I. Adolescent problem gambling: Developing a gambling expectancy instrument

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Abstract

Positive and negative outcome expectancies have been found to play a significant role in adolescents' decisions to engage in drug and alcohol use. In light of the parallel risk and protective factors among high-risk behaviors, youth gambling outcome expectancies were explored through the development of the 23-item Gambling Expectancy Questionnaire (GEQ) using a sample of 1,013 students aged 12 to 18. The resulting GEQ consists of three positive expectancy scales (enjoyment/arousal, self-enhancement, money) and two negative expectancy scales (overinvolvement, emotional impact). The potential utility of this scale is discussed.
Key words: youth gambling, outcome expectancy, perceived benefits and risks

Introduction

Given the negative psychological, social, and economic consequences of gambling problems, it is essential to identify the factors that contribute to problem gambling behavior among youth. What is attracting young people to gambling activities and why do some develop problems when others do not? Jessor's (1998) *Adolescent Risk Behavior Model* conjectures that engagement in high-risk behaviors is determined by an interplay between psychosocial instigators (i.e., risk factors) and controls (i.e., protective factors), which can lead to health/life-compromising outcomes. These risk and protective factors interact in and across various domains—biology, social environment, perceived environment, personality, and behavior. The risk factors associated with adolescent high risk behaviours in general, and youth gambling problems in particular, have been well documented (Derevensky & Gupta, 2004; Gupta & Derevensky, 1998b; Hardoon, Derevensky, & Gupta, 2002; Langhinrichsen-Rohling, Rohde, Seeley, & Rohling, 2004; Stinchfield, 2000, 2004).

The common risk factors, however, cannot fully explain why some adolescents gamble excessively, just as they cannot fully explain why other youth develop drug or alcohol problems. As such, there must be specific reasons why an adolescent engages in gambling behavior. Social cognitive models of health behavior (e.g., Health Belief Model, Becker, 1974; Theory of Planned Behavior, Ajzen, 1991) place importance on proximal predictors of behavior, specifically the subjective cognitions related to behavior choice. As Osgood, Johnston, O'Malley, and Bachman (1988) suggest, each individual high-risk behavior, whether it is gambling, substance use, tobacco use, or unprotected sex, likely has its own specific determinants. The influence of risk and protective factors (i.e., common determinants) is thought to be mediated through these behavior-specific cognitions (Fishbein & Ajzen, 1975). As delineated in the substance use literature, the specific determinants of high-risk behavior often include the perceived positive and negative outcomes of behavior; personal, peer, and public approval/disapproval; and perceived role model behavior and accessibility (Johnston, 2003).

Within the gambling literature, the discussion of the specific determinants of youth gambling behavior has largely focused on societal attitudes and environmental characteristics.

Wynne, Smith, and Jacobs (1996) attribute accessibility, availability, and acceptance as factors that account for the high prevalence rates of youth problem gambling. Wynne et al. (1996) propose that the multiplicity of gambling venues, lax regulations regarding proof of age to gamble, advertising that encourages gambling and minimizes its potential harmful effects, and adult attitudes that minimize the dangers of youth gambling are specific determinants that likely promote gambling among youth. In general, adults condone youth gambling, particularly the purchase of lottery tickets, as a harmless activity (Felsher, Derevensky, & Gupta, 2004; Gupta & Derevensky, 1997; Winters, Stinchfield, & Kim, 1995). Similarly, public policy and regulatory legislation foster an environment where gambling activities are socially accepted, encouraged, and actively promoted (Nower & Blaszczynski, 2004).

In contrast, little research has directly explored adolescents' beliefs about the consequences of gambling behavior, and, in turn, how these positive and negative outcome expectancies influence their gambling participation. In general, adolescents frequently disregard the potential negative consequences of high-risk behaviors (Clayton, 1992). Furthermore, they have been shown to be more attuned to the positive consequences that such experiences may yield (e.g., pleasure and excitement, peer approval, relaxation) (Moore & Gullone, 1996). Research in addictive behaviors suggests that the positive outcomes of addictive behaviors are often associated with perceived immediate positive outcomes and hence are more influential (Stacy, Widaman, & Marlatt, 1990). In keeping with social cognition theories, an individual's decision to engage in gambling activities may, to a certain extent, reflect the salience of their perceived positive outcomes and the denial of negative outcomes.

Outcome expectancies: Implications from drug and alcohol research

Findings from drug and alcohol research validate the importance of understanding the role of outcome expectancies in adolescents' decisions to engage in high-risk behavior. Perceptions of the harmfulness of a drug tend to be a leading indicator of future changes in use among young people. In many cases, shifts in the perceived risk of a drug, as recorded by the National Institute on Drug Abuse's large-scale *Monitoring the Future* surveys, have preceded inflections in actual use (Johnston, 2003). Similarly, a moderately strong correlation between the degree to which a substance is seen as dangerous and the percentage of youth that use it has been found (Johnston, O'Malley, & Bachman, 2001). Trends in perceived risks associated with a particular behavior have been touted as playing an important role in the decline of marijuana use in the 1980s and its increase in the 1990s (Johnston, 2003). Adolescents who see less risk of addiction to drugs are more likely to report experimentation and problems with drug use (Goldberg & Fischhoff, 2000). In comparison, in alcohol studies, beliefs about the beneficial effects of alcohol have been shown to be an important predictor of teen alcohol consumption (Goldberg, Halpern-Felsher, & Millstein, 2002). The perceived benefits of alcohol represent the strongest predictor of actual drinking among adolescents, above and beyond other factors, including the perceived risks of alcohol consumption, chronological age, and experience (Goldberg et al., 2002). Positive outcome expectancies have been found to be significantly and substantially better predictors of alcohol use than negative outcome expectancies (Stacy et al., 1990).

Related findings on gambling motives and risks

While the predictive utility of expectancy models has been examined within the alcohol and drug literature, related research in the field of gambling has largely focused on gambling motives. In general, the results of a number of studies suggest that individuals gamble for a

variety of reasons. In particular, money, enjoyment, excitement, and social reasons are often cited as primary motivators and thus may be conceptualized as being strong positive outcome expectancies for adolescents and young adults (Gupta & Derevensky, 1998a; Neighbours, Lostutter, Cronce, & Larimer, 2002). Moreover, while the motives of enjoyment, money, and excitement were highly endorsed by all gamblers, more adolescent problem and pathological gamblers reported gambling to escape problems, to alleviate depression, to cope with loneliness, to relax, and to interact socially with others. However, these positive outcome expectancies may depend on an individual's level of gambling severity. The findings support the need for further exploration of how positive outcome expectancies may vary as a function of gambling severity.

Adolescents' beliefs regarding the risks associated with problem gambling have not been clearly delineated in previous research. The prevailing belief is that gambling is a mode of entertainment and that it has very few negative consequences (Winters, Arthur, Leitten, & Botzet, 2004). While the risks of gambling are extremely salient to researchers and clinicians working with pathological gamblers, it is likely that they are perceived quite differently among adolescents. The diagnostic criteria for gambling problems (e.g., DSM-IV) speak to the harm related to pathological gambling behaviors: significant financial losses, preoccupation and chasing behavior, cognitive and emotional turmoil, relational disruptions among friends and family members, stealing and other criminal acts, etc. (APA, 1994; Fisher, 2000). Whether or not adolescents are aware of these negative outcomes, however, remains unknown.

Developing a gambling expectancy questionnaire (GEQ)

By extrapolating from the gambling literature, as well as from the adolescent alcohol and drug literature, it seems plausible to suggest that adolescent gambling expectancies may encompass a diverse array of discrete biological, psychological, and social outcomes. From a biopsychosocial perspective, the expected positive outcomes of gambling likely include biological and arousal-related benefits (e.g., excitement, boredom, interest), cognitive and mood-related benefits (e.g., desire to win, enjoyment, coping, escape), and social benefits (e.g., money/power, conformity, autonomy) (Griffiths & Delfabbro, 2001). As noted, these themes have been endorsed as significant gambling motives in both adolescent and adult gambling studies (Gupta & Derevensky, 1998a; Neighbours et al., 2002; Platz & Millar, 2001). In contrast, the reality that gambling may be a costly activity, that it can promote negative feelings and thoughts, and that it can take a toll on one's relationships with friends and family members may be acknowledged by adolescents as well. The negative outcomes of financial costs, detrimental emotional effects, preoccupation, and relational disruptions should be considered as potential risks of gambling involvement, as they are empirically recognized as harmful consequences of problem gambling.

In order to assess the influence of outcome expectancies on gambling behavior, it is first necessary to develop a gambling expectancy instrument. Considering the success with which alcohol expectancy instruments have delineated the positive and negative outcome expectancies of adolescent drinking behavior (e.g., Alcohol Expectancy Questionnaire—Adolescent Version (AEQ-A), Brown, Christiansen, & Goldman, 1987; Comprehensive Effects of Alcohol (CEOA), Fromme, Stroot, & Kaplan, 1993; Outcome Expectancy Questionnaire (OEQ), Leigh & Stacy, 1993) (see Table 1), they provide a useful framework for the development of a GEQ.

Table 1.

A comparison of scales used in alcohol expectancy instruments

	AEQ-A (Brown et al., 1987)	CEOA (Fromme et al.,1993)	AEQ (Leigh & Stacy, 1993)
Positive Expectancy Scales	• changes in social behavior • relaxation & tension reduction • enhanced sexuality • increased arousal • improved cognitive and motor abilities • global positive changes	• sociability • tension reduction • liquid courage • enhanced sexuality	• social gains • fun • tension reduction/ negative reinforcement • enhanced sexuality
Negative Expectancy Scales	• cognitive and motor impairments	• impairment • risk and aggression • self-perception	• social problems • emotional problems • physical problems • cognitive/performance difficulty

As such, a youth GEQ should incorporate the key features of previous expectancy measures used in alcohol research, in keeping with themes found in the current gambling literature. Many of the gambling expectancy themes (e.g., excitement, enjoyment, social enhancement, escape, social and emotional impairment, cognitive difficulties) are similar to those found in alcohol expectancy measures. Before the relationship between gambling outcome expectancies and gambling severity can be evaluated, a GEQ that effectively represents the positive and negative effects of gambling on adolescent behavior, mood, and emotions needs to be developed.

Method

Participants

Participants were 1,013 students [males = 432 (42.6%); females = 581 (57.4%)] from grades 7 to 11 (age range = 11–18; mean age = 14.77 years; *SD* = 1.52). The majority of these students lived in the greater Montreal area, with approximately 6% of the sample being obtained in the Ottawa area. The majority (99.1%) of the sample was 17 years of age or younger; these adolescents were legally prohibited from gambling on provincially regulated forms of gambling. Only 0.9% of the sample was of legal age to participate in provincially regulated gambling activities. Of the total adolescent sample, 70.3% of adolescents reported having gambled with money during the past 12 months. Of those participants who reported gambling, more males (82.4%) reported gambling than females (61.3%).

Approval was requested and obtained from four school boards in the greater Montreal area for participation. Individual high schools were then approached with a detailed proposal once school board approval was granted. In total, nine public high schools approved their students' participation in the study. In addition, students from three private schools in Montreal and one private school in Ottawa were included. A total of 13 schools, located in

both urban and suburban areas and representing considerable variability in socioeconomic and cultural backgrounds, were included in this study.

Procedure

Derived from the gambling and alcohol literature, 48 items, referring to the multifaceted consequences of gambling, were presented in questionnaire form to students (see Appendix A). These risk and benefit items addressed the psychological, physiological, and behavioral outcomes associated with gambling involvement. Among statements considered to be benefits of gambling, items were created pertaining to one of seven themes that were empirically supported in the literature regarding gambling motives (Gupta & Derevensky, 1998a; Neighbours et al., 2002; Platz & Millar, 2001): money, mood enhancement/enjoyment, excitement/arousal, relief from boredom, social interaction, escape/tension reduction, and independence/autonomy. Among the risk statements, items pertained to one of four themes, created based on knowledge of adolescent gambling awareness, consequences associated with excessive gambling, and developmental concerns (APA, 1994; Fisher, 2000): financial cost, negative emotions, preoccupation, and relational disruptions. A 7-point Likert scale was employed to capture a wide range of expectancy strength: (1) no chance, (2) very unlikely, (3) unlikely, (4) neither likely nor unlikely, (5) likely, (6) very likely, and (7) certain to happen. Furthermore, items were pilot-tested for readability with a sample of 10 students (mean age = 16).

It should also be noted that a total of 34 focus groups (198 students, ages 12–18) were conducted in Ontario and Quebec to validate the themes represented by the gambling expectancy items before the final testing of the scale. Groups consisted of between four and nine students at the same grade level. The objectives of the focus groups were to explore the awareness of and participation in gambling activities, to identify the benefits that adolescents associate with gambling, and to identify the risks that adolescents associate with gambling. Adolescents cited a variety of benefits related to gambling; their responses were often characterized by complex combinations of several benefits. Money, excitement, enjoyment, boredom, competition/independence, social opportunities, and "coolness" were all suggested by adolescents. Although most youth did not cite escape as a benefit of gambling, a few youth did indicate an understanding of using gambling to cope or escape from problems. In addition, adolescents were able to enumerate several risks associated with gambling. Adolescents discussed the financial costs and potential illegal activity related to gambling, personal loss of control and preoccupation, relational problems, and gambling's toll on one's emotional and psychological wellbeing. Overall, the focus group discussions endorsed the salience of the seven risk and benefit themes originally generated for use in the questionnaire.

The questionnaire was group-administered to participants in classrooms and/or conference rooms by several trained research assistants. Groups ranged from 10 to 60 students, with the number of research assistants varying according to group size. Students were given a brief description of the types of questions that would be asked (e.g., "Some questions will ask you about your gambling behavior; some questions will ask you about what you expect to happen when you gamble") as well as instructions regarding the completion of the questionnaire ("Please make sure to take your time and read all the questions and instructions carefully. Also make sure to fill in the circles completely with the pencil that has been provided"). Students were also given a definition of gambling to keep in mind when they responded ("Gambling is any activity that you play in which you are putting money, or something of monetary value, at risk since winning and/or losing is based on chance").

Research assistants were present at all times to answer all questions and concerns. Participants required approximately 35 minutes to complete the questionnaire. The remaining class time was used to debrief the participants about the aims of the study. During the remaining class time, research assistants also facilitated discussion about excessive gambling and its potential risks and negative consequences.

Results

Data analyses

The 48 gambling expectancy items were included in a principal components analysis (PCA) to reduce the items to a smaller number of variables. A Varimax rotation was used to simplify factors by maximizing the variance loadings across variables, with the spread in the factor loadings being maximized (Tabachnick & Fidell, 1996). Varimax rotation also reapportions variance among factors such that they become relatively equal in importance. PCAs were performed with expectancy items being removed until the criterion of simple structure was met, whereby several variables correlated highly with each other and only one factor correlated highly with each variable. Simple structures are beneficial as they allow for a more definite interpretation of factors. In addition, correlations between items were observed in order to further reduce the linearity between factors. Cronbach alphas were then calculated as an index of internal reliability for each factor/scale.

PCAs

All 48 gambling expectancy items were entered into the first PCA. The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy was estimated as .93, a value deemed excellent by Kaiser (1974). Large values of the KMO suggest that data reduction via factor analysis or PCA is beneficial, as observed correlations between pairs of items are likely explained by overarching variables. The PCA extracted seven factors with eigenvalues > 1. An examination of the rotated component matrix identified 17 items that loaded roughly equally (within 0.20 of each other) on more than one factor. These included items reflecting the themes of escape (five items), negative emotions (one item), relational disruptions (two items), financial costs (four items), boredom (one item), independence (one item), social interactions (one item), and arousal (two items). Again, these items were removed to avoid ambiguity in the interpretation of the factors (Tabachnick & Fidell, 1996).

A second PCA was performed using the 31 items that remained. This PCA extracted five factors with eigenvalues > 1. Examination of the rotated component matrix identified two items that loaded roughly equally (within 0.20 of each other) on more than one factor and one item that minimally loaded on one factor (< .50). These three items, which were removed from the analysis, reflected feeling sad or depressed and feeling like one's own person. A third PCA was run on the remaining 29 items, once again resulting in a five-factor model. However, correlations between created factors were found to be high (> .50) and thus bivariate correlations between items loading on different factors were analyzed in order to reduce linearity between factors. Six additional items were removed from the model because their presence inflated correlations between scales. These items reflected themes of parental disapproval (two items), cognitive preoccupation, stress, financial losses, and boredom.

A final PCA was performed on the remaining 23 items, confirming a final model consisting of five factors. The five factors retained accounted for 66.8% of the overall variance in GEQ

item scores, with three to eight loadings on each factor. The overall solution has a simple structure (Tabachnick & Fidell, 1996) and the final KMO was estimated as 0.90. The rotated principal components matrix is presented in Table 2.

Table 2.

Rotated factor loadings on the GEQ

	Component				
GEQ Items	**1**	**2**	**3**	**4**	**5**
I have fun.	**.736**			–.223	.247
I feel more relaxed.	**.634**	.206			.114
I stop being bored.	**.744**	.101	.153		
I feel excited.	**.790**	.159	.152		
I spend time with people I like.	**.615**	–.210	.118		
I feel a rush.	**.575**	.183	.212	.371	
I enjoy myself.	**.703**		.255	–.272	.153
I have a good time.	**.704**		.234	–.281	.215
I only want to spend time with people who gamble.		**.718**	.152	.117	
I feel like gambling all of the time.	.150	**.835**	.108	.114	
I want to gamble more and more.		**.864**	.184	.206	
I get hooked.		**.853**	.141	.222	
I'm not able to stop.		**.774**	.205	.221	
My friends and classmates think I'm cool.	.222		**.715**		.129
I feel powerful.	.206	.285	**.757**	.10	.172

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I feel in control.	.243	.220	**.703**		.183
I'm more accepted by people.	.131	.204	**.717**	.133	
I feel guilty.	–.176	.200		**.834**	–.110
I feel in over my head.		.311		**.815**	
I feel ashamed of myself.	–.236	.352		**.738**	
I make a profit.	.406				**.742**
I win money.	.286		.119		**.812**
I get rich.			.305		**.754**

1 = enjoyment/arousal, 2 = overinvolvement, 3 = self-enhancement, 4 = emotional impact, 5 = money
Only factor loadings >│.1│ are displayed.

Based on the rotation sums of squares loadings, the first factor accounted for 18.9% of the variance in item scores. Variables that loaded onto the first factor mainly reflected the gambling benefits of enjoyment, arousal, and entertainment. This factor was labeled *enjoyment/arousal*. The second factor accounted for 16.9% of the variance in item scores. Items that loaded highly on this factor reflected the gambling risks of cognitive, affective, and social preoccupation with gambling. This factor was termed *overinvolvement*. The third factor accounted for 11.3% of the variance in item scores. This factor reflected the gambling benefits of feeling in control, feeling powerful, and feeling more accepted by peers; it was labeled *self-enhancement*. The fourth factor accounted for 10.8% of the variance in item scores. This factor reflected negative emotions (guilt, shame, loss of control) as a result of gambling; it was labeled *emotional impact*. Finally, the fifth factor accounted for 8.9% of the variance in item scores, reflecting the benefit of financial gain as a result of gambling; it was labeled *money*. A correlation matrix of the five factors is provided in Table 3.

Table 3.

Correlation matrix for the five factors of the GEQ

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

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

Internal consistency

Cronbach alpha coefficients were calculated for each of the five factors: enjoyment/arousal (α = .86), overinvolvement (α = .91), self-enhancement (α = .81), emotional impact (α = .85), and money (α = .78). Each of these interitem alpha coefficients represents adequate to good internal reliability (Cronbach, 1951).

Examination of frequencies revealed a significant positive skew for self-enhancement, overinvolvement, and emotional impact. However, the transformations applied to these distributions (logarithmic and square root transformations) could not establish univariate normality.

Discussion

The primary goal of this study was to develop an instrument to measure youth gambling outcome expectancies. Forty-eight gambling expectancy items representing 11 benefit and risk themes—money, excitement/arousal, enjoyment, boredom, social interaction, independence, escape/tension reduction, financial costs, preoccupation, negative emotional effects, and relational disruptions—were presented to participants. The resulting 23-item GEQ consists of three discrete scales of positive outcome expectancies (enjoyment/arousal, self-enhancement, money) and two discrete scales of negative outcome expectancies (overinvolvement, emotional impact). The retained items of the GEQ are presented in Table 4.

Table 4.

GEQ items

Positive Outcome Expectancies		
Enjoyment/Arousal	Self-Enhancement	Money
• I have fun. • I feel more relaxed. • I stop being bored. • I feel excited. • I spend time with people I like. • I feel a rush. • I enjoy myself. • I have a good time.	• My friends and classmates think I'm cool. • I feel powerful. • I feel in control. • I'm more accepted by people.	• I make a profit. • I win money. • I get rich.
Negative Outcome Expectancies		
Overinvolvement	Emotional Impact	
• I only want to spend time with people who gamble. • I feel like gambling all the time. • I want to gamble more and more. • I get hooked. • I'm not able to stop.	• I feel guilty. • I feel as if in over my head. • I feel ashamed of myself.	

Scale construction

The original 48 gambling expectancy items used to develop the GEQ touched upon a diverse array of bio-psycho-social outcomes empirically related to gambling involvement. While alcohol expectancy scales were used as a template (AEQ-A, Brown et al., 1987; CEOA, Fromme et al., 1993; OEQ, Leigh & Stacy, 1993), gambling items were chosen based on the clarity with which they depicted the target theme, as well as their consistency with related items. Items reflecting seven gambling benefit themes—money, excitement, enjoyment, boredom, escape/tension reduction, social interaction, and independence—were originally selected based on their endorsements as gambling motives in both adolescent and adult gambling studies (Gupta & Derevensky, 1998a; Neighbours et al., 2002; Platz & Millar, 2001). Similarly, items reflecting four gambling risk themes—financial cost, negative emotional effects, preoccupation, and relational disruptions—were used as they denoted the recognized signs of problem gambling (APA, 1994). Of the 48 items entered into the original factor analyses, 23 items were retained and included in the GEQ.

The three positive expectancy scales of the resulting GEQ reflect a combination of the benefit themes originally suggested to participants. In keeping with previous research (Gupta & Derevensky, 1998a; Neighbours et al., 2002), adolescents viewed money as a

distinct positive outcome of gambling; all three items that were used to denote money-making possibilities remained representative of the construct and encompassed the money scale. The complexity of items found within the enjoyment/arousal and self-enhancement scales, however, suggest that other positive outcome expectancies of gambling are not as discrete. The enjoyment/arousal scale includes items denoting enjoyment, excitement, relief from boredom, escape/tension reduction, and social interaction. The structure of the enjoyment/arousal scale suggests that adolescents anticipate and view gambling as a socially acceptable form of entertainment, an activity that holds the potential to stimulate high levels of excitement while simultaneously relieving stress as a form of escape. Adolescents positively perceive gambling as a diversion from the tediousness of daily life. Moreover, gambling activities serve to facilitate social interactions with friends and/or family. The self-enhancement scale includes items reflecting potential outcomes of social gains as well as independence. The composition of the self-enhancement scale suggests that adolescents further perceive gambling as providing an opportunity to feel good about themselves and to assert their own importance by impressing others and/or by establishing autonomy from others. The self-enhancement scale represents a new way of viewing gambling from an adolescent perspective, one that was not fully identified in previous research with adolescent and college-age samples (Gupta & Derevensky, 1998a; Neighbours et al., 2002; Platz & Millar, 2001).

Noticeably absent from the positive expectancy scales of the GEQ are five of the six escape/tension reduction items thought to be an important determinant of problem gambling. At the outset of the analyses, escape-related items loaded equally on both positive and negative expectancy scales and therefore were removed. On one hand, "escape" was perceived as a negative outcome of gambling, as adolescents perceived potential danger in being able to escape problems through gambling; on the other hand, adolescents also perceived the benefit of escaping problems through such an activity and entering into a dissociated state as a positive attribute. Since the measure was developed based on the pooled responses of all adolescents, it is likely that these discrepancies are a result of the divergent perceptions of non-problem gamblers and problem gamblers (Gupta & Derevensky, 1998a). Due to factor analytic techniques employed in the development of the GEQ, differences based upon degree of gambling severity on such escape-related items were not examined. Further research is therefore warranted to define their perceived meaning as an expectancy construct among adolescents.

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

Surprisingly, adolescents did not perceive the financial costs of gambling as a discrete negative outcome expectancy. Items reflecting the risk of losing money loaded approximately equally on all negative outcome expectancy scales at the outset of the analyses and were therefore removed. These analyses suggest that adolescents perceive the risk of losing money as being parallel to the cognitive, behavioral, and emotional risks of gambling. Intuitively, the financial cost of gambling is a negative outcome, yet the results of the factor analysis suggest that it may not be distinct from other types of negative gambling

outcomes in the minds of adolescents. Similar conclusions can be made for items targeting the risk of relational problems. Items reflecting the loss of trust and approval from family and friends loaded equally across the negative outcome expectancy scales; the items failed to fall within one scale. One can propose that although adolescents perceive the negative impact that gambling can have on one's relationships with family and friends, it is also subsumed within other negative gambling outcomes.

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

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

These findings support the need for further research in the area of youth gambling outcome expectancies. In particular, it is important to explore the salience of these positive and negative outcome expectancies across age, gender, and degree of gambling-related problems. It is likely that using this scale provides a viable method of understanding and explaining why some individuals engage in gambling to excess, why most gamble responsibly, and why others choose not to gamble at all.

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Appendix A

Benefit Themes

Money

1. I get rich.

2. I win money.

3. I make a profit.

Enjoyment

1. I enjoy myself.

2. I have fun.

3. I feel good.

4. I have a good time.

Excitement/Arousal

1. I feel a rush.

2. I get a thrill out of gambling.

3. I feel excited.

Boredom

1. I will pass time.

2. I will deal with boredom.

3. I will stop being bored.

Social Interactions

1. I spend time with friends and family.

2. I am surrounded by similar people.

3. I spend time with people I like.

4. I feel more accepted by people.

5. My friends and classmates think I am cool.

Escape/Tension Reduction

1. I feel more relaxed.

2. I take my mind off my problems.

3. I escape my problems.

4. I shut the world out.

5. I am distracted from my life.

6. I forget things I want to forget.

Independence/Autonomy

1. I feel independent.

2. I feel in control.

3. I feel powerful.

4. I feel like my own person.

Risk Themes

Financial Costs

1. I lose all my money.

2. I spend more money than I want to.

3. I spend more money than I should.

4. I have no money left.

Negative Emotional Effects

1. I feel ashamed of myself.

2. I feel guilty.

3. I feel sad or depressed.

4. I feel anxious or tense.

5. I feel stressed.

Preoccupation/Loss of Control

1. I want to gamble more and more.

2. All I think about is gambling.

3. I get hooked.

4. I'm not able to stop.

5. I feel in over my head.

6. I want to gamble all the time.

Relational Disruptions

1. My family gets upset.

2. I lose friends.

3. I lose the trust of my friends/family.

4. I only want to spend time with people who gamble.

5. My parents do not approve.

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