

The online issue: treating problem gambling in an era of uncontrolled access



Alex Blaszczynski*



“Current etiological models of pathological gambling refer to a complex matrix of interactive biopsychosocial factors.”

Gambling, defined as the wager of an item of value on the outcome of a chance event, appears to be a popular recreational activity, but is hazardous for some. Epidemiological studies indicate that approximately 80–90% of the general adult population gamble on commercial land-based forms of gambling. Between 1–6 and 2–9% of adults and adolescents, respectively, meet formal criteria for pathological gambling, depending on sample selection and measurement instruments [1–3]. Currently classified as a psychiatric disorder of impulse control [4], the forthcoming American Psychiatric Association’s revision of its diagnostic and statistical manual of mental disorders reclassifies pathological gambling within substance and related addictions as a nonsubstance behavioral addiction [101].

The disorder is defined as “persistent and recurrent maladaptive gambling behavior” characterized by a failure to control gambling, leading to significant deleterious psychosocial consequences: personal, familial, financial, professional and legal [4]. Impaired control is

manifested by chronic excessive use resulting in psychological symptoms of dependence, tolerance, withdrawal and cravings, as well as repeated unsuccessful attempts to cease or cut back the intensity of involvement. Among pathological gamblers seeking treatment, 75% suffer major depression with 40% reporting clinically relevant suicidal ideation, 30% reporting substance abuse and 14% reporting antisocial personality disorders [5], with an estimated 1.7% of suicides being gambling related [6]. Family and marital conflicts resulting in arguments, divorce, intimidation and domestic violence are also common outcomes [6].

Current etiological models of pathological gambling refer to a complex matrix of interactive biopsychosocial factors that contribute to the pathogenesis of the disorder: primarily, dysregulation of mesolimbic–frontal-associated reward systems involving dopaminergic, serotonergic and noradrenaline neurotransmitters, erroneous and irrational cognitive schemas, and

“Impaired control is manifested by chronic excessive use resulting in psychological symptoms of dependence, tolerance, withdrawal and cravings, as well as repeated unsuccessful attempts to cease or cut back.”

*School of Psychology, The University of Sydney, Sydney, NSW 2006, Australia; Tel.: +61 2 9351 2865; Fax: +61 2 9351 2603; alex.blaszczynski@sydney.edu.au

behavioral conditioning and family and peer group exposure [7]. From a treatment perspective, it is important to understand that pathological gambling represents a heterogeneous population characterized by differing motivations, personality traits and needs [7]. Therefore, treatments should be tailored appropriately to incorporate psychopharmacological, psychotherapeutic and cognitive interventions.

The neurobiological reward deficiency model advances the hypothesis that genetically determined sensitivities to the operant and classical conditioning effects of reinforcing subjective and physiological arousal (winning) and insensitivity to punishment (losses and adverse consequences) increase individual propensities to persist despite the presence of mounting problems [8]. Early wins produce heightened arousal and act to enhance the salience of gambling as a consequence of the perception generated that gambling represents an easy source of income [7]. Gambling-related cues trigger urges and cravings, which subsequently result in the phenomenon of temporal discounting, wherein longer-term objectives of control/abstinence are impulsively set aside in preference to short-term goals or immediate gratification [9]. Where high rates of impulsivity are evidenced not only by excessive behaviors but also other high-risk sensation-seeking personality traits, psychopharmacological agents may be used effectively in conjunction with other psychological treatments, given that selective serotonin reuptake inhibitors and opioid antagonists have shown some promising outcomes [10].

In a proportion of gamblers, gambling can be construed as the outcome of maladaptive avoidant coping strategies and negative affective states [11]. The excitement associated with gambling produces dissociative states of arousal that serve to distract attention away from current daily emotional stresses, depression and anxiety [12]. In these cases, winning provides an opportunity to prolong sessions and for continued, albeit temporary, escape from reality. Negative affective states are considered to play a primary causative role in gambling. Therefore, management should be directed towards enhancing behavioral coping and stress management skills and addressing factors contributing to underlying symptoms of depression and anxiety [7].

Erroneous and irrational cognitions, and the misunderstanding of probabilities and concepts of randomness and mutually exclusive chance events play a central role in the etiology of pathological gambling and must be addressed if treatment is to be successful [3]. Illusions of control where gamblers believe that they have personal skills, the presence of superstitious beliefs and attributes of luck that lead to overestimates of probabilities of winning and the gambler's fallacy, where wins are believed to be due after a series of losses, are powerful cognitive distortions that maintain habitual patterns of gambling behavior [3]. Cognitive therapy designed to identify and correct these distortions forms the essential core ingredient of any therapeutic endeavor, whether delivered as a brief intervention or as part of an intense individual or group program. Outcome rates of up to 70–85% have been reported in randomized controlled and case series outcome trials, depending on the definition of recovery and improvement [3,13,14].

However, irrespective of which therapeutic modality is adopted, availability, accessibility and social/cultural acceptability determine individual levels of exposure and consequently the prevalence of pathological gambling within given communities [7,15]. In this regard, governments are responsible for broadening the reach of gambling through legislation allowing the availability of land-based outlets and, more recently, online forms of gambling.

The internet is a virtual medium of communication that has permeated almost every aspect of daily commercial, communicational, recreational, educational, interpersonal and social activities. Data indicate that in 2012, up to 88% of the population of western developed countries are current users of the internet compared with one-third in 2000 [102]. Emerging technologies now provide increasing online access through wireless and cable interactive platforms. These are offered on multiple devices including computers, smart phones, tablets (Android® [Google, CA, USA] and iPads® [Apple Inc., CA, USA]), televisions and gaming consoles. In this context, the market penetration and widespread usage of the internet has major public health and treatment implications for pathological gambling. This is reflected in the escalating global popularity and growth of online gambling from 34 gambling websites in 1994 to approximately 2500 in 2011,

“Pathological gambling represents a heterogeneous population characterized by differing motivations, personality traits and needs.”

with a predicted annual expenditure growth rate of 10% [16]. Between 1 and 30% of adults report having participated in online forms of gaming [16]. In response, some 74 international jurisdictions have acted to legalize and regulate online gambling to prevent loss of revenue to offshore sites, protect citizens from exploitation by unscrupulous unregulated sites and reduce harms associated with problem gambling [16]. This trend has legitimized online gambling, contributing to the growth of wagering and sports betting options in particular [16].

With the technological familiarity and skills of today's youth, concerns are now expressed over the structural features of online gambling contributing to the increase in pathological gambling behaviors and subsequently, the burden of healthcare costs. The provision of unrestricted and convenient access from any location and mobile device to diverse rapid-paced continuous gambling options in modes of attractive interactive or solitary play, and anonymity coupled with the capacity for electronic transfer of funds using one of 199 current facilities, has the potential to exacerbate an existing major public health issue [16]. Although knowledge of the characteristics of internet gamblers and the relationship between traditional land-based and online gambling remains in its nascent stages, evidence indicates problem gambling rates of 4–20%, reaching as high as 64%, have been reported among internet gamblers [16]. This is not surprising given the level of advertising and promotion of online sports betting, free-to-play sites where the odds of winning are inflated, giving novice players the impression of skill and enticing online pay-to-play sites, and peer group exposure.

On a more positive note, it is ironic that the internet also has the potential to be used as an effective tool to assist pathological gamblers through online treatment programs. Self-guided internet-based interventions for this population are relatively recent options and, accordingly, lack strong current empirical evidence for their effectiveness. However, research evaluating online interventions for problem drinking and smoking

cessation supports the potential utility of this approach to the management of pathological gambling [17]. Online brief interventions and more intensive cognitive-behavioral modules for pathological gambling are now increasingly being used either singularly by individuals or supplemental to traditional general/family physicians and specialized counseling services [17]. The advantages of online therapy include: availability and convenience, particularly for residents in geographically isolated regions or those who are unable to attend during business hours; flexibility of completing modules and therapeutic instructions at the individual's own pace and opportunity; cost-effectiveness and privacy, anonymity and confidentiality [17].

While gambling remains a legitimate recreational leisure pursuit, clinicians will continue to be confronted with pathological gamblers seeking treatment. The internet, although potentially escalating the prevalence of pathological gambling, can be used to supplement existing interventions available to clinicians, primarily cognitive-behavioral interventions combined, where appropriate, with pharmacological treatments. Nevertheless, clinical opinion, in weighing the public health costs of gambling against the benefits derived to government taxation revenue and the social benefits of gambling, plays a significant role in shaping policies regulating this product equivalent to the efforts achieved in moderating the consumption of tobacco and alcohol. The way forward is not the advocacy of prohibition but the responsible and ethical provision by industry and government regulators of a potentially harmful product.

“The advantages of online therapy include: availability and convenience, particularly for residents in geographically isolated regions...”

Financial & competing interests disclosure

The author has received funding support for research and consultancy from gaming industry and government sources.

The author has no other relevant affiliations or financial involvement with any organization or entity with a financial interest in or financial conflict with the subject matter or materials discussed in the manuscript apart from those disclosed.

No writing assistance was utilized in the production of this manuscript.

References

- 1 Stucki S, Rihs-Middel M. Prevalence of adult problem and pathological gambling between 2000 and 2005: an update. *J. Gambl. Stud.* 23(3), 245–257 (2007).
- 2 Shaffer HJ, Hall MN. Estimating the prevalence of adolescent gambling disorders: a quantitative synthesis and guide toward standard gambling nomenclature. *J. Gambl. Stud.* 12(2), 193–1214 (1996).
- 3 Petry N. *Pathological Gambling: Etiology, Comorbidity, and Treatment*. American Psychological Association, Washington, DC, USA (2005).

- 4 American Psychiatric Association. *Diagnostic and Statistical Manual (4th Edition – Text Revised)*. American Psychological Association, Washington, DC, USA (2000).
- 5 Maccallum F, Blaszczynski A. Pathological gambling and suicidality: an analysis of severity and lethality. *Suicide Life Threat. Behav.* 33(1), 88–97 (2003).
- 6 Productivity Commission. *Australia's Gambling Industries*. Report No. 10. AusInfo, Canberra, Australia (1999).
- 7 Blaszczynski A, Nower L. A pathways model of problem and pathological gambling. *Addictive* 97(5), 487–499 (2002).
- 8 Goudriaan AE, Oosterlaan J, de Beurs E, Van den Brink W. Pathological gambling: a comprehensive review of biobehavioral findings. *Neurosci. Biobehav. Rev.* 28(2), 123–141 (2004).
- 9 Petry N, Casarella T. Excessive discounting of delayed rewards in substance abusers with gambling problems. *Drug Alcohol Depend.* 56(1), 25–32 (1999).
- 10 Grant J, Potenza M. *Pathological Gambling: A Clinical Guide To Treatment*. Grant J, Potenza M (Eds). American Psychiatric Association, TX, USA (2004).
- 11 Blaszczynski A, McConaghy N. Anxiety and/or depression in the pathogenesis of addictive gambling. *Int. J. Addict.* 24(4), 337–350(1989).
- 12 Anderson G, Brown RIF. Real and laboratory gambling: sensation-seeking and arousal. *Br. J. Psychol.* 75(Pt 3), 401–410 (1984).
- 13 Westphal J, Jackson AC, Thomas SA, Blaszczynski A. A review of pharmacological interventions in problem gambling. *J. Soc. Work Prac. Addict.* 8(2), 192–207 (2008).
- 14 Nower L, Blaszczynski A. Recovery in pathological gambling: an imprecise concept. *Subst. Use Misuse* 43(12–13), 1844–1864 (2008).
- 15 Shaffer HJ, Korn DA. Gambling and the health of the public: adopting a public health perspective. *J. Gambl. Stud.* 15(4), 289–365 (1999).
- 16 Gainsbury S. *Internet Gambling: Current Research Findings and Implications*. Springer, NY, USA (2012).
- 17 Gainsbury S, Blaszczynski A. Online self-guided interventions for the treatment of problem gambling. *Int. Gambl. Stud.* 11(3), 289–308 (2011).

■ Websites

- 101 American Psychiatric Association. Diagnostic and Statistical Manual V Development. [www.dsm5.org/Research/Pages/Substance-RelatedDisordersConference\(February14-17,2005\).aspx](http://www.dsm5.org/Research/Pages/Substance-RelatedDisordersConference(February14-17,2005).aspx)
- 102 Miniwatts Marketing Group. Internet World Stats: usage and populations statistics. www.internetworldstats.com/stats.htm