

What you need to know

- Online gambling (also commonly known as “Internet gambling”) includes various betting or gaming activities available through Internet-enabled devices like computers, smartphones, tablets and digital television.
- Factors that make online gambling appealing include the privacy, 24/7 accessibility, wide geographic coverage, affordability and interactivity of the Internet.
- Internet and social media technology expansion have significantly increased online gambling opportunities worldwide.

What’s the problem?

People who frequently engage in online gambling may be at risk for or experience health and social problems. Mental health and addictions service providers who work with clients who engage in online gambling will benefit from learning more about the prevalence and health-related implications of online gambling, along with potential treatment solutions.

What did we do?

Between May and July 2020, we conducted literature searches using three academic databases (Medline, PsycINFO and Embase) to find research on online gambling. Searches were limited to studies published in English since 2000. Search keywords included “gambling,” “Internet” or “online,” and related terms such as “mobile.” Initial searches yielded 3,292 articles. We refined our searches to focus on reviews of peer-reviewed literature, including systematic and other types of reviews, which yielded 323 articles. We then scanned this narrower list of references to find literature that could help address the following questions:

- What kinds of online gambling are available?
- How popular is online gambling?
- What kinds of problems are associated with online gambling?
- Are there evidence-based solutions or practices for online gambling problems?

We worked with an interdisciplinary team at the Centre for Addiction and Mental Health (CAMH) to develop these questions. This team also suggested additional relevant resources to review.

What did we find?

Online gambling content and availability

Online gambling content includes digital versions of traditional table and casino games (e.g., poker, blackjack, slot machines and roulette), and betting on sports, racing and other real-life or virtual events. A decade ago, approximately 3,000 of these types of online gambling sites were available internationally (Griffiths, 2009). Since then, online gambling sites have proliferated in number and type. Online gambling content and simulated gambling activities have also become common on social media platforms and apps (Armstrong et al., 2018; King & Delfabbro 2016). Non-financial or “simulated” gambling activities—such as “free-to-play” online casino games and social media apps—do not directly involve monetary risk or gain, yet still use features of wagering and chance-determined outcomes (King & Delfabbro, 2016; King et al., 2014).

While online gambling and online gaming (e.g., video games played on the Internet) have been treated as distinct activities, the line between them is often blurred. Online gaming has increasingly come to include aspects of gambling like risk- or chance-based outcomes and monetary transactions (Sirola et al., 2021). Gaming elements such as immersive reality and fantasy sports are also being increasingly used in online gambling activities (Abbott, 2020).

A growing number of international jurisdictions are formally regulating online gambling. However, there are limited studies to date about the impacts of legalization on online gambling content and availability, and on health and social outcomes. Legal consensus on what kinds of online and simulated activities are considered gambling is also lacking (King & Delfabbro, 2016).

Popularity

While about 80 per cent of gambling spending involves in-person venue- and/or land-based activities, online gambling has significantly increased in the last few decades, including activities accessed via mobile devices (Abbott, 2020; Gainsbury, 2015). Prevalence estimates for online gambling among adults and youth have ranged considerably across studies and jurisdictions.

Prevalence estimates likely vary so much due to differences in research samples, locations and timeframes, plus variation in how studies define online gambling. In Canada, approximately 6.4 per cent of adults report that they gambled online in 2018 (Williams et al., 2020).

The most popular online gambling activities are wagering, casino games, poker and bingo (Gainsbury, 2015). Shifts in online gambling popularity (and the popularity of specific activities) can occur quickly. For instance, online gambling participation appears to increase in regions that have legally regulated online playing and sites (Gainsbury, 2015). The global COVID-19 pandemic and associated public health restrictions, including the closure of land-based venues, may also be contributing to rapid changes in online gambling participation (Gambling, Gaming and Technology Use, 2020).

Problems associated with online gambling

Similar to prevalence estimates of online gambling, estimates of problem gambling vary widely. For example, past-year problem gambling rates range from 0.12 per cent to 5.8 per cent around the world, and from 0.12 per cent to 3.4 per cent in Europe (Calado & Griffiths, 2016). Differences in study methods and definitions of problem gambling make it difficult to know how much reported problem gambling takes place online. Another complication in determining problem online gambling prevalence and risk factors is that most people who gamble online do not gamble exclusively online (Gainsbury, 2015).

Researchers have identified a number of behavioural indicators of problem online gambling, including (Griffiths, 2009):

- spending considerable time and/or money on gambling, and increasing this amount of time and/or money over time
- chasing losses from gambling
- engaging in a variety of games or gambling activities
- “reloading” within a gambling session
- frequently changing payment method
- using verbal aggression
- making frequent customer service complaints.

People who gamble online may be more likely to develop gambling problems and have higher rates of co-occurring mental illness and/or substance use concerns—including mood disorders, smoking, and frequent alcohol and other substance use—compared to people who gamble elsewhere (Gainsbury, 2015; Scholes-Balog & Hemphill, 2012).

Motivations for people experiencing online gambling problems include excitement, escaping reality, mood regulation and winning money (Delfabbro et al., 2012). As well, people experiencing online gambling problems are likely to hold faulty beliefs about gambling (e.g., illusion of control over outcomes) and experience stress, anxiety, depression and low self-esteem, and to consume alcohol and/or drugs while gambling.

Certain features of online gambling may increase the likelihood of developing gambling problems, such as (Gainsbury, 2013; 2015; Griffiths, 2003):

- availability and ease of access that enable people to play for long periods without interruption
- ability to gamble in isolation
- use of credit card and other digital payments that make it easier to spend money
- highly interactive or immersive environments that make it easier to lose track of time and money.

According to available evidence, demographic factors related to problem online gambling include being male and younger in age. Findings have been mixed in relation to other risk factors such as employment, debt, socioeconomic status and level of education (Calado & Griffiths, 2016; Chagas & Gomes, 2017; Gainsbury, 2015; Scholes-Balog & Hemphill, 2012; Williams & Wood, 2007).

Evidence-based interventions

Despite the disruptions to well-being and functioning that gambling-related problems can introduce to an individual’s life, only a small number of people experiencing gambling problems seek treatment (Carlbring & Smit, 2008; Gainsbury & Blaszczynski, 2011a,b). Dropout rates for addictions treatment also tend to be high. For these and other reasons, in recent years greater attention has been paid to Internet-based therapy and other online interventions for behavioural addictions, including problem gambling.

Internet-based interventions for problem gambling compare favourably to traditional in-person therapies in terms of client uptake and retention, equity and privacy in access, convenience and treatment flexibility, relevance to young people and cost-effectiveness (Gainsbury & Blaszczynski, 2011a,b). Cognitive-behavioural therapy and motivational interviewing interventions that have shown effectiveness in the treatment of substance use and problem gambling can be readily adapted for Internet-based interventions that address problem gambling (Gainsbury & Blaszczynski, 2011a). The most common form of Internet-based intervention for problem gambling appears to be one-to-one counselling with a trained professional, while online self-help, educational tools and peer-to-peer support are also increasingly available (van der Maas et al., 2019).

Available studies suggest that Internet-based interventions for people experiencing problem gambling have significant and positive effects on gambling behaviours and frequency, along with levels of reported distress, anxiety, depression and alcohol use (Chebli et al., 2016; van der Maas et al., 2019). While participating in virtual communities where there are positive gambling attitudes can be a risk factor for problem gambling, the interaction and socialization that virtual communities offer can also be protective against excessive gambling (Sirola et al., 2021). More published evaluations of Internet-delivered interventions for problem gambling are needed (see Giroux et al., 2017; Paterson et al., 2020).

Various measures are being used to prevent and/or address problem online gambling, including harm reduction methods designed to reduce problem gambling behaviours and/or make gambling safer without prohibiting or reducing gambling activities themselves. These measures include (Griffiths, 2003; Harris & Griffiths, 2017; Ladouceur et al., 2017):

- age verification checks for gambling websites
- restriction of payment methods
- setting credit or wager limits
- self-exclusion options
- static and pop-up messaging during play to promote self-appraisal/self-awareness
- messaging aimed at faulty gambling beliefs or biases
- inclusion of helping agencies/social responsibility partner information on gambling websites
- confirmation of bets and ability to change betting decisions
- built-in breaks and pauses in play
- no reloading or re-gamble options.

Evaluations of these kinds of measures are still in a relatively early phase and have generated some mixed findings (Harris & Griffiths, 2017).

What are the limitations of this review?

Some findings we have presented may be tentative. Many available studies of online gambling are cross-sectional in design, which limits the ability to determine changes over time. It has also been challenging for researchers to recruit large samples of people who gamble exclusively online, which affects the ability to interpret associations between online gambling and specific behaviours and motivations.

What are the conclusions?

Online gambling involves a range of activities and has become increasingly popular worldwide. Emerging research highlights health-related concerns associated with problem online gambling as well as evidence-based interventions. More evaluations of Internet-based interventions that address problem online gambling are needed.

References

- Abbott, M.W. (2020). Gambling and gambling-related harm: Recent World Health Organization initiatives. *Public Health*, 184, 56–59.
- Armstrong, T., Rockloff, M., Browne, M. & Li, E. (2018). An exploration of how simulated gambling games may promote gambling with money. *Journal of Gambling Studies*, 34(4), 1165–1184.
- Calado, F. & Griffiths, M. D. (2016). Problem gambling worldwide: An update and systematic review of empirical research (2000–2015). *Journal of Behavioral Addictions*, 5(4), 592–613.
- Carlbring, P. & Smit, F. (2008). Randomized trial of internet-delivered self-help with telephone support for pathological gamblers. *Journal of Consulting and Clinical Psychology*, 76(6), 1090–1094.
- Chagas, B.T. & Gomes, J.F.S. (2017). Internet gambling: A critical review of behavioural tracking research. *Journal of Gambling Issues*, 36, 1–27.
- Chebli, J., Blaszczynski, A. & Gainsbury, S.M. (2016). Internet-based interventions for addictive behaviours: A systematic review. *Journal of Gambling Studies*, 32(4), 1279–1304.
- Delfabbro, P., King, D.L. & Griffiths, M. (2012). Behavioural profiling of problem gamblers: A summary and review. *International Gambling Studies*, 12(3), 349–366.
- Gainsbury, S. (2013). Internet gaming and disordered gambling. In D.C.S. Richard, A. Blaszczynski & L. Nower (Eds.), *The Wiley-Blackwell Handbook of Disordered Gambling* (pp. 361–385). Wiley-Blackwell. Available: <http://onlinelibrary.wiley.com/doi/book/10.1002/9781118316078>
- Gainsbury, S. (2015). Online gambling addiction: The relationship between internet gambling and disordered gambling. *Current Addiction Reports*, 2(2), 185–193.
- Gainsbury, S. & Blaszczynski, A. (2011a). A systematic review of internet-based therapy for the treatment of addictions. *Clinical Psychology Review*, 31(3), 490–498.
- Gainsbury, S. & Blaszczynski, A. (2011b). Online self-guided interventions for the treatment of problem gambling. *International Gambling Studies*, 11(3), 289–308.
- Gambling, Gaming and Technology Use. (2020). Online gambling during COVID-19. Available: <http://learn.problemgambling.ca/eip/online-gambling-during-covid-19>
- Giroux, I., Goulet, A., Mercier, J., Jacques, C. & Bouchard, S. (2017). Online and mobile interventions for problem gambling, alcohol, and drugs: A systematic review. *Frontiers in Psychology*, 8, 954.
- Griffiths, M. (2003). Internet gambling: Issues, concerns, and recommendations. *CyberPsychology and Behavior*, 6(6), 557–568.
- Griffiths, M.D. (2009). Social responsibility in gambling: The implications of real-time behavioural tracking. *Casino and Gaming International*, 5(3), 99–104.
- Harris, A. & Griffiths, M.D. (2017). A critical review of the harm-minimisation tools available for electronic gambling. *Journal of Gambling Studies*, 33(1), 187–221.
- King, D.L. & Delfabbro, P.H. (2016). Early exposure to digital simulated gambling: A review and conceptual model. *Computers in Human Behavior*, 55, 198–206.
- King, D.L., Delfabbro, P.H., Kaptsis, D. & Zwaans, T. (2014). Adolescent simulated gambling via digital and social media: An emerging problem. *Computers in Human Behavior*, 31, 305–313.
- Ladouceur, R., Shaffer, P., Blaszczynski, A. & Shaffer, H. J. (2017). Responsible gambling: A synthesis of the empirical evidence. *Addiction Research and Theory*, 25(3), 225–235.
- Paterson, M., Whitty, M. & Boyer, C. (2020). An overview of digital and online strategies to reduce gambling harm. *Health Promotion Journal of Australia*, 32(2), 248–257.

Scholes-Balog, K.E. & Hemphill, S.A. (2012). Relationships between online gambling, mental health, and substance use: A review. *Cyberpsychology, Behavior, and Social Networking*, 15(12), 688–692.

Sirola, A., Savela, N., Savolainen, I., Kaakinen, M. & Oksanen, A. (2021). The role of virtual communities in gambling and gaming behaviors: A systematic review. *Journal of Gambling Studies*, 37(1), 165–187.

van der Maas, M., Shi, J., Elton-Marshall, T., Hodgins, D.C., Sanchez, S., Lobo, D.S., Hagopian, S. & Turner, N.E. (2019). Internet-based interventions for problem gambling: Scoping review. *JMIR Mental Health*, 6(1), e65.

Williams, R.J., Leonard, C.A., Belanger, Y.D., Christensen, D.R., el-Guebaly, N., Hodgins, D.C. et al. (2020). Gambling and problem gambling in Canada in 2018: Prevalence and changes since 2002. *The Canadian Journal of Psychiatry*, 66(5), 485–494.

Williams, R.J. & Wood, R.T. (2007). *Internet Gambling: A Comprehensive Review and Synthesis of the Literature*. Guelph, Ontario: The Ontario Problem Gambling Research Centre.

Acknowledgments

The questions of interest that informed this evidence brief were developed by a team of CAMH researchers in collaboration with managers and staff at the Gambling, Gaming and Technology Use unit at CAMH's Provincial System Support Program. Dr. Tara Marie Watson, Research Coordinator, was responsible for the literature searches, evidence synthesis and initial drafts of the brief. Jean-François Crépault, Senior Policy Analyst, provided an expert review of the brief.