What this research is about

People with an addiction often pay more attention to cues related to their addiction than other cues in the environment. This is known as attentional bias, which has been linked to problem gambling. Problem gambling is repetitive gambling behaviour that leads to harms for the gamblers, their family and community. Studies show that adults with problem gambling are more likely to direct attention to gambling cues and spend more time looking at those cues than people without gambling problems. To date, the role of attentional bias in adolescent gambling has not been explored.

The first aim of this study is to examine attentional bias in adolescent gamblers. The second aim is to examine if attentional bias is related to craving. Research in substance use has found that attentional bias can lead to craving for the drug. However, there is little gambling research on the relationship between attentional bias and craving. Furthermore, gambling often occurs with alcohol use. Drinking alcohol may lead to faster or slower reaction to gambling cues, depending on the situation. Thus, a final aim of this study is to examine if alcohol use has an impact on attentional bias toward gambling cues.

What the researchers did

Participants were 87 adolescents attending a secondary school in the area of Caserta, Italy. They were between the ages of 16 to 20 years old and had gambled at least once in the past year. The majority of participants were male (94.3%).

Participants first completed a modified version of Posner Task. In this task, participants were shown 40 gambling cues and 40 neutral cues. Gambling cues included pictures of slot machines, chips, and lottery tickets, and neutral cues included pictures of gas pumps, buttons, and watches. The task had 160 trials. For each trial, participants saw a fixation cross (+) on a computer screen which was followed by a gambling or neutral cue. The cue appeared for a period of 100 or 500 milliseconds (ms). Afterward, a blue dot appeared, either in the same or opposite side of the cue. Participants had to press a button on a keyboard to indicate the location of the dot as quickly and accurately as possible. The researchers recorded their accuracy and reaction time (i.e., the time it took for participants to press the button).

Participants completed several questionnaires after the Posner Task, including:

- The South Oaks Gambling Screen Revised for Adolescents (SOGS-RA) was used to assess how...
severe their gambling had been in the past year. For the analyses, participants were assigned into two groups: non-problem and problem gambling.

- The Gambling Craving Scale (GACS) was used to assess participants' craving for gambling. The GACS measures three aspects: desire (e.g., “I have an urge to gamble”), anticipation (e.g., “Gambling would be fun right now”), and relief (e.g., “If I were gambling now, I could think more clearly”).

- Alcohol Use Disorders Identification Test (AUDIT) was used to assess how often and the amount of alcohol drank. Participants also reported any problems caused by drinking alcohol.

The researchers compared between adolescents with and without problem gambling in their attentional processes toward gambling and neutral cues.

**What the researchers found**

Adolescents with problem gambling were more likely to pay attention to gambling cues than neutral cues. This was not observed in adolescents without problem gambling. Compared to adolescents without problem gambling, those with problem gambling paid more attention to gambling cues when those cues were shown for 500 ms. But the two groups did not differ when the gambling cues were shown for only 100 ms. These results suggest that adolescents with problem gambling were not more likely to automatically direct attention to gambling cues. However, they maintained their attention on gambling cues for longer period.

Adolescents with problem gambling had greater anticipation that gambling could be fun than those without problem gambling. Their craving was not related to a desire to gamble or an expectation of relief. Adolescents with problem gambling reported higher alcohol use. Alcohol use affected the attentional polarization toward gambling stimuli in problem gamblers, enhancing the easy detection of and a difficulty disengaging from gambling cues, which in turn fosters gambling behaviour.

**How you can use this research**

This study provides insights into attentional bias in adolescent problem gambling, namely in the maintenance of attention on gambling cues. It suggests that treatment programs to reduce attentional bias may help prevent more severe gambling among youth. These programs could also consider the client’s alcohol use, which may increase attentional bias to gambling cues. Future research could use more direct methods to assess attentional bias (e.g., eye movement tracking).

**About the researchers**

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Gambling Research Exchange Ontario (GREO) has partnered with the Knowledge Mobilization Unit at York University to produce Research Snapshots. GREO is an independent knowledge translation and exchange organization that aims to eliminate harm from gambling. Our goal is to support evidence-informed decision making in responsible gambling policies, standards and practices. The work we do is intended for researchers, policy makers, gambling regulators and operators, and treatment and prevention service providers. Learn more about GREO by visiting greo.ca or emailing info@greo.ca.