The WAGER, Vol. 26(12) – Problem gambling risk factors in the general adult population across 104 studies: How do they rank?

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Individual-level factors associated with the risk of experiencing problem gambling (PG) are numerous and include socio-demographic, psychosocial, substance-related, and gambling behavior factors. Rates of PG are substantial in the U.S., with published research showing that 1% to 3% of adults (2.6 to 7.8 million people) report experiences consistent with PG. An understanding of which risk factors are most relevant and strongly associated with PG is necessary to guide prevention, intervention, and treatment efforts. This week, The WAGER reviews Youssef Allami and colleagues' meta-analysis of 104 gambling prevalence studies that sought to determine which risk factors are most strongly associated with PG.

What were the research questions?

What are the effect sizes of the most frequently assessed PG risk factors? How do these risk factors rank when compared to one another by their effect sizes? Do effect sizes differ across gender?

What did the researchers do?

The researchers identified 104 gambling prevalence studies conducted in the general adult population. Each study reported on at least one PG risk factor[1]. Fifty-seven risk factors were reported on in total. Risk factors comprised four categories: (1) socio-demographic, (2) psychosocial, (3) gambling activity, and (4) substance use. The researchers conducted a meta-analysis to determine the mean weighted effect size (i.e., odds ratio) of each risk factor on PG. They then ranked risk factors from largest to smallest according to the relative strength of their association with PG. Finally, they conducted a subgroup meta-analysis of nine studies to examine how age as a risk factor varied between men and women.

What did they find?

Only four risk factors, all of which were gambling activities, were found to be

strongly associated with PG: engaging in Internet gambling, playing electronic gambling machines and slot machines, and playing poker (see Figure). Psychosocial and substance use risk factors generally had small- to medium-sized effects. Within the psychosocial category, risk factors related to mental health (e.g., attempted suicide or suicidal thoughts) were more strongly associated with PG than physical health problems. All socio-demographic risk factors had small or non-significant effect sizes. Men in every age group were found to be at higher risk for PG compared to women.

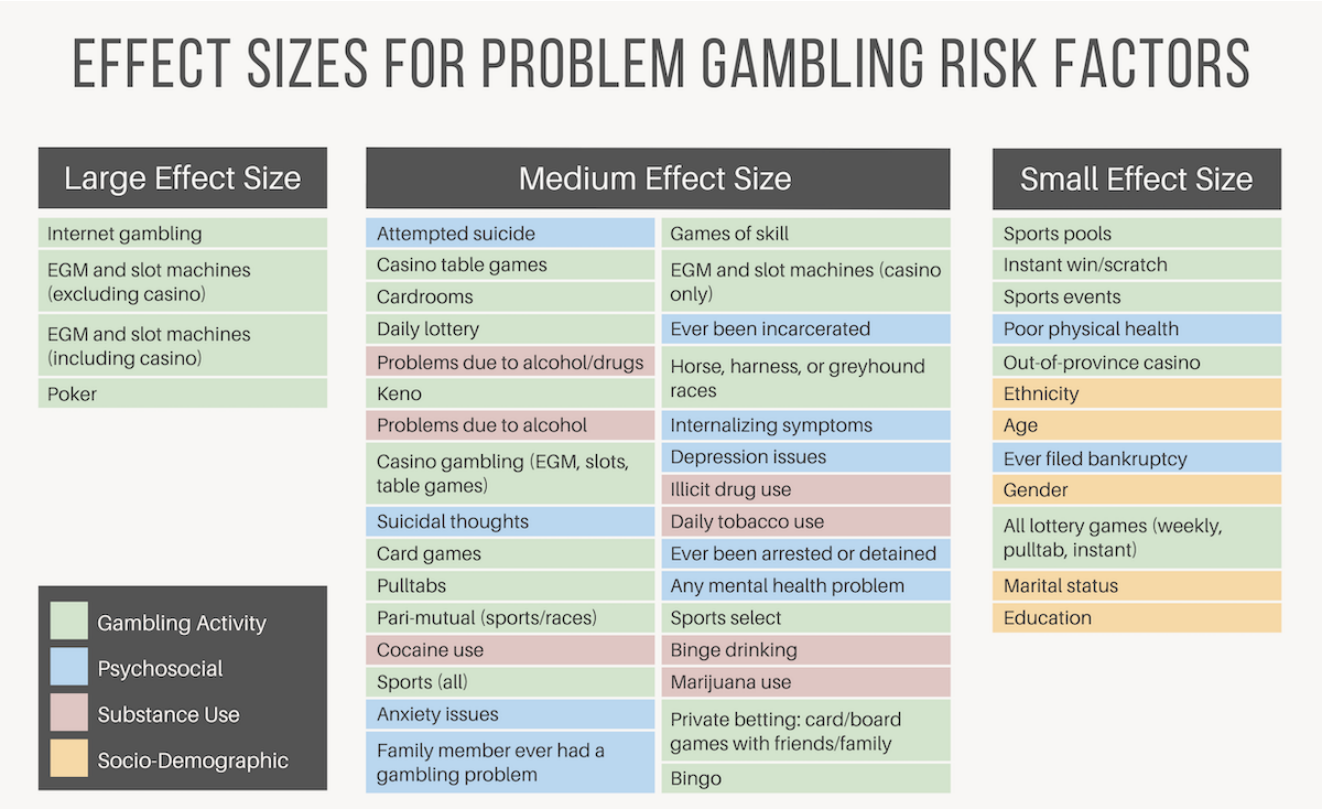

Figure. Effect sizes (large, medium, small) for problem gambling risk factors. Figure only shows effect sizes that were statistically significant. Click image to enlarge.

Why do these findings matter?

This meta-analysis ranked 57 individual-level risk factors by their strength of association with PG. Risk factors with larger effect sizes should be used to guide the development and implementation of targeted in-person and internet-based prevention and intervention efforts, and responsible gambling initiatives. Findings from this study indicate that such efforts should not focus heavily on socio-demographic factors, but instead focus on modifiable risk factors that are more strongly associated with PG, like substance use or certain gambling activities. These findings reaffirm the co-morbid relationship between PG and mental health

and substance use concerns, and are consistent with research which suggests that clinicians should be vigilant about this relationship and screen clients with these concerns for PG.

Every study has limitations. What are the limitations of this study?
The data utilized in this meta-analysis are cross-sectional; as such, causality cannot be determined (e.g., it cannot be determined whether suicidal thoughts came before or is a consequence of gambling problems). Additionally, some risk factors were defined or assessed inconsistently or unclearly across studies despite ultimately being pooled to determine a weighted mean effect size.

For more information:
Do you think you or someone you know has a gambling problem? Visit the National Council on Problem Gambling for screening tools and resources. For additional resources, including gambling and self-help tools, visit our Addiction Resources page.

— Kira Landauer, MPH

What do you think? Please use the comment link below to provide feedback on this article.

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[1] To be eligible for inclusion in the meta-analysis, a study needed to: (1) examine the relationship between one or more risk factors and PG, (2) be a quantitative study or technical report, (3) be published in English, French or Spanish, (4) use a valid and reliable instrument to measure PG, (5) only include adults 18 or older, (6) be published between Jan. 2012 and Mar. 2019, and (7) target a general population (i.e., not a small population subset). Individual studies could have included control variables (i.e., confounders), but the combined estimates reported in the meta-analysis did not control for confounders.