They reported that both of these increased significantly on the days when the U.S. government released social security and assistance cheques.

Despite common claims that giving financial means to gambling research participants is unwarranted, empirical studies on the subject are lacking. A search in the Scopus database (August 2014) with the query TITLE-ABS-KEY(pay*) OR TITLE-ABS-KEY(compensat*) OR TITLE-ABS-KEY(incentive*) OR TITLE-ABS-KEY(honorarium) AND KEY(gambl*) yielded 315 articles, but no relevant results. Some empirical studies (e.g., Zangeneh et al., 2008) evaluated the impact of using lotteries as a method of compensating research participants in fields other than gambling. However, none focused specifically on the effects of research compensation on gamblers. Because problem gamblers might be characterized by monetary deprivation, their financial needs could entice them to participate in research.

The following hypothesis was tested with gamblers at electronic gambling machines in venues outside of casinos: Do probable pathological gamblers² tend to cash in their compensation cheques faster than non-pathological gamblers do over a 1-month follow-up period?

Method

Data Source and Materials

Data came from the secondary analysis of a questionnaire validation study carried out via regular mail (see Cantinotti, Ladouceur, & Jacques, 2010, for a detailed description of the methodology). The REB concluded that a review was not needed for the present study, which relied on the secondary use of denormalized data that does not generate identifiable information. The original study received REB review and approval.

Research assistants recorded when monetary compensation in the form of a cheque (15 CAD) was mailed to voluntary participants ($N = 406$; i.e., 116 participants from the questionnaire pilot test and 290 participants from the validation study). Because copies of the cashed cheques were automatically made available to researchers by the emitting financial institution, it was possible to track the cash-in date and to calculate a time interval variable. The administrative process required by the university was

²A terminology change in the 5th edition of the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 2013) occurred in which “pathological gambling” was renamed “gambling disorder.” The present article retains the old terminology because gambling categories were operationalized according to a questionnaire that referred to pathological gambling.

that researchers had to provide copies of the cashed cheques to the Financial Services Department for reimbursement. Days between the estimated receipt of cheques by participants and the cash-in date were computed by taking into account the following information:

1. One day was subtracted when the mail with the cheques was deposited at the post office after the cut-off time for processing or when there was a public holiday.
2. Regular letters were delivered in 2 business days within the city where the mail originated and in 3 days within the province (i.e., other cities; Canada Post, 2007). To account for the different delivery times between these areas, 2 and 3 days were subtracted, respectively, depending on the participant's address.
3. Two weekend days were subtracted when the mail had to be delivered within the city and was deposited at the post office on a Friday, or when the mail had to be delivered outside of the city and was deposited at the post office either on a Thursday or on a Friday (during operating hours).

A total of 375 participants with complete data were included in the analyses.

Gambling status (non-pathological gambler [$n = 220$] or probable pathological gambler [$n = 155$]) was determined in accordance with the Canadian Problem Gambling Index (Ferris & Wynne, 2001). Other variables included in the study were *sex* (male or female), *employment status* (employed or unemployed), and *household income* (1 = less than \$20,000; 2 = \$20,000 to \$39,999; 3 = \$40,000 to \$69,999; 4 = \$70,000 to \$89,999; 5 = \$90,000 or more).

Data Analysis

Analyses were performed with SPSS version 22; a p value of .05 indicated significance. A Kaplan-Meier plot and a Breslow test (generalized Wilcoxon; Kleinbaum & Klein, 2012) were used to illustrate and check for group differences in the delay between receipt of a cheque and when it was cashed. Cox proportional-hazards regression modelling (Singer & Willett, 2003) was used to analyze whether gambling status was a statistically significant explanatory variable of the days between the receipt of cheques by participants and the cash-in date, with adjustment for potential confounding variables (sex, employment status, household income). The proportional hazards assumption was checked by visual inspection of the Kaplan-Meier survival curves.

Results

The Kaplan-Meier procedure showed that probable pathological gamblers tended to cash their monetary compensation faster (median = 3 days) than did non-pathological gamblers (median = 5 days), as reported by the Breslow test, $\chi^2(df = 1) = 8.66$, $p = .002$ (one-tailed, $n = 375$; see Figure 1).

In order to test whether sex, employment status, and household income had an impact on the results, we conducted the Cox regression analysis. At Step 1, only

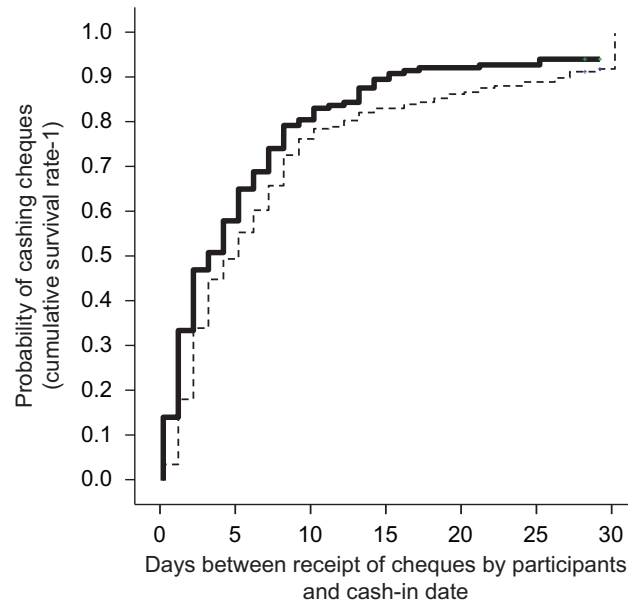


Figure 1. Days within which a compensation cheque was cashed by participants. Continuous survival curve: probable pathological gamblers ($n = 155$). Dotted survival curve: non-pathological gamblers ($n = 220$).

gambling status was included, which led to a statistically significant increase in fit over the null model, $\Delta\chi^2(1) = 7.79$, $p = .005$ (hazard ratio = 1.38). At Step 2, potential confounders were added. As indicated in Table 1, these variables showed no statistically significant association with the outcome, but gambling status remained significantly related to it. The model with the covariates did not demonstrate a statistically significant increased fit over the model with gambling status as the only predictor, $\Delta\chi^2(3) = 3.19$, $p = .363$. The odds for cashing the compensation cheques were 32% higher among probable pathological gamblers than among non-pathological gamblers over a 1-month follow-up period (see Table 1). Thirteen participants (3.5%) had censored data and 40 (10.7%) had missing data for one or more variables.

Table 1

Cox Proportional-Hazard Regression Model With Days Between Receipt of Cheques by Participants and Cash-in Date as Event Outcome Variable ($n = 335$)

Variable	Description	HR (95% CI)	p Value
Gender	167 men (r); 168 women	0.85 (0.68-1.07)	.163
Employment	283 employed (r); 52 unemployed	1.22 (0.88-1.68)	.237
Household income	Treated as continuous	0.99 (0.89-1.11)	.858
Gambling status	196 NPGs (r); 139 PPGs	1.32 (1.05-1.67)	.018

Note. PPGs = probable pathological gamblers; NPGs = non-pathological gamblers; HR = hazard ratio; (r) = reference category (e.g., PPGs have a 32% higher HR than do NPGs); CI = confidence interval.

We also assessed whether a difference in the proportion of probable pathological gamblers in the two mail delivery areas (49.2% inside the city delivery area and 37.6% outside of it) could act as a potential confounder. The delivery area was included as a stratum in the Kaplan-Meier analysis and the results were similar to those of the first analysis. This finding means that the differential composition of gamblers in each area did not bias the statistical inference of the test.

Discussion

To our knowledge, this study is the first to indicate that probable pathological gamblers have a tendency towards faster cash-in behavior of cheques offered as research compensation. These results suggest that financial compensation may play a more significant role for probable pathological gamblers than for non-pathological gamblers at electronic gaming machines. The notion that pathological gamblers participate in research primarily for economic motives deserves further investigation. We endorse the claim made by Fisher (2011) that it is necessary to learn how addicts perceive their situation regarding participation in research. These data could inform thinking about applied ethics in gambling research. It is also important to determine whether there are situations in which REBs overemphasize the risks involved in research because of financial incentive and could be overprotective of research participants (Guillemin et al., 2012).

Do these results indicate that compensating participants in gambling studies unduly influences their participation? The Tri-Council Policy Statement, which Canadian REBs should follow, indicates that "where incentives are offered to participants, they should not be so large or attractive as to encourage reckless disregard of risks" (Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, & Social Sciences and Humanities Research Council of Canada, 2014, p. 27). The U.S. Department of Health and Human Services (2015, paragraph 3) states that "wherever the remuneration is set, it will influence the decision of some more than others." Both Canadian and U.S. ethical guidelines underline that the economic circumstances of the prospective participants should be taken into account. However, in 1979, the Belmont Report (U.S. Department of Health and Human Services) had already acknowledged the difficulty in distinguishing justifiable persuasion and undue influence.

According to Largent et al. (2013), "undue influence compromises the validity of consent by creating a cognitive deficiency or distortion in reasoning" (p. 506) and "an offer of payment does *not* constitute *undue* influence if subjects are likely to make a reasonable or rational choice to regard the value of the payment as sufficient to justify the risks or burdens of participation"; (p. 505). The challenge, therefore, consists in drawing the line between contexts in which a monetary amount motivates participation and contexts in which it diminishes the ability to perceive risks adequately. It follows that it is difficult to argue that monetary incentives on a scale commensurate with low-skill labour represent undue influence, at least in low-risk questionnaire studies. Because studies of problem gamblers ought to include references for recovery

and support resources, participants also gain access to relevant information that might help them and that they would not have spontaneously sought (Chrétien et al., 2013).

Although the analysis yielded statistically significant results, it is worth noting that the median difference between types of gamblers involved only 2 days. An understanding of the meaningfulness of this result in the life of pathological gamblers requires a more detailed understanding of their life situation (e.g., pressing financial needs, the meaning that gamblers give to an inability to meet these needs). A phenomenological research framework aimed at studying "what it is like to be, to have, or to live" (Sandelowski, 2008, p. 787) could be useful in order to qualitatively assess pathological gamblers' tendency to cash in compensation cheques faster. Even if people with gambling problems were to appear more focused on financial compensation, would it be a reason to prevent them from participating in research? Doing so might exclude persons from higher material deprivation levels, which would pose an ethical and scientific problem. At present, the state of knowledge on the topic of this research lacks sufficient empirical support to suggest definite changes in how gamblers are compensated for research participation.

More research is nevertheless required to study how and when gamblers—especially impoverished gamblers—have an impaired decision-making process when confronted with research compensation. One option worth exploring would be the procedure suggested by Nelson et al. (2011) for studying the perception of voluntariness among research participants with the Decision Making Control Instrument.

This study has three main limitations. It is a secondary analysis of data collected by using a methodology with a different purpose from that of studying the effects of monetary compensation. Only electronic gambling machine gamblers in venues located outside of casinos were included; therefore, the results do not necessarily apply to other forms of gambling. Lastly, the study does not provide an understanding of the cognitive and emotional processes of gamblers related to their cash-in behavior after receiving research compensation cheques.

In conclusion, we have found that probable pathological gamblers tend to cash in compensation cheques faster than non-pathological gamblers do; consequently, compensating those who participate in gambling research could raise ethical concerns.

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The Social Side of the Pathways Model: Examining the Mediation of Social Support on the Relationship between Psychopathology and Problem Gambling

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Abstract

This study uses a large representative sample of gamblers in the Canadian province of Quebec to examine the relationship between social support and psychopathologies commonly associated with gambling problems. Generalized linear modeling is applied to the 2008 Canadian Community Health Survey to find that social support mediates the relationship between mood disorders and problems that a person experiences as a result of gambling. These findings are discussed in the context of developing a framework that understands the features of social support in relation to psychopathological predictors of gambling problems. The study concludes that prominent psychopathological predictors of problem gambling are best understood in the respective contexts of the social environments in which they are found.

Keywords: problem gambling, addiction, social support, Canada, generalized linear models, mood disorders, sociology

Résumé

Cette étude a été réalisée auprès d'un vaste échantillon représentatif de joueurs de la province de Québec, au Canada, en vue d'examiner le lien entre le soutien social et les psychopathologies accompagnant fréquemment les problèmes de jeu. Le modèle linéaire généralisé a été appliqué à l'Enquête de 2008 sur la santé dans les collectivités canadiennes en vue de découvrir le soutien social qui joue un rôle dans le lien entre les troubles de l'humeur et les problèmes que connaît une personne à cause du jeu. Les résultats de cette étude sont examinés dans le contexte de l'élaboration d'un cadre qui comprend des éléments de soutien social en matière de prédicteurs psychopathologiques des problèmes de jeu. L'étude conclut que les principaux prédicteurs psychopathologiques des problèmes de jeu sont mieux compris dans les contextes respectifs des environnements sociaux dans lesquels on les retrouve.

Introduction

In the current research literature, few theoretical frameworks are available that take a multidisciplinary approach to problem gambling. It is even rarer to find a theoretical approach that consistently applies sociological or social psychological concepts and which is constructed in a meaningful way. The importance of social support and positive social relationships in understanding gambling behaviour has been demonstrated in a variety of research settings. These studies show that generally those subjects with greater social support from their personal relationships experience fewer problems as a result of the gambling, though these relationships are complex and varied (Gomes & Pascual-Leone, 2009; Oei and Gordon, 2008; Petry and Weiss, 2009; Vander Bilt et al., 2004; Weinstock and Petry, 2008). However, little effort has been made to incorporate such research into a coherent theoretical model that seeks to understand these findings in relation to other fields' research on problem gambling.

The following research examines the extent to which an individual's access to social support accounts for the association between psychopathologies and problem gambling. In doing so, these findings contribute to the extant literature by revealing an important mechanism through which psychopathologies are associated with problem gambling. The present study is useful on several levels. First, making sense of social support in relation to widely studied psychological predictors of gambling problems will help to demonstrate the interconnection between mental health traits and social environment in predicting problems. Second, this study will be able to contribute to the development of a multidisciplinary theoretical model that makes sociological and social psychological research more relevant to our explanations of gambling-related harm.

Current theoretical models

Much of the research on problem gambling in the current literature focuses on individual attributes or conditions that are associated with problem gambling. This approach works to explain its presence. This focussing has led to an understanding of problem gambling as the result of an intersection of various risk factors, the majority of them being related to some manner of psychological or neurological condition or disorder. However, fewer theoretical perspectives exist that attempt to understand these conditions' contributions to gambling problems in context of the social environment in which they are found. If we are concerned with refining our knowledge of the situations or conditions where problem gambling is most likely to be present, we must address two propositions. First, to understand the relationships between these conditions and problem gambling more clearly, it is important to consider the extent to which features of the social environment explain these relationships. Second, that if a person's social support network offers them greater social resources, it decreases accordingly the negative impact of mental health problems in that person's everyday life. At a theoretical level, the goal of this paper is to expand on our understanding of the interconnections between predictors of

problem gambling by examining how a gambler's social support network is related to the experience of gambling-related harm.

Several theoretical frameworks exist that try to incorporate a range of risk factors from different disciplines that approach the problem of problem gambling. One such theoretical framework is the Pathways Model. The Pathways Model was developed by Blaszczynski & Nower (2002) to address the wide range of existing explanations of problem gambling at the time. The Pathways Model has been used to examine several aspects of gambling including seniors gambling (Tirachaimongkol, Jackson, & Tomnay, 2010), gambling propensity among young adults (Fabiansson, 2010), variation in gamblers by age (Welte, Barnes, Tidwel, & Hoffman, 2011), impacts of gambling on family life (Kalischuk, 2010), and the relevance of mythic icons in gambling (Nixon & Solowoniuk, 2009). The goal of this theoretical framework is to develop a model of problem gambling where the existing explanations of fields in neurobiology, psychiatry, psychological sociology etc. could be understood as complementary rather than competing explanations for problem gambling. The result is a theoretical model that allows the findings of many different types of research to be understood in relation to each other. Another important aspect of the Pathways Model is its ability to recognize variation among problem gamblers. By recognizing that there are many contributing factors that lead to a diagnosis of problem gambling the theory also points out that there is also likely variation in the types of problems that a person experiences because of their gambling. This leads to the model's three "pathways" to problem gambling: (1) behaviourally conditioned gamblers, (2) emotionally/biologically vulnerable gamblers, and (3) antisocial-impulsivist gamblers.

Of particular interest to the current study are traits belonging to the "emotionally/biologically vulnerable" pathway. This pathway includes gamblers who learn how to gamble and how to perceive the results of their gambling activities through behavioural conditioning, but who also have a psychological or neurological condition that predisposes them to harm. Specifically, this study examines the relationships between anxiety disorders, mood disorders and supportive relationships. Analyzing the interplay between psychopathologies and features of a person's social life, such as social support and family life, can help us gain a greater understanding of how a person's emotionally vulnerable condition might lead to gambling. Showing that the link between psychopathologies and problem gambling is shaped significantly by features of a person's social relationships represents an important step in gambling research. Not only does the link represent a significant expansion of the Pathways Model, but it also serves the wider purpose of aiding in interdisciplinary understandings of problem gambling.

Anxiety and mood disorders

Two generally supported correlates with problem gambling are anxiety disorders and mood disorders. Conditions such as depression and obsessive compulsive disorder have long been associated in the psychological research literature with the presence of problem gambling (Beaudoin & Cox, 1999; Black & Moyer, 1998; Castellani & Rugle, 1995;

Giddens, Xian, Scherrer, Eisen, & Potenza, 2011; McCormick, 1994; Vitaro, Ferland, Jacques, & Ladouceur, 1998). Not surprisingly, these families of conditions play a prominent role in multidisciplinary frameworks such as the Pathways Model.

Epidemiological evidence has shown that both conditions are strongly related to problem gambling. In an analysis of the Canadian Community Health Survey for the 1.2 cycle (for the year 2002), el-Guebaly et al. (2006) found that people with a mood disorder and/or an anxiety disorder were about 1.9 times more likely to experience moderate to high severity of problem gambling, as measured by the PGSI. (Petry, Stinson, & Grant, 2005) note that some inconsistency exists in existing research between the conditions and problem gambling. However, in their epidemiological study of the 2001-2002 NESARC survey, Petry et al. found that, after controlling for various demographic factors, both mood disorders and anxiety showed strong and significant relationships with pathological gambling (Petry et al., 2005).

While these conditions are clearly important for the treatment and prevention of problem gambling, it is also important to recognize that these conditions do not operate in a vacuum. Research has shown that various social factors play an important role in determining what effects these conditions will have. For example, in their study of social anxiety disorder and alcohol abuse, Buckner, Timpano, Zvolensky, Sachs-Ericsson, and Schmidt (2008) found that co-morbidity between the two was significantly lower in the presence of high social support from friends. Similarly, in a study of comorbidity between substance use and mental health problems, Warren et al. (2007) found that, among participants in residential drug abuse programs, social support was linked to both better mental health and lower cocaine and heroin use. Weinstock et al. (2006) determined that family functioning is significantly related to the occurrences of mood disorder episodes. Specifically, they found that, among patients with major depressive disorder and bipolar affective disorder, acute episodes were associated with family dysfunction.

Social Support

Current gambling research has found that low levels of social support are an important risk factor in problem gambling. Social support has been shown to be both a protective factor against the negative effects of anxiety and mood disorders and an encouraging factor in the treatment of problem gambling. In a study of 60 outpatients of a problem gambling treatment program in Ontario, Gomes and Pascual-Leone (2009) found that emotional support and instrumental support were associated with greater motivation to abstain from gambling, greater self-confidence, and reductions in depressed affect, all of which led to better treatment outcomes. Similarly, in their examination of over 200 pathological gamblers, Petry and Weiss (2009) discovered that social support was both positively related to positive outcomes in abstaining from gambling, and was negatively related to both the presence of anxiety disorder and the presence of clinical depression. In terms of social support as a protective factor against problem gambling, in their study of a sample of university

students, Weinstock and Petry (2008) found that students with higher levels of perceived social support were less likely to be problem gamblers.

In their study of the relationship between coping with stress and specific gambling motivations, Thomas, Allen, Phillips, & Karantzas (2011) found that high subjective social support was a direct protective factor against gambling frequency. The researchers also determined that social support indirectly protected against avoidance-motivated and accessibility-motivated gambling. Hardoon, Gupta, & Derevensky (2004), in the sample of student in grades 7-13, found that respondents who screened for probable pathological gambling had significantly lower scores of perceived social support compared to other students. High perceived support from both family and peers served as protective factors from problem gambling (Hardoon et al., 2004).

In their study of the members of gamblers anonymous, Oei and Gordon (2008) also determined that social support was significantly related to gambling behaviours. Specifically, Oei and Gordon found that social support and involvement in meetings of gamblers anonymous were the most strongly associated factors with abstinence from gambling.

It is important to note that social relationships can also have the effect of increasing the likelihood of gambling. In a longitudinal study of older adults (mean 78.8 years old), Vander Bilt et al. (2004) found that social support was positively related to gambling participation. It was suggested in their research that this situation is the result of gambling being a positive social activity for older adults and reflects high rates of sociability motivation in older adults as opposed to action-seeking or escapist motivations. Relationships can also lead to greater stress and problem gambling. Elman, Tschibelu, and Borsook (2010) through extensive interviews with problem gamblers, discovered that the experience of interpersonal stress was positively related to problem gambling severity.

Research Question

The above discussion suggests several things. First, it implies that strong theoretical frameworks for a multidisciplinary approach to problem gambling research do indeed exist, but also that sociological research to this point is not well represented within them. Second, the presence of psychopathologies, particularly anxiety and mood disorders, are key defining aspects in the categories of problem gamblers in a wealth of psychological research. Third, the degree of social support that a person receives is related to gambling frequency, the experience of gambling-related harm, and negative effects associated with mood and anxiety disorders.

Given the above assumptions, it is reasonable to expect that social support plays an important role in the extent to which psychopathologies are related to problem gambling. The current study is then driven by the following two questions: (1) Is higher perceived social support related to lower problem gambling scores when mood disorders and anxiety disorders are controlled for? (2) Does perceived social

support mediate the association between psychopathologies and problem gambling? Showing that aspects of the social environment are as effective as, and perhaps even modify, established psychological predictors of problem gambling supports the greater inclusion of sociological variables into theoretical frameworks for explaining problem gambling. Such an inclusion has the potential to improve the model as a tool for conducting multidisciplinary research, for guiding treatment and prevention strategies, and for allowing understanding of gambling research across disciplines.

Method

Data Source

The data source for this study is the Canadian Community Health Survey for the 2007-2008 collection cycle. The CCHS is a national level cross-sectional survey which collects data throughout the year and releases it annually. It is the joint effort of the Canadian Institute of Health Information (CIHI), Statistics Canada, and Health Canada. The survey's sample includes Canadian residents, over the age of 12, in all ten provinces and three territories. The survey excludes those persons living on reserves and other aboriginal settlements, institutionalized populations, and residents in two small communities in Quebec.

The entire sample collects data from over 130,000 Canadian residents in 136 Health Regions. These Health Regions are divided into both large urban centres and rural areas to avoid over-representation from urban areas. Respondents were selected through a combination of area frames, random digit dialing, and telephone number list frames. The CCHS data was collected by face-to-face interviews and telephone computer-assisted telephone interviews by specially-trained interviewers. Interviews typically lasted between 40 and 45 minutes.

Participant Sample

This study will focus on the Quebec subsample since that was the only province that administered questions relating to both gambling and social support for the 2007-2008 cycle of the CCHS. This study includes only adults 18 years old and above who had participated in at least one gambling activity in the twelve months prior to their interview (9014). After listwise deletion for missing cases for variables included in the analyses and 8 deleted outliers (see discussion below), the sample for the present study contained 8010 participants.

Materials

This study employs the Problem Gambling Severity Index (hereinafter referred to as the PGSI), a part of the Canadian Problem Gambling Index (hereafter referred to as the CPGI), as its measure for problem gambling. The PGSI was developed for use with large surveys, in part because of the problems associated with other psychiatric diagnostics screens, such as the South Oaks Gambling Screen and the DSM-IV

criteria for pathological gambling (Ferris & Wynne, 2001). In comparison to other commonly used screens for problem gambling, the CPGI includes more questions related to the consequences of respondents' gambling practices. This problem-based approach makes the use of this scale more appropriate for sociological research than more addiction-based diagnostic scales (Ferris & Wynne, 2001). The PGSI is specifically useful to this study because of its capability to measure the severity of gambling problems, not just their presence or absence.

The current study includes only respondents aged 18 and older. Age is coded by the CCHS as a categorical variable consisting of 16 categories. With the exception of the 18-19 years old category, these categories are separated into groups of five years (e.g., 20-24) with a maximum category of 80 years or older. Existing research has found that the relationship between age and problem gambling is better understood as a non-linear relationship. Rates of problem gambling have been found to be lower among young adults and older adults and higher among middle aged groups (Welte et al., 2011). To account for this, a term is introduced that squares age, forming a quadratic regression equation.

Gender is coded as a dichotomous variable. The gender of the respondent as either a man or a woman was determined by the interviewer. If it was not clear which category the respondent belonged to the interviewer was instructed to ask the respondent which gender he or she was. Models also control for marital status. Marital status is coded as a dichotomous variable for this study with "married" and "common-law" coded as "yes" and widowed, separated, divorced, and never married coded as "no."

The degree of social support available to the respondent is measured by the Social Support Survey, which is part of the Mental Outcomes Survey (MOS) (Sherbourne & Stewart, 1991). This scale includes information on several aspects of social support including positive social interaction, emotional and informational support, affection, and tangible social support. There are 19 items asking respondents about scenarios related to the following question: "How often is each of the following kinds of support available to you if you need it?" (Sherbourne & Stewart, 1991, p. 713). Each item is scored on a Likert scale with a score 0 indicating "none" and 4 indicating "all the time." The scale has a minimum score of 0, maximum score of 76, and a mean of 64.5. Higher scores on this scale indicate higher levels of support. The Social Support Survey also includes a question concerning how many close relationships a person maintains from which they might receive the aforementioned support. Respondents are asked to indicate a number for the following question: "About how many close friends and close relatives do you have, that is, people you feel at ease with and can talk to about what is on your mind?" (Sherbourne & Stewart, 1991, p. 713). Eight respondents indicated having over 95 close relationships and were removed as outliers. The next highest score was 60.

Psychopathologies are represented by the presence of anxiety disorders and mood disorders. The presence of an anxiety disorder is indicated by a yes/no answer to the following question: "Do you have an anxiety disorder such as a phobia,

Table 1
Sample description

	Variable	Count/Mean	%/ <i>SD</i>
Gender	Male	3631	45.33%
	Female	4379	54.67%
Age	18-29	1576	19.68%
	30-39	1412	17.63%
	40-49	1367	17.07%
	50-64	2300	28.71%
	65 and up	1355	16.92%
Mood/anxiety disorders	Neither	7256	90.59%
	Anxiety only	314	3.92%
	Mood only	273	3.41%
	Comorbidity	167	2.08%
Marital status	Married/cohabiting	4348	54.28%
	Single/Divorced/Separated/Widowed	3662	45.72%
Social support	Social Support Survey (mean score)	64.4	14.2
	Number of relationships (mean)	7.5	6.6

obsessive-compulsive disorder or a panic disorder?” Likewise, the presence of a mood disorder is indicated by a yes/no answer to the following question: “Do you have a mood disorder such as depression, bipolar disorder, mania or dysthymia?” (Statistics Canada, 2008, p. 25). These two questions are preceded by the phrase, “Remember, we are interested in conditions diagnosed by a health professional.” Whereas it might be preferable to have a screening tool for detecting these conditions in a survey sample, the current measures are considered to be justifiable because they are likely to be highly specific. That is, while they may miss undiagnosed mental health disorders, they are nevertheless unlikely to produce a large number of false positives. To account for problems of comorbidity of these conditions (Mineka, Watson, & Clark, 1998), they have been combined into a categorical variable. The categories of this variable are “neither anxiety nor mood disorders” (the reference category), “mood disorder only,” “anxiety disorder only,” and “both anxiety and mood disorder.”

Analysis

Data analysis for this study employs hierarchical multiple regressions. The estimates reported represent the raw estimates for each variable. The first step examines the relationship between PGSI scores and two common psychopathological predictors of high problem gambling scores, mood disorders, and anxiety disorders. This first step also controls for basic demographic variables of age and gender. The second step introduces social predictors of low problem gambling scores, marital status, perceived social support, and the number of relationships from which one receives that support. The third step combines psychopathological predictors of high gambling scores with social predictors of low gambling scores.

The experience of considerable problems due to gambling is a relatively rare occurrence. This suggests that it is difficult to estimate the relationships between gambling problems and other variables using least squares regression without bringing into serious question the validity of those findings. For this reason the current study uses a generalized linear model approach which assumes a gamma distribution for the models with a log function. The use of generalized linear models is rare in gambling research. However, this technique has proven useful in modelling other similarly distributed events such as alcohol consumption (Lopes, Andreozzi, Ramos, & Sá Carvalho, 2008) health economics research (Basu & Rathouz, 2005) and risk assessment (Blough, Madden, & Hornbrook, 1999). Typically, gamma models cannot be run when there are zero values on the dependent variables. To account for this, a score of 0.1 was added to all scores on the PGSI. This means that, when interpreting the fitted values of the models, a score of 0.1 should be subtracted from the predicted values. Such adjustments are made in the discussion and presentation of the results.

Conditions for mediation tests include that (1) the mediator (social support) is significantly related to the dependent variable (PGSI scores), (2) the mediated variable-past diagnosis of a mood disorder) is significantly related to the dependent variable, and (3) the mediated variable is significantly related to the mediating variable. To test the whether a mediation effect is taking place, the relationship between the mediated variable and the dependent variable must be significantly lowered with the introduction of the mediator variable. To test whether this lowering of effect is significant, a Sobel test was performed (Sobel, 1982). The following analyses were performed using the R project for statistical computing.

Results

As shown in Table 2, PGSI is regressed as the dependent variable on mood disorders, perceived social support, and controls. Model 1 first looks at psychopathology and basic demographic variables. This model largely supports existing research findings. As expected, gender shows a significant negative effect on PGSI scores. The literature has shown that women have significantly lower rates of problem gambling in comparison to men and the findings here support that as well (Hraba & Lee, 1996). Significances of both the age and age-squared variables show a non-linear relationship between age and PGSI scores where rates of gambling problem scores are lower at the younger and older ends of the scale, and highest in the middle age groups. This finding supports research describing the relationship between age and gambling problems as being curvilinear (Welte et al., 2011). The presence of mood and anxiety disorders show strong and positive effects on PGSI scores, and they are significant at the $p < 0.001$ level. This model confirms the generally-supported findings that both mood disorders and anxiety disorders are strong predictors of gambling problems. Further, having been diagnosed with both anxiety and mood disorder shows an even stronger effect, thereby supporting research that identifies problem of mental health comorbidity among problem

Table 2

Psychological and social predictors of PGSI scores: Generalized linear model regression analysis

	Model 1		Model 2		Model 3	
	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error
Gender (Female)	-0.54***	0.087	-0.396***	0.088	-0.448***	0.084
Age	0.155*	0.068	0.252***	0.071	0.214**	0.068
Age sq.	-0.009*	0.004	-0.014***	0.004	-0.012**	0.004
Mood Disorder	0.718**	0.238			0.403	0.230
Anxiety Disorder	0.971***	0.223			0.827***	0.214
Mood and Anxiety Disorders	1.525***	0.302			1.127***	0.292
Marital Status (Married)			-0.410***	0.095	-0.370***	0.091
Social Support			-0.018***	0.003	-0.014***	0.003
Number of relationships			-0.008	0.007	-0.006	0.006
Intercept	-1.675***	0.074	-0.609	0.091	-0.843*	0.365
AIC	-5156		-5351		-5742	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

gamblers (Beaudoin & Cox, 1999; Black & Moyer, 1998; Castellani & Rugle, 1995; Giddens et al., 2011; McCormick, 1994; Vitaro et al., 1998).

The second model examines variables that are used to indicate the quantity and quality of social support that a person receives. In reference to model 1, we see the effect of gender reduces somewhat but still remains significant. The age variables increase in their effect, and their level of significance increases to the $p < 0.001$ level. Social support shows a significant negative relationship with PGSI scores, indicating that those subjects in the sample with higher levels of social support tend to experience fewer problems related to gambling. However, the number of social relationships from which a person receives social support does not show a significant effect in the model. While the AIC score is lower for model 2 compared to model 1, an analysis of variance test shows that the improvement in model fit is not significant.

Model 3 includes the two sets of independent variables. The age variables and gender variable all show a similar effect as in the first two models. Variables in this model relating to social support show reasonably consistent effects with model 2. Likewise, both the presence of an anxiety disorder and comorbidity of mood and anxiety disorders show strong and significant effects. While in model 2 mood disorders were significantly related to higher PGSI scores, model 3 shows that, once model has adjusted for social support, that association becomes non-significant. This suggests that the relationship between mood disorders and problem gambling scores is mediated by the degree of support that a person has. After confirming that the conditions for testing mediation were met, a Sobel test was conducted on the relationships involved. The models used in the Sobel test controlled for the presence

of anxiety disorders, comorbidity with anxiety disorder, gender, age, and marital status. The Sobel test statistic is 3.937 where $p < 0.001$ on a two tailed probability test. One interpretation of this pattern is that the relationship between mood disorders and problem gambling is indirect. The positive relationship between the presence of a mood disorder and problem gambling scores is explained in part by the negative relationship observed between mood disorder and the social support that one receives, specifically that those subjects who have been diagnosed with a mood disorder report significantly lower levels of social support. The observation that model 3 has the lowest AIC score of the models examined shows that the combined model provides the best fit for the data examined. An analysis of variance test shows that model 3 is a significant improvement over both model 1 and model 2 ($p < 0.001$).

Discussion

To begin with, the models contained in the above analysis confirm many aspects of problem gambling that we already know. In terms of demographics, these models show that women experience fewer problems as a result of gambling compared to men (Hraba & Lee, 1996), and that age shows a non linear relationship with gambling, with younger and older adults experiencing fewer problems in comparison to those adults in the middle age groups (Welte et al., 2011).

While research on personal relationships as related to problem gambling has received less attention in the literature, the findings here show mixed support for existing research on such variables. First, the amount of social support that a person receives was related to significantly lower gambling problems. Conversely, the number of relationships from which a person receives social support does not show a significant relationship with problem gambling scores in the analyses of this study. These findings suggest that it is the quality of social support that is associated with fewer gambling-related problems, rather than size of a person's social support network. They also show that social support is an aspect of one's social environment that requires greater consideration in theoretical frameworks. Particularly, in the context of the Pathways Model, the degree of social support that person receives should be considered as a part of a person's "path" to problem gambling. Unfortunately, the current study is unable to explore the causal order of the relationship between support and gambling problems. This limitation makes it difficult to determine where to place the variable into the current model, making further research on the subject necessary.

Interestingly, the comparison of the first and second models shows that the social support related variables summarized the data better than the models focusing on psychopathologies commonly used as explanatory factors in the development of problem gambling as indicated by the lower AIC score. Perhaps a more important result of this study is the finding that the relationship between having been diagnosed with a mood disorder and the problem gambling score became non-significant with the introduction of the social support variables. The current study interprets this finding as a mediating effect as identified in the results section. Under this interpretation, the initial relationship observed between mood disorders and problem

gambling scores is, in part, explained through mood disorders' relationship with social support.

As mentioned earlier, psychopathologies such as mood disorders are not only a crucial aspect of current theoretical frameworks for understanding problem gambling, but also to a large range of psychiatric and psychological research on problem gambling (Beaudoin & Cox, 1999; Black & Moyer, 1998; Blaszczynski & Nower, 2002; Castellani & Rugle, 1995; Giddens et al., 2011; McCormick, 1994; Vitaro et al., 1998). Again, causal ordering is difficult to assert given the methods of this study. However, this study suggests that the social environment that a person lives in not only has an effect on gambling problems itself, but also affects how closely certain psychological conditions are related to gambling problems. The findings of this study suggest that the support that a person receives from his or her close personal relationships mediates the relationship between mood disorders and gambling problems. For the Pathways Model specifically, and for theoretical approaches to problem gambling more generally, the above findings suggest that variables related to social environment not only have their own important relationships to gambling problems, but are also necessary in understanding the relationships between problem gambling and different psychopathologies. It is important to note that this study also found no mediation effect between anxiety disorders and social support-related variables. As the Pathways Model suggests, different types of emotional vulnerability are likely to react with a person's social environment in different ways (Blaszczynski & Nower, 2002). This study then further supports the goal of the Pathways Model in that it shows greater variability in regard to gambling problems.

The implications of these findings are important not only for the theoretical frameworks we use to study problem gambling but also in how we treat and prevent gambling. Understanding that the social relationships that a person maintains affects the relationship between powerful predictors of problem gambling and the experience of gambling-related problems is a necessary part of any multidisciplinary theoretical framework on the subject. Recognizing the interconnectedness of social and psychological traits makes theoretical frameworks of problem gambling more useful, not only for designing multidisciplinary research, but also for allowing researchers from disparate fields to understand their research in relation to each other. Such a model also helps us to recognize the confluence of personal traits and social environment to help inform policy and encourage more responsible provision of gambling opportunities. The current study aims to contribute to that goal by showing not that the social environment is as important as psychopathological predictors of gambling problems, but that the effects of both factors are best understood in relation to each other rather than separately.

Limitations

There are several important limitations to this study. First, while this study borrows from the logic of the Pathways model, this study is nonetheless not able to examine

the whole of the Pathways Model itself. The data available is not able to examine certain aspects of the model, such as biological or neurological predispositions toward problem gambling. Additionally, impulsivist traits and anti-social personality traits are not included in the data. Another weakness of the current study is that it was not able to study the rate of problem gambling as the dependent variable in the models. The rates of problem gambling in the sample, according to the CPGI screen, were quite low (approximately 2.4%). This fact presented problems when trying to examine categories that had especially low rates of problem gambling. This study opted instead to focus on the PGSI as a continuous dependent variable. This decision was made to capture more persons in the sample who experience problems as a result of gambling but do not also screen positively for problem gambling. The current study shows that the social support that a person receives affects the relationships between individual traits that the person possess and experiencing problems related to gambling. It is reasonable to assume other individual traits would behave similarly. Given the findings of the current study, future research on the relationship between social support and these other aspects of the Pathways Model is needed.

Another possible problem lies with the anxiety and mood disorder variables. As noted in the methods section, these variables are each a self-reported yes/no answer to whether the participant has received a diagnosis from a mental health professional. These variables may not reflect the actual rates of these conditions for several reasons. First, they do not capture subclinical or undiagnosed mental health problems. Second respondents may over-report, under-report, or may be unable to remember mental health diagnoses. Third, the questions ask for lifetime diagnosis rather than currently experiencing the condition. The current study is limited by the methods under which the survey was collected, but the fact that the question references clinical diagnosis makes it less likely for respondents to self-diagnose, and lowers the chances of false-positive screens.

Unfortunately, the current study uses only cross-sectional data, making it difficult to assert more specific claims about the causal ordering of the relationship between social support and psychopathology variables. This limitation is particularly a problem when trying to contextualize the current findings in multidisciplinary framework such as the Pathways Model, which implies a temporal ordering of the variables involved. As such, it is difficult to determine “where” in the Pathways Model social support related variables should be placed. However, the interaction effect between social support and mood disorders suggests a moderating effect between mood disorders and problem gambling, placing it “between” those variables.

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The Role of Cross-Cue Reactivity in Coexisting Smoking and Gambling Habits

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Abstract

Cigarette smoking is the most common addictive behaviour co-occurring with problem gambling. Based on classical conditioning, smoking and gambling cues may acquire conditioned stimulus properties that elicit cravings for both behaviours. This study examined cross-cue reactivity in 75 men who were regular smokers, poker players or cigarette-smoking poker players. Participants were exposed to discrete cigarette, poker and neutral cues while skin conductance and psychological urges to smoke and gamble were measured. Results showed evidence of cross-cue reactivity based on skin conductance, and subjective response to smoking cues; subjective response to gambling cues was less clear. Smoking gamblers showed greater skin conductance reactivity to cues, and stronger subjective urges to smoke to smoking and gambling cues, compared to individuals who only smoked or only gambled. This study demonstrates evidence for cross-cue reactivity between a substance and a behavioural addiction, and the results encourage further research.

Keywords: cue reactivity, smoking, gambling, skin conductance, urge, craving

Résumé

Le tabagisme constitue l'un des comportements addictifs les plus fréquents accompagnant le jeu compulsif. D'après le conditionnement classique, les déclencheurs du tabagisme et du jeu peuvent acquérir les propriétés d'un stimulus conditionnel en suscitant une envie incontrôlable pour les deux comportements. Cette étude consistait à examiner la réactivité croisée des déclencheurs chez 75 hommes qui fumaient régulièrement, jouaient au poker ou étaient des joueurs de poker qui avaient l'habitude de fumer. Les participants ont été exposés à des déclencheurs discrets (cigarettes, poker, stimuli neutres) pendant qu'étaient mesurées la conduction cutanée et les envies psychologiques de fumer et de jouer. Les résultats ont révélé une réactivité croisée des déclencheurs à partir de la conduction cutanée et de la réponse subjective aux déclencheurs du tabagisme; la réponse subjective aux déclencheurs du jeu était moins claire. Les joueurs qui étaient fumeurs ont présenté une plus grande réactivité aux

déclencheurs selon leur conduction cutanée et de plus grandes envies subjectives de fumer en présence de déclencheurs de tabagisme et de jeu, comparativement aux personnes qui fumaient uniquement ou qui jouaient uniquement. Cette étude montre qu'il y a une réactivité croisée des déclencheurs entre une substance et une dépendance comportementale, et les résultats encouragent la poursuite des travaux de recherche.

Introduction

Problem gambling tends to be associated with other addictive behaviours, including alcohol and substance abuse (Gerstein et al., 1999; Welte, Barnes, Wieczorek, Tidwell, & Parker, 2001), but most often with nicotine dependence (Grant, Desai, & Potenza, 2009; McGrath & Barrett, 2009; Smart & Ferris, 1996). In the Epidemiological Catchment Area Survey, the prevalence of nicotine dependence in problem gamblers was 55%, compared to 27% in non-gamblers (Cunningham-Williams, Cottler, Compton, & Spitznagel, 1998). Smoking rates among treatment-seeking gamblers may even be higher still (Petry & Oncken, 2002; Stinchfield & Winters, 1996). Preliminary evidence also suggests that smoking is associated with greater gambling severity and more psychiatric symptoms (Grant & Potenza, 2005; Odlaug, Stinchfield, Golberstein, & Gant, 2012; Petry & Oncken, 2002; Potenza et al., 2004). These findings warrant further research to elucidate possible common mechanisms underlying the relationship between nicotine dependence and problem gambling.

Cue Reactivity

The development and maintenance of addictive behaviours such as smoking and gambling have been explained via operant and classical conditioning. Unconditioned physiological reactions (e.g., increased adrenaline output; heart rate arousal) and their psychological correlates (the “high” feeling; the excitement of winning money) come to function as positive reinforcement and increase the future probability of these behaviours. Through their association with reinforcement, previously neutral exteroceptive (i.e., discrete external or contextual stimuli) and interoceptive stimuli develop a cueing function and begin to elicit specific psychological and physiological conditioned responses (Bouton, 2000). In a research setting, the conditioned reactions at the physiological level are often measured as changes in heart rate or in skin conductance, and at the psychological level, as urges or craving to engage in the addictive behaviour. This phenomenon has been termed *cue reactivity* (Drummond, 2001) and has been reliably shown with substances including cigarettes, alcohol, cocaine and heroin (for a meta-analysis, see Carter & Tiffany, 1999). Cue reactivity is also a well-established phenomenon with recreational and pathological gamblers, both in the laboratory (e.g., Blanchard, Wulfert, Freidenberg, & Malta, 2000; Sodano & Wulfert, 2010) and a real-world environment (e.g., Kushner et al., 2007).

The cue reactivity paradigm has enhanced our conceptual understanding of the role of conditioning in addiction (Drummond, Tiffany, Glautier, & Remington 1995). In smoking studies, participants are exposed to smoking-related and neutral cues while subjective and objective reactivity measures are monitored. Studies have examined factors thought to influence cue reactivity (e.g., cigarette availability [Carter & Tiffany, 2001], mood [Taylor, Harris, Singleton, Moolchan, & Heishman, (2000)], nicotine deprivation [Payne, Smith, Sturges, & Holleran (1996)], and various stimulus modalities (e.g., in vivo exposure, pictorial stimuli, imagery scripts). The findings converge, showing that exposure to smoking-related stimuli results in robust increases in urges to smoke and modest increases in physiological reactivity (Carter, Bordnick, Traylor, Day, & Paris, 2008; Carter & Tiffany, 1999).

Cue reactivity studies with social and problem gamblers conducted in laboratory and naturalistic settings have also demonstrated increased physiological arousal, and urges to gamble to a variety of gambling modalities, including playing slot machines (Coulombe, Ladouceur, Desharnais, & Jobin, 1992; Coventry & Hudson, 2001; Griffiths, 1993), casino blackjack (Anderson & Brown, 1984; Krueger, Schedlowski, & Meyer, 2005), or imagined gambling situations (Blanchard et al., 2000). The mere expectancy of winning money while gambling can result in increased arousal (Griffiths, 1993; Wulfert, Roland, Hartley, Wang, & Franco, 2005). The general finding is that gamblers reliably report cue-induced urges to gamble, and sometimes also show increased physiological responding in heart rate or skin conductance (e.g., Yucha, Bernhard, & Prato, 2007).

Cross-Cue Reactivity

The principles of operant and classical conditioning can also elucidate the co-occurrence of specific addictive behaviours. For example, the high comorbidity between alcohol and tobacco dependence has been explained via cross-substance cue reactivity (Zacny, 1990). Through the repeated use of cigarettes and alcohol together, one substance comes to act as a conditioned stimulus for the other substance and elicits cravings for the immediate as well as the associated substance. This situation has been found in nicotine and alcohol dependent individuals who experienced urges to smoke when exposed to alcohol cues, and vice versa (e.g., Burton & Tiffany, 1997; Drobos, 2002; Traylor, Parrish, Copp, & Bordnick, 2011). Conceptually, the same conditioning processes can be assumed to govern the co-occurrence of a substance addiction (e.g., smoking) and a behavioural addiction (e.g., gambling). Indeed, evidence exists to suggest a link between substance-related verbal cues and multi-modal gambling cues (e.g., wins, losses) (Zack, Stewart, Klein, Loba & Fragopoulos, 2005). However, research has yet to explore this relationship using discrete exteroceptive cues (i.e., cigarettes, poker chips, cards). Thus, smoking gamblers may also develop cross-cue reactivity to simple gambling and smoking stimuli.

Aims of the present study

To date most studies examining the link between smoking and gambling have relied on self-report. We examined cross-cue reactivity using a psychological (urges) and a physiological measure (skin conductance). We hypothesized that smoking gamblers

would show greater reactivity to smoking and gambling cues than individuals who only smoke or gamble.

As gambling preferences tend to be associated with differences in gamblers' demographic characteristics (gender, age, education), we sought to minimize confounding variables in this exploratory study. We recruited homogeneous community samples of regular poker players who smoked or had never smoked, and regular smokers who had never played poker. As poker players are predominantly male, the sample was comprised of men only.

Method

Participants

The sample consisted of 25 non-gambling smokers, 23 non-smoking gamblers (poker players) and 27 smoking gamblers (poker players), with an average age of 27.2 years between them (range 18-61). The majority of subjects were Caucasian (85.5%), and all had at least a high school education.

Design

We used a 3×3 mixed subjects design with cue (gambling, smoking, neutral) as the within-subjects variable and participant (smokers, gamblers, smoking gamblers) as the between-subjects variable. Dependent variables were skin conductance, and urges to gamble and smoke.

Measures

Participants provided information about demographics, gambling and smoking. Gambling was assessed using the South Oaks Gambling Screen (SOGS) (Lesieur & Blume, 1987), which commands strong internal consistency (Cronbach's $\alpha = .97$; present sample $\alpha = .92$) and which yields scores from 0 to 20 (≤ 2 no gambling problem, 3-4 potential problem gambling, ≥ 5 probable pathological gambling). Smoking was assessed with the Fagerström Test for Nicotine Dependence (FTND; Heatherton, Kozlowski, Frecker, & Fagerström, K., 1991), which has acceptable internal consistency (Cronbach's $\alpha = .61$; present sample $\alpha = .69$), and which yields scores from 0 to 10 (≤ 3 minimal nicotine dependence, 4-6 moderate dependence, ≥ 7 high dependence). Breath CO was measured with a Vitalograph Breath CO Monitor to corroborate self-report of smoking status (Irving, Clark, Crombie, & Smith, 1998). As impulsivity tends to correlate with cue-reactivity in addictive behaviours (Papachristou, Nederkoorn, Havermans, van der Horst, & Jansen, A., 2012), we administered the 54 yes/no item Eysenck Impulsiveness Questionnaire (EIQ) (Eysenck & Eysenck, 1978), and used the impulsivity and venturesomeness subscales, which have good internal consistency (Cronbach's $\alpha = .85$ and $.79$).

Skin conductance was recorded continuously during baselines and stimulus presentations with a bioamplifier (James Long Company, Caroga Lake, NY). It employs a

500mv, 30Hz sinusoidal excitation wave form, and yields skin conductance level and response as outputs. Ag/Ag CL electrodes and isotonic gel were attached to the distal phalanges of the non-dominant hand.

Participants reported urges to smoke and gamble on a Likert-type scale from 1 (no urge) to 10 (maximum urge) (Wulfert et al., 2005).

Procedure

The study was approved by the university's institutional review board, and was conducted consistent with ethical standards laid out in the 1964 Helsinki declaration and its later amendments. After initial screening to determine frequency of smoking and gambling, those whom we classified as regular (i.e., daily) smokers and/or poker players were invited to participate in a study purportedly "to better understanding what people feel when they interact with a variety of stimuli." Participants who smoked were instructed to refrain from smoking for two hours prior to coming to the lab. Upon their arrival, participants first provided informed consent, then completed the SOGS and FTND in counterbalanced order, followed by a CO breath reading and the cue reactivity procedures.

After a three-minute adaptation period, participants were exposed to three sets of cues: neutral, gambling, and smoking cues. The neutral cues were always presented first, while the order of the gambling and smoking cues was counterbalanced between participants. To ensure standardization, participants interacted with each set for three minutes according to instructions delivered via DVD. Before and after each cue exposure, participants relaxed for five minutes. The cues were presented on trays covered with a cloth, and consisted of a pack of cigarettes and a lighter (smoking cues), a deck of cards and poker chips (gambling cues), and a pack of pencils and an eraser (neutral cues). Participants were instructed to remove the cloth of a given tray, look closely at and handle the items as they normally would (e.g., picking up a cigarette, handling the poker cards as if dealing them, simulating writing with a pencil), then put them back on the tray, cover them, and relax. After each cue exposure and each relaxation period, participants rated the intensity (1-10) of their urge to smoke and to gamble. At the conclusion, participants were debriefed, received a \$35 honorarium, and were entered into a raffle for a \$250 prize drawing.

Results

Urges to smoke and gamble, and of skin conductance level (SCL) after removal of one outlier, were satisfactorily distributed. Smokers, gamblers, and smoking gamblers did not differ on any demographic variables. The impulsivity and venturesomeness subscales, two distinct dimensions of impulsivity, were included as covariates in each analysis since impulsivity has been shown to account for a significant portion of the variance in cue reactivity paradigms (Doran, Cook, McChargue, & Spring, 2009; Papachristou et al., 2012). For ANCOVA analyses, the adjusted means are reported unless otherwise noted.

Gambling involvement

A one-way ANOVA using past-year SOGS scores as the dependent variable showed an expected main effect, $F(2, 72) = 5.42, p = .006$. Follow-up contrasts showed smokers ($M = 1.16, SD = 4.03$) had lower SOGS scores than gamblers ($M = 3.57, SD = 3.33$), $t(46) = -2.24, p = .03$, and smoking gamblers ($M = 4.67, SD = 4.22$), $t(50) = -3.06, p = .004$; the latter two groups did not differ significantly, $t(48) = -1.01, p = .32$. Of the 23 poker players, 43% were non-problem gamblers, 38% were possible problem gamblers and 19% probable pathological gamblers. Of the 27 smoking poker players, 33% were non-problem gamblers; the remainder were possible problem (26%) or pathological (41%) gamblers.

Smoking involvement

Smokers on average smoked 16.4 ($SD\ 7.2$) cigarettes per day and scored 5.71 ($SD\ 1.71$) on the FTND (moderately nicotine dependent). The average carbon monoxide level of 19.5 ppm ($SD\ 11.3$) classified them as moderate smokers. There were no significant differences between pure smokers and smoking gamblers on the FTND [$t(50) = -1.11, p = .27$], in number of cigarettes smoked [$t(50) = .41, p = .68$] and in carbon monoxide levels [$t(50) = -.38, p = .71$].

Cue reactivity analyses

Urge to gamble. A 3 X 3 repeated-measures ANCOVA with group as between-subjects factor, cue as within-subjects factor, and urge to gamble as the dependent variable was used to test for cross-cue reactivity. The EIQ impulsivity and venturesomeness subscales served as covariates. The analysis yielded significant main effects for group [$F(2, 70) = 27.81, p < .001, \eta_p^2 = 0.443$] and cue [Huynh-Feldt = .985, $F(1.971, 137.944) = 3.641, p = .029, \eta_p^2 = 0.056$] and a significant group-by-cue interaction [Huynh-Feldt = .985, $F(3.941, 137.944) = 4.97, p = .001, \eta_p^2 = 0.124$]. We used pairwise comparisons (Fisher's LSD method) to examine the significant interaction (Figure 1). For smoking gamblers, the adjusted mean for urge to gamble to the gambling cue was 6.34 ($SE = 0.48$), to the smoking cue 3.69 ($SE = 0.43$), and to the neutral cue 3.55 ($SE = 0.45$). For gamblers, urge to gamble to the gambling cue was 6.11 ($SE = 0.52$), to the smoking cue 4.35 ($SE = 0.47$), and to the neutral cue 3.37 ($SE = 0.49$). For smokers, urge to gamble was 1.49 ($SE = 0.49$) to the gambling cue, 0.29 ($SE = 0.44$) to the smoking cue, and 0.34 ($SE = 0.46$) to the neutral cue.

In summary, smoking gamblers' and pure gamblers' urges to gamble were significantly higher ($p < .001$) than those of pure smokers, but did not differ in response to any of the cues ($p \geq .314$). Hence this finding did not reflect cross-cue reactivity.

Urge to smoke. An analogous 3 X 3 repeated-measures ANCOVA with urge to smoke as the dependent variable showed significant main effects for group [$F(2, 70) = 66.47, p < .001, \eta_p^2 = 0.655$] and cue [Huynh-Feldt = .945, $F(1.889, 132.265) = 11.206,$

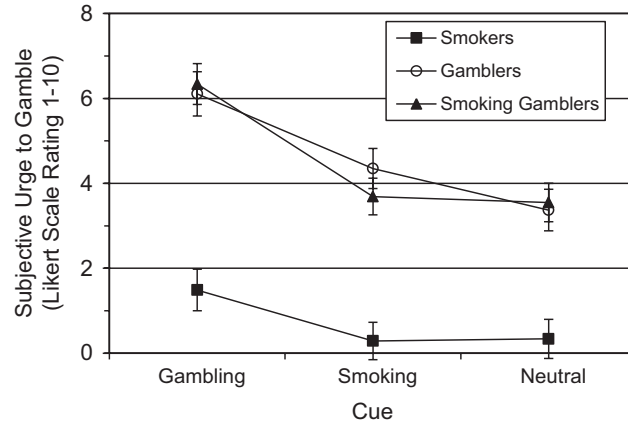


Figure 1. Smokers', gamblers' and smoking gamblers' urge to gamble in response to gambling, smoking and neutral cues. Error bars represent the standard error (*SE*) within each group. Means are adjusted based on impulsivity ($= .48$) and venturesomeness ($= .69$) scales as covariates.

$p < .001$, $\eta_p^2 = 0.138$] and a significant group by cue interaction [Huynh-Feldt $= .945$, $F(3.779, 132.265) = 2.52$, $p = .047$, $\eta_p^2 = 0.067$]. Again, pairwise comparisons (Fisher's LSD method) were used to examine the significant interaction (see Figure 2).

For smoking gamblers, urge to smoke was 6.20 ($SE = 0.43$) to the gambling cue, 7.45 ($SE = 0.39$) to the smoking cue, and 5.76 ($SE = 0.41$) to the neutral cue. For smokers, urge to smoke was 4.93 ($SE = 0.44$) to the gambling cue, 6.07 ($SE = 0.40$) to the smoking cue, and 4.81 ($SE = 0.42$) to the neutral cue. For gamblers, urge to smoke was 0.10 ($SE = 0.46$) to the gambling cue, 0.57 ($SE = 0.42$) to the smoking cue, and 0.10 ($SE = 0.44$) to the neutral cue.

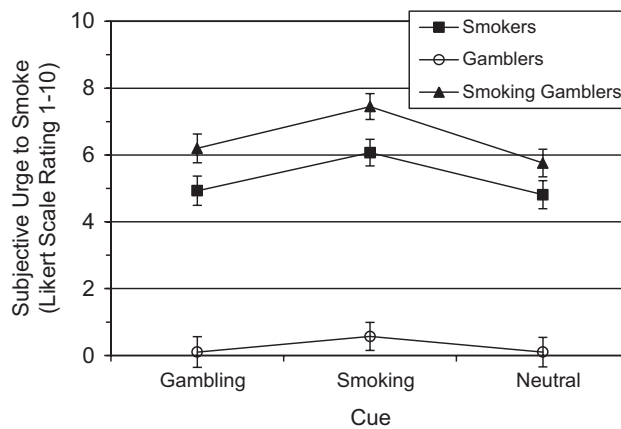


Figure 2. Smokers', gamblers' and smoking gamblers' urge to smoke in response to gambling, smoking and neutral cues. Error bars represent the standard error (*SE*) within each group. Means are adjusted based on impulsivity ($= .48$) and venturesomeness ($= .69$) scales as covariates.

Although smokers and smoking gamblers reported urges to smoke that were significantly higher to smoking cues than were gambling ($p \leq .001$) and neutral cues ($p < .001$), smoking gamblers' urges to smoke were significantly higher ($p \leq .042$) than those of pure smokers in response to both smoking and gambling cues, whereas there was no difference between the two groups in their response to the neutral cue ($p = .113$). This finding supported the hypothesis of cross-cue reactivity in smoking gamblers. Pure gamblers' urges to smoke were significantly lower than those of smokers and smoking gamblers ($p < .001$), and did not differ in response to any of the cues ($p \geq .098$).

Skin Conductance Levels (SLC). A 3×3 repeated-measures ANCOVA was conducted with baseline-corrected SCL as the dependent variable and the impulsivity and venturesomeness subscales as covariates. The ANCOVA yielded a significant main effect for group [$F(2, 70) = 4.67, p = .012, \eta_p^2 = 0.118$] and a non-significant main effect for cue [Huynh-Feldt = .838, $F(1.677, 117.381) = 0.539, p = .526, \eta_p^2 = 0.008$]. The group by cue interaction was not significant [Huynh-Feldt = .838, $F(3.354, 117.381) = 0.742, p = .543, \eta_p^2 = 0.021$].

The main effect for group using pairwise comparisons (Fisher's LSD method) showed that smoking gamblers (adj $M = 1.03, SE = 0.10$), overall, had the largest increases ($p \leq .016$) in SCL compared to smokers (adj $M = .68, SE = 0.10$) and gamblers (adj $M = 0.62, SE = 0.11$); the latter did not differ (see Figure 3).

Discussion

To our knowledge, the present study was the first to explore cross-cue reactivity between an addictive substance (nicotine) and an addictive behaviour (gambling) using discrete cues (i.e., cigarettes, poker chips). We did not find cross-cue reactivity

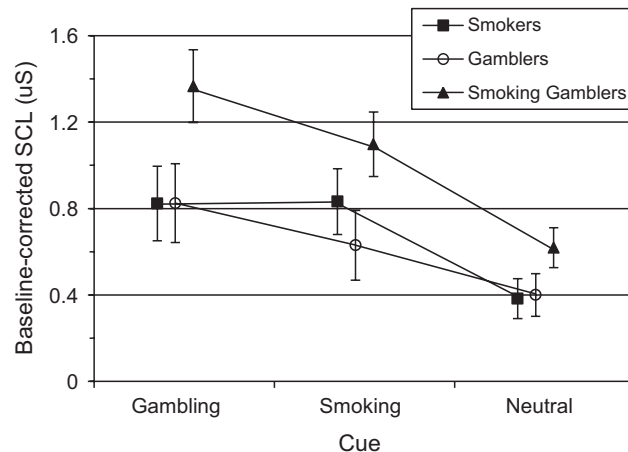


Figure 3. Skin Conductance Level (SCL) in response to each cue presentation (neutral, gambling and smoking cues) by group (smokers, gamblers, and smoking gamblers). Error bars represent the 95% confidence intervals within each group. Means are adjusted based on impulsivity ($= .48$) and venturesomeness ($= .69$) scales as covariates.

for urge to gamble, but there was evidence of cross-cue reactivity between smoking and gambling cues for urge to smoke. That is, smoking gamblers reported higher urges to smoke towards both smoking and gambling cues than did pure smokers and gamblers. We also found that smoking gamblers overall had stronger SCL reactivity to smoking and gambling cues than did pure smokers and gamblers. However, we also have reason to believe that the overall effect of subjective urge to smoke may have been obscured by participants' background urge (Ferguson & Shiffman, 2009). As smoking gamblers and smokers had abstained for several hours, their reported smoking urge to any cue was likely muddled by internal cues of deprivation. An ad libitum smoking phase (30-60 minutes before cue exposure) might have standardized participants' background craving (Barrett, Collins & Stewart, 2015; Carpenter et al., 2009; Traylor et al., 2011). Thus, we speculate that allowing participants to smoke one cigarette under controlled circumstances before the experimental manipulations might in turn yield clearer evidence of cross-cue reactivity regarding urges to smoke. The results of this study are nonetheless generally consistent with that research that has shown cross-cue reactivity involving two addictive substances. Examples of such substances include nicotine and alcohol (Drobes, 2002; Traylor et al., 2011) or nicotine and cocaine (Taylor et al., 2000).

The smoking and gambling cues used in the present study were effective because they elicited stronger psychological and physiological responses than did neutral cues. Consistent with our hypothesis, individuals who both smoked and gambled tended to show stronger conditioned responses to the cues than did individuals who engaged in only one of these behaviours. Specifically, the smoking poker players reported the highest urges to smoke (although their urges to gamble did not surpass those of the pure poker players). The smoking poker players also displayed greater physiological reactivity in SCL in response to all cues, as compared to pure smokers or pure gamblers. These findings are consistent with the hypothesis that cross-cue reactivity is enhanced via classical conditioning, and that dually addicted individuals may experience the largest increases in sympathetic nervous system activity. Furthermore, the increase in subjective and physiological arousal resulting from dual addiction can be explained by one or more psychobiological models of craving (for review, see Skinner & Aubin, 2010). For instance, considering the incentive sensitization model (Robinson & Berridge, 1993), one might conclude that concomitant substance use and gambling results in more frequent or pervasive activation of neural systems than either activity alone, and that this "dual activation" might result in greater sensitization of neural systems, more pronounced sensitization-related neuroadaptation in these systems and an overall increase in the incentive salience of cues. However, the neurobiological effects of a dual substance and behavioural addiction are unknown, thereby warranting further investigation.

The finding that smoking poker players did not report stronger urges to gamble than pure poker players was somewhat unexpected. The most likely explanation is that the smoking poker players in this community sample were similar in gambling severity to their non-smoking counterparts. Based on SOGS scores, many subjects were classified as social gamblers, i.e., they were not "addicted" to gambling. We speculate that the

results might have been different if we had recruited pathological or treatment-seeking gamblers, such as those of Petry and Oncken (2002) or Potenza et al. (2004). Such a difference would be consistent with recent findings that daily tobacco-using gamblers in treatment have significantly greater gambling severity and also more severe comorbidity (McGrath & Barratt, 2009; Odlaug et al., 2012). Therefore, cigarette-smoking pathological gamblers might well experience stronger urges to gamble compared to their non-smoking counterparts. On the other hand, there is also evidence that smoking gamblers are not a homogeneous group: apparently a subset of gamblers who smoke find that smoking lessens their urges to gamble, even though others consider smoking urge-inducing (Odlaug et al., 2012). These findings indicate that more research is needed to shed further light on these important questions.

While this study provides some evidence that gambling cues can become conditioned stimuli (CSs) for urges to smoke, the inverse was not also observed—i.e., with smoking gamblers, the smoking cues did not, in fact, elicit strong urges to gamble. A possible explanation for this finding is extinction or even conditioned inhibition (Bouton, 2007). These phenomena lead to a decrease in the response to a CS when that stimulus is regularly presented without the US following acquisition (i.e., CS-US pairings). For example, smoking poker players are likely to encounter smoking stimuli frequently, in their daily lives, in multiple venues outside of gambling; these presentations of CSs without the US may either extinguish or inhibit smokers' gambling urge in response to smoking stimuli. The opposite is true of poker stimuli because they are typically not present outside of a gaming environment. Moreover, smoking poker players are likely to smoke each and every time they gamble. Gambling cues are thus rarely present in the absence of nicotine ingestion. We therefore speculate that, under these circumstances, gambling stimuli will be better at acquiring CS properties for smoking than vice versa.

Limitations

Several limitations should be noted. First, as mentioned, participants were merely exposed to, and interacted minimally with, gambling and smoking stimuli. Although this is common in cue-reactivity research with smokers, *gambling* cue-reactivity research, in contrast, has often tried to mimic the real-world gambling environment more closely by allowing participants to gamble and wager small amounts of money. The method used in the present study may have prevented much of the excitement people typically experience when gambling because, in such circumstances, they can win money. Therefore, replicating the study with a preparation that involves actual gambling should be considered to obtain more meaningful physiological and subjective measures of urge under more arousing circumstances. One might also consider using multidimensional measures of urge in addition to subjective ratings based on Likert-scale measurements.

A second limitation is that for the reasons previously explained we only enrolled men in this study and do not know whether the findings hold true for both sexes. A replication of cross-cue reactivity involving a substance and a behavioural addiction

that includes women is indicated. Similarly, the current findings are limited to poker players. We chose them for this study because of the frequent comorbidity of nicotine dependency and problem gambling in card players. But future studies should seek to replicate the results with gamblers who prefer other gambling modalities in which cue-elicited arousal plays a central role (e.g., electronic gaming machines).

Finally, as indicated above, the participants in this study were indeed regular smokers and gamblers, but on average did not also show a clinically significant, pathological involvement with gambling. Cross-cue reactivity may be more pronounced in nicotine-dependent pathological gamblers, and future studies should be conducted with treatment-seeking smokers and gamblers.

Conclusions

Despite limitations, the present findings provide initial support for a cross-cue reactivity model as it applies to smoking poker players. Compared to pure smokers or gamblers, these individuals showed overall stronger physiological arousal (SCL) and stronger urges to smoke, although their urges to gamble did not surpass the urges of pure gamblers. If the present findings are replicated with treatment-seeking samples, the way treatment is administered to dually addicted individuals may change accordingly. Because of cross-cue reactivity and smoking gamblers' overall higher physiological arousal (as measured by SCL), we surmise that dually addicted individuals probably experience more frequent and possibly stronger urges to engage in the addictive behaviours. If a heavy gambler attempted to abstain from smoking, exposure to gambling cues might precipitate relapse, because the gambling cues will elicit urges to smoke. The same reasoning applies to smokers who seek to refrain from gambling, but do not also quit smoking. Interventions may have to be geared towards simultaneously treating smoking and gambling problems.

We know from treatment outcome research that cigarette-smoking alcohol abusers who quit smoking were more likely to maintain the alcohol-related treatment gains than those who did not (Bobo, McIlvain, Lando, Walker, & Leed-Kelly, 1998). Analogously, the addition of a smoking-cessation component to gambling treatment, and vice versa, may lead to better outcomes for dually addicted individuals than treating either problem in isolation. Therapists are therefore encouraged to assess the potential benefits of interventions that target both behaviours in cross-addicted individuals.

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« La première fois que j'ai joué... » : l'expérience d'adolescents considérés comme ayant des difficultés avec les jeux de hasard et d'argent

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Résumé

Notre étude vise à décrire les premières expériences de jeux de hasard et d'argent (JHA) d'adolescents ayant développé des habitudes problématiques sur ce plan concernant :a) la nature des activités de JHA, b) la signification des premières expériences au regard des bénéfices et des aspects attrayants des JHA, et c) la progression vers des comportements problématiques. Le devis de recherche qualitatif s'appuie sur des analyses secondaires de données issues d'entrevues semi-structurées réalisées auprès de 31 adolescents présentant des habitudes problématiques de JHA et en traitement pour leur consommation de substances psychoactives (SPA). L'analyse des propos des adolescents révèle que les bénéfices associés aux premières expériences de JHA et à leur exacerbation sont de nature matérielle, émotive et sociale. Les résultats sont analysés à la lumière du contexte social dans lequel les adolescents évoluent : popularité de certains jeux, importance de la performance, la richesse et de la recherche de plaisir.

Mots-clés: Adolescence, première expérience, études qualitatives, bénéfices, contexte social, jeux de hasard et d'argent et consommation de substances

Abstract

This study describes the initial gambling experiences of teenagers who have developed problem gambling habits with regard to: a) the nature of the gambling activities, b) the significance of the first experience in terms of the benefits and attractive aspects of gambling, and c) the progression toward the development of problematic behaviours. The research design draws on secondary analysis of data from semi-structured interviews carried out with 31 adolescents with problem gambling behaviours in treatment for the consumption of psychoactive substances (PS). An analysis of the teenagers' responses reveals the existence of material, emotive and social benefits associated with their first

gambling experience and the exacerbation of their behaviours. The results were analysed in light of the teenagers' social context: popularity of certain games, importance of performance, wealth and the pursuit of pleasure.

Introduction

Les études sur la prévalence des habitudes de jeux de hasard et d'argent (JHA) à l'adolescence présentent des résultats très variables. Les taux oscillent entre 4,1 % et 20 % pour le jeu à risque, et de 0,3 % à 11 % pour le jeu dit pathologique ou problématique (Derevensky & Gupta, 2000; Huang, Jacobs, Derevensky, Gupta, & Paskus, 2007; Jacobs, 2000; Martin, Gupta, & Derevensky, 2009; National Research, 1999; Rainone & Gallati, 2007; Shaffer & Hall, 1996; Welte, Barnes, Tidwell, & Hoffman, 2007). Au Québec, selon la dernière enquête de l'Institut de la statistique du Québec sur le sujet, les taux observés quant au jeu à risque et au jeu dit pathologique probable sont respectivement de 4,1 % et 2,0 % (Martin et al. 2009).

Plusieurs études ont documenté les facteurs de risque associés au développement d'habitudes de jeux de hasard et d'argent dites problématiques à l'adolescence (Derevensky & Gupta, 2004; Hardoon, Gupta, & Derevensky, 2004; Shead, Derevensky, & Gupta, 2010; van Hamel, Derevensky, Takane, Dickson, & Gupta, 2007; Wickwire, Whelan, Meyers, & Murray, 2007). Toutefois, la signification des premières expériences de JHA chez les adolescents demeure peu documentée (Reith & Dobbie, 2011). Il en est de même du contexte social dans lequel elles se déroulent. Or, il est essentiel de mieux comprendre comment cette activité s'immisce dans la vie des adolescents et comment elle fait écho au contexte social dans lequel ils évoluent, afin de mieux prévenir l'apparition de difficultés sur ce plan. Quels sont les bénéfices et les aspects attrayants des premières expériences de JHA pour les adolescents? Comment leur contexte social est-il lié à ces expériences? Cet article vise à répondre à ces questions, en documentant les premières expériences de JHA d'adolescents qui ont par la suite développé des habitudes problématiques de JHA.

Les connaissances sur les facteurs de risque du développement d'habitudes problématiques de jeux de hasard et d'argent

Les études qui ont porté sur les facteurs individuels ont mis en évidence que le fait d'être un garçon (Dickson, Derevensky, & Gupta, 2008; Hardoon et al., 2004), de vivre de l'anxiété (Dickson et al., 2008) et d'avoir une faible propension à la conformité (Gupta, Derevensky, & Ellenbogen, 2006), peu d'autodiscipline (Gupta et al., 2006), de faibles habiletés d'adaptation (Bergevin, Gupta, Derevensky, & Kaufman, 2006), un caractère impulsif (Nower, Derevensky, & Gupta, 2004) et une forte propension à la prise de risque (Dickson et al., 2008; Gupta et al., 2006)

sont des caractéristiques associées à la probabilité de développer des habitudes problématiques de JHA à l'adolescence. En outre, ces adolescents ont une plus grande probabilité de présenter de faibles performances scolaires (Dickson et al., 2008), un trouble des conduites, des habitudes problématiques de consommation de substances psychoactives (SPA) (Hardoon et al., 2004) et une expérience précoce avec les JHA (Gupta & Derevensky, 1998a; Rahman et al., 2012; Vitaro, 2004).

Plusieurs études ont documenté l'influence de la famille, et plus particulièrement des parents, sur l'initiation des adolescents aux JHA (Kalischuk, Nowatzki, Cardwell, Klein, & Solowoniuk, 2006). Que ce soit en jouant avec leurs parents ou en étant exposés à des situations de JHA, les adolescents dont les parents sont eux-mêmes joueurs sont plus susceptibles de développer des habitudes problématiques de JHA. Puisqu'ils évoluent dans un environnement où les JHA sont perçus de façon positive, ces adolescents apprendraient à jouer à travers un processus de modelage qui les conduit à reproduire des comportements de jeu (Felsher, Derevensky, & Gupta, 2003; Gupta & Derevensky, 1997; Magoon & Ingersoll, 2006; Reith & Dobbie, 2011). L'association entre des habitudes problématiques de JHA chez un des deux parents et l'adoption de comportements de jeu problématiques chez l'adolescent a été observée dans plusieurs études (Hardoon et al., 2004; Oei & Raylu, 2004; Raylu & Oei, 2002; Vachon, Vitaro, Wanner, & Tremblay, 2004; Wickwire et al., 2008; Wickwire et al., 2007).

L'appartenance à un groupe de pairs qui s'adonnent à des JHA contribuerait également à l'adoption de comportements de jeu et, éventuellement, au développement d'habitudes problématiques de JHA (Dickson et al., 2008; Hardoon & Derevensky, 2001; Langghinrichsen-Rohling, Rohde, Seeley, & Rohling, 2004; Wickwire et coll., 2008; Wickwire et al., 2007). Par exemple, dans l'étude de Gupta et Derevensky (1997), 75 % des adolescents de l'échantillon ont indiqué jouer en compagnie de leurs pairs.

Au-delà des facteurs liés à la famille et au groupe de pairs, quelques études ont été réalisées sur le contexte social, culturel et géographique dans lequel prennent naissance les habitudes de JHA. Reith et Dobbie (2011) ont exploré les premières expériences avec les JHA de 50 adultes joueurs problématiques. Leurs résultats mettent en lumière que les habitudes de JHA prennent naissance à travers un processus complexe d'observation et d'apprentissage via des interactions avec l'entourage et qu'elles sont inscrites dans un contexte social, culturel et géographique particulier. Ils indiquent également que les premières expériences de JHA sont associées à plusieurs bénéfices, dont le fait de gagner le respect et l'estime de ses pairs, l'intégration à un groupe et l'accès à un statut social particulier. L'aspect social des JHA, qui se manifeste notamment par l'influence de la famille et des pairs, ressort également de l'étude des premières expériences avec les JHA de Kristiansen, Trabjerg et Reith (2015), menée auprès de 52 adolescents et jeunes adultes âgés de 12 à 20 ans.

Malgré l'importance du contexte social au sein duquel les adolescents s'initient aux JHA, cet aspect demeure parmi les moins documentés. Plusieurs questions pouvant permettre de mieux comprendre le développement d'habitudes de JHA problématiques restent sans réponses. Comment un adolescent décide-t-il de s'initier aux JHA? Quels sont les aspects attrayants et les bénéfices associés au fait de prendre part à des activités de JHA? Comment les expériences initiales avec les JHA en viennent-elles à évoluer vers des comportements problématiques? Or, il est essentiel de mieux comprendre comment cette activité s'immisce dans la vie des adolescents et comment elle fait écho au contexte social dans lequel ils évoluent, si l'on veut prévenir l'apparition de difficultés.

Une analyse des habitudes de JHA basée sur le parcours de vie

La théorie du parcours de vie s'appuie notamment sur les postulats suivants : (1) le développement humain est un processus multidimensionnel qui se déroule tout au long de la vie et s'exprime dans de multiples domaines (2) l'action individuelle contribue à la construction de la trajectoire en fonction des possibilités et des contraintes sociales et historiques, des expériences et des significations accordées aux événements, et (3) les événements et leur succession influencent le développement individuel (Elder, Johnson, & Crosnoe, 2004). L'approche du parcours de vie permet une analyse « compréhensive » du développement individuel en tenant compte des liens entre le contexte social et l'action individuelle. Elle propose d'analyser les parcours en considérant à la fois les structures sociales qui modèlent les parcours de vie et les significations accordées aux expériences de la vie par les acteurs individuels (Elder et al., 2004; Settersten, 2003).

Les théories explicatives des habitudes de JHA s'inscrivent généralement dans une vision déterministe qui suggère que les comportements sont, en bonne partie, la résultante de caractéristiques biologiques ou psychologiques (Savard, Tremblay, & Turcotte, 2015). Une telle conception véhicule l'idée d'une grande stabilité des comportements puisqu'ils résultent de déterminants difficilement modifiables comme les traits de personnalité ou les antécédents familiaux. Une autre perspective consiste à examiner les comportements sous l'angle du parcours de vie, c'est-à-dire en examinant la séquence d'événements qui marquent la vie d'une personne. Selon Lalive d'Épinay, Bickel, Cavalli et Spini (2005), le parcours de vie peut se concevoir comme un ensemble de trajectoires dans lesquelles se déroule l'existence individuelle. Ces trajectoires se présentent comme des séquences plus ou moins ordonnées de positions, de transitions et d'événements. Alors que les transitions renvoient à des changements graduels, les événements sont à l'origine de changements abrupts et souvent imprévus. Certains de ces événements peuvent se révéler des points tournants en ce sens qu'ils marquent un changement majeur dans la vie de la personne.

L'approche par parcours de vie conduit à aborder le développement des comportements problématiques de JHA comme une trajectoire qui s'amorce avec

une expérience initiale de jeu et qui se développe par la suite sous l'influence de différents facteurs qui tiennent, entre autres, aux personnes avec lesquelles les adolescents sont en interaction (influences sociales) et aux milieux de vie qu'ils fréquentent. Cette approche conduit donc à porter une attention particulière à des aspects tels que les événements, les significations qui leur sont accordées, de même que le contexte dans lequel elles s'inscrivent, avec ses possibilités et ses contraintes.

Objectifs

Ce texte présente les résultats d'une étude visant à décrire les premières expériences de JHA d'adolescents qui ont par la suite développé des habitudes de JHA considérées comme problématiques.¹ Ces expériences y sont examinées sous différents angles : a) la nature des premières activités de JHA, b) la signification de ces premières expériences au regard des bénéfices et des aspects attrayants des JHA, et c) la progression vers le développement de comportements problématiques dans les mois et les années qui ont suivi cette première expérience.

Méthode

Méthodologie

Cette étude s'appuie sur une analyse secondaire de données collectées dans le cadre d'un projet de recherche pancanadien dont l'objectif était le développement et la validation de l'Inventaire canadien des jeux de hasard et d'argent chez les adolescents (ICJA) un instrument d'évaluation des habitudes de JHA chez les adolescents (Tremblay, Stinchfield, Wiebe, & Wynne, 2010). Les données utilisées portent sur l'expérience des adolescents ayant des habitudes problématiques de JHA. Elles ont été récoltées dans le cadre d'entrevues semi-dirigées (Mayer & Saint-Jacques, 2000) conduites par des interviewers expérimentés entre mars 2008 et juin 2009. Il s'agit donc d'une étude qui comporte les avantages d'une analyse de données secondaire, notamment l'utilisation maximale de données facilement accessibles et l'élimination des problèmes opérationnels de collecte, mais également ses inconvénients, dont le risque d'hégémonie théorique et l'absence de certaines informations (Dale, 1993; Turgeon & Bernatchez, 2009).

Collecte de données

Le recrutement des participants s'est déroulé en deux étapes (Wiebe, Wynne, Stinchfield, & Tremblay, 2007). Une première démarche de recrutement s'est déroulée dans des écoles secondaires du Québec et du Manitoba ($n = 2\,394$). Dans un deuxième temps, des centres de traitement de la toxicomanie et des centres jeunesse du Québec ont été sollicités. Les adolescents retenus pour la présente étude sont ceux pour qui le score à la

¹Dans cette étude, l'expression *habitudes problématiques de JHA* réfère à un score de six et plus à la sous-échelle de gravité des problèmes de jeux de l'Indice canadien des jeux de hasard et d'argent chez l'adolescent (ICJA).

sous-échelle de sévérité des habitudes de jeux l'ICJA² (6 et +) indiquait la présence de difficultés importantes sur le plan de leurs habitudes de JHA. Tous ces adolescents ont été recrutés dans les centres de traitement publics et privés de la toxicomanie; ils présentent donc également des habitudes problématiques de consommation d'alcool ou de drogues. Chaque adolescent formulant une demande d'aide dans un des centres participants se voyait administrer le *South Oak Gambling Screen – Revised for Adolescents (SOGS-RA)* (Winters, Stinchfield, & Fulkerson, 1993). Tous ceux qui obtenaient un score de 3 ou plus au SOGS-RA³ se voyaient offrir de participer à la recherche. Les adolescents qui acceptaient de participer signaient un formulaire autorisant un membre de l'équipe de recherche à les contacter.

Les données ont été recueillies dans le cadre d'entrevues réalisées par des cliniciens d'expérience et des assistants de recherche diplômés en psychologie ou en service social. Tous avaient préalablement reçu une formation d'une durée de deux heures portant sur la conduite du protocole d'entrevue. Lors de la rencontre de recherche, d'une durée d'environ 1 h 30, après avoir signé le formulaire de consentement, le participant était invité à remplir l'ICJA et à répondre à des questions abordant différents aspects de ses habitudes de JHA. Les données utilisées pour la présente analyse sont essentiellement rétrospectives et perceptuelles puisqu'elles résultent d'un effort du répondant de se remémorer des événements passés et de leur donner un sens à la lumière de sa réalité actuelle. Les entrevues étaient enregistrées sur support audio.

Analyse des données et critères de scientificité

La transcription des entrevues a été réalisée à partir des enregistrements audio. Le matériel a ensuite été codifié au moyen du logiciel N'Vivo 10, puis analysé selon la méthode

²L'ICJA (Tremblay et al., 2010) est un instrument de détection des habitudes problématiques de JHA chez les adolescents développé et validé simultanément en français et en anglais auprès d'un échantillon de 2 499 adolescents canadiens. Il est composé de 36 items qui se divisent en 5 sous-échelles (analyses factorielles exploratoires, rotation varimax, 67,3 % variance expliquée) : conséquences psychologiques, sociales, financières, perte de contrôle. De plus, des analyses factorielles discriminantes et d'aire sous la courbe (ROC) ont permis d'identifier neuf items (5^e sous-échelle de gravité des problèmes de jeux) permettant une bonne classification des jeunes ayant des comportements de JHA en trois niveaux de gravité : élevée (6 et plus), faible à modérée (2 à 5) et l'absence de problèmes liés aux JHA (0-1). L'ICJA présente une consistance interne élevée (α de Cronbach, ,83 à ,90) ainsi qu'une très bonne stabilité temporelle (ICC, ,77 à ,90). L'instrument présente également une bonne validité de convergence mesurée à partir de construits associés aux JHA (prise de risque, impulsivité, maîtrise de soi) et différents indicateurs de participation au jeu (nombre de jeux, fréquence, temps passé au jeu, argent perdu, dettes, etc.). L'ensemble de ces mesures présente des corrélations $> ,30$ avec au moins une sous-échelle de l'ICJA.

³Le *South Oaks Gambling Screen – Revised for Adolescents* est une adaptation adolescente d'un instrument de mesure de la sévérité des habitudes de JHA développé et validé auprès d'une population adulte (SOGS). Il est composé de 12 items. Pour être considéré comme joueur problématique selon le critère conservateur, l'adolescent doit avoir obtenu un score de 4 et plus, alors qu'un score de 2 ou 3 indique un joueur à risque et de 0 ou 1, un joueur non problématique. Le critère libéral consiste en un score de 2 et plus et avoir joué au moins une fois par semaine ou avoir joué à tous les jours peu importe le score. Le SOGS-RA présente un coefficient alpha de Cronbach de ,80 et a été corrélé avec des indicateurs de jeu sur le plan de la validité de convergence, tels les activités de jeu ($r = ,54$), la fréquence de jeu ($r = ,39$) et le montant d'argent joué dans la dernière année ($r = ,42$).

d'analyse de contenu thématique, qui s'appuie sur un système de codification du matériel afin d'en arriver à des catégories exhaustives cohérentes et bien définies (L'Écuyer, 1990). Les analyses ont été menées selon la méthode de thématization en continu, c'est-à-dire selon « une démarche ininterrompue d'attribution de thèmes et, simultanément, de construction de l'arbre thématique » (Paillé & Mucchielli, 2008, p. 166). Cette démarche permet une analyse à la fois fine et riche du matériel (Paillé & Mucchielli, 2008).

Un des désavantages de l'utilisation de données secondaires réside généralement dans le fait que les données sont analysées à d'autres fins que celles pour lesquelles elles ont été récoltées (Turgeon & Bernatchez, 2009), ce qui peut représenter un risque d'entrave à la crédibilité des résultats. Or, dans le cas présent, ce désavantage est amoindri par le fait que l'analyse de l'expérience des adolescents interrogés faisait partie des objectifs initiaux du projet de recherche duquel sont issues les données; cet objectif n'a toutefois pu être atteint dans la phase initiale du projet. Puisque le protocole d'entrevue a été construit dans cette optique, l'impact sur la qualité scientifique de l'étude en est amoindri. Une attention particulière a tout de même été portée aux liens entre les observations et leurs interprétations. De plus, bien qu'il s'agisse ici d'analyse de données secondaire, l'auteure principale a mené elle-même une grande partie des entrevues dans le cadre de ses fonctions professionnelles. Ces éléments renforcent la crédibilité des interprétations effectuées (Noiseux, 2010). Afin de diminuer les biais possibles liés à l'analyse par un seul expérimentateur et d'assurer la confirmabilité des résultats (Noiseux, 2010), des rencontres périodiques ont eu lieu avec les coauteurs afin de discuter du processus d'analyse ainsi que des thèmes et catégories issus du corpus de données. Finalement, la description des caractéristiques de l'échantillon et du contexte de collecte de données (centre de traitement de la dépendance) assure la transférabilité des résultats.

Résultats⁴

Au total, 1 223 adolescents ont complété le SOGS-RA. De ce nombre, 63 ont obtenu un score de 3 ou plus à cette échelle et 41 ont participé à l'entrevue de recherche, dont 31 ayant un score de 6 et plus à l'ICJA. Ce sont majoritairement des garçons (64,5 %) âgés de 14 à 18 ans ($M = 15,6$, $ÉT = 1,2$) et ils sont considérés comme présentant des habitudes problématiques avec les JHA selon l'échelle de sévérité des habitudes de jeux de hasard et d'argent de l'ICJA ($M = 13$, $ÉT = 4,8$). Ces adolescents jouent en moyenne 17,4 heures par semaine ($ÉT = 11,2$, $Md = 15$, $Min = 2$, $Max = 40,8$) et près de 30 % jouent plus de 20 heures par semaine. Ils ont perdu en moyenne 771,80 \$ au jeu au cours des trois derniers mois ($ÉT = 1\,471,10$, $Md = 300$, $Min = 15$, $Max = 7\,940$).

Les résultats portant sur l'histoire des participants avec les JHA seront présentés en trois temps : 1) une description des premières expériences de jeux de hasard et d'argent (activité, partenaires de jeu, issue de la première expérience), 2) la signification de cette première expérience au regard des bénéfices et des aspects attrayants des JHA et 3) la

⁴Dans la présentation des résultats, les prénoms des participants ont été changés afin de préserver la confidentialité.

perception de la progression vers le développement de comportements problématiques dans les mois et les années qui ont suivi cette première expérience.

La première expérience avec les JHA

Les adolescents de l'échantillon ont vécu leur première expérience avec les jeux de hasard et d'argent entre 10 et 15 ans. L'âge moyen de la première expérience est de 12,4 ans (ÉT = 1,3).

Au départ, une majorité de ces adolescents se sont adonnés à des jeux combinant le hasard et les compétences (stratégies, connaissances, habiletés). Ces premières expériences prennent les formes suivantes : miser lors de jeux de cartes faisant appel à certaines habiletés (p. ex. poker ou black jack) ou de loteries sportives, parier de l'argent sur sa propre performance lors de jeux vidéo ou de performances sportives, tels le billard ou les quilles, et relever des défis. Les jeux dont l'issue repose uniquement sur le hasard (dés, pile ou face et loterie) sont moins répandus. Tous jeux confondus, c'est avec les cartes (p. ex. poker, black jack) que la majorité des adolescents de l'échantillon ont été initiés aux JHA.

Le contexte social. Tous les adolescents interrogés rapportent avoir vécu leur première expérience de jeu en compagnie d'une autre personne ou, dans le cas des jeux de loterie, par l'entremise d'une autre personne. Le tableau 1 présente les partenaires en fonction du type de jeu lors de cette première expérience. On constate que les principaux partenaires sont les amis.

Tableau 1
Partenaires de JHA en fonction du type d'activité

	Amis	Fratrie	Parents	Adulte	NSP	Total (n)
Hasard (n)	5	2	1	2	0	10
Hasard et compétences (n)	17	1	2	1	1	22
Total (n)	22	3	3	3	1	32

Mais les adultes ne sont pas totalement absents de ces premières expériences, particulièrement dans le cas des jeux faisant appel uniquement au hasard (p. ex., loterie). Ces adultes ne sont pas que des témoins, parfois ils initient l'adolescent aux JHA en lui donnant accès à des produits qu'il consomme lui-même. Les extraits suivants illustrent dans quels termes ces expériences sont présentées, avec d'abord une première expérience entre amis suivie de deux exemples où les adultes « encouragent » un comportement de JHA en bas âge.

La première fois, j'avais dix ans. J'étais avec mon ami puis on avait de l'argent de poche chaque semaine. J'ai dit : « On fait tu une course en bicycle et lui qui gagne, il gagne 5 \$ ». Il a dit « Ok ». Puis on a fait une course et j'ai gagné.
(Louis, H, 14)

La première fois que j'ai joué aux gratteux [...] je l'avais pas acheté, je l'ai pris à ma grand-mère. [...] j'avais genre 8-9 ans là. Je volais des gratteux à ma grand-mère là. Euh oui j'ai déjà gagné, mais là tu sais je ne pouvais pas aller le changer fait que là je suis allée le redonner à ma grand-mère puis je lui ai dit que vu que c'était moi qui l'avait gratté, je voulais la moitié de l'argent! Elle avait gagné 20 \$. Elle m'a donné un dix. (Julianne, F, 14 ans)

Il jouait [mon père] avec ses amis le soir [au poker]. À tous les jours. Puis je m'en souviens, j'étais petite pis c'est moi qui grattait ses gratteux. (Camille, F, 15)

La signification de cette première expérience. La première expérience revêt une signification positive pour les adolescents, car elle est associée à plusieurs bénéfices. Les propos recueillis permettent de distinguer trois principaux types de bénéfices selon qu'ils sont d'ordre matériel, émotif ou social.

Les bénéfices d'ordre matériel sont ceux auxquels les adolescents réfèrent le plus souvent. Ils correspondent à des gains qui sont immédiats. Ils représentent un accès facile à des biens qui sont généralement difficiles à obtenir. Les JHA symbolisent alors la vie facile.

On pouvait gagner de l'argent. J'ai pas pensé à l'argent qu'on pouvait perdre, mais j'ai pensé qu'on pouvait gagner. (Émile, H, 14)

C'était des cigarettes faciles là tu sais. Vite faites. Tu sais je fumais. J'avais 13 ans pis j'avais pas souvent d'argent, pis même quand t'as de l'argent c'est dur d'aller te chercher un paquet de cigarettes au dépanneur là fait que... (Charlie, F, 16)

Les bénéfices d'ordre émotif correspondent à l'ambiance de l'activité de jeu et à la sensation ressentie au moment de jouer. En voici deux illustrations.

J'ai trouvé ça hot là. L'ambiance qu'il y a... ben tout le monde se faisait du fun genre. [...] L'ambiance qu'il y a là c'est hot. (Jeanne, F, 14)

Well usually I feel the rush of gambling, thing like that [...]. Yeah, the money and the excitement [...]. I felt happy, excited, ecstatic, motivated... (Alexis, H, 15)

Les JHA débouchent également sur des bénéfices sociaux. Deux dimensions principales ressortent du discours des adolescents quant à ces bénéfices : l'appartenance à un groupe et l'affirmation personnelle. Le jeu est une activité qui permet de se lier socialement à un groupe de pairs. Que ce soit en raison de difficultés à entrer en relation avec les autres, par besoin de se faire accepter, ou pour le simple goût de se joindre à une activité valorisée par un groupe, la première expérience de JHA a été un événement positif.

Je voyais mes chums de gars puis mes chums de filles jouer puis là un moment donné tant qu'à être à l'école avec d'autre monde, je me suis dit :

« Ah! Je vais essayer! ». Tu sais un soir j'ai dit : « Je veux jouer moi aussi! » Fait que là, ils ont commencé à m'apprendre un peu comment ça fonctionnait puis à partir de là j'embarquais dans le fond avec eux. (Mia, F, 17)

Elle représente également pour plusieurs jeunes une occasion de s'affirmer, d'afficher ses capacités, de se démarquer.

On était nouveaux là, on venait juste d'arriver. Puis, il est arrivé, il est venu me voir là tu sais grosse affaire : « Envoyez les p'tits allez-vous en, c'est notre terrain [de basketball]. » Puis moi j'ai fait : « Qu'est-ce tu dis là, [...] comme j'ai autant ma place. » [...]. Puis là il a fait : « En tout cas, moi je te dis que je te plante là ». [...] « Je te gage 10 \$ ». Tu sais il a juste dit ça de même, tu sais pour se vanter. Mais moi j'ai dit : « Ok, c'est beau. » Après ça, c'est parti. Ben, j'ai gagné fait que là j'étais fier. (Jocelyn, H, 16)

Les bénéfices ne sont pas nécessairement en lien avec le type de jeu. Ainsi, les bénéfices d'ordre émotif et matériel sont également présents dans les deux types de jeux. Par contre, les bénéfices d'ordre social sont plus fréquents avec les jeux combinant hasard et compétences. Le tableau 2 présente les bénéfices associés à la première expérience selon que le jeu fait appel seulement au hasard ou qu'il combine hasard et compétences.

Issue de la première expérience avec les JHA. En ce qui a trait à l'issue de la première expérience avec les JHA, celle-ci est variable. Si une majorité d'adolescents rapporte avoir gagné lors de cette première expérience de JHA, d'autres ont perdu ou n'ont pas de souvenir précis de l'issue de cette expérience. Quoi qu'il en soit, l'issue de cette première expérience ne semble pas avoir eu le même effet sur la poursuite des habitudes de JHA pour tous, car si gagner est décrit comme un renforcement, perdre n'est pas nécessairement dissuasif, même si la perte est importante.

Puis là j'ai vu que je gagnais des petits, des gros et des petits montants [...] fait que j'ai fait le lien que je pourrais peut-être pas perdre, fait que là j'ai continué à jouer fait que là c'est là que ça commencé puis etc. (Sam, H, 16)

Ok I remember it was about... the first time I gambled with dices. [...] We gambled for my cat. Because he wanted my cat and I said ok, but if I win then I will get your cat so... and he won. [...] I thought about how I lost my cat and how I felt sad... I don't understand why I did it, I just... (Rosalie, F, 15)

Tableau 2

Bénéfices et aspects attrayants en fonction du type d'activité de jeu

	Émotif	Matériel	Social et relationnel	Total (n)
Hasard (n) ^a %	770,0	660,0	220,0	15
Hasard et compétences (n) ^a %	1568,2	1463,6	940,9	38

^a Les proportions sont calculées en fonction du type de jeux de hasard et d'argent.

La progression des habitudes de jeu

Au terme de cette première expérience, tous les adolescents ont continué à jouer en augmentant le rythme du jeu et les montants investis au point de se retrouver éventuellement avec des habitudes de JHA problématiques selon l'échelle de sévérité des habitudes de jeux de hasard et d'argent de l'ICJA. C'est donc dire que leur première expérience de JHA n'a pas été un événement isolé. Elle s'est traduite par la répétition et l'augmentation de leurs activités de jeu.

Au moment de la collecte des données, tous ces adolescents avaient joué à un jeu combinant hasard et compétences au moins une fois par mois au cours des trois derniers mois et 96,8 % ($n = 30$) à un jeu de hasard pur. Les plus populaires parmi ces derniers sont les loteries et les jeux de société ou de dés. Près de 60 % ($n = 18$) des adolescents de l'échantillon avaient joué à des loteries instantanées, dont 12,9 % ($n = 4$) à chaque jour. La moitié mentionnaient avoir joué à des jeux de société ou de dés pour de l'argent.

Les jeux combinant hasard et compétences sont ceux auxquels les adolescents de l'échantillon s'adonnent le plus souvent : plus de 70 % ($n = 22$) ont joué à un jeu de ce type de deux à trois fois par mois, près de 65 % ($n = 20$) l'ont fait une fois par semaine, plus de 60 % ($n = 19$) de deux à six fois par semaine au cours des trois derniers mois et près de 10 % ($n = 3$) tous les jours. La moitié de l'échantillon rapporte jouer aux cartes pour de l'argent au moins une fois par semaine alors que 23 % ($n = 7$) et 35 % ($n = 10$) de ces adolescents mentionnent avoir parié respectivement sur des parties de jeux vidéo ou d'arcade ou sur des jeux d'habiletés à la même fréquence. Comme cette progression ne s'explique pas nécessairement par l'ampleur des gains lors de la première expérience, pour la comprendre, il est nécessaire de dépasser l'explication rationnelle des « gains faciles » et de s'attarder à la signification de cette expérience et au contexte dans lequel elle s'inscrit, avec ses possibilités et ses contraintes.

Explication de la progression des habitudes de JHA. Du point de vue des adolescents, la progression de leurs habitudes de JHA peut s'expliquer par les bénéfices qu'ils en retirent sur les plans social, matériel et émotif. L'analyse de leur situation laisse également transparaître une forte association entre le jeu et la consommation de substances psychoactives.

Les aspects d'ordre relationnel et social sont au premier plan des motifs avancés par les adolescents pour expliquer l'augmentation de leurs habitudes de JHA. En fait, pour les adolescents rencontrés, l'augmentation de leurs habitudes de JHA s'accompagne d'une transformation du réseau social. Ils fréquentent davantage des pairs qui adoptent des comportements de jeu, délaissent leurs amis non-joueurs et font partie de cercles d'amis composés de personnes plus âgées adeptes des JHA. Cette transformation de leur réseau les place dans un environnement où les JHA sont une activité centrale.

People I was just hanging out with... friends that gambled more [...] not talk to the people that were not gambling and talk more to those who were gambling. (Alexis, 15, H)

Ben, mes amis étaient tout le temps plus vieux, pis ils jouaient depuis une couple d'années. Ils m'apprenaient comment jouer, pis au début, je les regardais jouer, je regardais ce qu'ils faisaient. J'avais envie, je posais des questions. (Simon, H, 16).

De pair avec la transformation du réseau social, les habitudes de JHA sont parfois en lien avec une modification de l'environnement physique de l'adolescent, laquelle le place dans un cadre qui facilite l'accès aux JHA. Ces modifications sont associées notamment à un déménagement en appartement avec un amoureux adepte du jeu, à la fréquentation des bars et à l'obtention d'un emploi dans un milieu qui vend des jeux de hasard. Les citations suivantes illustrent comment elles sont présentées par les adolescents.

Déménagement.

Quand j'ai commencé à jouer j'habitais plus chez nous [c.-à-d., chez mes parents]. Avec mon chum, à l'appartement, c'était pas mal là que tout le monde jouait. J'étais plus proche là. (Charlie, F, 16)

Accès au marché du travail.

C'était vraiment dans les débuts au dépanneur. Je suis mineure fait que, [...] je ne commencerai pas à montrer mes cartes pour sortir un gratteux. Quand tu travailles au dépanneur tu peux te les acheter toi-même fait que c'est pour ça. (Mia, 17, F)

Sorties dans les bars.

C'est plus quand j'ai commencé à consommer des drogues dures que ça... je sortais tout le temps dans ce temps-là, fait que je passais devant les machines pis je jouais. (Thomas, H, 18).

Dans la foulée de la première expérience, le sentiment d'appartenance à un groupe et le fait de se distinguer sont des effets qui persistent et même s'amplifient au fur et à mesure que les expériences de jeu se répètent. Le statut social associé au jeu apparaît donc comme un incitatif à multiplier les expériences.

Je voulais me faire accepter je pense. Je voulais montrer que j'étais capable de faire des choses comme tout le monde... (Didier, H, 17)

Au début, quand j'étais plus jeune... ça donné un impact sur ma réputation là. (Sam, H, 16)

Dans l'fond, ça déboulé parce que je gagnais pas mal puis il y avait beaucoup de monde qui [...] venait me voir [...]. J'étais en sixième année...et je me tenais avec du monde de 20 quelques années. Donc, j'étais hot. (Alice, F, 16)

Mais comme le traduit ce dernier extrait, reconnaissance sociale et aisance financière ne sont pas des éléments étrangers. En effet, l'aspect financier est bien présent dans l'explication de l'évolution des habitudes de JHA de plusieurs des adolescents de l'échantillon.

So I thought I was good at it, make some money. Everyone wants to work, but jobs that paid like \$10, \$15/hour, while I could sell drugs and [...] and gambled it and double or triple it. You know. It's just the way I thought. (Antonin, H, 17)

Parmi les explications de la progression de leurs habitudes de JHA sur le plan émotif, certains adolescents mentionnent leur tendance à s'engager sans réserve et avec passion dans les activités qu'ils pratiquent.

Ouais pis je me suis pris de passion pour le poker. Fait que tu sais je jouais toujours, toujours, toujours parce que je trouvais ça hot là. (Camille, F, 15)
Moi je suis un accro de l'ordinateur. Fait que je l'ai découvert sur ordinateur. Fait que tu sais je pense que ça a évolué nécessairement dans, pas ma phobie comme on peut dire, mais dans ma passion de l'ordinateur. (Jean-Pierre, H, 17)

D'autres voient dans leurs habitudes de JHA le résultat d'un intérêt qui s'est développé graduellement tout en s'accompagnant d'une augmentation de leur confiance en soi et d'une amélioration de leurs habiletés.

Je cherchais des sites pour jouer au poker sur Internet [...] j'ai écouté à la télé Poker Star pis je me suis dit : « Je vais aller jouer. » J'ai commencé à jouer sans argent, pis après je vais mettre de l'argent, je vais avoir plus d'argent. (Didier, H, 14)

Habitudes de JHA et consommation/vente de substances. Au moment des entrevues, tous les participants à l'étude recevaient des services en raison de leurs habitudes problématiques de consommation d'alcool ou de drogues. Néanmoins, seulement le tiers fait un lien entre leurs habitudes de JHA et leur consommation d'alcool ou de drogues. Lorsqu'un tel lien est identifié, il réfère à l'un ou l'autre des éléments suivants : le financement de la consommation de substances par les activités de JHA, le financement des JHA par la vente de substances et la modification des comportements de jeu sous l'effet des substances.

Financement de l'achat de SPA.

Plus je consommais plus je misais. Parce que plus que j'avais d'argent plus j'avais de consommation. Parce que tu sais, plus tu consommes, plus tu consommes en grosse quantité. Fait que grosse quantité égale beaucoup de sommes d'argent. (Léo, H, 14)

Changements sur le plan des habitudes de consommation.

J'ai découvert le speed dans le fond. Puis là, je me suis mis à plus jouer, plus jouer, plus jouer, en misant plus. Tu sais, comme ils disent là, ça [le speed] nous

donne une illusion qu'on est supérieur. Fait que c'est ça que je pensais là, je pensais que j'étais pour gagner. (Jean-Pierre, H, 17) Je jouais un peu avant mais avec la consommation c'est là que ça a plus... ça a chuté avec la consommation. C'est plus que je consommais plus que je misais. Parce que plus que j'avais d'argent fait que plus que j'avais de consommation. Parce que tu sais, plus tu consommes, plus tu consommes en grosse quantité. Fait que grosse quantité égale beaucoup de sommes d'argent. (Léo, H, 14)

Financement des JHA.

Ça pis aussi j'avais commencé à vendre de la drogue dans ce temps-là... vers 13 ans. (Luc, H, 16).

Le développement des habitudes de JHA s'inscrit dans une spirale dans laquelle les bénéfices d'ordre émotif, social et matériel attribués aux premières expériences de JHA pavent la voie à l'augmentation des habitudes de JHA, laquelle augmentation est elle-même associée à de nouveaux bénéfices. L'analyse des interactions entre l'adolescent et son environnement social fait ressortir que chez les adolescents qui en viennent éventuellement à développer des habitudes problématiques de JHA, le jeu apparaît comme une expérience positive qui s'accompagne, pendant une certaine période, de bénéfices qui outrepassent les contraintes et les effets négatifs que les observateurs extérieurs peuvent identifier. Ainsi, de leur point de vue, la progression de leurs habitudes de JHA ne se présente pas comme une chute progressive vers l'inconnu, mais comme la voie d'accès à une vie plus stimulante et plus valorisante.

Discussion

Cette étude visait à mieux comprendre comment les adolescents se sont initiés aux jeux de hasard et d'argent et comment ils en sont venus à développer des habitudes problématiques. Pour y parvenir, les premières expériences de JHA ont été analysées au regard de : a) la nature des premières activités de JHA, b) la signification des premières expériences et c) la progression vers le développement de comportements problématiques à la suite de cette première expérience.

Premières expériences de JHA

Sur le plan des premières expériences, une majorité d'adolescents se sont initiés aux JHA via une activité leur permettant de s'illustrer, de démontrer leurs compétences. Ces jeux impliquent généralement un aspect de compétition. Les cartes, notamment le poker, sont l'activité à laquelle le plus grand nombre d'adolescents de l'échantillon se sont adonnés. Ce résultat diffère de ceux de Felsher et ses collègues (2001) dans le cadre d'une étude menée en Ontario et dans laquelle les adolescents qui présentaient des difficultés sur le plan de leurs habitudes de JHA avaient joué dans un premier temps à la loterie. Une des hypothèses permettant d'expliquer cette divergence réside dans l'environnement social au sein duquel les adolescents évoluent, notamment quant

à la popularité fulgurante du poker au cours des dernières années. La plupart des adolescents de l'échantillon ont vécu leur première expérience avec les JHA pendant la période identifiée par plusieurs experts comme étant le moment où le poker a commencé à susciter de l'engouement au Québec. Pendant cette période, avec le lock-out de la Ligue nationale de hockey, les chaînes de télévision sportives ont remplacé la diffusion du hockey par des parties de poker entre personnalités célèbres (Boutin, 2010). À partir de ce moment, le poker a littéralement commencé à être considéré comme un sport (Schuck, 2010) et il a gagné non seulement une légitimation, mais également une glorification. Tel que le souligne Boutin (2010) «le poker est dorénavant perçu comme une activité sexy et associée à la vie des gens riches et célèbres». À cela s'ajoute la publicité faite autour des joueurs du poker qui, du jour au lendemain, sont passés d'inconnus au statut de vedettes. Boutin (2010) mentionne que la popularité des jeux repose en partie sur leur accessibilité et sur l'image qui en est véhiculée. À cet égard, la grande popularité du poker n'est pas étrangère à l'image très «VIP» qui y est associée et à la prolifération des sites de jeu en ligne.

La majorité des premières expériences avec les JHA ont eu lieu en compagnie de pairs et de membres de la famille. Ces résultats concordent avec les données de recherche qui identifient les membres de la famille et le groupe de pairs comme des acteurs clés dans l'expérience de jeux des adolescents ayant des difficultés sur ce plan (Dickson et al., 2008; Felsher et al., 2003; Gupta & Derevensky, 1997; Kalischuk et al., 2006; Raylu & Oei, 2002, 2004; Wickwire et al., 2008). Ils mettent en lumière le caractère fondamentalement social des JHA. Comme le soulignent plusieurs auteurs, les adolescents apprennent à jouer à travers leurs interactions sociales dans un contexte particulier (Kristiansen, Trabjerg, & Reith, 2015; Reith & Dobbie, 2011).

En ce qui a trait à l'issue de la première expérience de JHA, les données sur les bénéfices matériels ne concordent pas nécessairement avec l'idée que le fait de vivre une expérience de gains tôt dans la trajectoire de jeu incite à poursuivre les activités de jeu (Sharpe, 2002). Bien sûr, l'occasion de s'enrichir sans trop d'efforts fait partie des bénéfices anticipés. Tel que le soulignent Barmaki et Zangeneh (2009), les JHA peuvent facilement être perçus comme un moyen facile et légitime d'accéder à la richesse, d'accéder à cet idéal véhiculé au sein de notre société. De plus, la publicité entourant les JHA ne manque pas de faire miroiter l'occasion d'accéder à cette richesse tant convoitée. Cependant, les données de la présente recherche indiquent que les adolescents qui ont persévéré dans leurs habitudes n'ont pas tous réalisé des gains lors de leur première expérience de jeu. Les gains matériels de la première expérience de JHA n'expliquent donc pas, pour eux, la poursuite de la trajectoire de jeu.

En fait, les propos des adolescents indiquent que l'aspect matériel n'est pas le seul aspect à prendre en considération lorsqu'il s'agit d'apprécier les bénéfices du jeu. En effet, plusieurs mentionnent des bénéfices autres. Au plan émotif, le plaisir et la décharge d'adrénaline ressentis lors de l'épisode de jeu sont des attraits des JHA. Cette dimension émotive est particulièrement attrayante pour des adolescents attirés par le risque ou à la recherche de sensations fortes (Chambers & Potenza, 2003; Dickson, Derevensky, & Gupta, 2002; Dickson et al., 2008). Outre cette caractéristique propre à

leur stade développemental, les adolescents évoluent dans une société de consommation reconnue pour vouer un culte à la recherche du plaisir, des sensations fortes et à l'importance de vivre intensément le moment présent (Reith, 2007).

Comme l'indiquent certains auteurs, les relations sociales sont cruciales dans le développement de la signification de l'expérience avec les JHA (Kristiansen et al., 2015; Reith & Dobbie, 2011). Sur le plan relationnel, la première expérience de jeu est pour certains l'occasion de se distinguer et de se démarquer. S'illustrer par ses compétences est une bonne stratégie pour se faire accepter par le groupe de pairs. Ce caractère social du jeu chez les adolescents concorde avec les résultats de Reith et Dobbie (2011) et de Kristiansen et ses collègues (2015) qui ont trouvé que le fait de gagner le respect et l'estime de ses pairs, l'intégration à un groupe, l'accès à un statut social particulier et l'appartenance à une communauté sont autant de bénéfices associés aux JHA.

Perception de la progression des habitudes de JHA

L'ensemble des adolescents de l'échantillon présente, au moment de l'entrevue, des habitudes de JHA considérées problématiques. À l'exception des loteries instantanées, la majorité de ces jeux impliquent d'être en compétition avec un ou des adversaires. Il s'agit de jeux qui combinent hasard et compétences, ce qui leur offre la possibilité de démontrer leurs capacités.

Ces adolescents expliquent de diverses façons l'augmentation de leurs habitudes de JHA. Outre les bénéfices d'ordre émotif et matériel, l'influence du réseau social ressort clairement dans les facteurs associés à la progression des habitudes de JHA. En effet, les JHA sont souvent liés à un délaissement des pairs non-joueurs au profit des pairs joueurs et à une plus grande accessibilité aux JHA (déménagement, entrée sur le marché du travail, sorties dans les bars). Ces éléments du contexte social mettent en lumière l'importance de l'environnement dans le développement d'habitudes problématiques de JHA à l'adolescence.

L'argent et la valorisation sociale sont parmi les raisons qui expliquent l'évolution des habitudes de JHA. La possibilité de se distinguer et d'appartenir à un groupe de pairs valorisés est un thème qui émerge du discours des adolescents, d'où l'intérêt d'en arriver à une meilleure compréhension de l'effet de valorisation sociale des JHA, tant au sein du groupe de pairs que de la société en général.

Une des dimensions centrales de l'évolution des habitudes de JHA chez les adolescents de l'échantillon est le lien entre le jeu et la consommation de substances psychoactives : les deux phénomènes sont, chez plusieurs, indissociables. Alors qu'ils sont parfois présentés comme deux problématiques différentes issues d'un même syndrome global se traduisant par une tendance générale à l'adoption de comportements à risque (Dickson, Derevensky, & Gupta, 2004), ou encore comme le résultat d'une même propension à la dépendance (Gupta & Derevensky, 1998b), nos résultats mettent plutôt en lumière les liens qui s'articulent entre consommation

de substances et habitudes de JHA. Alors que le jeu peut avoir comme utilité de financer l'usage de SPA, en retour, la vente de substances illicites peut apparaître comme une source de financement des JHA. L'augmentation des habitudes de JHA coïncide alors avec l'augmentation de la consommation. Ce type de liens entre habitudes problématiques de JHA et problèmes de consommation concordent avec les résultats d'autres études menées auprès d'adolescents présentant des habitudes problématiques de JHA (Brunelle, Cousineau, Dufour, Leclerc, & Gendron, 2009; Brunelle et al., 2012).

JHA et parcours de vie

Pour les adolescents rencontrés, la première expérience de jeu a marqué l'entrée dans une trajectoire qui a éventuellement mené à des habitudes problématiques de JHA. Le maintien dans cette trajectoire a été alimenté par les interactions au sein du réseau social des jeunes et soutenu par le contexte macrosystémique dans lequel ils évoluent. Les résultats suggèrent que la progression des comportements de JHA des adolescents est marquée par des influences de nature sociale (appartenance au groupe de pairs, reconnaissance sociale, changement de réseau social), par des événements qui marquent la trajectoire de vie (déménagement, entrée sur le marché du travail, début des sorties dans les bars) et par la superposition d'habitudes. À cet égard, la consommation de substances psychotropes a influencé les comportements de JHA, modulant ainsi la trajectoire des adolescents.

Limite

Les résultats qui se dégagent de cette étude doivent être appréciés en tenant compte de ses limites. L'une de celles-ci réside dans les caractéristiques de l'échantillon. Il s'agit d'adolescents qui présentent des habitudes problématiques de consommation d'alcool ou de drogues et qui sont en traitement pour ces difficultés. Les résultats ne peuvent donc pas être transférés à l'ensemble des adolescents présentant des difficultés avec les JHA. Les caractéristiques de l'échantillon à cet égard correspondent à une réalité souvent observée et de plus en plus documentée; la forte concomitance entre habitudes problématiques de JHA et problèmes de consommation de SPA chez les adolescents (Barnes, Welte, Hoffman, & Tidwell, 2011; Barnes, Welte, Hoffman, & Tidwell, 2009; Brunelle et al., 2009; Brunelle et al., 2012; Hammond et al., 2014; Lee, Martins, Pas, & Bradshaw, 2014; Molde, Pallesen, Bartone, Hystad, & Johnsen, 2009; Rahman et al., 2014; Shead et al., 2010; Winters & Anderson, 2000; Yip et al., 2011).

Par ailleurs, il s'agit d'une étude basée sur l'analyse secondaire de données, ce qui implique que le schéma d'entrevue n'a pu être modifié à la lumière des concepts qui ont émergé des premières analyses. Soulignons également qu'il est difficile d'apprécier l'influence de la désirabilité sociale sur la nature des propos des répondants. Comme il s'agit d'adolescents qui avaient été récemment, ou étaient encore, en démarche de traitement pour leur problème de dépendance, on ne peut exclure la possibilité que leurs propos aient été teintés par cette expérience récente.

Conclusion

Cette étude sur les premières expériences de jeux de hasard et d'argent d'adolescents ayant des problèmes de dépendance met en lumière l'importance de tenir compte du contexte social dans lequel naissent et se perpétuent les activités de JHA. En effet, les comportements problématiques de JHA débutent avec une première expérience et se développent sous l'effet de multiples influences, notamment les interactions sociales. Ces interactions teintent la signification qu'attribuent les adolescents à leurs premières expériences avec les JHA et elles colorent le sens que revêt pour les adolescents, leur incursion dans l'univers des JHA. Ainsi, pour comprendre les habitudes problématiques de JHA non seulement faut-il s'attarder à la perception de la première expérience avec les JHA, mais il faut également chercher à cerner les significations que revêtent ces jeux en abordant leur progression dans une perspective de trajectoire (Reith & Dobbie, 2013). Davantage d'études doivent être menées en tenant compte à la fois du point de vue de l'adolescent et des caractéristiques de son environnement pour mieux comprendre la dynamique sous-jacente au développement d'habitudes problématiques de JHA. L'adoption d'une perspective combinant l'examen des zones de vulnérabilités personnelles et l'analyse du contexte social représente, dans cet esprit, une avenue intéressante à mettre de l'avant dans les recherches futures, mais également la planification de stratégies de prévention et d'intervention adaptées au vécu des adolescents.

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Psychopathology and Personality Characteristics in Pathological Gamblers: Identifying Subgroups of Gamblers

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Abstract

We examined psychopathology and personality characteristics among 62 pathological gamblers (49 men and 13 women; mean age 37.8 years), measured by the Minnesota Multiphasic Personality Inventory-2 (MMPI-2). The mean MMPI-2 profile of the present sample of gamblers was characterized by elevated scores on depression and psychasthenia (anxiety/tension). Latent class analysis revealed 3 separate latent clusters: one with MMPI-2 profiles within the normal range, one with a moderately elevated profile, and one with elevations on most of the clinical scales. We conclude that pathological gamblers are a heterogeneous group with different degrees of pathology and personality configurations; thus, one cannot talk about a general "gambler personality" as such. Interventions for pathological gamblers should therefore take into consideration the pattern and the level of psychopathology of the patients.

Keywords: Pathological gambling, personality characteristics, psychopathology, subgroups, latent class analyses, MMPI-2

Résumé

Nous avons examiné les caractéristiques psychopathologiques et les traits de personnalité de 62 joueurs pathologiques (49 hommes et 13 femmes; âge moyen : 37,8 ans), selon une évaluation effectuée à l'aide de l'Inventaire multiphasique de la personnalité du Minnesota-2 (MMPI-2). Le profil moyen MMPI-2 du présent échantillon de joueurs se caractérisait par des scores élevés pour la dépression et la psychasthénie (anxiété-tension). L'analyse de structure latente a révélé trois groupes latents distincts : un dont les profils MMPI-2 se situent dans les limites normales, un présentant un profil modérément élevé et un ayant obtenu des scores élevés sur la plupart des échelles cliniques. Nous concluons que les joueurs pathologiques forment un groupe hétérogène dont la pathologie et la personnalité varient à différents degrés; par conséquent, on ne peut pas parler comme telle « d'une personnalité générale de

joueur pathologique ». Les interventions auprès des joueurs pathologiques devraient donc prendre en considération le type de psychopathologie des patients et leur gravité d'atteinte.

Introduction

Pathological gambling (PG) is associated with adverse financial consequences, psychological and social impairment, and poor health (Welte, Barnes, Wieczorek, Tidwell, & Parker, 2001). Lifetime prevalence rates of PG have been estimated to be 0.4% to 0.6% in the adult population of North America (Kessler et al., 2006; Petry, Stinson, & Grant, 2005). Increased rates of mood disorders; anxiety disorders; attention-deficit/hyperactivity disorder; substance abuse; other impulse-control disorders; and antisocial, narcissistic, and borderline personality disorders have been reported in pathological gamblers (American Psychiatric Association [APA], 2000; Petry, et al., 2005).

Vachon and Bagby (2009) underline that converging lines of evidence suggest that pathological gamblers can best be understood as a heterogeneous group comprising qualitatively unique subtypes. These authors emphasize that an empirically derived taxonomy of PG may enhance therapeutic outcomes by providing more specific guidelines on how to tailor treatment for different subtypes of pathological gamblers. Different taxonomies of PG have been offered, whereby some authors have subtyped gamblers on the basis of personality characteristics (e.g., Vachon & Bagby, 2009) and others have suggested subgroups on the basis of assumed etiology or motivations for engaging in gambling behavior (e.g., Stewart, Zack, Collins, Klein, & Fragopoulos, 2008). For a comprehensive review of subtypes of pathological gamblers, see Milosevic and Ledgerwood (2010).

Stewart et al. (2008) presented empirical evidence for the existence of subtypes of pathological gamblers and suggested subtyping gamblers into three clusters on the basis of their affective motivation to gamble: enhancement gamblers (who gamble purely for positive reinforcement), coping gamblers (who gamble primarily for negative reinforcement, but also for positive reinforcement), and low-emotion regulation gamblers (who gamble for reasons other than direct affect regulation).

Vachon and Bagby (2009) found further empirical support for three subtypes of pathological gamblers in a non-treatment-seeking sample with distinguishable personality structures on the basis of the five-factor model of personality. The simple PG cluster was characterized by low rates of comorbid psychopathology; gamblers in this cluster tended to have no elevated scores on the five personality factors. The hedonic PG cluster was in turn characterized by moderate rates of comorbid psychopathology. The third cluster, called the demoralized PG cluster, was

characterized by high rates of comorbidity with other Axis I and II disorders. These individuals were further characterized by extreme negative affect, low positive emotionality, poor motivation, and high levels of impulsivity.

One of the most comprehensive assessment tools of psychopathology and personality is the Minnesota Multiphasic Personality Inventory (MMPI). The MMPI has been applied in a wide array of settings and with diverse groups (Graham, 2006). The MMPI is a self-report measure and the revised version, MMPI-2, comprises 567 items that make up 10 standard scales, several validity scales, and a number of subscales (see Butcher, 2005, for a comprehensive overview). The most typical use of the MMPI is to evaluate the profile configuration defined by the 10 standard scales. The code-type descriptions are correlates of test results. Different code types are associated with different scale score configurations, which serve to generate hypotheses of other attributes that may apply to a given individual (but may not apply to all individuals with a particular code-type configuration).

Previous studies of MMPI characteristics of pathological gamblers have typically found elevated scores on Scales 4-*Pd* (Psychopathic Deviate) and 2-*D* (Depression; Ciarrocchi, Kirschner, & Fallik, 1991; Graham & Lowenfeld, 1986; Moravec & Munley, 1983). This profile type is associated with significant psychopathology, including depression, anxiety, acting out, and substance abuse. Ciarrocchi et al. (1991) compared MMPI profiles of pathological gamblers and alcoholics and found that both groups had an average profile, with the highest scores on Scales 4-*Pd* and 2-*D* and the next two highest scores on Scales 7-*Pt* (Psychasthenia) and 8-*Sc* (Schizophrenia). These findings were interpreted as support for a general model of addictions, implying that certain personality characteristics may represent a general predisposition to develop an addiction, whereas situation-specific factors are believed to influence the development of the specific addiction (Jacobs, 1986).

Graham and Lowenfeld (1986) conducted a cluster analysis of MMPI profiles among pathological gamblers and found four clusters, accounting for 89% of the sample. The most frequent profile type (comprising 35% of the sample) was a 4-9 profile, which is associated with antisocial behavior: being immature, hostile, rebellious, restless, and grandiose. The second cluster comprised 28% of the sample and showed elevations on Scales 8-*Sc*, 7-*Pt*, 2-*D*, and 4-*Pd*. Persons with this profile tend to be suspicious, jealous, rigid, and withdrawn and are often diagnosed with paranoid personality disorder or paranoid schizophrenia (Graham & Lowenfeld, 1986). The third cluster showed an elevated score on Scale 2-*D* and moderate elevations on Scales 3-*Hy* (Hysteria), 4-*Pd*, and 7-*Pt*. Common for this profile are anxiety, alcoholism, depression, and passive-aggressive personality traits. The last cluster type showed a marked elevation on Scale 4-*Pd* and moderate elevations on Scales 2-*D*, 7-*Pt*, and 9-*Ma* (Mania). These persons tend to be immature, irresponsible, demanding, and impulsive and are often diagnosed with passive-aggressive personality or emotionally unstable personality (Graham & Lowenfeld, 1986). On average, a 4-2-7 profile type was most characteristic for the sample. This profile is associated with impulsivity, inability to delay gratification of impulses, little respect for social standards and values, acting out, and excessive drinking (Butcher, 2005).

McCown and Chamberlain (2000) conducted a study of MMPI-2 profiles of pathological gamblers recruited from several treatment settings and identified three clusters. The first cluster (comprising 30% of the study sample) was characterized by elevations on Scales 1-*Hs* (Hypochondriasis), 2-*D*, and 3-*Hy*, whereas the second cluster (comprising 26% of the sample) was characterized by elevations on Scales 9-*Ma* and 4-*Pd*. A third cluster with elevations on Scales 6-*Pa* (Paranoia), 7-*Pt*, and 8-*Sc* was found in some treatment settings, but not in others (McCown & Chamberlain, 2000).

Because pathological gamblers probably do not constitute a homogeneous population, standard treatment models may not be effective when applied uniformly to all pathological gamblers, irrespective of type of gambling activity, gender, neurobiology, comorbidity, and personality types. Psychopathology and personality are among the many factors that have been hypothesized to contribute to the development and maintenance of excessive gambling and PG (Bagby et al., 2007). Still, the number of empirical studies focusing on personality characteristics of pathological gamblers is limited (Saez-Abad & Bertolin-Guillen, 2008). More knowledge about psychopathology and personality characteristics in different subgroups of gamblers could consequently be helpful in designing more effective prevention and intervention strategies.

MMPI-2 is a comprehensive tool for assessing both psychopathology and personality characteristics and has gained considerable psychometric support throughout the years (Butcher, 2005). Most studies in the field of gambling have, however, used the original version of MMPI, which is no longer recommended (Butcher, 2005). Furthermore, the research in this field has mainly been conducted in North America and there is a need for replication of the findings in different cultures and contexts. No study has yet investigated MMPI-2 profiles in a Norwegian sample of pathological gamblers. The purpose of the present study was therefore to explore psychopathology and personality characteristics among treatment-seeking pathological gamblers in Norway and to investigate whether pathological gamblers could be divided into subgroups on the basis of an assessment with the MMPI-2. The investigation of MMPI-2 profiles in a Norwegian context will further elaborate the existing knowledge base, which hitherto has mostly used the original version of the MMPI, primarily in North American settings.

Method

Participants

The study sample comprised 62 pathological gamblers (49 men and 13 women), with a mean age of 37.8 years ($SD = 11.8$). All participants fulfilled the diagnostic criteria for PG from the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; *DSM-IV-TR*; APA, 2000).

Procedure

Participants were recruited from two out-patient treatment studies of pathological gamblers conducted at the University of Bergen, Norway, one offering group treatment and one individual treatment in combination with pharmacological treatment with selective serotonin reuptake inhibitors (SSRIs). Exclusion criteria for both studies were (1) being under 18 years of age, (2) not fulfilling the diagnostic criteria for PG according to the *DSM-IV-TR* (APA, 2000), (3) showing evidence of psychosis or organic mental disorder, (4) having concurrent alcohol or drug dependency, and (5) having used SSRIs in the last 6 months (only for the second study). Of 113 referrals, 32 dropped out before the screening interview or before initiating treatment, and 12 were excluded for various reasons (not fulfilling diagnostic criteria [$n = 3$], drug dependency [$n = 1$], delusions or hallucinations [$n = 4$], already using an SSRI [$n = 4$]). Of the remaining 69 participants (55 men and 14 women), 60% were recruited to the cognitive behavioral group treatment program for pathological gamblers, and 40% were recruited to the treatment program offering individual cognitive behavioral therapy and pharmacological treatment. Patients were either referred by their general practitioner ($n = 18$) or were self-referred after being informed about the projects in the local mass media ($n = 51$).

Screening interviews were conducted by four psychologists. The National Opinion Research Center DSM Screen for Gambling Problems (Gerstein et al., 1999) was used to assess PG. Comorbidity was assessed with the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I; First, Spitzer, Gibbon, & Williams, 1995) and the Structured Clinical Interview for DSM-IV Axis II Disorders (SCID-II; First, Gibbon, Spitzer, Williams, & Benjamin, 1996). The MMPI-2 was administered after the screening interview. Sixty-nine subjects completed it. Three subjects had too many missing items ($> 10\%$) and were subsequently excluded from the analyses. Another four participants were excluded from the analyses because of high scores (T -score > 100) on the Infrequency (F) scale, which measures exaggerated symptom endorsement. Two participants had a slightly elevated score either on the Variable Response Inconsistency ($VRIN$) scale or on the True Response Inconsistency ($TRIN$) scale (> 80), indicating inconsistent response patterns, but because these two respondents did not display any other elevated validity indicators, they were included in the analyses. The study was approved by the Regional Committee for Medical and Health Research Ethics in Western Norway and by the Norwegian Social Science Data Services, and it complied with the tenets of the Helsinki Declaration.

Instruments

The MMPI-2 (Butcher et al., 1989) was used to measure symptoms and personality characteristics in the sample. This test comprises 567 items, which make up 10 standard scales and three validity scales. The 10 standard scales in the MMPI are as follows: Scale 1-*Hs* (Hypochondriasis), Scale 2-*D* (Depression), Scale 3-*Hy* (Hysteria), Scale 4-*Pd* (Psychopathic Deviate), Scale 5-*Mf* (Masculine-Feminine), Scale 6-*Pa* (Paranoia), Scale 7-*Pt* (Psychasthenia), Scale 8-*Sc* (Schizophrenia), Scale

9-*Ma* (Mania), and Scale 0-*Si* (Social Introversion). These scales, except for 5-*Mf* and 0-*Si*, comprise the eight clinical scales. The validity scales are as follows: the *L* (Lie) scale, the *F* (Infrequency) scale, and the *K* (Correction) scale. The *L* scale measures underreporting of symptoms and the tendency to present oneself in an unrealistic and favorable light. The *F* scale is used to assess test-taking approaches, such as inconsistent and random responses. The *K* scale was developed as an index of attempts to deny psychopathology; high scores on this scale are associated with a defensive approach to the test, whereas low scores reflect unusual frankness and self-critical attitudes. The Infrequency-Back scale (*F[b]* scale) is a measure of symptom aggregation in the later part of the test and is usually evaluated in tandem with the original *F* scale. The *VRIN* and the *TRIN* scales are both indicators of the tendency to respond inconsistently; the *VRIN* measures inconsistent answers to pairs of items with similar or opposite content, whereas the *TRIN* measures the tendency to answer either "true" or "false" regardless of the content of the items. For a more detailed description of the scales, see Butcher (2005).

T-scores are the most commonly reported output, in which the mean score derived from a norm group is set to a *T*-score of 50 for each scale and the standard deviation is 10 *T*-scores. For the MMPI-2, a *T*-score > 65 is considered elevated, indicating clinically significant problems (> 1.5 *SDs* above the mean). Norwegian norms were used when calculating the MMPI-2 *T*-scores (Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 2004).

The most typical use of the MMPI-2 is to interpret the profile configuration defined by the 10 standard scales or the eight clinical scales (excluding Scales 5-*Mf* and 0-*Si*), particularly the combination of the two or three clinical scales with the highest scores, into code types. Code types are summary indexes that include the most elevated scale scores of the eight clinical scales. Code-type interpretation is often more accurate and clinically useful than is the mere interpretation of individual scales, but it is more appropriate for populations with *T*-score elevations > 65 (Groth-Marnat, 2003). Code types should ideally be well defined (*T*-score difference > 5 points between the lowest scale in the code type and the next-highest clinical scale) to avoid the influence of measurement error (Graham, 2006).

Statistics

We coded and processed the data with SPSS, version 15.0 (Bellringer, 1999), and calculated *T*-scores for the MMPI-2 validity and standard scales. In order to identify subgroups in the present sample of pathological gamblers for psychopathology and personality, we explored different latent class (LC) clusters by using Latent GOLD 4.5 (Vermunt & Magidson, 2003). LC is a statistical method that classifies respondents into mutually exclusive groups with respect to a latent (not directly observed) trait (Notelaers, De Witte, Vermunt, & Einarsen, 2006). LC analysis starts with the assumption that there is only one class and subsequently estimates up to *n* different classes until an LC model is found that statistically fits the data (Goodman, 1974a, 1974b; McCutcheon, 1987). Magidson and Vermunt (2001) refer

to such models as LC cluster models because the T -nominal categories of the latent variable serve the same function as the T clusters desired in cluster analysis. An important difference from traditional cluster methods (such as k -means clustering) is that LC analysis is based on a statistical model that can be empirically tested (Magidson & Vermunt, 2002). As a consequence, determining the number of LCs is less arbitrary than when using traditional cluster methods. LC analysis was based on the eight clinical scales in MMPI-2.

Modeling an LC is an iterative procedure that determines the need for a certain number of clusters starting from one cluster model. The number of clusters needed to explain the associations in the data is determined by the Bayesian information criterion (BIC; Magidson & Vermunt, 2004; McCutcheon, 1987). Besides the BIC, it is also important that the latent variable, as in a traditional measurement model, explains the associations between the indicators. This can be inspected by using bivariate residuals (BVRs) in Latent GOLD output. These should be lower than or equal to 3.84, which corresponds to a nonsignificant χ^2 with one degree of freedom. This means that all bivariate associations are explained by the latent variable. In practice, with many indicators, the reduction in BVRs should be at least 85% (Notelaers et al., 2006) to prevent Latent GOLD from adding an additional cluster for each pair (or few pairs) of BVRs that is higher than 3.84.

Results

As shown in Table 1, of the total sample, over three quarters were men, only 27% had any education after high school, and 29% were unemployed or receiving social security benefits. Means and standard deviations for the MMPI-2 validity and clinical scales are reported in Table 2, along with the percentage of gamblers with a T -score above 65 for each clinical scale. Furthermore, four participants (6.5% of the total sample) had a T -score > 110 on the Fb scale, which may indicate symptom exaggeration. However, their corresponding F scores were < 90 .

The mean profile for the total sample was a 2-7 two-point code type, and 21% of the sample had this code type. Scale 2- D was the only scale for which the mean T -score of the gamblers was above 65 ($M = 66.2$, $SD = 14.7$). On Scale 2- D , 50% of the sample had a T -score > 65 . However, on each of the following clinical scales, at least 30% of the sample had a T -score > 65 : 2- D , 3- Hy , 4- Pd , 7- Pt , and 8- Sc .

Scores on the eight clinical MMPI-2 scales were entered into the LC analyses. Hence, the indicators were treated as interval measures. In accordance with the BIC criterion, a model with three clusters best fit the data among the LC cluster models (Models 1 to 4). However, the three-cluster model was associated with three large BVRs, indicating that Scales 1- Hy and 3- Hy , Scales 2- D and 7- Pt , and Scales 7- Pt and 8- Sc had shared variance. Because these pairs of scales share common items (20 items, 13 items, and 17 items, respectively), it is not surprising that the BVRs are large.

Table 1
Demographic Characteristics of the Sample

	Total sample (<i>N</i> = 62)	Low psychopathology group (<i>n</i> = 23)	Moderate psychopathology group (<i>n</i> = 24)	High psychopathology group (<i>n</i> = 15)	Test of group differences
Age, <i>M</i> (<i>SD</i>)	37.8 (11.8)	34.2 (10.6)	36.5 (11.2)	45.5 (11.9)	$F = 7.5$, $p = .001$
Gender (Male), <i>n</i> (%)	49 (79.0)	21 (91.3)	21 (87.5)	7 (46.7)	$\chi^2 = 12.6$, $p = .002$
Highest education level					
Elementary school, <i>n</i> (%)	9 (14.5)	0	7 (29.2)	2 (13.3)	
High school, <i>n</i> (%)	36 (58.1)	16 (69.6)	10 (41.7)	10 (66.7)	
University/College, <i>n</i> (%)	17 (27.4)	7 (30.4)	7 (29.2)	3 (20.0)	$\chi^2 = 15.6$, $p = .02$
Employment status					
Unemployed, <i>n</i> (%)	8 (12.9)	2 (8.7)	4 (16.7)	2 (13.3)	
Employed, <i>n</i> (%)	38 (61.3)	16 (69.6)	16 (66.7)	6 (40.0)	
Student, <i>n</i> (%)	6 (9.7)	3 (13.0)	3 (12.5)	0	
Social security benefit, <i>n</i> (%)	10 (16.1)	2 (8.7)	1 (4.2)	7 (46.7)	$\chi^2 = 1.1$, <i>ns</i>
Marital status					
Single, <i>n</i> (%)	32 (51.6)	13 (56.5)	13 (54.2)	6 (40.0)	
Partner, <i>n</i> (%)	30 (48.4)	10 (43.5)	11 (45.8)	9 (60.0)	
Current comorbidity					
0 Axis I disorders, <i>n</i> (%)	34 (54.9)	15 (65.2)	13 (53.2)	6 (40.0)	$\chi^2 = .2$, <i>ns</i>
1 Axis I disorder, <i>n</i> (%)	20 (32.3)	7 (30.4)	7 (29.2)	6 (40.0)	$\chi^2 = .8$, <i>ns</i>
> 2 Axis I disorders, <i>n</i> (%)	8 (12.9)	1 (4.3)	4 (16.7)	3 (20.0)	$\chi^2 = .6$, <i>ns</i>
0 Axis II disorders, <i>n</i> (%)	55 (88.7)	21 (91.3)	21 (87.5)	13 (86.7)	$\chi^2 = .9$, <i>ns</i>
1 Axis II disorders, <i>n</i> (%)	6 (9.7)	2 (8.7)	2 (8.3)	2 (13.3)	$\chi^2 = 4.0$, <i>ns</i>
> 2 Axis II disorders, <i>n</i> (%)	1 (1.6)	0	1 (4.2)	0	$\chi^2 = 3.2$, <i>ns</i>

There are several ways to deal with problematic BVRs (Magdison & Vermunt, 2004). The first consists of adding more clusters. However, the subsequent four-cluster model provided even higher BIC values (see Table 3).

The second way is to increase the number of latent variables in the model by using LC factor models. Models 5 to 10 showed that adding a second and third latent variable with sufficient classes provided a better fit, as indicated by lower BIC values (see Table 3). Inspection of the factors in the three-factor model yielded a solution

Table 2

Means, Standard Deviations, and Minimum and Maximum Values for Validity and Clinical MMPI-2 Scales (Total Sample, N = 62)

Scale	Mean	SD	Min	Max	% of T-scores > 65
<i>L</i>	51.8	8.1	37	66	
<i>F</i>	65.9	12.8	42	91	
<i>K</i>	43.9	9.6	30	69	
<i>VRIN</i>	58.5	11.9	35	85	
<i>TRIN</i>	42.2	49.9	-76	118	
<i>1-Hs</i>	61.3	16.1	34	105	27.4
<i>2-D</i>	66.2	14.3	42	92	50.0
<i>3-Hy</i>	59.8	15.1	35	97	35.5
<i>4-Pd</i>	59.8	13.6	38	92	35.5
<i>6-Pa</i>	56.6	12.1	30	102	17.7
<i>7-Pt</i>	63.2	14.2	36	99	45.2
<i>8-Sc</i>	58.9	14.3	33	95	35.5
<i>9-Ma</i>	53.0	10.6	30	76	19.4

Note. Scales: *L* = Lie, *F* = Infrequency, *K* = Correction; *VRIN* = Variable Response Inconsistency; *TRIN* = True Response Inconsistency; *1-Hs* = Hypochondriasis; *2-D* = Depression; *3-Hy* = Hysteria; *4-Pd* = Psychopathic Deviate; *6-Pa* = Paranoia; *7-Pt* = Psychasthenia; *8-Sc* = Schizophrenia; *9-Ma* = Mania; min = minimum; max = maximum.

that was similar to the three-cluster model. Two of the factors had loadings on Scales *1-Hs* and *3-Hy*, *2-D*, *7-Pt*, and *8-Sc*. Because these pairs of scales (*1-Hs* and *3-Hy*, *2-D* and *7-Pt*, and *7-Pt* and *8-Sc*) share common items, they are normally positively correlated (e.g., Graham & Lowenfeld, 1986; McCown & Chamberlain, 2000). Apparently, the LC factor models extracted method factors in addition to content factors, that is, the first factor. Moreover, adding classes to the method factors was rewarded with a decreasing BIC. Still, these models portrayed large BVRs.

Table 3

Fit Statistics in Latent Gold

Model		LL	BIC (LL)	Npar	Class.Err.
1	1-Cluster	-1997, 1	4060, 239	16	0
2	2-Cluster	-1881, 65	3899, 491	33	0.0073
3	3-Cluster	-1849, 4	3905, 151	50	0.0354
4	4-Cluster	-1828, 66	3933, 828	67	0.0433
5	2-D Factor (2, 2)	-1848, 62	3841, 683	35	0.0097
6	2-D Factor (3, 3)	-1835, 78	3824, 267	37	0.0883
7	3-D Factor (2, 2, 2)	-1827, 83	3845, 499	46	0.0172
8	3-D Factor (3, 2, 2)	-1818, 53	3831, 026	47	0.0614
9	3-D Factor (3, 3, 2)	-1814, 96	3828, 017	48	0.1058
10	3-D Factor (3, 3, 3)	-1811, 92	3817, 82	47	0.0717
11	3-Cluster, local dependencies	-1800, 71	3832, 534	56	0.0159

Note. LL, log likelihood; BIC, Bayesian criterion information; Npar, number of parameters; Class.Err., classification error.

The third alternative to deal with the initial problematic BVRs is to relax the local independence assumption (i.e., allowing some of the indicators to covary). This approach is extremely useful when an external factor that is not really related to the LC variable is responsible for creating an "irrelevant" association between indicators. Allowing such a direct-effect parameter (Hagenaars, 1998) may be advisable if, for example, symptoms are strongly related (Uebersax, 2009). Because the high BVRs in the three-cluster model were related to three pairs of scales that share common items, and elevations on these pairs of scales often occur together (e.g., Graham & Lowenfeld, 1986; McCown & Chamberlain, 2000), we relaxed the assumption of local dependency. In a subsequent model, we therefore allowed Scales 1-*Hs* and 3-*Hy* and Scales 7-*Pt* and 8-*Sc* to covary. The results portrayed a lower BIC. However, the total rate of adjacent error classification (erroneously classified subjects in adjacent LCs) was lower in the LC factor models. In contrast to these models, however, no BVR was larger than 3.84 in the current solution. Hence, this solution was considered to represent the best fit. The latent profile shown in Table 3 explains how the indicators were related to the latent clusters.

Results from the LC analysis hence suggested that there were three distinct latent clusters of gamblers in the sample: one that had a profile within the normal range, scoring low on psychopathology, and two with elevated profiles (see Figure 1).

Latent Cluster 1 ($n = 23$), labeled "the low psychopathology group," comprised 37.10% of the sample and had all mean scores of the eight clinical scales in the MMPI-2 profile within the normal range ($T < 65$). Latent Cluster 2 ($n = 24$), which comprised 38.71% of the sample, had elevated mean scores ($T > 65$) on two of the eight clinical scales. This cluster was characterized by a 2-7 profile type. This cluster was labeled "the moderate psychopathology group." Approximately 42% of the individuals in this group displayed the mean code type (2-7/7-2 code). In this group, 71% had Scale 2-*D* as one of the two highest scales, and 63% had Scale 7-*Pt* as one of

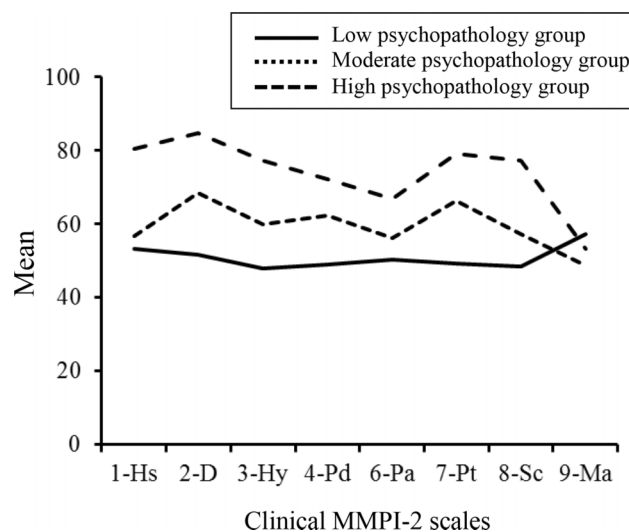


Figure 1. Mean MMPI-2 profiles for each latent cluster.

the two highest scales. Latent Cluster 3 ($n = 15$), comprising 24.19% of the sample, had a profile with elevations on seven of the eight clinical scales and was therefore named "the high psychopathology group." This group was characterized by a 2-1 two point code type. The 2-1 code type was found in 27% of the individual code types in the high psychopathology group; 53% of this group had Scale 1-*Hs* as one of the two highest scales and 47% had Scale 2-*D* as one of the two highest scales (see Table 4).

Demographic characteristics also differed between the latent clusters (see Table 1). The high psychopathology group had a significantly higher mean age (45.5 years) than did the low psychopathology group or the moderate psychopathology group (34.2 and 36.5 years, respectively; $p = .001$). The moderate psychopathology group and the high psychopathology group had a larger percentage of gamblers with low education (29% and 13%, respectively, with elementary school only) than did the low psychopathology group (0%). In addition, a larger percentage of gamblers in the moderate and high psychopathology groups were unemployed or receiving social security payments (21% and 66%, respectively) than was the case in the low psychopathology group (17%).

Discussion

This study showed that pathological gamblers in a treatment-seeking setting on average tended to score highest on Scales 2-*D* and 7-*Pt*. Scale 2-*D* was the only scale with a mean *T*-score above 65 in the total sample. The results showed that half of the gamblers seeking treatment showed symptoms of depression and 45% showed symptoms of anxiety. Elevations on Scale 2-*D* may reflect dissatisfaction with current life circumstances rather than clinical depression (Graham, 2006). High scores on Scale 2-*D* are further associated with lack of hope for the future and a pessimistic view on the likelihood of overcoming one's problems and making a better adjustment. It has been proposed that escaping from negative feelings such as depression, anxiety, hopelessness, and guilt may be the primary reasons that some

Table 4
MMPI-2 Code Types Within Each Subgroup

	Low psychopathology group ($n = 23$)	Moderate psychopathology group ($n = 24$)	High psychopathology group ($n = 15$)
2-7/7-2 code type	1 (4.3%)	10 (41.7%)	2 (13.3%)
1-2/2-1 code type	2 (8.7%)	0	4 (26.7%)
1- <i>Hs</i> as one of the 2 highest scales	7 (30.4%)	2 (8.3%)	8 (53.3%)
2- <i>D</i> as one of the 2 highest scales	7 (30.4%)	17 (70.8%)	7 (46.7%)
7- <i>Pt</i> as one of the 2 highest scales	2 (8.7%)	15 (62.5%)	4 (26.7%)

Note. Scales: 1-*Hs* = Hypochondriasis; 2-*D* = Depression; 7-*Pt* = Psychasthenia. The table shows number of individuals within each subgroup who are characterized by the mean code types and number of individuals whose highest score is on one of the code-type scales.

people gamble (Blaszczynski & McConaghy, 1989; Jacobs, 1986). An alternative interpretation is that these people became worried, anxious, tense, and depressed because of the negative consequences of their gambling. Both interpretations are supported by high rates of comorbidity of depression and anxiety among pathological gamblers (Petry et al., 2005). Elevations on Scale 7-*Pt* typically reflect excessive doubts, compulsions, obsessions, and unreasonable fears (Graham, 2006). Pathological gamblers are often obsessed with gambling and experience a strong urge to gamble, followed by the experience of relief after engaging in gambling activities, which may be reflected in high scores on compulsions or obsessions.

The present study showed that pathological gamblers do not comprise a homogeneous group, but can be divided into several distinct latent clusters. In line with the results reported by Vachon and Bagby (2009), we found three separate clusters characterized by low, moderate, and high levels of psychopathology. We identified one group with average MMPI-2 profiles and all clinical scales within the normal range and two groups with elevated profiles. More than one third (37%) of the sample (the low psychopathology group) scored within the normal range. This group seems to resemble previously suggested subtypes of gamblers who gamble for reasons other than coping with psychopathology and seem not to be predisposed to certain personality traits, resembling the "low emotion regulation gamblers" (Stewart et al., 2008) and the "simple PG cluster" (Vachon & Bagby, 2009).

The moderate and high psychopathology groups showed different profiles and differed in degrees of psychopathology. The moderate psychopathology group (comprising 38% of the sample) had elevations on two scales and was characterized by a 2-7 code type. However, as this code type is not well defined, its interpretation should be taken with some caution. Individuals with a 2-7 code type are typically characterized by depression, anxiety, and tension. They tend to be passive and dependent in relationships, are often viewed as rigid in their thinking and problem-solving styles, and often have high and unrealistic expectations of themselves (Butcher, 2005). Rigid thinking and problem-solving style may be reflected in the wide range of cognitive distortions that typically characterize pathological gamblers. Such cognitive distortions have been suggested to contribute to the inability to control gambling behavior (Ladouceur & Walker, 1996; Toneatto, 1999). Gamblers have also been shown to overestimate their chances of winning, which may be reflected in the high and unrealistic expectations that characterize this profile type. This group partly resembles the third cluster in the study of Graham and Lowenfeld (1986), as well as the first cluster in McCown and Chamberlain (2000), which was characterized by elevations on Scales 1-*Hs*, 2-*D*, and 3-*Hy*. McCown and Chamberlain (2000) further found that women and video gamblers were over-represented in this group and suggested that they gambled primarily to escape from depression.

The high psychopathology group showed on average the most extensive elevations on all scales, indicating more severe psychopathology and maladjustment. The only mean *T*-score below 65 for this group was on the 9-*Ma* scale. The 9-*Ma* scale had, however,

the lowest discriminative power of all eight clinical scales. Although no statistically significant differences in the number of Axis I disorders between the groups were detected, a greater proportion of the high psychopathology group reported one or more Axis I disorders in addition to their gambling problem. This finding further illustrates the differences in degree of pathology observed between the groups. The high psychopathology group was characterized by a 2-1 profile, which is not well defined; hence, one should be careful in interpreting the code type. The 2-1 profile is associated with somatic discomfort and complaints. Individuals with this code type are often overly concerned about health and bodily functions and tend to be anxious, tense, and nervous. They typically tend to be passive-dependent in their relationships and use repression and somatization when encountering problems. The passive style make these persons tolerate high levels of discomfort before becoming motivated to change. In addition, they often lack insight and self-understanding and have difficulties accepting responsibility for their own behavior. Long-term changes after psychotherapy are therefore less likely with this group (Graham, 2006). These individuals may gamble in order to escape from reality and to cope with their psychopathology, and they may lack the necessary motivation and skills to stop gambling. One may expect poor treatment outcomes for this group because of the low initiative, lack of insight, and difficulties in accepting responsibility for their own behavior.

The high psychopathology group resembles the second cluster type in Graham and Lowenfeld's study (1986) and the third cluster type in McCown and Chamberlain's study (2000), with elevations on Scales 6-*Pa*, 7-*Pt*, and 8-*Sc*. The high psychopathology group in the present study also showed elevations on Scales 7-*Pt* and 8-*Sc*, but showed more elevations on Scales 1-*Hs*, 2-*D*, 3-*Hy*, and 4-*Pd* relative to Scale 6-*Pa*, indicating less paranoid ideation and more anxiety and depressive symptoms. McCown and Chamberlain (2000) related the basic pathology of their third cluster to misconceptions about the world and a failure to understand the basic laws of probability, and they suggested that these problems were largely culturally based and more likely to appear among the poor or other socially deprived groups.

The mean code type for the high psychopathology cluster was representative for only one quarter of the individuals in this group. Given that most of the means of the clinical scales were elevated in this group, this finding may simply reflect the fact that this group is not homogenous but a group with a wide range of psychopathology.

Significantly higher mean age was also found in the high psychopathology group than in the two other groups, which may indicate that the level of psychopathology increases with age. It may be further assumed that older gamblers are likely to have gambled longer, and greater gambling severity may be related to higher levels of psychopathology.

The 4-9 profile that was reported in the two previous studies (Graham & Lowenfeld, 1986; McCown & Chamberlain, 2000) was not found in the present sample, and previous findings indicating that Scale 4-*Pd* is the most elevated scale among pathological gamblers were not supported. Graham and Lowenfeld (1986) found in

their study that the mean profile for pathological gamblers was a 4-2-7 code type, which is often reported by alcohol and other substance abusers (Owen & Butcher, 1979). Graham and Lowenfeld (1986) also found elevated scores on Scale 4-*Pd* in all four clusters. In the present study, the high psychopathology group had elevated scores on Scale 4-*Pd*, but this scale was not among the most elevated scales. This discrepancy may be due to the small sample size of the present study. If this subtype of gamblers is relatively rare (only 26% in McCown and Chamberlain's sample), a sample size of 62 gamblers may not be sufficient to detect this subtype.

Furthermore, PG has been shown to have high comorbidity with substance abuse, and people with substance abuse typically also score high on the 4-*Pd* scale (Owen & Butcher, 1979). Because participants with substance abuse were excluded from the present study, this might partly explain why previous findings of elevated Scale 4 scores were not fully supported here. Another possible explanation is that participants in the present study may be higher functioning than patients in inpatient treatment settings, who are typically included in other studies. Most of the patients in the present study were self-referred, which may have caused a selection bias. One may speculate that self-referred patients are higher functioning and encompass more resources to cope with their problems than do referred patients.

Another possible explanation for why previous findings were not confirmed in the present study is that the gambling market has gone through dramatic changes over the last decades; gambling opportunities have expanded and new types of games have been introduced. Most of the previous MMPI studies of gamblers were conducted in the late 1980s and early 1990s, and the typical gambler today may not be the same type as the typical gambler in the 1980s. As gambling has become more common, the gambling population has probably also become more heterogeneous.

Clinical Implications

Generally, individuals in more distress are more receptive to therapeutic interventions and may be willing to tolerate the effort and discomfort of therapy in order to feel better (Graham, 2006). Because gamblers are often characterized by discomfort and tension, they may have a high motivation for treatment. The existence of different subgroups may have implications for designing effective and targeted treatment interventions. It has been hypothesized that the presence of additional psychopathology and gambling severity may be related to relapse and poorer treatment outcomes (Ledgerwood & Petry, 2005). However, gambling severity has been found to be positively related to treatment outcome, and the severity of the problem has been suggested as a motivating factor for treatment (Hodgins & El-Guebaly, 2010).

Subtyping on the basis of personality and underlying motivations for substance use has led to the development of effective motivation-matched treatment programs (Conrod et al., 2000). Similarly, motivation-matched treatment programs for pathological gamblers could be developed and presumably enhance treatment efficacy. Gamblers who engage in gambling activities to cope with stress or other

negative emotions may benefit from training of coping skills and learning how to deal with their underlying pathology. Those who, on the other hand, gamble primarily for the thrill or for sensation seeking may be encouraged to find other less harmful ways of fulfilling their need for stimulation.

Approximately one third of the sample in the present study showed personality profiles within the normal range, and one may assume that subjects belonging to this group have adequate resources to help them benefit from minimal intervention programs or standard short-term cognitive behavioral therapy, which seems to be effective on both a short- and long-term basis (Pallesen, Mitsem, Kvale, Johnsen, & Molde, 2005). The rest of the sample, having elevated profiles, was characterized by considerable psychopathology. Hodgins and El-Guebaly (2010) suggested that comorbid disorders complicate the treatment process; several studies have found that higher levels of psychopathology are related to relapse and dropout (Echeburúa & Fernández-Montalvo, 2005; Echeburúa, Fernández-Montalvo, & Báez, 2001; Jiménez-Murcia et al., 2007) and that the presence of comorbid disorders is associated with the need for longer treatment to achieve abstinence (Hodgins & El-Guebaly, 2010; Hodgins, Peden, & Cassidy, 2005). Hence, gamblers with elevated levels of psychopathology may need longer and more supportive treatment and may have other comorbid disorders that should also be addressed in therapy.

One may speculate that tailoring treatment for pathological gamblers and taking the general level of psychopathology of the patients into consideration may enhance treatment efficacy. However, little evidence exists concerning differential treatment outcomes for different subgroups of pathological gamblers (Milosevic & Ledgerwood, 2010). Because general therapeutic factors, such as alliance, have been found to correlate more strongly with therapy outcome in comparison with specific treatment interventions (e.g., Lambert & Barley, 2001), it is possible that these general factors may override patient differences in subgroups of gamblers in terms of outcome.

Limitations of the Study and Future Directions

The pathological gamblers in this study represented a convenience sample; accordingly, they may not be representative for the general population of pathological gamblers. One should therefore be careful about generalizing the results from the present study to the non-treatment-seeking population of gamblers. There are reasons to believe that treatment-seeking populations experience more distress and negative consequences of their gambling; they may hence show more elevated profiles compared with non-treatment-seeking gamblers.

LC analysis is usually performed with larger sample sizes. Hence, the size of the sample may be conceived as a limitation of the present study. The number of parameters is relatively high for such a small sample, and ideally the ratio between the number of indicators (MMPI-2 scales) and the number of subjects should be greater than 10. Such a rule of thumb implies that the current study did not have enough power to arrive at a stable solution. Recently, however, Gudicha, Tekle, and

Vermunt (in press) investigated the issue of power and sample size computations for LC models. Their work shows that if entropy (r^2) is above .80, small samples do not threaten the stability of LC analysis. In our case, entropy was .948, or 95%.

Some gamblers had high scores on the validity scales measuring malingering and defensiveness, and future studies should accordingly investigate the level, correlates, and treatment implications of impression management and social desirability in gamblers.

High scores on Scale 2-*D* are commonly found in treatment-seeking samples. Although the scores of the MMPI-2 are relatively stable over time (Graham, 2006), the 2-*D* scale has been criticized for being too sensitive to temporary and situation-specific states and thus one might expect these scores to decline after treatment. Future studies should therefore attempt to investigate how the MMPI-2 scores change following successful treatment of PG.

The present study did not have a patient contrast group (e.g., alcohol abusers); hence, some findings from this study may not be specific to pathological gamblers, but may rather be representative for patients with mental disorders or addictions in general. Future studies should therefore include contrast groups with both healthy controls and other patient contrast groups.

Another possible limitation is that we did not differentiate between different forms of gambling. Former studies have found a relationship between gaming preference (skill vs. luck based) and MMPI personality variables (Adkins, Kreudelbach, Toohig, & Rugle, 1987); hence, gamblers preferring poker or sports betting (which involve elements of skill) may be characterized by different psychopathology and personality traits than gamblers who participate primarily in games in which the outcome is purely based on chance. Future studies should therefore investigate whether a preference for different types of gambling may be related to differences in personality and psychopathology.

Conclusions

Pathological gamblers are a heterogeneous group with different personality configurations and degrees of pathology; the notion of a general "gambler personality" is not supported by the present findings. The data indicate three separate latent clusters of pathological gamblers, one (approximately half of the sample) with normal personality profiles and two with elevated profiles characterized by considerable psychopathology. The two clusters with highest psychopathology to a certain degree resemble previous findings in the field, but a previously observed 4/9 subtype was not replicated by the present study. The moderate psychopathology group showed a 2-7 profile type, whereas the high psychopathology group displayed a 2-1 profile type.

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Les joueurs sans problème de jeu de 55 ans et plus : événements, conséquences et caractéristiques structurelles et environnementales influençant les habitudes de jeu

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Résumé

Les habitudes de jeu de hasard et d'argent des joueurs âgés sans problème de jeu font rarement l'objet d'investigation. Dans le but de documenter les événements de vie et les effets liés à la pratique du jeu, 19 joueurs de 55 à 74 ans sans problème de jeu ont été réunis en trois *focus groups*. L'analyse de contenu révèle des changements d'habitudes de jeu liés au passage à la retraite et à la survenue de problèmes de santé, ainsi que diverses conséquences favorables et défavorables sur les finances, les loisirs, les relations sociales et la santé psychologique. Les caractéristiques propres aux jeux de hasard et d'argent ou à l'environnement de jeu, qui influencent leurs habitudes de jeu, émergent spontanément dans le discours des joueurs. Les résultats mettent en lumière la nécessité d'étudier les événements de vie dans une perspective plus large, qui inclurait entre autres les facteurs de risque et de protection, afin de mieux comprendre la modification des habitudes de jeu.

Mots-clés: jeu de hasard et d'argent, aînés, prévention, événements de vie, conséquences

Abstract

Gambling habits of people aged 55 years and over without gambling problems are rarely being investigated. In order to document life events and to identify the impacts of gambling on quality of life, 19 participants aged 55 to 74 years without gambling problems, male and female, were assembled in three focus groups. Qualitative content analysis of the groups reveals changes in gambling habits associated with transition to retirement and occurrence of health problems. The content analysis further reveals a variety of positive and negative consequences of gambling habits on finances, hobbies, social relationships, and psychological health. Although the focus groups did not target the structural or environmental characteristics of gambling that influence participants' gambling habits, those themes were brought up spontaneously. Results highlight the necessity to study life events from a larger

perspective including, for example, protective and risk factors, in order to better understand the life contexts and the individual characteristics that may lead to an alteration or not of gambling habits.

Introduction

Aux États-Unis et au Canada, le pourcentage des personnes de 55 ans et plus jouant à des jeux de hasard et d'argent (JHA) a augmenté depuis les années 70. En 1975, 23 % des Américains de 65 ans et plus rapportaient jouer annuellement à des JHA, et ce pourcentage a plus que doublé entre 1975 et 1998, pour s'élever à 50 % (Gerstein et al., 1999). L'une des rares études pancanadiennes réalisées à ce jour indique que 70 % des femmes et 74 % des hommes de 65 ans et plus ont participé, sur une base annuelle, à au moins un JHA en 2002 (Marshall & Wynne, 2003). Une étude réalisée en 2001 auprès de résidents de la grande région de Montréal (Québec, Canada) indique que 48 % des 55 ans et plus participent annuellement à au moins un JHA (Philippe & Vallerand, 2007). Des taux de participation compilés à partir de données de 2009 recueillies auprès de l'ensemble de la population du Québec (Canada) s'avèrent nettement plus élevés, et ce, même si l'on segmente les 55 ans et plus en trois groupes d'âge : 76,1 % des 55 à 64 ans; 68,2 % des 65 à 74 ans et 56,3 % des 75 ans et plus (Kairouz & Nadeau, 2011).

La population des personnes âgées de 65 ans et plus, dont la cohorte d'âge croît très rapidement au Canada (Statistique Canada, 2010), représente une cible idéale pour l'industrie du jeu, entre autres parce qu'elles bénéficient de plus de temps libre. L'industrie des casinos met d'ailleurs de l'avant plusieurs stratégies pour attirer cette clientèle, notamment en lui offrant certains privilèges, dont le transport vers les lieux de jeu, ou en sécurisant davantage l'environnement de jeu (McNeilly & Burke, 2001; Zaranek & Chapleski, 2005). La sécurité peut constituer un enjeu important pour attirer la clientèle plus âgée. À cet égard, Southwell, Boreham et Laffan (2008) soutiennent que les clubs australiens – des associations sans but lucratif qui offrent entre autres de l'amusement et des repas à prix modique, et où se trouvent des appareils électroniques de jeu – sont perçus comme plus sécuritaires que les hôtels et les bars par les personnes âgées. Ces clubs représentent d'ailleurs leur endroit de prédilection pour jouer.

Globalement, les raisons de jouer à des JHA invoquées par les personnes âgées s'apparentent à celles des joueurs plus jeunes (Ferland, Fournier, Ladouceur, & Giroux, 2009), qui disent le faire notamment pour s'amuser (Azmier, 2000; Platz & Millar, 2001), parce qu'ils ont l'espoir de réaliser un gain (Azmier, 2000; Park, Yang, Lee, Jang, & Stokowski, 2002), pour socialiser (Azmier, 2000; Lee, Rovers, & MacLean, 2006) ou pour fuir les problèmes quotidiens (Azmier, 2000; Loro, 2004). Cependant, contrairement aux plus jeunes, les joueurs âgés mentionnent jouer

d'avantage pour échapper à l'ennui que pour gagner de l'argent (Desai, Maciejewski, Dausey, Caldarone, & Potenza, 2004).

Homes et Rahe, dans leur ouvrage classique de 1967, établissent une liste décroissante d'événements stressants (positifs et négatifs) nécessitant des adaptations chez l'individu en cas d'occurrence. Au sommet de cette liste se trouve le décès du conjoint – événement dont la probabilité de survenue augmente de manière exponentielle avec le passage du temps. D'autres événements tels le décès d'un être cher, la retraite ou un changement de l'état de santé d'un membre de la famille nécessitent également des efforts d'adaptation importants. Contrairement à Homes et Rahe, Thoits (1995) distingue les événements de vie, qu'elle qualifie de changements aigus nécessitant une réadaptation comportementale majeure dans un court laps de temps (p. ex., naissance du premier enfant, divorce, deuil, perte d'un emploi), des tensions chroniques issues d'exigences continues ou récurrentes nécessitant une réadaptation sur des périodes de temps prolongées (p. ex., blessure invalidante, problèmes de santé, pauvreté, problèmes conjugaux). Elle distingue également les tracasseries quotidiennes ou les situations réconfortantes (*uplifts*), qu'elle qualifie de « mini-événements » requérant une adaptation comportementale minimale au cours d'une journée (p. ex., bouchon de circulation, visite impromptue, avoir un bon repas).

Les multiples changements auxquels font face les personnes plus âgées pourraient en amener certaines à se tourner vers les JHA pour diminuer leur stress, pour se sortir de l'isolement ou s'évader de leur vie quotidienne (Ferland et al.,; Southwell et al., 2008; Vanderbilt, Dodge, Pandav, Shaffer, & Ganguli, 2004) en fuyant, par exemple, les émotions causées par la perte d'un être aimé (Martin, Lichtengerg, & Templin, 2011). L'augmentation des habitudes de jeu n'est pas sans conséquence pour les personnes âgées, et les pertes encourues peuvent entraîner l'émergence rapide de situations financières difficiles (Levens, Dyer, Zubritzsky, Knott, & Oslin, 2005; Petry, 2002). Il devient plus difficile pour les gens âgés d'accroître leurs revenus en travaillant davantage ou bien, comme le documentent Southwell et al. (2008), en pigeant à même leurs économies, ce qui fait que jouer à des JHA risque de compromettre leur sécurité financière.

Ainsi, divers événements de vie peuvent moduler les occupations des personnes âgées et affecter leurs habitudes de vie, dont la participation aux JHA. Ces événements de vie n'amènent pas les joueurs âgés uniquement vers une augmentation de leur participation au jeu, puisqu'ils peuvent également les éloigner du jeu et, du coup, réduire leurs comportements de jeu. Une étude qualitative réalisée auprès de personnes âgées ayant un comportement de jeu problématique révèle que les aînés lient leur jeu problématique à une variété d'événements de vie, et qu'un événement peut inciter certaines personnes à jouer et d'autres personnes à diminuer leurs comportements de jeu (Poupard, 2013), indiquant la présence de plusieurs facteurs qui contribuent au changement des habitudes de jeu. Dans ce contexte, il s'avère pertinent de s'intéresser aux joueurs âgés sans problème de jeu afin d'explorer l'effet

des événements de vie sur les comportements de jeu, hors du contexte de la pathologie du jeu.

Le jeu auprès d'une clientèle de joueurs âgés sans problème de jeu a été peu étudié. Hagen, Nixon et Solowoniuk (2005) ont exploré les expériences de jeu de 12 adultes de 60 ans et plus sans problème de jeu. Ces personnes rapportent entre autres prendre part au jeu pour l'aspect social, la nourriture, l'excitation, en plus de la possibilité de donner ainsi à des œuvres de bienfaisance et de faire des voyages peu coûteux. Les participants ont aussi énoncé plusieurs stratégies pour que leurs habitudes de jeu ne progressent pas à un niveau problématique; cependant, les événements de vie n'ont pas été pris en considération.

La présente étude réalisée auprès de joueurs de 55 à 74 ans sans problème de jeu a donc pour buts : (a) de documenter les événements qui pourraient influencer les habitudes de jeu et (b) de préciser les conséquences positives et négatives de ces habitudes de jeu sur les sphères personnelle, sociale et financière.

Pour ce faire, interroger des joueurs de 55 ans et plus sur les événements de vie et les conséquences (négatives et positives) liées à la participation au jeu pour les gens de leur groupe d'âge s'avère être une avenue d'exploration, et pour cette raison nous avons utilisé des *focus groups* (Touré, 2010). Afin d'atteindre les objectifs de cette étude, l'utilisation de *focus groups*, qui impliquent une dynamique semi-directive et progressive, a été retenue, plutôt que le recours à des groupes de discussion, qui comportent une dynamique non directive et processuelle (Davila & Dominguez, 2010).

Méthode

Participants

Les participants ont été recrutés par l'entremise d'annonces publiées dans des journaux de la ville de Québec et d'une liste de volontaires du Centre [Centre québécois d'excellence pour la prévention et le traitement du jeu de l'Université Laval]. Pour être admissibles à l'étude, les personnes devaient : (a) être âgées de 55 ans et plus, (b) avoir joué minimalement deux fois par mois à un JHA au cours de la dernière année et (c) être sans problème de jeu. Au total, 93 personnes ont complété une entrevue de présélection, et 85 d'entre elles ont satisfait aux critères d'admissibilité. Par la suite, seuls les joueurs sans problème de jeu (score de 0 au *Problem Gambling Severity Index* [PGSI], Ferris & Wynne, 2001) ont été retenus pour les *focus groups*, ayant des problèmes de jeu étant conservés pour une phase ultérieure de la recherche. Puis, 22 personnes âgées de 55 à 74 ans sans problème de jeu ont été invitées à participer à l'un des trois *focus groups*. Sur les 19 personnes qui se sont finalement présentées, sept étaient des hommes et 12, des femmes. Parmi ces participants, 10 avaient de 55 à 64 ans et neuf avaient de 65 à 74 ans. Par ailleurs, neuf de ces personnes se définissaient comme retraitées, deux soulignaient avoir pris leur retraite d'un emploi et s'être lancées en affaires ou dans une entreprise à leur compte, trois mentionnaient être retraitées mais occuper un emploi à temps partiel, deux se définissaient comme

travailleurs et une ne se définissait pas comme retraitée, bien qu'elle avait quitté le marché du travail et s'occupait activement de son conjoint beaucoup plus vieux qu'elle. Le statut occupationnel de deux participants est demeuré indéterminé.

Instruments

L'entrevue téléphonique de présélection d'une durée de 10 minutes comprenait les trois sections suivantes :

Données sociodémographiques. Deux questions recueillaient l'âge et le sexe des participants. L'information sur le statut occupationnel des participants a été tirée du verbatim des *focus groups*.

Participation et argent dépensé aux JHA. Une liste de 16 JHA a permis de recenser les différentes activités de jeu auxquelles se livrent les participants et d'en établir la fréquence à l'aide d'une échelle en 7 points : chaque jour, quelques fois par semaine, environ une fois par semaine, quelques fois par mois, environ une fois par mois, quelques fois au cours des 12 derniers mois et jamais. Les participants indiquaient également le montant d'argent qu'ils avaient dépensé au cours du dernier mois dans les différents JHA. Ces questions s'inspirent de celles développées par Ferris et Wynne (2001) pour évaluer les habitudes de jeu et ont été adaptées par Ladouceur, Jacques, Chevalier, Sévigny et Hamel (2005).

Dépistage des problèmes de jeu. Le dépistage des problèmes de jeu s'est effectué à l'aide du PGSI, une sous-section de l'Indice canadien du jeu excessif (ICJE; Ferris & Wynne, 2001). Le PGSI comprend 12 énoncés, dont neuf servent au calcul du score des problèmes de jeu. Seuls ces neuf énoncés ont été administrés. Chaque énoncé appelle une réponse sur une échelle de type Likert en quatre points, allant de *jamais* (0) à *presque toujours* (3). L'interprétation de la somme des scores au PGSI s'effectue selon les indications suivantes : 0 = joueur sans problème de jeu; 1 à 2 = joueur à faible risque; 3 à 7 = joueur à risque modéré et 8 ou plus = joueur excessif. Cet instrument, validé en anglais et en français, démontre une bonne validité convergente ($r = 0,83$) avec le *South Oaks Gambling Screen* (SOGS; Lesieur & Blume, 1987) et les critères diagnostiques du *Manuel diagnostique et statistique des troubles mentaux* (DSM-IV; American Psychiatric Association, 1994) ainsi qu'une bonne cohérence interne ($\alpha = 0,84$; voir Ferris & Wynne, 2001).

Matériel pour l'animation des *focus groups*

Le matériel nécessaire à la réalisation des *focus groups* comprenait un ordinateur portable, un projecteur, deux enregistreurs numériques et un guide de l'animateur. Le guide de l'animateur comportait trois parties, correspondant aux thèmes abordés lors des séances de *focus group* : (a) les raisons de jouer, un thème permettant d'amorcer la discussion et de familiariser les participants avec le déroulement d'un *focus group* (15 minutes); (2) les conséquences positives ou négatives du jeu sur la

qualité de vie et les finances (45 minutes) et (3) les événements de vie influençant les habitudes de jeu (30 minutes).

Procédure

Un assistant de recherche a joint les participants intéressés par l'étude pour vérifier leur admissibilité et leur expliquer le déroulement de l'étude. Les personnes admissibles ont été convoquées à un *focus group* tenu à Université Laval et d'une durée de 105 minutes environ, incluant une pause de 15 minutes. Le coanimateur (un étudiant au doctorat en psychologie) et l'animateur (un psychologue spécialisé en JHA) ont accueilli les participants à leur arrivée et les ont invités à lire et à signer un formulaire de consentement et d'engagement à la confidentialité. Les participants ont pris place autour d'une table de conférence pour faciliter l'interactivité et la prise de notes. L'animation des *focus groups* s'est effectuée en suivant la séquence des thèmes et des questions présentés dans le guide de l'animateur. L'animation a été réalisée de manière à favoriser l'expression des points de vue de tous les participants, en lien avec leurs expériences personnelles ou celles de personnes qu'elles connaissent. À la fin de la séance de *focus group*, chaque participant a reçu un chèque-cadeau de 50 \$ en guise de dédommagement, et ceux qui ont engagé des frais de stationnement ou de taxi ont été remboursés. Une liste de ressources leur a également été remise. Cette étude a été approuvée par le Comité d'éthique de Université Laval (2009-003).

Analyses

L'objectif de l'analyse qualitative était de dégager les thèmes pertinents à l'étude qui ont émergé du discours des participants. Pour ce faire, le verbatim des *focus groups* a été transcrit et dénominalisé avant que nous procédions aux analyses qualitatives selon un processus itératif standardisé inspiré de Guest et MacQueen (2008) : (a) lecture flottante des verbatim, (b) développement d'un livre de codes, (c) premier codage de l'ensemble des verbatim à l'aide du logiciel *QDA Miner*, (d) intercodage de 25 % du contenu des verbatim à partir des codes créés lors du premier codage et (e) interprétation des résultats. Deux doctorants en psychologie, sous la supervision de la première auteure, ont procédé au codage du verbatim. Un accord interjuge a été calculé et s'élève à 97,7 %. Les désaccords ont été discutés en équipe afin d'en arriver à un consensus. Une fois le consensus établi, le livre de codes a été modifié pour refléter les nouvelles définitions des thèmes. Par la suite, les deux doctorants ont procédé à l'analyse complète des verbatim. Dans le but d'illustrer les résultats, des citations représentatives ont été retranscrites mot pour mot, en conservant le sens du propos et l'émotion véhiculée par les participants.

Résultats

Les résultats sont présentés sous forme de thèmes ayant émergé du discours des participants, selon chaque objectif. Les thèmes sont d'abord expliqués et ensuite appuyés à l'aide d'extraits du verbatim afin d'enrichir la compréhension.

Événements de vie et participation au jeu

Deux événements potentiellement liés à la hausse ou à la baisse de leur participation au jeu ou à celles de personnes de leur âge ont émergé de l'analyse thématique : le passage à la retraite et les problèmes de santé.

Passage à la retraite. Le passage à la retraite est rapporté comme une période propice aux changements d'habitudes de jeu, entre autres en raison de l'augmentation du temps libre et de l'amélioration de la situation financière (parce que la personne bénéficie d'une rente de retraite, a terminé de payer l'hypothèque de la maison, etc.).

Du jour au lendemain, tu tombes à la retraite, les enfants sont partis et tu n'as plus d'horaire fixe, il faut que tu fasses attention. La maison est payée alors tu as un gain supplémentaire en plus. Le jeu peut commencer à embarquer un peu.

... Moi, quand je travaillais, on n'y allait pas [au casino]. On va au casino depuis qu'on est à la retraite. **Donc, vous, à partir du moment où vous êtes arrivés à la retraite...** C'est là qu'on a commencé à aller au casino.... On a arrêté parce qu'on y allait trop souvent et on ne gagnait pas.

Avant la retraite, est-ce que vous vous adonnez à certains jeux, soit vous ou votre conjoint? Non. **Achiez-vous de la loterie?** Oui, des billets on en a toujours acheté. On faisait comme la madame. Je prenais les âges des enfants. Quand j'ai arrêté de travailler, j'ai arrêté. Je ne les prends plus.

Problèmes de santé du joueur ou d'un proche. Le déclin de la santé d'un proche peut contribuer à maintenir la fréquence de jeu lorsque cette activité se révèle une solution de remplacement aux activités jadis pratiquées.

Moi, le côté positif de ça, c'est que mon épouse a une santé médiocre. Auparavant, on avait beaucoup plus d'activités à l'extérieur, mais vu son état de santé, on ne peut plus faire les mêmes activités. [De jouer au casino] ça nous permet de faire une activité ensemble et ça lui permet de se changer les idées.

Cependant, des problèmes de santé importants qui affectent la mobilité contribuent à diminuer la participation au jeu.

J'achète la poule une fois de temps en temps. J'achète max une fois par semaine. [...] J'achète un 6/49 par semaine [...]. Ça fait 15 ans, mais j'en achète beaucoup moins depuis que je suis allée à l'hôpital [en raison d'un problème de santé].

La participation au jeu : pas seulement affectée par les événements de vie

D'autres thèmes émergent ont émergé du discours des participants comme influençant les habitudes de jeu : l'accessibilité des jeux et de l'argent, les caractéristiques structurelles des jeux ou associées au site de jeu, le jeu d'autrui, la possibilité de socialiser, la rationalité et les émotions associées à l'activité de jeu.

Accessibilité des jeux ou de l'argent. L'accès au jeu, comme les présentoirs de billets de loterie qui se trouvent, entre autres, dans les dépanneurs ou les supermarchés, peuvent contribuer à l'augmentation de la fréquence de jeu ou des montants d'argent misés au jeu, en rappelant la possibilité de jouer.

Les billets de loterie, c'est aux 15 jours, un 6/49. Une petite poule [poule aux œufs d'or] à gratter aussi quand c'est dans mon champ visuel.

À l'inverse, la difficulté d'accès au jeu représente un élément dissuasif à la participation. La complexité ou la multiplication des étapes à franchir avant de pouvoir jouer peuvent contribuer à la décision de ne pas jouer.

Je voulais juste être capable de jouer un 2 \$, mais il faut que tu t'enregistres, que tu fasses ci. Il y a toute sorte de barrières [exigences du Salon de jeu]. C'est peut-être mieux de même. Je suis retourné de bord... Il y a ben des barrières. Je présume que c'est voulu de même, mais on constate que c'est un frein.

La facilité d'accès à l'argent, entre autres grâce à la présence de guichets automatiques ou à la plus grande disponibilité de l'argent, contribue à une augmentation des habitudes de jeu, notamment lorsque diminuent les obligations financières.

Il y a des guichets automatiques partout. Si au bout de 3 minutes tu as dépensé ton 100 \$, tu te dis mon Dieu j'en ai encore pour combien de temps à attendre les autres. Tu vois le guichet automatique et ça y est [tu vas chercher de l'argent pour jouer].

Par contre, un changement dans les priorités financières peut amener une diminution, voire l'arrêt de la participation au jeu.

Moi, c'est comme je t'ai dit au commencement. On y allait beaucoup et on a changé notre train de vie. On a dit on arrête et on met cet argent-là sur le paiement de char [l'automobile].

Caractéristiques structurelles des jeux. Différentes caractéristiques structurelles propres aux jeux sont ont été identifiées par les participants comme source d'influence des comportements de jeu, entre autres le montant du lot, le

montant de la mise minimale aux tables de jeu, l'expérience de gains ou de pertes et les coupons imprimés qui remplacent l'argent comptant.

La possibilité de gagner un important montant d'argent, par exemple à la loterie, augmente l'attrait du jeu et, ainsi, la motivation ou le désir de se procurer un billet. Sans cet élément incitatif, les joueurs achèteraient tout de même des billets de loterie, mais possiblement en moins grand nombre.

Moi, quand c'est un gros montant, j'en profite, je vais en acheter deux ou trois au lieu d'un.

Le remplacement de l'argent comptant par des coupons de remboursement que le joueur doit imprimer diminue l'attrait subjectif des machines à sous au casino, mais pas forcément les comportements de jeu.

Je ne vais plus au casino, je vais vous dire pourquoi. Depuis qu'ils ont sorti les tickets [coupon imprimé pour réclamer le gain], quand l'argent ne tombe plus. Il y a beaucoup de monde qui n'y vont plus à cause de ça. Quand l'argent tombait, ça excitait le monde [...] Oui, j'ai été à Boston l'automne passé. Je suis rentré dans un casino pour voir et c'était la même chose. Je suis ressorti au bout de deux minutes. C'est sûr qu'on aime moins les petits coupons, mais ça ne fait rien, j'y vais pareil.

Au même titre, l'augmentation du montant minimum des mises aux tables de jeux dans les casinos semble constituer un frein à la participation ou au plaisir du jeu en raison d'une diminution du temps de jeu possible pour un même budget dédié au jeu.

Moi, je mettais un 5 \$ alors avec un 100 \$, je pouvais jouer quasiment toute la journée [au blackjack sur table]. Tu montes, tu baisses, mais tu t'amuses [...] là, je ne m'amuse plus parce qu'il n'y a plus ça. À 10 \$ ça va vite, à 15 \$ c'est encore pire. Je regarde.

L'expérience de gains ou de pertes d'argent peut occasionner un changement dans la manière de jouer des participants.

C'est ça le malheur, c'est que quand tu gagnes, tu dis j'ai gagné, je vais y retourner. Ce n'est pas bon.

Quand je vois que j'ai gagné, je dis ne me cherchez plus, je m'en vais prendre une bière, j'ai gagné et je le garde. Quand je gagne, j'arrête de jouer. Je ne veux pas perdre ce que j'ai gagné. J'ai déjà dépassé mon budget et je n'étais pas fière, je n'étais pas contente partout. Je l'avais sur la conscience. Je l'avais l'argent, mais il me semble que ça aurait été mieux ailleurs. Depuis que je me suis sentie mal, je ne l'ai plus jamais refait.

Caractéristiques associées aux sites de jeu. Les joueurs de 55 à 74 ans prenant part aux *focus groups* relèvent des caractéristiques associées aux environnements de jeu qui contribuent à la participation au jeu, comme les attraits touristiques sur le site ou près du site de jeu, l'ambiance et la sécurité.

Les sorties au casino permettent de profiter des attraits touristiques, comme les paysages, ou des services qui s'y rattachent, comme les massages. Ces attraits incitent aux déplacements vers le site de jeu, mais peuvent également constituer une option autre que le jeu lorsque les personnes se trouvent sur place.

Quand je vais au casino, moi aussi j'aime les forfaits. J'aime aller me baigner, me faire masser. Je vais là plus pour me reposer.

J'aime le paysage aussi. Le trajet est très beau. Si tu ne veux pas jouer, tu peux aller dehors.

L'ambiance des aires de jeu, nommée comme un élément attirant, mais également comme un désagrément en raison du niveau de bruit, influence l'expérience de jeu.

Moi je me dis je joue jusqu'à la dernière minute, je suis venue ici pour jouer. Même si je perds, je ne regrette pas ma journée, parce que j'aime l'atmosphère.

Je n'aime pas le casino en tant que tel pour le bruit. Ça finit que ça m'agace. Je ne suis pas capable. Moi, je vais aller m'asseoir et je vais jouer aux cartes. Pas au blackjack, mais au poker. Je joue plus aux cartes qu'aux machines.

Se sentir à l'aise et en sécurité pendant la participation au jeu peut s'avérer un élément déterminant dans le choix de l'établissement de jeu.

J'aime mieux y aller ma petite journée à Charlevoix [casino régional]. Montréal [casino urbain], je trouve qu'il y a trop [d'immigrants]. Je suis un peu inquiète quand mon mari n'est pas avec moi. Souvent, il prend son bord et moi aussi.

Jeu d'autrui. L'analyse du verbatim des *focus groups* fait ressortir l'influence du jeu des autres joueurs sur le comportement de jeu d'une personne, que ce soit parce que cette personne accompagne un joueur ou parce qu'elle est témoin d'un gain ou d'une perte chez un autre joueur.

Accompagner un proche qui joue constitue un incitatif à aller jouer ou à jouer davantage.

Là, je commence à avoir mon quota. Ben des fois, je passe la journée dehors et surtout, pour faire plaisir à ma femme parce qu'elle aime ça. J'y vais pour y faire plaisir.

On a un meilleur contrôle lorsqu'on est trois ensemble. Ils ont tout pour nous faire dépenser. Si au bout de trois minutes tu as dépensé ton 100 \$, tu te dis mon Dieu j'en ai encore pour combien de temps à attendre les autres. Tu vois un guichet automatique et ça y est.

À l'inverse, les activités de jeu en apparence « excessives » d'un proche peuvent amener une diminution des habitudes de jeu des participants, qui tentent ainsi de protéger ce proche.

C'est sûr qu'on se fait une ligue avec des personnes qui se connaissent bien normalement pis on sait que des fois il y en a un qui va dépasser sa capacité. On essaie de voir c'est quoi l'impact qu'il va y avoir. Ça ne le privera pas de manger toute la semaine, ce n'est jamais jusque-là. On dit on va arrêter, on va changer de jeu. Il y a 2 semaines, il y en a un qui perdait beaucoup et on a changé de jeu, on a joué au 5 sous. On a dit on est tanné de jouer au poker. On sentait que l'autre ne voulait pas lâcher prise (...).

Être témoin des pertes et des gains d'autrui influence les perceptions face au jeu et ainsi les habitudes de jeu.

Des fois, tu mets les 1 \$ et ça ne vaut rien pis ça sonne à nulle part. Je ne vois pas personne qui gagne et tout le monde dit que ce n'est pas payant.

Rationalité et émotions associées à l'activité de jeu. Les joueurs ont indiqué que la planification du comportement de jeu en termes de temps, d'argent et de fréquence contribue à la diminution des comportements de jeu ou à la maîtrise de ceux-ci, au même titre que les émotions de peur et de honte ressenties dans des contextes de jeu. À l'opposé, le plaisir associé au fait de jouer influence positivement la participation au jeu.

La fixation de limites associée à des stratégies concrètes permet de respecter un certain cadre et de maîtriser le comportement de jeu.

Quand on arrive dans un casino, on se donne une heure et on ne dépasse jamais l'heure. Si on a dépensé tout notre argent dans l'espace de 5-10 minutes, on attend et on se promène.

Ça ne prendrait pas grand-chose pour être accro, mais je me contrôle. En même temps, je pars et j'emmène 100 \$ et je me dis je ne dépense pas plus, je n'en traîne pas plus. Je ne fais pas de retrait.

La peur de développer un problème de jeu ou la honte à la suite d'une perte importante d'argent représentent également des freins à la participation et à certains comportements de jeu.

Non, c'est drôle, mais moi le casino ça me fait peur. J'aurais peur de devenir accro, donc tout de suite, j'ai un pied sur le frein au départ.

J'ai déjà dépassé mon budget et je n'étais pas fière. Je n'étais pas contente pantoute. Je l'avais sur la conscience. Je l'avais l'argent, mais il me semble que ça aurait été mieux ailleurs. Depuis que je me suis sentie mal, je ne l'ai plus jamais refait [dépasser le budget].

À l'opposé, aimer jouer ou apprécier l'activité de jeu influence positivement la participation au jeu.

Moi, je peux dire que si j'ai le choix entre le restaurant, un souper ou le casino, c'est sûr que je prends le casino. Je me sens pas accro, mais j'aime ça.

Conséquences des habitudes de jeu sur les sphères de vie

Les finances, les loisirs, les relations sociales, familiales ou de couple, ainsi que la santé psychologique émergent du discours des participants comme étant affectés par les habitudes de jeu.

La qualité de vie du joueur ou celle de proches profite des gains financiers ou matériels liés au jeu.

Une fois, on a gagné un petit montant, peut-être 150 \$. On est allé au restaurant et on a bouffé, on a partagé ça. On s'est toujours dit quand on est deux ou trois si on gagne quelque chose, on s'en va le dépenser après – soit dans un restaurant, prendre un verre. C'est des plaisirs de la vie.

Oui, ça permet aussi de donner la vieille télé à un de tes neveux, un de tes petits-enfants. Tu en fais partager d'autres. Ça améliore la qualité de vie (...).

Par ailleurs, la perte d'argent et son effet sur les finances et le budget ressortent comme des conséquences négatives liées à la participation au jeu.

Ça dérange le budget. Comment est-ce que je dirais ça. Il va essayer de cacher ça, mais je suis avertie pour savoir que ça dérange. Il dit [son conjoint] tu ne manques de rien. Entre manquer de rien pis avoir plus, c'est une autre affaire. Je pense qu'il dérange le budget (...). Dans la vie commune, ça dérange le budget.

La participation au jeu représente une activité de loisir qui procure du plaisir. Les joueurs de casino apprécient l'expérience de jeu en tant que telle, mais aussi les « à-côtés » associés aux sites des casinos (forfaits hôtel-casino, paysage, spectacles, etc.).

C'est une belle activité pour les gens qui sont capables de se contrôler, aller voir les spectacles pour 50-70 \$. Quand je vais au casino et que je me limite à 50 ou 60 \$, je trouve que ce n'est pas cher.

Moi, c'est comme le monsieur, c'est le tout-compris. On part une fin de semaine et pour nous, ça fait changement et c'est des choses qu'on ne fait pas souvent. On y va et on prend notre temps pour aller au casino. On s'organise pour aller se baigner, à l'hôtel. C'est un peu ça.

En contrepartie, la participation au jeu influence négativement les autres loisirs, en accaparant un budget qui pourrait servir à autre chose que le jeu.

Moi je vais vous dire bien franchement que si je regarde ce que mon conjoint a dépensé au casino, on a plusieurs voyages. Je préférerais beaucoup plus un voyage que ça.

Le jeu est perçu comme ayant des conséquences positives sur les relations sociales, parce qu'il permet de socialiser avec des amis, d'entretenir des relations existantes ou d'échanger avec de nouvelles personnes et de briser la solitude.

Moi, ça me permet de rencontrer de nouvelles personnes. On revient à la maison et ça nous a permis de discuter avec des personnes intéressantes. (...) Ça été pour moi une sortie et je rencontre tout le temps des gens intéressants.

Ben, c't'un passe-temps, c't'une occasion de rencontrer des amis et d'échanger. Briser la solitude d'une certaine façon.

La participation au jeu peut également constituer une façon de passer du temps seul, avec soi-même.

J'ai ma vie de petite joueuse tranquille, personnelle pis ma vie de famille. J'ai beaucoup de petits-enfants, je fais beaucoup de bénévolat. Je suis très très occupée et les billets de loterie je ne deviendrai pas amie avec la personne à qui j'achète ça. Quand je vais à Montréal, je ne prends pas le même autobus qu'elle. Il y a différentes compagnies, moi je prends [nom de compagnie], les gens sont très bien, mais je ne peux pas dire que je crée des amitiés avec ces gens-là. J'ai mon walkman et je fais mon affaire [...].

Les activités de jeu sont également perçues comme rassembleuses et représentent des occasions de passer du temps en famille ou s'avèrent une activité de divertissement et un plaisir qui se partagent entre conjoints.

Hier soir, j'ai joué avec mon fils et sa femme. Quand ils viennent, ils savent que moi j'aime jouer aux cartes alors on joue. Le côté social de ça, c'est qu'à un moment donné, on a joué avec les belles-sœurs et les beaux-frères et même ma belle-mère qui est rendue à 90 ans pis on est monté en autobus tout le monde ensemble. On a eu du plaisir dans l'autobus, c'était épouvantable!

Moi les activités de jeu, c'est le casino.... C'est un divertissement avec mon épouse.

Moi et mon mari, on prend une machine à côté de l'autre. On va souper ensemble.

Les critiques que formulent les enfants à propos des habitudes de jeu ont émergé du discours des participants comme une conséquence négative qui affecte la sphère familiale. Des désaccords et des conflits ayant rapport avec les habitudes de jeu peuvent survenir dans le couple et causer une grande détresse, jusqu'à mener à envisager une séparation.

Ils ne veulent pas trop qu'on dépense sur leur héritage.

On a souvent des désaccords là-dessus. S'il me disait à 11 h on entre et à 5-6 h on s'en va souper pis on s'en va, ce serait correct, mais ça ne se passe pas de même. La journée est longue.

Moi, je pense souvent au divorce. Quand je vois ce que le jeu fait. Le stress pourrait avoir favorisé à développer le cancer. En 2000, j'ai été atteinte de deux cancers différents. Un dans chaque sein. Le débalancement du budget [à cause du jeu] ne m'a pas aidée.

La participation au jeu est une manière de se détendre, de penser à soi et même de réduire le stress. Sous certaines conditions, elle contribue à une forme de mieux-être.

En y allant de façon modérée, ça nous fait se changer les idées et ça lui permet de s'évader un peu de sa situation [problèmes de santé]. **Donc, pour elle c'est une activité qui est bien adaptée à sa situation actuelle.** Oui et on y va de façon délicate avec ça sauf que je m'aperçois qu'elle aime ça. Ça lui fait plaisir et ça lui change les idées.

En revanche, être identifié dans un endroit de jeu ou dépasser ses limites financières peuvent susciter des émotions négatives, telles la honte, la culpabilité et la gêne.

Si je suis au casino et que je rencontre quelqu'un, la personne va être gênée de venir me parler parce qu'on est au casino. C'est très flagrant.

Discussion

Cette étude avait pour but de documenter, auprès de joueurs sans problème de jeu de 55 ans et plus, les événements qui influencent les habitudes de JHA ainsi que les conséquences positives et négatives de ces habitudes sur les sphères personnelle, sociale et financière.

L'analyse du verbatim permet de dégager le passage à la retraite et les problèmes de santé comme événements de vie qui affectent les habitudes de JHA chez des joueurs

sans problème de jeu. Le passage à la retraite amène presque inévitablement une augmentation des temps libres, et selon des études s'intéressant aux joueurs âgés (p. ex., Desai et al., 2004; Ferland et al., 2009; Grant, Won Kim, & Brown, 2001), chasser l'ennui se révèle l'une des motivations importantes à jouer. Lorsque le joueur s'inscrit dans une telle dynamique, le jeu prend progressivement plus de place et une augmentation du temps consacré au jeu est nécessairement en corrélation avec une augmentation de l'argent dépensé. À cet égard, les personnes âgées qui jouent trop présentent un risque particulier inhérent à leur situation de retraité. Comme l'a souligné avec justesse Petry (2002), les joueurs âgés avec une dette de jeu doivent gérer cette dette dans un délai temporel particulièrement difficile, et ce, dans un contexte où le revenu est limité et sans grande possibilité d'amélioration à travers le temps. Cela amène certains joueurs à piger dans leurs économies (Southwell et al., 2008). De manière un peu imprévue, le thème des problèmes de santé physique vécus par le joueur ou par un proche du joueur ressort aussi en tant qu'événement ou état associés aux habitudes de jeu. Ce thème est inattendu dans la mesure où il se distingue des recherches liant le développement de problèmes de jeu à un mauvais fonctionnement cognitif, comme dans le cas de la démence (Gschwandtner, Aston, Renaud, & Fuhr, 2001; Mendez, Bronstein, & Christine, 2000), ou d'un mauvais fonctionnement du système dopaminergique, comme dans le cas de la maladie de Parkinson (Nadeau, Giroux, Dufour, & Simard, 2012). Pour les participants à l'étude, le problème de santé apporte une modification des activités sur la base des limitations découlant de la condition physique, et le jeu représente alors une activité adaptée compte tenu du peu d'efforts physiques nécessaires pour la pratiquer. Facilement accessible, l'activité de jeu peut permettre d'oublier, le temps de sa pratique, un état de santé déclinant, résultat qui s'apparente à ce que Southwell et al. (2008) ont observé. À l'inverse, lorsque le problème de santé s'avère trop important et plus limitatif, il contribue à la diminution de la participation au jeu. Ces résultats illustrent que des événements de vie affectent les habitudes de jeu de joueurs sans problème, tout comme le rapportent les joueurs présentant des problèmes de jeu (Poupard, 2013), à la seule différence que le jeu s'avère problématique chez ces derniers.

Ces résultats conduisent notamment à se demander si la retraite et les problèmes de santé constituent les seuls événements marquants vécus par les joueurs sans problème de jeu âgés de plus de 55 ans. Les autres événements de vie affectent-ils les habitudes de jeu de ces personnes? Une enquête à grande échelle permettrait certes de mieux répondre à ces questions. Cependant, l'analyse du contenu provenant des *focus groups* permet d'avancer des pistes de réponse. Les participants ont relevé plusieurs événements marquants, comme le suicide d'un enfant, la perte d'une très grosse somme d'argent dans un contexte autre que le jeu, la perte d'emploi après plusieurs années de service et sans prestations de retraite, son propre divorce ou celui d'un de ses enfants, les déménagements multiples, etc. Ces événements, qui nécessitent une adaptation de la part de l'individu (Homes & Rahe, 1967), auraient pu amener ces joueurs à se réfugier dans le jeu alors qu'ils ne l'ont pas fait. Ces joueurs sans problème possèdent-ils des facteurs de protection permettant d'éviter un glissement vers le jeu? La présente étude a conduit à poser cette question sans pouvoir y

répondre, mais des réponses permettraient de clarifier les conditions d'action des événements de vie sur les habitudes de jeu.

Des thèmes autres que les événements de vie, qui ne faisaient pas l'objet d'une discussion planifiée dans les *focus groups*, ont ressorti spontanément du discours des joueurs comme influençant les habitudes de jeu. Plusieurs de ces thèmes sont documentés dans le cadre d'autres recherches, et c'est le cas de l'accessibilité des jeux (Jacques & Ladouceur, 2006; Ladouceur, Jacques, Ferland, & Giroux, 1999; Pearce, Mason, Hiscock, & Day, 2008; Shaffer, LaBrie, & LaPlante, 2004), de l'argent (Bélanger, Boisvert, Papineau, & Vétére, 2003; Griffiths & Parke, 2003; McMillen, Marshall, & Murphy, 2004) et de caractéristiques liées à l'environnement de jeu, comme les attraits touristiques (Lam & Vong, 2009) ou la sécurité pour les joueurs plus âgés (Southwell et al., 2008; Zaranek & Chapleski, 2005).

Également, les particularités intrinsèques ou les caractéristiques structurelles des JHA comme motivation à jouer, telles la possibilité de faire de l'argent (Azmier, 2000; Park et al., 2002) ainsi que l'accroissement des gros lots à la loterie (Forrest, Simmons, & Chesters, 2002; Turner & Ferentzy, 2010), ou à l'opposé comme limiteur de jeu, telle l'augmentation du montant de la mise minimale (Turner & Ferentzy, 2010), ont déjà été décrites. Par contre, l'introduction de coupons imprimés au lieu des gains en argent comptant aux machines à sous et l'influence négative de cette méthode sur la participation au jeu semblent constituer un élément nouveau. La modification des caractéristiques des jeux, surtout de celles qui sont perçues comme incitant au jeu problématique, a donc aussi une influence sur le comportement de jeu des joueurs sans problème ayant participé à l'étude. D'autres thèmes relevés par ces joueurs apparaissent dans la documentation scientifique, comme la rationalité ou les émotions liées à l'expérience de jeu (Azmier, 2000), ainsi que les aspects sociaux impliqués dans l'expérience de jeu (Azmier, 2000; Lee et al., 2006). Ces thèmes mettent en lumière la capacité des participants à maîtriser leur comportement de jeu, par le biais de limites d'argent et de temps, et une volonté de prévenir la survenue de problèmes de jeu, tout comme l'ont observé Hagen et al. (2005) auprès d'un échantillon de joueurs sans problème âgés.

Ces caractéristiques qui influencent le comportement de jeu des participants ne surprennent pas en soi, et ces observations semblent cohérentes avec la littérature scientifique. En fait, ce qui surprend, c'est l'abondance de ces thèmes dans la discussion par rapport aux événements de vie. En nommant seulement la retraite et les problèmes de santé comme événements pouvant affecter leur comportement de jeu, mais en mentionnant par ailleurs une multitude de caractéristiques liées au jeu, à l'environnement de jeu, aux émotions et aux facteurs sociaux, les joueurs font indirectement la démonstration de l'importance de ces dernières. Ce constat soulève l'idée que l'évolution des habitudes de jeu des joueurs sans problème pourrait être tributaire d'une multitude de facteurs et non seulement d'événements particuliers. Vouloir isoler un événement de vie afin de déterminer un moment propice pour

intervenir dans une perspective préventive pourrait constituer une fausse route, car cet événement, pour influencer les habitudes de jeu, peut nécessiter la présence de facteurs de risque ou bien l'absence de facteurs de protection. Les recherches futures en matière d'événements de vie et de comportements de jeu devraient s'inscrire dans une perspective qui intègre également l'étude de facteurs de risque et de protection.

Le deuxième objectif de la présente étude consistait à discerner les conséquences des habitudes de jeu de joueurs sans problème de jeu de 55 ans et plus dans différentes sphères de vie. De manière générale, les participants rapportent des conséquences positives du jeu sur les finances, les loisirs, les relations sociales et le bien-être psychologique. Cependant, même si ces joueurs n'ont pas de problème de jeu, le jeu peut constituer une source de conflits avec leurs proches et causer des émotions désagréables, entre autres lors du non-respect des limites fixées. Le jeu peut également affecter négativement leurs finances.

Les forces de cette étude concernent, en premier lieu, l'utilisation d'un devis qualitatif comprenant l'utilisation de *focus groups*. Cette méthode de cueillette de données a permis la libre expression des participants sur différents thèmes liés aux JHA, l'approfondissement de ces thèmes et l'émergence d'aspects inexplorés associés aux habitudes de jeu. À cet égard, des participants ont rapporté que de participer à un *focus group* et de se retrouver en compagnie d'autres personnes et d'un animateur leur a permis de révéler des choses qu'ils auraient gardées pour eux-mêmes dans le cadre d'un entretien téléphonique. En deuxième lieu, cette étude s'intéresse aux joueurs âgés sans problème de jeu, une population peu étudiée jusqu'à ce jour. La principale limite de cette étude est liée également au devis qualitatif, qui ne permet pas de généraliser les résultats à l'ensemble de la population des joueurs sans problème de jeu de 55 ans et plus.

En conclusion, cette étude fait ressortir la retraite et les problèmes de santé comme des événements de vie associés à une augmentation des habitudes de jeu auprès des participants âgés de 55 ans et plus, sauf lorsque les problèmes de santé s'avèrent trop importants. Bien qu'ils aient fait face à d'autres événements de vie, les participants ne lient pas ces événements à leurs habitudes de jeu. Les participants retirent des bénéfices du jeu dans différentes sphères de leur vie. Toutefois, le fait de ne pas vivre de problèmes de jeu n'empêche pas certaines conséquences négatives, particulièrement sur les finances et sur les relations conjugales. Les recherches futures en matière d'événements de vie devront s'inscrire dans un contexte plus large, incluant le rôle de facteurs de risque ou de protection dans le développement ou non d'habitudes de jeu excessives. Par ailleurs, les participants identifient spontanément plusieurs thèmes liés au jeu ou au contexte de jeu qui contribuent à une modification des habitudes de jeu, démontrant possiblement leur importance chez des joueurs sans problème de jeu. À cet égard, d'autres recherches pourraient apporter une contribution intéressante en étudiant plus à fond les aspects clés liés au contexte et aux caractéristiques du jeu qui modifient les habitudes de jeu chez des gens âgés de 55 ans et plus.

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review

Funding of Gambling Research: Ethical Issues, Potential Benefit and Guidelines

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Abstract

There has been an unprecedented growth of legalized gambling opportunities in Canada over the past two decades, partly to generate revenues without raising taxes. Unfortunately, for 2–3% of the Canadian population, gambling can become disordered (i.e. develop into a gambling addiction). To help attenuate the harms and prevalence of disordered gambling, all provincial governments earmark a portion of gambling revenues for the prevention, treatment and research into disordered gambling. However, the field of gambling studies has recently come under criticism in the way research is conducted. At the forefront of the criticism is the issue of accepting funding from the gambling industry. We provide an overview of the ethical considerations, potential ethical issues, and the possible benefits of accepting such funding. The aim of the present paper is not to argue for or against accepting industry funding, but rather to delineate the potential ethical issues and benefits related to that acceptance. More importantly, we provide a summary of best practice ethical guidelines, and recommendations to guide in the ethical decision making process in accepting or declining funding from gambling industry. To this end, we use the Canadian Code of Ethics for Psychologists as a framework in which to situate our guidelines and recommendations. Given that Canadian researchers have a long history and continue to contribute valuable knowledge in the field of gambling studies, it is of important for gambling researchers to be aware of the ethical considerations and issues related to funding from gambling industry.

Keywords: legalized gambling, industry funding, ethical issues, ethical guidelines

Résumé

Depuis les deux dernières décennies, les occasions de prendre part à des jeux de hasard légalisés ont connu une augmentation sans précédent au Canada, en partie pour générer des revenus sans augmenter les taxes et les impôts. Malheureusement, pour 2 à 3 % de la population canadienne, le jeu peut déboucher sur un trouble (c.-à-d., une dépendance au

jeu). Afin d'aider à réduire les méfaits du jeu compulsif et sa prévalence, tous les gouvernements provinciaux réservent une portion des recettes tirées des jeux de hasard pour l'investir dans la prévention et le traitement de cette dépendance et la recherche dans ce domaine. Toutefois, les études portant sur les jeux de hasard ont récemment fait l'objet de critiques pour le déroulement de la recherche. L'acceptation du financement de l'industrie des jeux de hasard est un sujet qui a retenu l'attention des critiques. Nous donnons une vue d'ensemble des considérations d'ordre moral, des éventuels enjeux éthiques et des avantages possibles d'un tel financement. Le présent document ne vise pas à faire valoir le pour ou le contre du financement de l'industrie, mais plutôt à définir les éventuels enjeux éthiques et les avantages. De plus, nous présentons un résumé des meilleures lignes directrices de pratique en matière de déontologie et les recommandations pour guider la prise de décision éthique lorsqu'il s'agit d'accepter ou de refuser le financement de l'industrie des jeux de hasard. À cette fin, nous utilisons le Code canadien de déontologie professionnelle des psychologues comme cadre de référence pour situer nos lignes directrices et nos recommandations. Puisque les chercheurs canadiens enrichissent, depuis longtemps, les connaissances dans le domaine des études sur les jeux de hasard, et continuent à le faire, il est important que les chercheurs qui s'intéressent au jeu compulsif soient sensibilisés aux considérations d'ordre moral et aux enjeux liés au financement accordé par l'industrie des jeux de hasard.

Introduction

Gambling is a popular recreational activity for many Canadians. Indeed, studies suggest that up to 76% of Canadian adults engage in at least one gambling activity in any given year (Cox, Yu, Afifi, & Ladouceur, 2005; el-Guebaly et al., 2006), while over 90% have engaged in gambling activities in their life time (Ladouceur, 1996). Unfortunately, for 2–3% of the Canadian population, gambling can develop into an addiction, causing an array of harms for individuals and their families (Cox et al., 2005; Fong, 2005; Williams, Volberg, & Stevens, 2012). To help attenuate the harms of disordered gambling, the provincial governments, who are the regulators and beneficiaries of legalized gambling, set aside a portion of revenues to fund research and prevention treatment into disordered gambling (Smith, 2014; Smith & Rubenstein, 2011). For example, in 2006/07 fiscal year, \$80 million dollars was invested in the prevention, treatment and research into disordered gambling across Canada, or just over 1% of the \$6.8 billion in revenues gambling generated for the provincial governments (Collier, 2008). It is important to note Canada differs from other jurisdictions in that provincial governments directly or indirectly are the sole providers of gambling as well the regulators of legalized gambling. As such, the distinction between the government and industry is overlapping and blurred, which gives an added layer of complexity regarding the acceptance of funding from the gambling industry.

Herein, we use the term “gambling purveyors” (opposed to gambling industry) to define the provincial and federal governments who are the regulators and beneficiaries

of legalized gambling in Canada. Thus, in the present paper, “funding from gambling purveyors” refers to the portion of revenues earmarked from the governments to fund research into disordered gambling. This is an important distinction as, unlike some of the funding from alcohol and pharmaceutical industries, funding for gambling research in Canada is distributed mainly by intermediary sources (e.g., Alberta Gambling Research Institute [AGRI]) or directly from government ministries (e.g., Ontario Ministry of Health and Long-Term Care), rather than industry corporations or gambling establishments. Indeed, a meaningful distinction lies between research that is directly funded by the industry and research that is funded by intermediary sources. Specifically, the ethical concerns noted in the present paper are more salient when research is funded directly by the industry. That said, the potential ethical concerns are still potentially relevant when intermediary bodies fund gambling research.

Moreover, the term gambling purveyors was chosen as the organization of legalized gambling differs from province to province in Canada and differs between types of gambling (e.g., bingo, casinos). For example, casinos in most provinces are owned and operated by provincial government agencies (e.g., Ontario Lottery and Gaming, Lotto Quebec), whereas in Alberta, casinos are operated directly by casino facility licensees under the regulations established by the provincial gambling agency. For these reasons, we use the general term gambling purveyors to reflect more accurately a Canadian context. However, we also use the term gambling industry when appropriate, specifically when referring to examples from an international context and when summarizing the criticisms levied against the field of gambling studies.

While the respective fields of the alcohol, pharmaceutical and tobacco industries have long debated the potential ethical issues and considerations related to conducting research with industry funding, the field of gambling studies has, in contrast, lagged considerably behind (Blaszczynski, & Gainsbury, 2015). Recently, however, researchers in the gambling field have once again begun to discuss the ethical considerations and potential ethical issues when accepting funding from the gambling industry. Despite the increasing recognition of the potential ethical issues related to funding from the gambling industry, no document to date guides researchers through the ethical considerations that may arise when accepting funds from gambling industries or purveyors. The first aim of the present paper is to help readers become aware of the potential ethical issues that may arise when accepting such funding. To this end, we summarize the criticism directed against the field of gambling research and delineate the ethical issues that have affected the alcohol, drug and pharmaceutical industries. Secondly, we outline the potential benefits of accepting funding from gambling purveyors. Indeed, it is our opinion that the act of accepting purveyor funding does not automatically manifest in ethical issues (e.g., conflict of interest) and moreover, believe that funding from gambling purveyors may have potential benefits such as translating research into practice.

The third aim of the present paper is to provide a summary of best practice ethical guidelines and recommendations using the Canadian Code of Ethics for

Psychologists (Canadian Psychological Association [CPA], 2000) to help readers weigh the potential benefits and risks of accepting funds from gambling purveyors. Doing so will help readers through the ethical decision-making process in whether to accept or decline funding from gambling purveyors. Indeed, whereas we, as gambling researchers believe the field of gambling studies has avoided many of the ethical issues that have plagued the alcohol, drug and pharmaceutical industries, ethical issues related to funding from gambling purveyors is nonetheless not new. Moreover, the field of gambling studies has recently come under criticism (e.g., Cassidy, 2014; Cassidy, Loussourn & Pisac, 2013), specifically in regards to the ethical issue of accepting funding and support from gambling industries. Thus, we believe the present paper will provide a needed summary of best practice ethical guidelines to help gambling researchers continue producing valuable knowledge while conducting research in an ethical manner.

Although the present paper focuses primary on ethical issues related to funding from gambling industries and purveyors, the issues and recommendations presented herein can be applied to any field that accepts funding from industries (e.g., pharmaceuticals, alcohol, tobacco). In addition, the Canadian Code of Ethics for Psychologists is consistent with ethical documents of other jurisdictions (e.g., American Code of Ethics; APA, 2010) and thus, the guidelines and recommendations in the present paper can be applied to many jurisdictions outside Canada.

Gambling in the Canadian Context

Prior to 1969, gambling was an illegal activity in Canada (Korn, 2000). Since its legalization, the expansion of gambling has resulted in an unprecedented growth of gambling opportunities for many Canadians. According to the Canadian Partnership of Responsible Gambling (2014), 72 casinos, 200 bingo halls, 232 racetracks, 29,626 lottery outlets and a staggering 95,906 electronic gambling machines (arguably the most addictive form of gambling; Breen, 2005; Breen & Zimmerman, 2002; Wiebe & Cox, 2001) are available in Canada. One reason for the expansion of legalized gambling is the valuable tax dollars that legalized gambling generates for the provincial governments (Korn, 2000). Indeed, the increased opportunities for gambling have helped to increase profits from \$2.7 billion in 1992, to about \$11.2 billion in 2002 and \$13.8 billion in 2012-2013 (Canadian Partnership for Responsible Gambling, 2014; Statistics Canada, 2003), with a portion of the revenues proceeding to fund gambling research.

In part because of the contribution of provincial governments to gambling-related research, Canada boasts some of the top research labs in the field of gambling studies (e.g., Université Laval, McGill University, Carleton University, the University of Calgary, Dalhousie University, the University of British Columbia and the University of Waterloo). In addition, Canadian researchers have contributed valuable scientific knowledge concerning responsible gambling tools, the prevalence of disordered gambling, and the prevention and treatment of gambling disorders. For example, one of the most widely used scales to measure prevalence of disordered

gambling, the Canadian Problem Gambling Index, as well as its short form, the Problem Gambling Severity Index, were both developed by the Canadian Centre on Substance Abuse (Ferris & Wynne, 2001). Given that funds from gambling purveyors fund a significant portion of research in Canada, it is of importance for both Canadian researchers and gambling researchers in general to be aware of the potential ethical issues related to such funding, and furthermore, to consider guidelines and recommendations to help them decide whether to accept funding from gambling purveyors. Before doing so, it is important to understand how the funds that support research into disordered gambling are generated.

Follow the Money: The Source of Gambling Research Funds

A potential concern regarding the acceptance of funds from gambling purveyors is that, although disordered gamblers represent a minority of the population, their gambling in fact accounts for as much as 40-50% of total gambling revenues (Productivity Commission, 1999). Thus, a significant portion of the revenues that are raised by regulated gambling activities come from a small percentage of gamblers who potentially face immense harms as a result of their gambling. The fact that a significant portion of funding comes from individuals who experience harms have led certain researchers to suggest that receiving funding from gambling industries is morally and ethically questionable (Adams, 2009; Livingston & Woolley, 2007). To address the taint associated with funding from gambling, Adams (2011) argued that a sanitization process has been instigated to remove the stains and negative associations with accepting funds that were generated through legalized gambling.

Distribution of Gambling Funds

According to Adams (2011), the sanitization process is in contrast to the traditional direct transfer method in which gambling industry provided funds directly. As researchers became more critical of the direct transfer method, a shift to the sanitization process has taken place. Although Adams (2011) notes five different sanitization methods (structural decoupling, tripartite partnership committee, independent panel of experts, peer review, and blending of sources), we focus on structural decoupling as this is the dominant model of sanitization practice in Canada.

Structural decoupling occurs when researchers receive funding through an intermediary body rather than directly from gambling purveyors (Adams, 2011). Examples of structural decoupling agencies in Canada include the Manitoba Gambling Research Council and AGRI. Although Adams (2011) argued that structural decoupling serves to reduce the taint associated with gambling funds by reducing the visibility between the source of funding (i.e., gambling purveyors) and the researchers, it is nonetheless important to note that the main reason for granting agencies is to keep the government at arm's length away from the research and to ensure it does not control the direction of research. That said, one potential result of the reduced visibility of the connection between the funding source and recipient is obscuring the ethical considerations that the recipient should consider when it comes to accepting funding (Adams, 2011). However,

sanitization practices do not make funding from gambling purveyors less ethically questionable, nor do they remove the issues and problems. Indeed, obscuring the potential ethical issues related to funding from gambling purveyors actually increases the need researchers to be aware of the ethical issues.

Current Issues Related to Funding From Gambling Purveyors

The potential ethical issues related to funding from the gambling purveyors mimic for the most part, the ethical issues in the alcohol and tobacco industries (e.g., conflicts of interest, suppression of research findings). Moreover, it should be noted that, whereas the ethical issues and considerations noted below relate to the gambling field generally, they are also highly applicable to the state of gambling research in Canada. However, a further complication occurs when governments are the sole proprietors and beneficiaries of gambling revenues, as in Canada, as they become increasingly reliant on gambling revenues for their own general operations. Specifically, it has been argued that governments who operate and benefit from legalized gambling have a vested interest, as they do have a duty to protect citizens from harm, but are also responsible for the availability of legalized gambling, a fact which makes it difficult for governments to regulate gambling opportunities (Adams, Buetow, & Rossen, 2010; Adams, Raeburn, & de Silva, 2009). Indeed, the field of gambling studies has recently come under criticism, specifically as it relates to funding of gambling research from the gambling industries (Cassidy et al., 2013).

Although Cassidy et al. (2013) provided only anecdotal evidence, their concerns nevertheless related to gambling research warrant consideration. It is important to note, unlike the alcohol and tobacco industries, there is to our knowledge, no direct evidence of the gambling industry attempting to influence (e.g., censor) research results and their dissemination (Miller & Michelson, 2013). Having said that, it is important to consider the potential ethical issues that may arise when accepting funding from the gambling purveyors in order to produce research that has been conducted ethically. Below, we summarize the criticism directed at the field of gambling studies, and note ethical issues that have faced the alcohol, drug and pharmaceutical industries.

Conflict of Interest

A conflict interest arises when a person (e.g., a researcher) or an organization (e.g., gambling purveyors) is involved in multiple roles that may affect the objectivity of the results. It has been suggested that conflict of interest is the biggest hurdle facing gambling research (Griffiths, 2009). Accepting funds from gambling purveyors does not automatically create such a conflict. However, the issue of conflict of interest is of legitimate concern. Specifically, there may exist explicit or implicit pressure to provide results that favour the funding agency, with the understanding that not doing so might consequently diminish the chances for future funding or limit access to purveyor resources (e.g., research participants).

Indeed, studies from the alcohol and tobacco field have found research funded by the tobacco and alcohol industries tend to report pro-industry results. In other words, results that favour commercial interests at the expense of public health (Jørgensen, Maric, Tendal, Faurschou, & Gøtzsche, 2008; Yank, Rennie, & Bero, 2007). These results can be problematic as they might be used to influence policy to oppose the regulation of these harmful products (Bero, Montini, Bryan-Jones, & Mangurian, 2001; Montini, Mangurian, & Bero, 2002). That is, studies funded by gambling purveyors might be more likely to find pro-gambling results, which could in turn be used as evidence to expand legalized gambling opportunities.

Unlike research funded from the pharmaceutical industry (Jørgensen et al., 2008; Yank et al., 2007) no empirical evidence exists to suggest research funded by the gambling purveyors is biased towards to pro industry results. It is beyond the scope of this paper to conduct a meta-analysis comparing research funded by gambling purveyor to research that is not, with the objective of determining whether such a bias exists, as has been done with research in the pharmaceutical industry. Such a study would indeed prove informative. Nonetheless, gambling researchers should be aware of potential implicit or explicit biases when conducting research funded by gambling industries or purveyors.

Suppression of Research

Another important ethical risk is that industries may suppress research that is deemed harmful to their interests (Babor & Xuan, 2004; Hong & Bero, 2006). Concerns have been raised that the alcohol and tobacco industries may have the potential to regulate, censor, or outright suppress unfavorable results from research that they have funded (Miller, Moore, & Strang, 2006). Whereas Miller et al. (2006) note the lack of scientific evidence of the prevalence of censorship, anecdotal evidence (e.g., discussions with researchers from alcohol and other drug in US, Australia and UK) does indeed suggest the suppression of research is in fact common in the alcohol, drug and pharmaceutical industries. In regards to gambling research, we are not aware of instances, anecdotal or otherwise, where the gambling industry suppressed research that they deemed harmful to their interests. In fact, prominent gambling researchers have stated they maintain scientific independence regarding the dissemination of their research (Clark, 2015), and that, furthermore, they have not been asked to modify or redact research reports (Wohl & Wood, 2015). It is important to note, however, that even if researchers do not believe their objectivity is affected by the source of funding, it does not negate the potential ethical concerns when it comes to accepting funds from the gambling industry. Once again, a systematic empirical investigation as to whether a suppression of research has taken place in the field of gambling studies would be highly informative (for an example of publication bias in the pharmaceutical industries, see Turner, Matthews, Linardatos, Tell, & Rosenthal, 2008).

Reputational Risk

Researchers should be aware of the potential reputational risks they face when accepting funding from gambling purveyors (Adams, 2007). For example, the public

may be distrustful of the results of a study that has been funded by gambling purveyors and may accordingly begin to question the motives of the researcher and institution that receives such funding. This potential risk has made some researchers (e.g., Miller & Kypri, 2009) reject funding from the alcohol and tobacco industries. Other researchers have encouraged universities to also reject such funding (Turcotte, 2003). A number of prominent gambling researchers outside of Canada have received funding from the gambling industry, which, in turn, has consequently made certain persons question both the academic independence and research findings of those researchers (Griffiths, 2009).

Focus on the Problem Gambler

Despite the practice of structural decoupling, it has been argued that the gambling industry continues to influence the field by identifying those fundable research priorities that do not threaten their mandates (Adams, 2011). Specifically, many researchers (e.g., Cassidy et al., 2013; Delfabbro, 2009; McDonald, 2009) have stated the field of gambling studies has focused on the concept of the “problem gambler” with correspondingly less focus on the socioeconomic impacts of legalized gambling. According to Livingstone (Livingstone & Adams, 2011; Livingstone & Woolley, 2007) focusing on the problem gambler allows for gambling industries to blame the harm caused by excessive gambling on the flawed individual (i.e., the gambler who cannot control his or her impulses) and deflects the blame from those governments that are responsible for increasing the availability and accessibility of gambling through legalized expansion. In other words, a focus on the problem gambler in turn allows the governments to argue for the expansion of gambling by stating that only a minority of flawed gamblers will be harmed by the expansion of gambling. Similarly, focusing on the problem gamblers deflects the influence of the structural characteristics of electronic gaming machines (EGMs), features which are designed to increase player expenditure (Dixon, Harrigan, Sandhu, Collins, & Fugelsang, 2010; Harrigan & Dixon, 2010; Livingstone & Adams, 2011). For example, the flickering lights and sounds of EGMs have been shown to facilitate a state of dissociation (i.e., a trance-like state) that may in turn result in the gambler losing track of money and time, and thus leading to greater personal financial harm (see Diskin & Hodgins, 2001; Noseworthy & Finlay, 2009).

Restrictions on Publishing and Lack of Disclosure of Funding Sources

While we know of no documented case of research censorship or tampering from gambling purveyors, it is, in fact, nonetheless true that funding agencies in Canada do place restrictions on the publication of research. Importantly, the policies regarding the release of findings are different for each funding agency, and, as such, the responsibility of each researcher is thus to ensure that he or she is aware of the different policies. For example, one funding agency stipulates that the findings of a final report cannot be published until 60 days after the results are peer reviewed by experts the agency selected. The agency may also request changes to be incorporated prior to the publication of the final report. Another agency requires that final reports be submitted

30 days in advance of their public release to allow government to preview (but not approve) the results, while some require 30 days notice before the results are published. Conversely, however, one funding agency does not stipulate needing notification of publication or having the final report peer-reviewed. Placing a timeframe on when research can be published is a form of restriction. It would, however, be of grave concern if the funding agency requested its own experts to review the research and requested changes prior to submission to an academic journal. Whereas agencies do indeed request changes to the final report before it is posted on the funding agencies websites, we are nonetheless not aware of any cases where funding agencies also requested changes to be made prior to academic publication.

The lack of disclosure regarding the source of funding is another potential concern that has been raised. Babor and Miller (2014) noted that, of 30 randomly selected papers funded by the National Center on Responsible Gaming (NCRG), only one paper declared a conflict of interest and fewer than half acknowledged their respective funding sources. However, the results presented by Babor and Miller (2014) have been questioned by the senior director of the NCRG (see Reilly & Smith, 2015), who stated 75.3% of 173 studies funded by the NCRG had in fact appropriately disclosed the NCRG as the funding source. In addition, Cassidy (2014) pointed out the field of gambling studies itself has resisted mandatory disclosure statements. Further, unlike academic journals in alcohol and tobacco research, prominent gambling journals such as *International Gambling Studies* either did not mandate or enforce policies regarding disclosure statements (although these two problems have subsequently been remedied). Regardless of whether a journal requires a disclosure statement, we nevertheless recommend authors be transparent and declare any real or perceived conflict of interest by noting sources of funding and any constraints on publishing. Moreover, editors of gambling journals would do well to require and enforce disclosure statements.

Potential Benefits of Funding from Gambling Purveyors

Thus far, we have discussed the potential ethical issues and problems that might arise when accepting funding from gambling purveyors. However, it is worth noting that collaboration can give many potential benefits in addition to the financial support for conducting the research. For example, collaborations with gambling purveyors can facilitate the knowledge translation process and provide access to data and participants in ecologically valid environments. The Reno Model (Blaszczynski, Ladouceur, & Shaffer, 2004) and, more recently, the C.A.R.E. model (Wohl, Sztainert, & Young, 2013) posit that collaboration is essential, among all stakeholders relevant to the gambling process to minimize the prevalence of disordered gambling. Moreover, we, like others believe successful collaboration between researchers and the gambling purveyors is indeed possible.

Knowledge Translation and Exchange

The primary purpose of knowledge translation is to close the gap between knowledge creators and end users (MacKay, Petermann, Hurrell, & Hodgins, 2015; Sztainert,

Kim, & Wohl, 2014). In other words, knowledge translation takes empirical research and puts it into practice. Knowledge translation is most effective when multiple stakeholders form collaborative relationships to communicate each other's needs, needs that might be filled by empirical research (Blaszczynski et al., 2004; Griffiths & Wood, 2008; MacKay et al., 2015; Sztainert et al., 2014). Indeed, when gambling purveyors and researchers engage in collaborative relationships, research findings can be implemented where it can potentially make a significant impact in the prevention of disordered gambling (e.g., Wohl, Christie, Matheson, & Anisman, 2010).

Access to Participants and Data

The field of gambling research, like many others, has been criticized for its reliance on student populations as research participants (Cassidy et al., 2013; Gainsbury, Russell, & Blaszczynski, 2014). Given that student populations are not representative of gamblers in the general population (Gainsbury et al., 2014), collaborations with gambling purveyors may instead be used to provide meaningful access to those participants research studies are targeting, a process which would, in turn, increase the validity of research findings. That is, collaboration with gambling purveyors can provide researchers with participants and data that will increase the external validity of their results. In fact, access to and data from gambling purveyors have been identified as two of the principle ways to advance the field of gambling research (Morrison, 2009).

Recent advances in technology (e.g., online gambling) provide further opportunities for researchers and gambling purveyors to collaborate. Specifically, an opportunity exists for researchers to be provided with large samples of de-identified player data. Two immense benefits of this type of data are as follows. They can provide both an objective assessment of any implemented interventions, and an opportunity for researchers to assess new prevention tools for disordered gambling. Indeed, research with player data is underway in the field of gambling studies to assess tools that may help attenuate the rates of disordered gambling (Auer & Griffiths, 2015; Griffiths, Wood, & Parke, 2009; Wood & Wohl, 2015). Given the increasing popularity and rise of online gambling (Gainsbury, 2012; Griffiths, 2003), player data is a potentially fruitful area wherein collaborating with gambling purveyors might be of benefit.

To Accept or Not To Accept: That is the Question

Despite the potential benefits noted above, researchers need to be mindful of the ethical issues that may potentially arise from funding and collaboration with gambling purveyors. Certain authors have taken an extreme position in this regard, and suggested researchers and universities should not accept industry funding to conduct research (Miller & Kypri, 2009; Miller, Kypri, Chikritzhs, Skov, & Rubin, 2009; Turcotte, 2003). However, for many researchers, such funding is seen as crucial for conducting rigorous research in the gambling area. Moreover, as previously

argued, accepting funding from industries (gambling or otherwise) is not inherently unethical. However, it is important to keep in mind the potential ethical issues that may arise from accepting such funding.

Several actions can attenuate and or eliminate the ethical issues that stem from accepting funds from gambling purveyors. One proposed solution is to include mandatory disclosures of funding and conflicts of interest when submitting a research article for publication (Adams, 2007; Goozner et al., 2009). Indeed, failure to disclose industry funding has in fact led to major embarrassments, for members of the scientific community, embarrassments that have included mainstream media exposure (e.g., *The Wall Street Journal*) (Goozner et al. 2009). In response, the editor-in-chief of *Addiction*, one of the most prestigious journals in addiction studies, invited editors of other addiction journals and publishers to discuss the ethical issues related to industry funding (Badawy & Tipton, 1998). The result of the meeting was the Farmington consensus. According to the International Society of Addiction Journal Editors, the intention of the Farmington consensus was to “set standards for ethical expectations from authors, referees, editors alike and thus to bring out the importance of avoiding duplicate publications and undeclared conflicts of interest.” Currently most, if not all, addiction journals have mandatory disclosure statements.

In addition to the Farmington consensus, Adams (2007) proposed the PERIL model (**Purpose, Extent, Relevant Harms, Identifiers and Link**), which is a self-assessment tool to help organizations and researchers decide whether to accept industry funding. PERIL, however, is specifically a morality model (i.e., one’s own beliefs of right and wrong) and not an ethical model (i.e., standard rules and guidelines). As such, it does not provide a pertinent framework for researchers to consider the ethical issues and considerations related to industry funding. Indeed, it has been suggested that the field of gambling studies develop and adopt its own ethical guidelines and framework, similarly to the ethical framework that has been implemented in the pharmaceutical industry (IFPMA Code of Practice, 2012).

Until such time that the gambling field develops its own ethical framework, the Canadian Code of Ethics for Psychologists (CPA, 2000) provides, through its contents, a comprehensive framework for researchers to consider the ethical issues related to funding from gambling purveyors. The Canadian Code of Ethics for Psychologists has been adopted as the international code of ethics, as the International Union of Psychological Science found it to be in an independent audit, the most comprehensive ethics document available. Moreover, as previously mentioned, most of the ethical considerations in the Canadian Code are consistent with ethical documents in other jurisdictions (e.g., American Code of Ethics) (APA, 2010) and can thus be readily applied to gambling jurisdictions outside of Canada. As such, the Canadian Code of Ethics for Psychologists is used here to guide readers through the ethical issues related to funding from gambling purveyors.

Ethical Issues and Considerations

The Canadian Code of Ethics for Psychologists articulates principles, values, and standards to promote ethical behavior, and contains four higher order principles, with the first principle (*Respect for Dignity of Persons*) given higher weight in the ethical decision-making process than the second (*Responsible Caring*), third (*Integrity in Relationships*) and fourth (*Responsibility to Society*). It is worth noting that not all principles may apply when it comes to the ethical issues related to purveyor funding. However, there are several ethical principles that are implicated when deciding to accept purveyor funding and thus warrants further consideration.

Respect for the Dignity of the Person

The highest order principle in the Canadian Code of Ethics for Psychologists refers to “the belief that each person should be treated primarily as a person or an end in him/herself, not as an object or a means to an end” (CPA, 2000, p. 8). In other words, each person has a right to his or her innate worth as a human being appreciated. The concept of Respect for the Dignity of the Person is not greatly implicated when it comes to ethical issues related to purveyor funding, with the exception of the concept of Informed Consent. Informed consent requires that research participants be given sufficient information, and in a clear manner, so that subjects may make an informed decision regarding their participation. The Canadian Code of Ethics for Psychologists states that participants should be provided with “as much information as reasonable or prudent persons would want to know before making a decision or consenting to the activity” (2000, standard I.23, p. 11). Given that a large number of participants in gambling research have likely faced immense harm as a result of gambling, it would accordingly be prudent to provide funding information to the participants so they can make an informed choice of whether to be part of a study that is funded by gambling purveyors. Indeed, knowing who has funded the research, and thus potentially knowing how the results may be used, is actually pertinent information that participants may wish to know before making an informed decision. Thus, in line with the code described in Canadian Code of Ethics for Psychologists, it is therefore suggested that researchers disclose the source of funding when conducting research with funds received from gambling purveyors, even when not explicitly asked to do so.

Responsible Caring

The second order principle of *Responsible Caring* refers to the idea that the activities of psychologists will be of benefit members of society, or at the very least, do no harm to society (CPA, 2000, p. 15). This principle invites a careful consideration of the potential harms and benefits of the researcher’s activities and proceeding only when the benefits outweigh the harms. Thus, at the forefront of this ethical principle is a risk-benefit analysis of the implication of funding from gambling purveyors.

Several pertinent risks may arise when accepting funding from gambling purveyors and formulating research questions. In addition to the potential reputational risks,

one should consider and weigh the risks of *how* the research will be used, especially given that research results are often used to influence social policy. Specifically, researchers should consider whether the results would be used as evidence for the expansion of legalized gambling and thus to increase the accessibility and availability of gambling activities. This outcome may be of concern as increased availability and access to gambling may increase the rates of problem gambling (Room, Turner, & Ialomiteanu, 1999), and results of purveyors-funded research may actually be used in support of expanding legalized gambling. However, if the research is conducted with methodological rigor, researchers should remain objective and report their findings, regardless of how the results may be used. That said, researchers should take care to note the limitations of their study and ensure their conclusions are not misinterpreted. Moreover, the criticisms directed at the field of gambling studies have been mostly related to the research questions (i.e., research priorities of funding agencies) (Adams, 2011) rather than the results of the research itself.

Although there are risks involved in accepting funding from gambling purveyors, there are also benefits in doing so, as discussed above. Researchers should consider whether the benefits, such as advancing the field of gambling with scientific knowledge, or the development and validation of new assessment, prevention or intervention tools, outweigh the potential harms. It is also important to note that accepting purveyor funding may not actually have any risks at all. However, when perceived or actual risks exist, strategies need to be put in place to mitigate them.

Integrity in Relationship

Integrity in Relationship is arguably the principle most relevant to the ethical concerns regarding the acceptance of funding from gambling purveyors. This principle states that “the relationships formed by psychologists in the course of their work embody explicit and implicit mutual expectations of integrity that are vital to the advancement of scientific knowledge” (CPA, 2000, p. 22). In this regard, researchers are expected to be accurate and honest, maximize objectivity and minimize bias, and avoid conflict of interest. It is important to note psychologists are not expected to be value-free or totally without self-interest. However, it is their responsibility to be aware when their values and self-interests may conflict with their objectivity, and take measures to reduce biases that may impact their objectivity.

Dual relationships and conflict of interest are also implicated in the principle. According to the CPA (2000, p. 22), a conflict of interest arises in situations “that can lead to distorted judgment and can motivate psychologists to act in ways that meet their own personal, political, financial or business interests...” Because of the potential for conflict of interest when accepting purveyor funding, it is recommended that researchers take steps to minimize their bias and maximize their objectivity. To this end, it is suggested researchers outline clearly the terms of the funding, including discussing any future potential funding that may be contingent upon the results, or any potential restrictions on publishing. Researchers should guard against any restrictions on dissemination and ensure they retain the authority to disseminate the

results objectively. Such safeguards will avoid the potential for gambling purveyors to censor or attempt to control the results and thus will allow the researchers to uphold the integrity of science.

Responsibility to Society

The last principle in the Canadian Code of Ethics for Psychologists is *Responsibility to Society*, which states the “two legitimate expectations of psychology as a science and profession are that it will increase knowledge and that it will conduct its affairs in such ways that it will promote the welfare of all human beings” (CPA, 2000, p. 28). Several value statements are implicated from this principle related to accepting purveyor funding. First, researchers should ensure that the terms of the funding do not interfere with the expression of knowledge (Standard IV.2) by ensuring they retain autonomy in regards to the dissemination as discussed above. Second, researchers should become aware of the social and political climate and assess whether the results could be misused for political or economic advantage. If there is potential for misuse, researchers should be careful in communicating the results (Standard IV.25), especially if the results involve vulnerable populations (e.g., problem gamblers) or could influence social policy (Standard IV.26). These standards can be achieved by elucidating the terms of the research funding and noting the limitations of the research project.

Summary of Best Practice Ethical Guidelines

We provide now a summary of best practice ethical guidelines and recommendations for researchers to utilize as they decide whether to accept such funding. We base this summary on the above consideration of the potential ethical issues that may arise when conducting gambling research funded by gambling purveyors. Although most gambling researchers are likely aware of the potential concerns noted in the present paper, we still offer these guidelines to (1) help researchers be mindful about the potential ethical issues related to funding from gambling purveyors, (2) provide a mechanism, using the Canadian Code of Ethics for Psychologists, for assessment as to whether to accept or decline purveyors funding, and (3) help attenuate or eliminate the potential ethical issues that may arise from accepting funding from gambling purveyors. The summary of best-practice ethical guidelines immediately below will both help serve as a reminder to current gambling researchers, and provide an overview for researchers who are just entering the field of gambling research.

1. Prior to applying for funding from gambling purveyors, it is recommended that researchers be aware of the potential ethical issues related to accepting funding from gambling purveyors. Specific attention should be paid to lessons from the alcohol and tobacco industries. Many excellent references are available for the interested reader (e.g., Adams, 2007; Cassidy et al., 2013; Goozner et al., 2009; Jørgensen et al., 2008; Miller et al., 2006).

2. When applying for funding from gambling purveyors, whether directly or through intermediary bodies, researchers should become aware of the research priorities of

the specific funding agencies. Researchers should ensure they have full autonomy over all aspects of the research, including dissemination. They should also make certain that future opportunities are not contingent upon the results of the research.

3. When deciding to accept funding from gambling purveyors, researchers should consider both the potential risks (e.g., reputational risks, conflicts of interest) and benefits (contributing scientific knowledge, access to data) and only proceed when the benefits clearly outweigh the harm of a specific project. Researcher should anticipate and consider how the results could affect policy, such as the expansion of legalized gambling.

4. Researchers should take steps to attenuate or eliminate potential conflicts of interest to minimize bias and maximize objectivity. This process requires clear articulation of the terms of the funding and assurance that these terms do not interfere with the integrity of science.

5. Researchers should disclose the source of funding as part of the informed consent. This action is consistent with the Canadian Code of Ethics for Psychologists, which states that participants should be provided with all pertinent information that one may expect come to an informed decision.

6. Researchers should disclose funding sources and any current or past involvement with the gambling purveyors when they submit their research for presentation or publication, even if it is not required. Although purveyor funding and consultant work may not constitute a conflict of interest, many pertinent disclosure policies require authors to disclose any real or *perceived* conflicts of interest.

Conclusions

The present paper attempted to provide a balanced view of accepting research funding from the gambling industry. To this end, we delineated the potential ethical issues and benefits that may arise when accepting funding from gambling purveyors. Moreover, the Canadian Code of Ethics for Psychologists was used as a framework to help guide readers through the issues and provide recommendations when accepting such funding. In line with Adams (2007), the goal of the present paper was *not*, in fact, to argue for or against purveyor funding. It is our opinion that receiving funding from gambling purveyors can provide many potential benefits. However, there exist ethical issues related to accepting funding from the gambling industry. Consequently, researchers need to be mindful of the potential and real ethical issues and consequently take appropriate steps to attenuate or eliminate these issues. Responsible and ethical conduct will help the field of gambling studies both avoid what has occurred in alcohol, drug and pharmaceutical industries, and continue to contribute valuable scientific knowledge that may be used for the benefit of society.

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Episodic Chasing and Price of Scratch-off Lottery Tickets

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Abstract

The present study examined the relationship between instant (scratch-off) lottery ticket price and “chasing losses” within a single gambling episode. Across several months, each time an instant lottery ticket was purchased ($N = 1081$), convenience store clerks recorded the gamblers’ genders, the price of the tickets purchased, and whether the customer purchased another ticket before leaving the premises. Logistic regression analysis showed a significant association between ticket price and repurchasing (odds ratio = .842, $p < .0001$), suggesting within-session chasing is common with lower priced instant lottery tickets, and lower costs are not necessarily indicative of less risk.

Keywords: Chasing, instant lottery, risk, scratch-off

Résumé

La présente étude portait sur la relation entre le prix des billets de loterie instantanée (à gratter) et la « récupération des pertes » dans un seul épisode de jeu. Pendant plusieurs mois, chaque fois qu’un billet de loterie instantanée était acheté ($N = 1081$), les commis de dépanneur consignaient le sexe des joueurs et le prix des billets de loterie instantanée, et indiquaient si le consommateur avait acheté un autre billet avant de quitter les lieux. L’analyse de régression logistique a montré une corrélation importante entre le prix des billets et le rachat (rapport de cotes = 0,842, $p < 0,0001$), ce qui suggère que la récupération au cours d’un même épisode de jeu est courante pour les billets de loterie instantanée à plus bas prix et que de plus faibles coûts ne réduisent pas nécessairement les risques.

Introduction

“Chasing losses,” or attempting to recover losses by further gambling (Lesieur, 1984; O’Connor & Dickerson, 2003; Toneatto, Blitz-Miller, Calderwood, Dragonetti, &

Tsanos, 1997), is a key indicator of a gambling disorder as approximately 60% of all gamblers who fulfill at least one DSM-IV criteria (American Psychiatric Association, 1994, p. 616) endorse this item (Toce-Gerstein, Gerstein, & Volberg, 2003). Though frequently assessed across gambling sessions, research has identified episodic or within-session chasing as gambling persistence in the face of losing (Dickerson, Hinchey, & Fabre, 1987; O'Connor & Dickerson, 2003), or adherence to a behavioral strategy resulting in elevated monetary risk (Breen & Zuckerman, 1999; Linnet, Røjskjær, Hygaard, & Maher, 2006).

Though chasing represents a common behavioral feature of gambling disorder, little research on this phenomenon has been conducted with lotteries, the most popular form of gambling (American Gaming Association, 2013; LaPlante, Gray, Bosworth, & Shaffer, 2010). Despite general perceptions that lotteries are a low-risk, socially acceptable form of gambling (Ariyabuddhiphongs, 2011; Casey, 2006; Rogers, 1998), instant lottery (scratch-off tickets) may in fact be particularly problematic, as this type of gambling provides immediate win/loss feedback and is widely available at low cost (Kundu et al., 2007; MacLaren, Harrigan, & Dixon, 2015; Short, Penney, Mazmanian, & Jamieson, 2015). Furthermore, unlike draw-based lotteries (e.g., weekly lotteries), instant lottery allows for both within- and between-session chasing, and thus low ticket prices may actually not necessarily be indicative of lower risk. Given the resulting need for further research into this specific area, the present study was established to examine the association between episodic chasing and price in instant lottery gambling.

Method

Participants consisted of 1081 customers (905 male, 176 female) of a suburban convenience store in the Midwestern United States. The convenience store displayed and sold instant (scratch-off) lottery tickets, with prices ranging from \$1 to \$30 USD, including basic “match and win prize shown” tickets purchased, as well as more interactive scratch games such as bingo or crossword tickets. Jackpot prizes ranged from \$1000 USD to sums of money paid for life. Customers’ ages were all verified by convenience store staff as above 21 years. Data were collected across several months on an ongoing basis. The study was approved by the Human Subjects Committee at Southern Illinois University.

Each time a customer purchased an instant lottery ticket in the store, the clerk handling the transaction covertly recorded the buyer’s gender and the price of the highest value ticket initially purchased after the customer exited the store. As a measure of episodic chasing, clerks recorded repurchasing behaviour, defined as allocating further funds to purchase additional instant lottery tickets in a separate transaction before leaving the premises (the store and immediate parking lot). That is, chasing was scored for a second instant lottery transaction regardless of whether participants (1) scratched off the initially purchased tickets, (2) scanned the barcode with the automatic scanner or asked a clerk to scan them to determine winnings, or (3) purchased additional tickets without contacting the outcome. Data collection was

closely monitored by a trained graduate student employed part-time at the convenience store who, when the study began, briefly trained all clerks to record data via instructions, role plays, and brief accuracy feedback. Data collection response effort was minimized via provision of data sheets with check boxes for each variable. To examine bivariate relationships among these variables we subjected gender and price categorical data to chi-square analyses. Next, we used logistic regression to determine the association between ticket price and chasing while adjusting for gender. Because we needed to represent the full continuum of costs, we entered price as a continuous variable rather than a categorical/ordinal variable. All analyses were conducted using IBM SPSS Statistics 21.

Results and Discussion

Table 1 displays categorical data and results of bivariate analyses. The number of observations recorded for each price category descended as price increased. The most common price of tickets purchased was \$1 USD (43.1%), and 81.5% of transactions included a maximum price of \$3 USD. Similarly, the proportion of participants who chased losses generally declined as prices increased. Greater than 80% of participants chased at lower ticket prices (\$1–3 USD) and fewer than 30% of participants chased after purchasing tickets costing \$10 USD or more, thus generating a significant difference across price categories ($\chi^2 = 195.649$, $p < .0001$). Chasing did not differ ($\chi^2 = .005$, $p = .945$) among males (76.46%) and females (76.70%). Results of the logistic regression analysis appear in Table 2. Gender did not contribute significantly to the model (odds ratio [OR] = 1.030, $p = .886$). Adjusted for gender, price of instant lottery tickets significantly predicted chasing losses (OR = .842, $p < .0001$), suggesting that for every dollar increase in price, odds of chasing decreased by approximately 16%.

Table 1
Frequency of episodic chasing across instant lottery price levels

	<i>n</i>	Chasing			χ^2	<i>p</i>
		Yes	No	%		
Price (USD)						
1	466	397	69	85.19	195.649	< .0001
2	269	225	44	83.64		
3	146	122	24	83.56		
5	70	44	26	62.86		
7	57	19	38	33.33		
10	31	9	22	29.03		
20	24	6	18	25.00		
30	18	5	13	27.78		
Gender						
Male	905	692	213	76.46	0.005	0.945
Female	176	135	41	76.70		

Table 2

Episodic chasing logistic regression model: Odds ratios and confidence intervals (CI)

Predictor	<i>p</i>	Odds Ratio	95% C.I.
Price	<.0001	.842	.808 - .877
Gender (M vs. F)	.886	1.030	.688 - 1.543

In sum, the current study demonstrated a significant relationship between episodic chasing and price of instant lottery tickets. Despite public perceptions that lottery gambling is acceptable and low-risk (Rogers, 1998), results suggest that monetary risk is frequently greater than the face value of lottery tickets and instant lottery gamblers commonly emit at least one behaviour indicative of disordered gambling (O’Conner & Dickerson, 2003), thus supporting recommendation of caution in regard to instant lottery gambling (Kundu et al., 2007; Short et al., 2015). Furthermore, though chasing was similar across genders, a majority (approximately 84%) of observations were of male gamblers, supporting previous observations of gender patterns in lottery gambling in the US (Kundu et al., 2007; Welte, Barnes, Wieczorek, Tidwell, & Parker, 2002), and suggesting a need for further study of gender differences in lottery gambling. The present results are limited in generality in that all data were collected from one convenience store and only limited demographic information was collected. What is more, the behaviour of customers buying instant lottery repeatedly over the period of data collection could in fact be over-represented, and all observations may not have actually been independent, no reliability checks verified the accuracy of observations, and several of the observations may indeed have been missed due to conflicting duties of data collectors. For all these reasons, the results must be interpreted with caution. Nevertheless, the present results do add to the literature by demonstrating a high rate of episodic chasing in a live sample of instant lottery gamblers. Future research may wish to examine in greater detail the relative effects of large gambles and repeated smaller gambles with chasing behaviour, and to investigate further the implications of chasing within a gambling episode.

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