Op-Ed/Editorials: Detecting At-risk Internet Gambling Behavior

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Howard J. Shaffer, Ph.D.

Debi A. LaPlante, Ph.D.

Richard A. LaBrie, Ph.D.

Sarah E. Nelson, Ph.D.

Land-based and online gaming companies are racing to create universal algorithms that will identify people who are at risk for developing problematic gambling behavior. Unfortunately, supporters of this effort are nowhere near the finish line for that race; perhaps worse, the competitors are quite possibly off-track. Researchers and practitioners have yet to agree upon the most important identifying characteristics of problematic gambling behavior. Land-based efforts are at a starting advantage, simply because the extant scientific gambling literature predominantly addresses land-based gambling. Consequently, innovators who are trying to facilitate the development of identification algorithms for land-based gambling venues have a stronger scientific foundation available to them than online gaming companies.

There is so little available empirical information about Internet gambling behavior and characteristics of problematic Internet gambling, that early efforts to develop appropriate algorithms are at high risk for error. Researchers cannot, at this time, say with confidence that any of the leading candidates for land-based identifying characteristics of problematic gambling behavior apply to online gambling behavior. The nature of Internet gambling is sufficiently distinct from land-based opportunities to suggest that although some factors might generalize fairly well, others will not, and still others unique to Internet gambling remain to be determined. And, we do not know yet if there are unique risk factors associated with Internet gambling.

Public information related to land-based identification algorithms is limited. In one exception, the Saskatchewan Gaming Corporation (SGC) has published information in a peer-reviewed journal about their algorithm-guided identification system (iCare) to identify at-risk gamblers; they also presented related peer-

reviewed findings at international conferences. (1) Unless the development of such algorithm-guided systems follows transparent validation procedures (e.g., surveying and comparing validation groups of patrons), the sensitivity (i.e., likelihood of accurate identification of individuals who have a problem), specificity (i.e., likelihood of accurate identification of individuals who do not have a problem), and predictive validity (i.e., the ability to accurately predict future gambling problems) of its identification of "problem gambling" is uncertain. Adapting problematic gambling characteristics gleaned from land-based research and/or relying on professional or conventional wisdom about problematic gambling characteristics is unlikely to result in behavioral profiles that can withstand traditional scientific scrutiny.

The risks and hazards associated with prematurely bringing an identification algorithm to the market are considerable. A product without acceptable specificity, sensitivity, and predictive validity places a company and its consumers at unnecessary risk. To illustrate, problematic gambling behavior is a low base-rate phenomenon. This means that an algorithm can claim a success rate of 90% due to its specificity (i.e., likelihood of accurately identifying individuals who do not have gambling problems), but yield minimal to no sensitivity (i.e., likelihood of accurately identifying individuals who do have problems). Last week we posted an illustration of this phenomenon in the *WAGER*, *The Importance of Sensitivity: In Models and for Interpreting What You Read*. Finally, the algorithm must have predictive validity. Absent predictive validity, the best that an algorithm can offer is a transient identification that might not be accurate the next day or beyond. The likelihood of sensitivity errors (i.e., falsely identifying someone who has a problem as being problem-free) and the absence of predictive validity place companies at great risk for litigation and players at risk for ongoing harm that can be avoided with careful and systematic research and planning.

The best next steps in the development of responsible gambling for Internet gambling companies are to identify the actual public health risks of online gambling and to develop a comprehensive profile of characteristics that empirically can distinguish problematic Internet gambling behavior from recreational Internet gambling. Specifics related to the best means of accomplishing these tasks are beyond the scope of this paper. Until the next investigative steps are accomplished, identification algorithms for online gaming consumers will be of dubious value.

Notes

1. Davies, B. (2007). iCare: Integrating Responsible Gaming Into Casino Operation. International Journal of Mental Health & Addiction, 5(4), 307-310.