RISK AND PROTECTIVE FACTORS FOR YOUTH PROBLEM GAMBLING: A SYSTEMATIC REVIEW AND META-ANALYSIS OF LONGITUDINAL STUDIES

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RESEARCH SUMMARY

Background

Public health frameworks focus on the individual and external societal determinants that serve as risk and protective factors associated with problem gambling. Risk factors are conditions that are associated with an increase in the likelihood of problem gambling, while protective factors are most often conceptualised as conditions that are associated with a decrease in the likelihood of problem gambling, regardless of exposure to identified risk factors. These protective factors are sometimes referred to as compensatory or promotive factors. Risk and protective factors can be organised according to the socio-ecological model, a multi-level framework considering individual, relationship, community, and societal contexts. Although most evidence for risk and protective factors for problem gambling in childhood, adolescence and young adulthood comes from cross-sectional studies, the insights from longitudinal studies shift the policy focus to factors that are predictive of youth problem gambling at a future time-point.

Review aims

The primary aim was to identify youth risk and protective (compensatory) factors associated with the development of gambling problems (using Stouffer’s method and meta-analyses). Secondary aims were to examine whether findings were robust to the quality of study methodologies (using sensitivity analyses) and to explore gender differences in these factors (using subgroup analyses).

Systematic search

The systematic search procedure, which included a search of electronic databases for peer-reviewed journal articles and a grey literature search, identified 15 studies published in 23 articles. Similar variables or measures from the included articles were grouped into thematic factors.

Characteristics of included studies

Most studies were published from 2000 onwards (87%), were recruited from North America (70%), and recruited participants from schools (70%). The median intervals from first to final evaluations was 6 years and the median retention rate from the first to final evaluations was 71%. The median sample size was 1,034 and 575 at the first and final evaluations, respectively. The median average participant age was 15 and 22 years at the first and final evaluations, respectively. The median proportion of men in the samples was 52% and 53% at the first and final evaluations, respectively. The most commonly employed problem gambling measures were the South Oaks Gambling Screen-Revised Adolescent (30%) and the South Oaks Gambling Screen (22%).

Risk of bias assessment and sensitivity analyses
Most studies employed standardised problem gambling measures (87%), employed current problem gambling measures (87%), and did not have any sponsorship from the gambling industry (83%). Most studies employed a representative sample (78%), conducted the first assessment in adolescence or young adulthood (74%), and reported non-adjusted effect sizes (70%). Fewer studies had follow-up periods longer than 5 years (57%) or provided correlation coefficients ($r$) as effect size estimates (22%). The sensitivity analyses revealed that the results of the review were generally robust to the inclusion of studies using non-standardised gambling measures, lifetime gambling measures, follow-up periods shorter than five years, gambling industry sponsorship, adjusted effect sizes, effect size estimates other than $r$, first assessment during childhood, and non-representative samples.

**Risk and protective factors**

The articles explored the associations between 88 thematic factors and youth problem gambling. However, 55 thematic factors (25 individual, 17 relationship, 12 community, 1 societal) were not eligible for inclusion in the synthesis of findings as they were investigated in only one study sample. The remaining 33 thematic factors (29 individual, 2 relationship, 2 community) were included in the synthesis of findings.

The review identified 18 risk and protective factors for problem gambling: 13 individual risk factors (alcohol use frequency, antisocial behaviours, depression, male gender, cannabis use, illicit drug use, impulsivity, number of gambling activities, problem gambling severity, sensation seeking, tobacco use, violence, undercontrolled temperament), 1 relationship risk factor (peer antisocial behaviours), 1 community risk factor (poor academic performance), 1 individual protective factor (socio-economic status), and 2 relationship protective factors (parent supervision, social problems). Small to medium effect sizes were generally identified for these factors.

The remaining 15 thematic factors for which results were synthesised (activation control, age, aggression, anxiety symptoms, attention problems, big early loss, big early win, dispositional attention, early gambling onset, negative affect, psychological distress, religious attendance, safety-related risk taking, sex risk taking, and suicidal ideation) were not significant. The planned subgroup analyses examining gender differences in risk and protective factors were not conducted due to an insufficient number of the studies providing gender-specific associations.

**Limitations of the existing evidence base**

There is limited evidence identifying risk and protective factors for youth problem gambling. Further research is required to identify non-individual risk factors, protective factors that do not operate in the presence of risk (compensatory factors), and protective factors that operate in the presence of risk. Other limitations include: significant estimate variability; over-representativeness of North American samples; use of non-standardised risk and protective factor measures; failure to report important study characteristics; relatively small numbers of problem gamblers; relatively high rates of attrition; use of low threshold definitions of problem gambling; measurement of gambling problems at only one evaluation; use of self-report measures, and measurement of time invariant predictors.
Implications for research translation

The findings have implications for public health initiatives, including the development of prevention and intervention programs for problem gambling. The risk factors identified in this review are similar to those for other problem behaviours, such as alcohol, tobacco use, marijuana use, and delinquency. These findings highlight the need for global prevention efforts that target multiple problem behaviours, not just problem gambling, as well as the importance of screening young people with these high-risk profiles for gambling problems. To date, however, there is insufficient investigation of protective factors to adequately guide problem gambling prevention initiatives.