

## **Prevention of Problem Gambling: Modifying Misconceptions and Increasing Knowledge Among Canadian Youths**

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*Research on gambling demonstrates that youths are involved in gambling activities. As they take part in these activities, young people develop and maintain irrational thoughts about gambling and become at risk for developing severe gambling problems. In a previous study, a French video was designed specifically to correct misconceptions and increase knowledge about gambling (Ferland, Ladouceur, & Vitaro, 2002). Findings indicated that the video significantly improves subjects' knowledge about gambling and corrects their misconceptions. The present study aims to evaluate the effectiveness of the English version of that video. The sample comprised 506 grade 7 and 8 English speaking students from Canada. The results confirmed the efficacy of the video in increasing knowledge of gambling and correcting misconceptions concerning the outcome of these games. The implications of these results for the prevention of gambling problems are discussed.*

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**KEY WORDS:** prevention; gambling; youth; student; video; Canadian.

Youths currently in high school have been frequently exposed to gambling advertisements since childhood. Television, radio, magazines, and newspapers all present alluring advertisements for lotteries, casinos, bingo, horse racing, etc. These advertisements can lead young people to believe that gambling is all fun and excitement, and that it is an easy way to win big money.

Gambling takes place when an item of value, usually money, is staked on the outcome of an event that is to some degree, unpredictable (Ladouceur & Ferland, 2003). It is common to refer loosely to such events of uncertainty as

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random or governed by chance. In gambling, the primary task of gamblers is to use information to try to predict the outcome of an event that is essentially unpredictable.

Research shows that first contact with gambling occurs as early as grade school (Gaboury & Ladouceur, 1993; Ladouceur, Dubé, & Bujold, 1994; Wynne, Smith, & Jacobs, 1996). In a meta-analysis conducted among 7,700 youths in North America, Shaffer and Hall (1996) estimated that between 9.9% and 14.2% of adolescents are at risk for developing gambling problems, and between 4.4% and 7.4% present signs of pathological gambling. A recent study examining the evolution of youth's gambling involvement over an 8-year period demonstrated that the rate of at-risk gambling significantly increases over time, while the rates of gambling remain stable over the same period of time (Winters, Stinchfield, Botzet, & Anderson, 2002). As gambling habits seem to be well in place by late adolescence (Derevensky & Gupta, 1998; Derevensky, Gupta, & Cioppa, 1996; Vitaro, Ladouceur, & Bujold, 1996), an effective prevention program is needed to prevent the development of gambling problems.

Several theoretical approaches have given rise to different theories about the development of gambling problems, but the cognitive approach is by far the one most documented. According to this approach, gamblers fail to take into account the independence of each turn when gambling. This cognitive error leads them to believe that they can control the outcome of the game, either by developing a game strategy based on, or using, the results of their previous games. According to Ladouceur and Walker (1996, 1998), this "illusion of control" explains why some people develop gambling problems.

Years of working with pathological gamblers in treatment enabled us to observe that most gamblers behave as if the act of gambling actually involves some element of personal skill, and that using one's skills can influence the game's outcome. In gambler's mind, skill can be superimposed over chance. This is often described as an "illusion of control," referring to the belief that the outcome of a chance event can be influenced or controlled, to some degree, by one's skills or abilities (Ladouceur, Sylvain, Boutin, & Doucet, 2002).

If our goal is to prevent the development of problem gambling in young people, giving young adolescents real facts about gambling may be an important first step in prevention (Ladouceur & Ferland, 2003). By providing youths with a more realistic view of gambling than that given by the media, it may be possible to limit their interest in gambling and restrict their participation in this activity. A 20-minute French video was thus developed to inform youths about gambling and to correct their misconceptions regarding the extent to which the game can be controlled. Previous results of studies using the French version of the video revealed that it significantly improves subjects' knowledge about gambling and corrects misconceptions, leading to a more sensible and realistic attitude towards gambling (Ferland et al., 2002).

In the present study, the effectiveness of the English translation of the video is evaluated among an English speaking adolescent sample. An experimental and a control condition were thus used. It is hypothesized that the experimental group will be significantly better than the control group, resulting in a greater increase in knowledge and decrease in erroneous perceptions regarding gambling.

## METHOD

### Participants

Participants ( $N = 506$ ) were English speaking students in grades 7 and 8 from two schools in the Quebec City area and two schools in New-Brunswick. Prior to the beginning of the study, a consent form was sent to parents, and only those students who obtained parental permission were allowed to participate.

Of the 506 participants, 422 completed both the pre-test and the post-test questionnaires, and of these, 371 completed all 16 items. Youths in grade 7 accounted for 54.2% of participants; 51.8% of participants were male, and the mean age of all participants was 12.8 years ( $SD = 0.7$ ; range from 12 to 15).

Schools were randomly assigned to one of the two conditions using a random number table. The experimental group comprised 204 students, while the control group was composed of 167 students. There were no gender or age differences between groups, though there were 33 more grade 7 students in the experimental group than in the control group ( $\chi^2 = 4.4$ ,  $p = 0.036$ ).

### Instruments

A short questionnaire examining knowledge and misconceptions about gambling was used. A total of seven (7) questions were used to assess misconceptions about gambling, and nine (9) questions were used to assess knowledge. The following are examples of questions targeting knowledge and misconceptions: "Lottery is a gambling activity," and "When I play bingo, I have more chances of winning if I bring good luck charms." All questions could be answered by: "I totally disagree," "I disagree," "I agree" or "I totally agree" (see Appendix A for a copy of the questionnaire).

The instrument was derived from the questionnaire used by Gaboury and Ladouceur (1993). The items were reformulated before verifying understanding of each item among students in grades 5, 6, 7, and 8. A factorial analysis revealed a two-factor structure. The first factor corresponded to knowledge about gambling (Eigen values = 3.54, accounting for 18.6% of the variance) and the second factor corresponded to misconceptions about gambling (Eigen values = 2.44, accounting for 12.9% of the variance). The reliability of the knowledge scale is very good,

with Cronbach's alpha at 0.74, while the reliability of the misconception scale is moderate, with Cronbach's alpha at 0.58.

The misconception score could vary from 0 (no errors) to 7 (all wrong answers), while the knowledge score could vary from 0 (no errors) to 9 (all wrong answers). A significant decrease in the number of errors reflects the impact of the experimental condition. The number of errors committed on the misconception and knowledge questions were used as dependent variables.

### Video

The video lasts 20 minutes and has a humorous style. The two main characters are "Lucky," a sarcastic clown, who has lost all his money gambling, and his assistant. The two were invited to a school to present a show about gambling. Throughout the video, Lucky explains the differences between gambling and games of skill. He also talks about the true chances of winning, the illusion of control, the notion of randomness, lucky charms, and the uselessness of strategies.

### Procedure

All students from both groups were met twice. At the first meeting, a member of our research team provided information on the study. They were told that their answers to the questionnaires would be anonymous, that they were free to not participate, and that no questions would be asked should they refuse. They were also asked to sign a consent form before completing the questionnaire.

Students then filled out the questionnaire, which took about 10–15 minutes. After its completion, students in the experimental group watched the video, while students in the control group proceeded with regular school work. A week later, students from both groups completed the questionnaire for a second time. The educational video was then presented to the control group, and a brief question period followed the presentation.

## RESULTS

An analysis of covariance using the pre-test scores as a covariate was performed to test the equality of post-test scores. This was done in order to control for possible differences between groups at pre-test.

The ANCOVA revealed significant group effects for knowledge post-test scores ( $F(1, 368) = 7.723, p < 0.01$ ; Eta Squared = 0.021; power = 0.79), and for misconceptions post-test scores ( $F(1, 368) = 15.772, p < 0.001$ ; Eta Squared = 0.041; power = 0.98). As hypothesized, the analysis revealed that the experimental condition significantly improved participants' knowledge, and

significantly decreased their misconceptions as compared to the control group. The Video condition was therefore significantly better than the control condition at decreasing the number of errors made by students on both the misconception and the knowledge questions.

## DISCUSSION

The results of this study confirm that a video, designed to provide specific information about gambling, is a meaningful medium among students. This finding confirms that both French and English versions are effective. Consequently, those findings confirm our hypothesis that a video-based intervention would have a positive effect in increasing knowledge and in modifying misconceptions towards gambling.

The cognitive treatment developed by Ladouceur et al. (2002) has already demonstrated that replacing erroneous beliefs about gambling with more realistic ones decreases interest in gambling activities. It seems that a major part of any intervention aimed at preventing the development of excessive gambling habits should therefore deal with this aspect of gambling problems. The results of the present study suggest that the video "Lucky" is effective in changing the kind of erroneous beliefs that Ladouceur et al. (2002) associates with the motivation to gamble.

Previous prevention research in domains of interest other than gambling, found that a preventive intervention could increase the frequency of the target behavior that one is trying to decrease (Brown, D'Emidio-Caston, 1995; Dishion, & McCord, 1999). Although the short preventive intervention presented here may have had a significant impact on the knowledge and misconceptions that youths hold toward gambling, this study did not evaluate the impact of the intervention on participants' gambling behavior. Would improvement in knowledge and misconceptions, obtained with our video, restrain gambling behavior? Further studies should examine this question. In addition, though the two versions of the video prove to be effective among two different populations, it is quite possible that a sole preventive intervention is not the best way to address gambling within different populations. Consequently, it would be interesting to evaluate the efficacy of our video among youths with a variety of gambling habits and personality traits.

One limitation of this study is the small effect sizes obtained on the two dependent variables. It is possible that some elements could have contributed to explain this phenomenon. First of all, the video used was presented in class and lasted only 20 minutes. It should also be noted that the video was the only information on gambling that the students received before completing the post-questionnaire one week later. Although this one week delay could not explain everything, it is worth considering that students are confronted with a lot of new information on various topics during a school week. Ferland, Ladouceur, and Jacques (2001) have already

demonstrated that the increase in knowledge dissipates slowly over time, even after a 3 hour gambling preventive intervention. It is therefore more than interesting to obtain a significant increase in knowledge and decrease in misconceptions with such a short and effortless intervention. However, the small effect sizes obtained here demonstrate that the use of a video, as good as it may be, has to be included within a more extensive preventive intervention and should not be used as the only preventive measure.

### APPENDIX A: QUESTIONNAIRE

1. When I'm betting, I must know the tricks and strategies if I want to win.
2. I don't have more chances to win at the lottery if I choose my numbers myself.
3. Betting is a good way to obtain money quickly.
4. Betting money is a good way to take up a challenge.
5. Anyone can stop betting easily.
6. Betting money can become a problem like alcoholism and drug addiction.
7. Buying lottery tickets is a type of gambling.
8. All pinball machines and electronic games are not considered as gambling activities.
9. Gamblers have no control on the gains and losses in a gambling activity.
10. At lottery, choosing numbers based on the numbers that came out most often during the year can be a good way to increase your chances to win.
11. It is impossible to predict chance.
12. When I play bingo, I have more chances of winning if I bring my lucky charm with me.
13. It is impossible to predict the winner or the loser at any gambling activity.
14. If I lose while gambling, it's because I played badly.
15. If I gamble often at a game of chance and money, I can become good and win more money.
16. If I play lottery 6/49, I have more chances to win if I choose my lucky numbers.

Answers: I totally disagree; I disagree; I agree; I totally agree

Misconception (7 questions): 1, 3, 4, 5, 12, 14, 15

Knowledge (9 questions): 2, 6, 7, 8, 9, 10, 11, 13, 16

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