

The Evaluation of a 1-h Prevention Program for Problem Gambling

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Abstract Reports on the pre-post controlled experimental evaluation of a problem gambling prevention program aimed at school age youth. The program was very positively received by the students. We found a significant, but small improvement in the students' understanding of random chance; however, we did not find any evidence for changes in gambling behaviour, coping strategies, or attitudes towards gambling.

Keywords Youth · Gambling · Prevention

Previous studies have shown that problematic gambling amongst youth is related to poor coping skills (Gupta and Derevensky 1998a, b) and erroneous beliefs about random chance (Ladouceur and Walker 1996). Turner et al. (2007b) have reported significant negative correlations between the problematic gambling and the students' understanding of random events and their reported use of effective coping skills.

In the present paper, we describe the evaluation of a problem gambling prevention program aimed at school age youth. The program was a 1-h live presentation given in the schools by the authors that explored the nature of gambling, random events, and how the emotional reaction to winning and losing can lead to problematic gambling. The program also included two short skits acted out by student actors that illustrated how emotional upset, early wins or erroneous beliefs can lead to problematic gambling. The goal was improve the students understanding of the relationship between emotion, experience and beliefs and to teach the students how not to be fooled by random chance.

The approach was to promote reasoned action (Evans 2003) by focusing on the link between errors in reasoning about random events and the emotional roller coaster of

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gambling. The intervention did not consist of a list of the true odds of winning lotteries or other games. This would have been pointless because we know that pathological gamblers know as much, if not more, about the odds of winning as non-problem gamblers (Turner et al. 2006; Lambos and Delfabbro 2007). Turner et al. (2006) found that severity of pathological gambling was in fact positively correlated with knowledge of game related odds of winning, $\rho=0.23$, $p<0.05$ (e.g., chance of drawing a spade from a deck of cards), but negatively related to knowledge of the nature of random chance (e.g., independence of random events), $\rho=-0.35$, $p<0.001$. The problem with pathological gamblers is that they believe they can beat the odds (Turner et al. 2006). Thus the focus was to debunk myths about gambling (e.g., staying at the same machine or playing the same numbers all the time increases your chance of winning) and talk to the students about how random chance can fool people into believing that they can beat the odds. We believe that if people understand what to expect from random chance it will decrease the impact of such events.

A recent literature review in the field of substance abuse cast doubts on the efficacy of educational interventions (Babor et al. 2003). We believe there is somewhat more reason to be positive about the potential effect of interventions aimed to teaching students about random chance and coping skills in relationship with gambling. In our approach we did not tell the students that gambling is inherently bad, but rather tell the students not to be fooled by chance. In this way we believe we can tap into the students' desire for autonomy to motivate reasoned action (e.g., don't be fooled by random chance).

The purpose of this study was to determine if a 1-h intervention on problematic gambling could improve the students' knowledge of random chance, and shift them from unhealthy approaches to coping with stress (escape, distraction) towards healthier approaches (problem solving and social support). It was hypothesized that the 1-h program would significantly improve the students' understanding of random chance, the quality of their coping strategies, the understanding of the role of skill and luck in games of chance and significantly decrease their interest in gambling.

Method

Participants

A total of 374 students ranging from grade 5 to grade 12 from 18 different schools in Ontario completed both the pretest and the posttest (control=162, experimental=212).

Measures

An anonymous evaluation questionnaire was handed out immediately after the session asking the students for feedback on our presentation. In addition, several measures were included in the pretest and posttest questionnaires: (1) a 14-item version of random event knowledge test (REKT; Turner et al. 2006, 2007b), (2) the SOGS-RA (Winters et al. 1993), (3) a shortened version of the luck and skill questionnaire (Herman et al. 1997), (4) a gambling activities checklist, (5) an activities preference questionnaire (based on Allen et al. 1992, but changed to a rating scale), which ask students how much they enjoyed several different activities, and (6) an open-ended questionnaire asking the students how they would cope with various stressful situations (Turner et al. 2007b). The coping questionnaire data were scored in terms of the type of coping strategy (e.g., escape, distraction, problem-solving, and social support).

Design and Procedure

The design of the study was a pretest/posttest controlled experimental study. The participants in the study completed a series of questionnaires twice, 2 months apart (pretest and posttest). Student in the experimental group attended a 1-h presentation on gambling approximately 1 week after the pretest. The control group received no intervention.

The study was approved by both the Research Ethics Board of CAMH and Toronto School Board. A researcher visited each class and explained the purpose of the study to the students and handed out a consent form. A week later, the researcher returned to collect the consent forms and administer the questionnaires. The researcher then handed out the questionnaires to students in their classes whose parents had consented to the student's participation. The first page of the questionnaire was an assent form that again explained the purpose of the study and informed the student that they had the right to not answer any question or questionnaire they did not wish to answer. The assent form was detached from the questionnaire and collected separately to ensure the students' anonymity. The only link between the assent form and the questionnaire data was a subject number. The students were given approximately half an hour to complete the questionnaires. The younger (grade 5 and 7) students needed about 10 min more than the high school students.

The prevention intervention began with a mock gambling activity where the students bet plastic chips on the outcome of a dice game. The mock gambling exercise was used to illustrate the emotional roller coaster ride of winning and losing and its relationship to reasoning. The goal was to inoculate the students against the effects of this emotional roller coaster ride, and to promote reasoned action (Evans 2003) about the experience of random chance. From an ethical point of view, this game was no more a gambling game than the dice based board games that 87% of the students report playing. The game itself was not like any of the standard commercial dice games that are found in casinos. The house edge was very large (four plastic chips returned for a win or a 33% house edge) which allowed us to also teach the students about how commercial gambling games are set up in favor of the casino. The students were not required to participate and a small number refused to take part in the exercise but did take part in the discussion. The game was followed by a group discussion of the emotions that are released by winning and losing, and the importance of being aware of how this can affect your ability to think clearly. The next part consisted of an interactive lecture on the concept of skill, luck, the house edge, chaos (e.g., fundamental uncertainty), and how random chance can fool you into believing you can win. The focus was to debunk myths about gambling (e.g., staying at the same machine or playing the same numbers all the time increases your chance of winning) and talk to the students about how random chance can fool people into believing that they can beat the odds. One demonstration involved sprinkling small pieces of paper confetti on the floor and then illustrating how easy it is for the human mind to see patterns in the randomly sprinkled confetti (e.g., we could nearly always find a dinosaur or happy face in the confetti).

In the final part of the program, a group of adolescent actors performed two skits illustrating how people can become overly involved in gambling because of emotional distress and poor coping skills, (skit 1), erroneous beliefs (skit 2), or an early win (skit 1 and 2). Each skit was followed by a brief discussion during which we asked the students how the characters in the skits could have avoided the problem. Finally, one of several different alternative endings to each skit was performed, based on the students' feedback.

The test session was repeated a second time 2 months after the first questionnaire session. After the questionnaires were completed the researcher debriefed the students about the study, answered any questions they had about gambling, and gave the students an

entertaining mini-lecture on how random chance can fool you into believing you can beat the odds.

Results

Over 93% of the respondents felt that the program was a good idea, 92% felt that it was interesting and 82% felt that it would prevent some people from developing gambling problems. Only 21% of the respondents felt that the program needed to be completely rewritten, and only 22% felt that no one would actually learn from it. A majority of the students reported liking the material on random chance (82%), coping skills (80%), the discussion of how different games work (88%) and the discussion of problem gambling (87%).

Only one of the hypothesized effects reached significance. The experimental group increased their scores on the REKT from 60 (SD=15) to 67 (SD=16). The control group scored 67 (SD=17) on the pretest and 68 (SD=17) on the posttest. The difference between pretest and posttest scores was analysed using both a repeated-measure ANOVA and mixed-models ANOVA on difference scores. We found a significant intervention effect on the random events knowledge scores as an interaction in the repeated measures analysis $F(1,360)=6.8$, $p<0.01$, $\eta^2=0.02$, and as a test of difference scores in the mixed models analyses $F(14.4)=5.7$, $p<0.05$. According to the mixed models results, students in the experimental condition increased their REKT scores by 7.5% (95% CI 0.036 to 0.113) whereas the students in the control group only increased their scores by 1.0% (95% CI -3.3 to 5.3%). We did not find any significant effect of the intervention in terms of gambling behavior, SOGS-RA scores, attitudes towards gambling, coping skills, or the students' rating of the role of luck and skill in gambling.

Discussion

This was our first attempt to develop and test a prevention program aimed at youth gambling. In terms of feedback, the students generally liked the program. The results regarding random chance were encouraging but the impact was rather small.

Based on these findings we conclude that a 1-h intervention was insufficient to create a change in the students' gambling involvement, attitudes towards gambling, reported problematic behavior, or reported use of healthy coping strategies.

We found no evidence that the program was able to decrease the students' interest in gambling. On the other hand, we also found no evidence that the program increased the student's interest in gambling.

The effect size relative to the variance of the measures was quite small, accounting for only 2% of the variance when measured across students. In another study we are conducting (Kennedy et al. 2004; Turner et al. 2007a), the average score on the REKT for adult non-problem gamblers was 67% (SD=13%), whereas the average score for problem and pathological gamblers was 58% (SD=13%), a difference of 9%. In this study we shifted the average score for these students 7.5% from a score nearly as low as that of the typical pathological gambler to a score close to the average for adult non-problem gamblers, thus the increase in the average score for the students is encouraging. This must be weighed against the fact that we failed to alter the students' coping skills or their attitudes towards gambling.

There are a number of limitations to the findings. First the followed up period was 2 months. A longer delay before the follow-up test session would have been better, but was not feasible because the study had to be arranged, implemented and completed for each particular class within a particular semester. Second, we only measured knowledge, not behaviour. We cannot determine if improvements in the students' understanding of random chance would translate into an actual change in the students' gambling behaviour. The recent literature review of educational interventions in the substance field found little evidence in support of educational interventions (Babor et al. 2003). In the present case however, we believe there is somewhat more reason to be positive about the potential effect of interventions aimed at teaching students about random chance. First, we know from experience teaching statistics and methodology courses that it is possible to improve students' reasoning about random chance. Secondly, the goal of our program—improving reasoning about random chance—is not incompatible with the students' desire for autonomy. We believe that the focus on how not to be fooled by random chance meshes well with the students' desire for autonomy, whereas a “don't gambler, its bad for you” program would clash with their desire for autonomy. Third, even if our attempts to decrease problem gambling were a complete failure, improving the students' understanding of random chance would still be an accomplishment. In this context we are particularly pleased that 82% of the students reported enjoying the math content about the nature of random chance.

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