

The WAGER, Vol. 18(4) - The influence of expanded gambling opportunities in Iowa on disordered gambling rates

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The expansion of gambling opportunities raises some important public health issues. Researchers previously thought that expanded gambling opportunities would lead to increased rates of gambling and gambling problems. A growing body of evidence, however, suggests that the relationship between gambling opportunities and gambling problems is more complicated (LaPlante & Shaffer, 2007). Iowa provides a setting to examine this relationship further. Iowa first legalized riverboat casino gambling in 1990, and then land-based casinos in 2005. There are currently 21 casinos in the state, up from just seven in 1994. . Today's WAGER reviews a study (Black, McCormick, Losch, Shaw, Lutz, & Allen, 2012) exploring trends in gambling and disordered gambling over time in Iowa using data from three cross-sectional studies spanning more than 20 years.

Methods

- Researchers analyzed data from three telephone studies of gambling behavior conducted among randomly selected households in 1989, 1995, and 2012 [\[1\]](#),[\[2\]](#).
- All surveys collected demographic information, as well as the [South Oaks Gambling Screen \(SOGS\)](#) to assess gambling and disordered gambling.
 - Gambling participation includes any gambling regardless of consequences; it is defined by a SOGS score of 1 or higher.
 - Recreational gambling includes gambling without experiencing negative consequences; it is defined as a

- SOGS score of 1 or 2.
 - Problem gambling is defined by a SOGS score of 3 or 4.
 - Pathological gambling, the most severe form of disordered gambling, is defined as a SOGS score of 5 or greater.
- The analytic sample for the 1989, 1995, and 2012 studies were 750, 1,500, and 356, respectively.
- Response rates were 74%, 57%, and 11% for 1989, 1995, and 2012, respectively.
- Researchers then compared the rates of lifetime gambling behavior from the 2012 study to rates from the 1989 and 1995 studies using chi-squared and Fisher's Exact Test. Researchers did not report statistical comparisons between the 1989 and 1995 studies; however, we calculated these statistics and report them below.

Results

- The rates of gambling participation increased significantly between 1989 (13.6%) and 1995 (28.3%; $\chi^2 (1) = 60.0, p < .001$). The rate dropped significantly between 1995 and 2012 (17.1%; $\chi^2 (3) = 18.7, p < .001$). The 2012 rates were still significantly higher than in 1989, Fishers Exact Test, $p < .05$.
- In the 2012 study, 17.1% of the sample reported lifetime gambling participation. This represents a significant drop from 1995 (28.3%, $\chi^2 (3) = 18.7, p < .001$), but a significant increase from 1989 (13.6%, Fishers Exact Test, $p < .05$). The 1995 rate was significantly higher than the 1989 rate, $\chi^2 (1) = 60.0, p < .001$
- The rates of problem gambling increased significantly between 1989 (1.7%) and 1995 (3.5%; $\chi^2(1) = 6.7, p <$

.05). The rates decreased from 1995 to 2012 (2.2%), but the difference did not

reach significance, $\chi^2 (1) =$

1.5, *ns*. Problem gambling rates

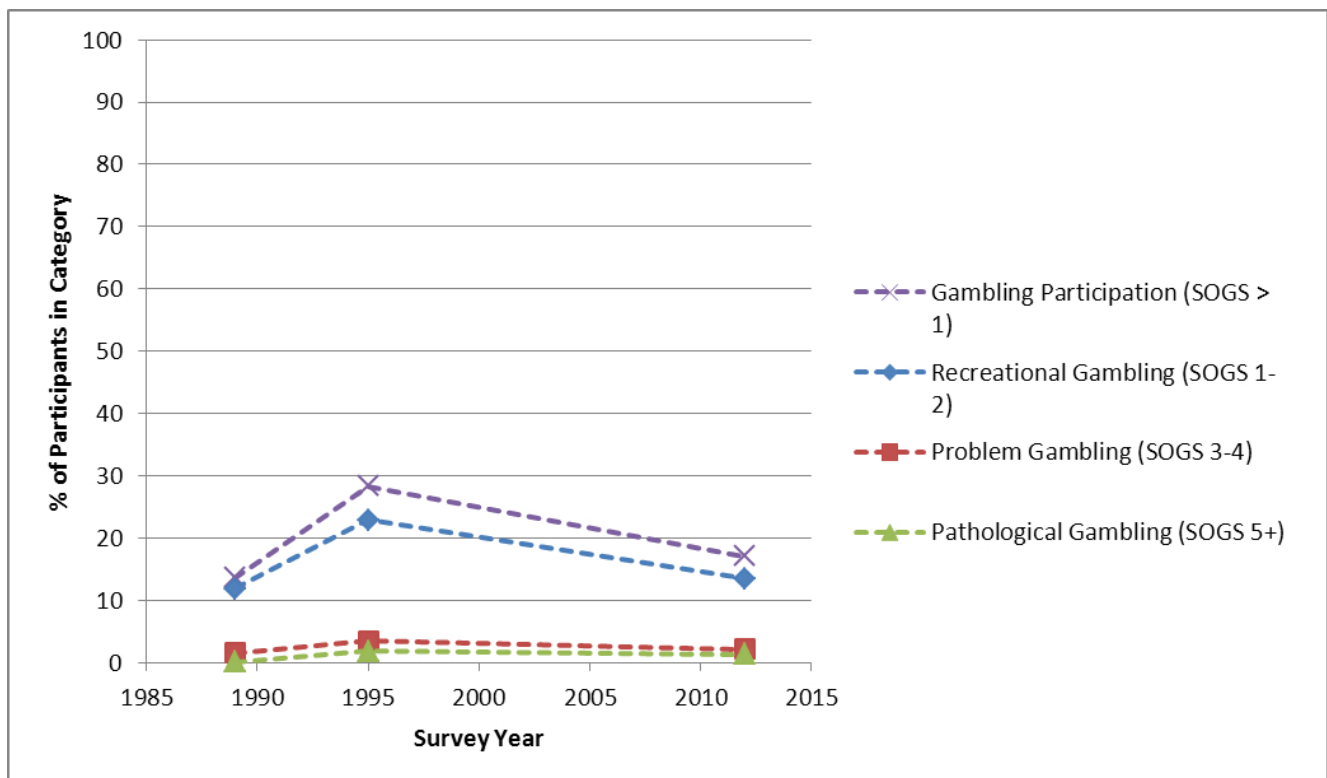
increased between 1989 and 2012, but this difference did not reach significance,

$\chi^2 (1) = 0.57$, *ns*.

- The rates of the pathological gambling increased significantly between 1989 (0.1%) and 1995 (1.9%; Fisher's Exact Test $p < .05$). The rates decreased marginally between 1995 and 2012 (1.4%; $\chi^2 (1) = 0.4$, *ns*). Pathological gambling rates increased significantly between 1989 and 2012, Fisher's Exact Test $p < .05$.
- Figure 1 shows these trends over time.

Figure 1 - Percent

of participants meeting criteria for SOGS score groups over time.



Note: The dotted lines are added for clarity only. They do not indicate the pattern of gambling and gambling problems in between survey years.

Limitations

- The sample size for the 2012 study was relatively small compared to similar random-digit dialing studies. This is particularly problematic for conditions with low base-rates like disordered gambling; in the 2012 study, only 5 people qualified for pathological gambling, and 8 for problem gambling.
- This study relies on self-report data; some participants might misrepresent or lack insight into their gambling problems.
- The response rate for the 2012 study was very low. Only 11% of those invited to participate were included in the analytic dataset.
- Repeated cross-sectional analyses cannot provide the same richness of information related to impact as a longitudinal design. By following the same group of participants over many years, longitudinal designs help eliminate many sources of bias, and can show us how individuals change and react over time.

Conclusions

Despite continued gambling expansion in Iowa since the legalization of casinos during 1990, there is not a linear increase in gambling participation rates; the percent of residents gambling rose significantly from 1989 to 1995 but dropped significantly from 1995 to 2012. The rates of problem and pathological gambling showed the same pattern. Rates rose significantly between 1989 and 1995, but decreased marginally between 1995 and 2012. . Overall, these results are consistent with an adaptation model proposed by Shaffer (2005) and LaPlante & Shaffer (2007), which suggests that gambling participation and problems increases initially with more exposure but peaks and stabilizes at a lower rate over time. However, true longitudinal research is needed to fully support or dispel this hypothesis. By following one large, representative group of people, we can learn how people react over time to

expanded gambling and avoid the ambiguity associated with repeated cross-sectional surveys. For example, a longitudinal design is required to see if the same people have disordered gambling over a period time, or if they recover and others develop problems.

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

References

Black, D.W., McCormick, B., Losch, M.E., Shaw, M., Lutz, G., Allen, J. (2012). Prevalence of problem gambling in Iowa: Revisiting Shaffer's adaptation hypothesis. *Annals of Clinical Psychiatry*, 24(4), 279-284.

LaPlante, D.A., Shaffer, H.J. (2007). Understanding the influence of gambling opportunities: Expanding exposure models to include adaptation. *American Journal of Orthopsychiatry*, 77(4), 616-623.

Shaffer, H.J. (2005). From disabling to enabling the public interest: Natural transitions from gambling exposure to adaptation and self-regulation. *Addiction*, 100, 1227-1230.

[1]

The data collection period for the 2012 study was from 2007-2008.

[2] A

2011 study in Iowa used the NODS, a different measure of disordered gambling. The results from this study are not directly comparable to the previous studies, which used the SOGS.