

## “That’s No Country for ‘Young’ Men”: A Critical Perspective on Responsible Online Gambling Policies for Gambling Disorder Prevention in Spanish Minors

Mariano Chóliz,<sup>1</sup> & Marta Marcos<sup>1</sup>

<sup>1</sup> Gambling and Technological Addictions Research Unit, School of Psychology,  
University of Valencia, Valencia, Spain

### Abstract

Recently, some governments and other stakeholders in countries where online gambling has been legalized have implemented responsible gambling policies. From the theoretical and empirical evidence in this study, we show that these responsible gambling policies are insufficient to prevent the emergence of pathological gambling disorder in society, especially among adolescents. Since online gambling was legalized in Spain in June 2012, online gambling companies have been required by law to implement responsible gambling policies. The implemented policies largely consist of informing customers of the dangers of gambling and how to minimize harm by engaging in behaviour that prevents addiction. However, online gambling addiction has increased exponentially; at present, it is the second most common form of pathological gambling in Spain and the most common form among young children and adolescents (Chóliz, 2016). In our study involving 6,053 underage adolescents, the results showed that more than half of them had gambled and that the prevalence rate of pathological gambling was triple that of the general population. Our main conclusions are that online gambling especially affects male minors, some of whom have developed gambling disorders since the legalization (and broad promotion) of online gambling in Spain. Responsible gambling policies implemented by the conservative government of Spain (2011–2018) and by gambling companies were insufficient to prevent such disorders from becoming an epidemic among Spanish adolescents.

**Keywords:** ethical gambling, responsible gambling, online gambling, prevention of gambling disorder, gambling policies, youth gambling, Spain

---

*Note.* The title of this paper alludes to the first verse of the poem by William B. Yeats, “Sailing to Byzantium,” and not the film by the Coen brothers.

## Introduction

Pathological gambling is classified by the *International Statistical Classification of Diseases and Related Health Problems* (9th ed.; World Health Organization [WHO], 1979) and the *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed.; American Psychiatric Association [APA], 1980) as a mental disorder. Recently, both the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; APA, 2013) and the *International Statistical Classification of Diseases and Related Health Problems* (11th ed.; WHO, 2018) introduced conceptual changes to this definition, and pathological gambling is now included in the same diagnostic category as substance-related disorders, reflecting arguments that have long been proposed for considering pathological gambling an addictive disorder (Petry, 2006b; Potenza, 2006). Gambling addiction is a mental disorder that, in addition to engendering social, family, and legal consequences, is often highly comorbid with other mental illnesses and with substance abuse (Shaffer & Korn, 2002). Given that gambling disorder is an addictive disease characterized by excessive gambling, implementation of preventive actions is essential to prevent gambling addiction in society.

Responsible gambling (Blaszczynski et al., 2004, 2011) is a concept that conveys the idea that gambling can be harmful to some gamblers, and it assumes that governments and companies can mitigate the problems caused by gambling and promote appropriate patterns of behaviour. A responsible gambling program rests upon two main principles, according to the Reno Model (Blaszczynski et al., 2004): (a) The ultimate decision of whether to gamble resides with the individual and represents a choice, and (b) to make this decision, individuals must have the opportunity to be informed. However, there are theoretical reasons, as well as empirical evidence, indicating that information is insufficient to prevent gambling disorder.

According to the APA, “Gambling behaviors activate reward systems similar to those activated by drugs of abuse and produce some behavioral symptoms that appear comparable to those produced by the substance use disorders” (APA, 2013, p. 481). The main criteria for the diagnosis of gambling disorder include tolerance (a need to gamble with increasing amounts of money to achieve the desired excitement), “chasing” (after losing money, a return another day to “get even”), control impairment (repeated unsuccessful efforts to control or stop gambling), gambling when distressed (helpless, guilty, anxious, or depressed), or emotional perturbation when gambling is interrupted. Of note is that most of these clinical criteria for gambling disorder are also characteristics that induce excessive gambling.

In societies in which it is allowed, gambling is also a major economic activity. Nevertheless, it is an unusual one. First, the profits of gambling companies are the losses of their customers. In terms of game theory (Morgenstern & Von Neumann, 1944), gambling is an example of a zero-sum game, a non-cooperative game in which one player’s wins equal the other player’s losses, resulting in a net benefit of zero. Second, all forms of gambling are designed to always favour gambling companies

because the expected value (or mathematical expectation) of any type of gambling is always favourable to gambling companies and, consequently, unfavourable to the gambler. Therefore, the more money spent on gambling, the greater the probability that the companies managing gambling will win.

In other words, gambling is designed to induce excessive gambling because that behavioural pattern is the most profitable for gambling companies. However, excessive gambling harms the gambler and the risk of a gambling disorder is enhanced. Pathological gamblers account for 15%–40% of gambling company profits (Williams & Wood, 2004, 2007b, 2016; Wood & Williams, 2007a). In a capitalist society, it is naive to think that companies will sacrifice profitability to prevent gambling addiction.

These characteristics of gambling activity can be summarized in the three laws of gambling, based on the principles of ethical gambling (Chóliz, 2018; Chóliz, et al., 2021):

- First law (Gambling Dynamics Law): “In gambling, money is neither created nor destroyed; it only travels from one pocket to another.”
- Second law (Expected Loss Law): “The probability of losing on the part of the gambler increases proportionally to the frequency with which money is gambled.”
- Third law (Addiction Law): “The more you gamble, the greater the need to gamble again, and this increases the probability of developing a mental disorder.”

In these circumstances, responsible gambling policies are insufficient to prevent the emergence of gambling addiction problems. It is necessary to adopt effective gambling policies that are based on scientific evidence and public health criteria (Livingstone et al., 2019). However, these measures are difficult to implement effectively because they contrast with the economic benefit of gambling companies. The importance of such companies and the interest on the part of some public agencies to obtain economic benefits from the activity of gambling (i.e., the gamblers’ losses) interferes with the implementation of effective measures for the prevention of gambling addiction and risks the very essence of democracy (Adams, 2008).

Not all types of gambling have the same addictive potential. The offline games that have the greatest addictive potential are electronic gaming machines (EGMs; Brooks et al., 2008; Dickerson et al., 1992; Dowling et al., 2005; Griffiths 1993, 2008; Livingstone et al., 2008; Parke & Griffiths, 2007; Schüll, 2012). Nevertheless, the nature of online gambling makes it inherently more problematic than most other forms of gambling (Abbott et al., 2013; Griffiths, 2003; Griffiths et al., 2006; LaBrie et al., 2007; McBride & Derevensky 2009; Meyer et al., 2011; Monaghan, 2009; Petry, 2006a; Smith & Rupp, 2005; Wood et al., 2012). One of the clearest pieces of evidence for this assertion is that online gamblers have higher rates of gambling addiction compared with those of traditional gamblers (Chóliz et al., 2019; Williams & Wood, 2007a;

Wood & Williams, 2007b, 2007c, 2009; Wood et al., 2012). Similarly, the introduction of new media in which to gamble (internet gambling or mobile-phone gambling) has greatly increased the accessibility of gambling throughout the world; as a result, the number of people seeking assistance for gambling-related problems has also increased (Abbott et al., 2004). However, some offline games, such as slot machines, are likely to be more addictive than some online games, such as online sports betting.

With respect to online gambling, the development and promotion of new online gambling is sparking a revolution not only in terms of economic activity, but also in terms of the patterns of consumption and the profiles of gamblers. Many countries have legalized online gambling in the absence of any regulation that may have helped prevent gambling addiction. Indeed, since the legalization of online gambling in Spain, the number of pathological gamblers for whom the main cause of addiction is online gambling has increased (Chóliz, 2016). This increase has disproportionately affected young people because online gambling targets this group, which comprises more frequent users of online technologies; such people also find online gambling more attractive than traditional gambling. In fact, online gambling was the major cause of gambling disorder for young people under 26 years of age who received treatment for this disease (Chóliz, 2016). However, the type of game must be considered, because EGMs have greater addictive potential than do some online games (e.g., sports pools).

Online gambling was legalized in Spain in 2011 with the aim of regulating an activity that had, in fact, been (illegally) available on the internet in that country since 2004. One of the objectives of the law was to apply responsible gambling policies, specifically: “a) To pay due attention to groups at risk; b) To provide the public with the necessary information so that they can make a conscious selection of their gambling activities, promoting moderate, non-compulsive and responsible gambling attitudes; and c) To inform, in accordance with the nature and means used in each game, of the prohibition of minors from participating...” (Article 8 of the Gambling Regulation Act, 2011).

Online gambling licenses (for casinos, bingo, slot machines, sports betting, and poker) began to be issued in June 2012. Since then, gambling offers and advertisements, as well as spending on gambling by Spaniards, have greatly increased. Many new games have appeared, and thousands of venues have appeared all over the country. Consequently, many adolescents and minors have started to gamble.

One characteristic assertion regarding responsible gambling is that minors should be protected from its harmful effects by not engaging in it. Indeed, many messages regarding gambling (especially online gambling) argue that gambling is an adult-only activity. However, those messages are not useful if they are not accompanied by control measures (Livingstone et al., 2019). In addition, these responsible gambling messages contrast with gambling advertising and marketing strategies that promote gambling as a fun leisure activity, which is the type of activity desired by adolescents.

The objective of this study was to show that responsible gambling measures implemented by the gambling industry and endorsed by the administration are insufficient to prevent gambling addiction in Spanish adolescents.

## Method

### Participants

Participants were 6,053 schoolchildren aged 15–17 years (50.4% female, 49.6% male) from 104 middle schools in rural and urban areas.

### Procedure

From February 2017 to November 2018, a gambling addiction prevention program called “Ludens” (Chóliz, 2017, Chóliz et al., 2021) was offered by the University of Valencia to the middle schools in the Valencian Community, a region in eastern Spain that represents approximately 10% of the Spanish population. Overall, 104 public (54.9%) and private (46.1%) centres from rural and urban areas participated in the study. Before starting, a brief survey on patterns of gambling (frequency with which one plays each game, places where one plays, etc.) and on gambling disorder was administered. A rating scale was used to evaluate the frequency of both traditional forms of gambling (lotteries, casino, slot machines, etc.) and online gambling. The measure used a 6-point Likert scale ranging from “I have never played that game” to “I play it every day or almost every day.” To assess problems associated with gambling, we used the National Opinion Research Center DSM-IV Screen for Gambling Problems (NODS; Gerstein et al., 1999), adapted to *DSM-5* criteria.

### Measures

The dependent variables were gambling frequency and problems caused by gambling, that is, gambling disorder and risky gambling. In the case of gambling frequency, two measures were considered: having ever taken part in legal gambling and having done so on a regular basis, which was deemed to be between one and three times a month or more. It was considered useful to distinguish between the two measures because it is relatively normal in Spain to engage in some games of chance, such as lotteries, at some point in life. Nevertheless, gambling between one and three times a month implies that gambling has become an activity to which the individual dedicates time and resources, and therefore it can be regarded as usual. This is a relevant consideration because minors are prohibited from gambling in Spain.

The NODS (Gerstein et al., 1999) was used to evaluate problems associated with gambling. A diagnosis of gambling disorder applies when four of the criteria listed in the *DSM-5* are met (APA, 2013). The presence of one to three criteria is considered to indicate risky gambling in minors because they are forbidden to gamble.

## Results

### Frequency of Gambling

Most teens have gambled at least once in their life. Table 1 shows the percentages of minors who have ever gambled, who engage monthly (one to three times per month or more) in any gambling, and who participate in online sports betting monthly.

With respect to the percentage of minors who have ever gambled, differences between girls (44.1%) and boys (64.1%) were statistically significant ( $\chi^2_1 = 240.36$ ,  $p < .001$ ,  $\phi = .20$ ). Despite the fact that minors are prohibited from gambling, 18.2% of adolescents gamble regularly (at least one to three times a month). Differences between boys (28.9%) and girls (7.8%) were statistically significant ( $\chi^2_1 = 447.39$ ,  $p < .001$ ,  $\phi = .27$ ).

The most common type of gambling was online sports betting (11.0%). Differences between boys (19.7%) and girls (2.4%) were statistically significant ( $\chi^2_1 = 460.14$ ,  $p < .001$ ,  $\phi = .28$ ). The most common betting sites were computers (13.7%), betting rooms (22.3%), mobile phones (24.2%), and betting machines installed in pubs or bars (84.9%).

### Gambling Problems

Sex differences in gambling disorder prevalence according to the type of gambling are shown in Table 2. Males and females differed significantly in the percentage of gambling disorder diagnosis ( $\chi^2_1 = 63.45$ ,  $p < .001$ ,  $\phi = .10$ ) in the overall sample.

**Table 1**  
*Frequency of Gambling According to Sex*

Sex	Ever gambled	Gamble monthly	Sport bets (monthly)
Female	44.1%	7.8%	2.4%
Male	64.1%	28.9%	19.7%
Total	54%	18.2%	11%

**Table 2**  
*Percentage of Pathological Gamblers Among Adolescents According to Sex*

Sex	Overall	Teens who engage in sports betting monthly	Teens who engage in other gambling monthly
Female	.5%	5.6%	2.5%
Male	3.3%	11.0%	5.9%
Total	1.9%	10.4%	4.6%

This did not differ by sex in the other samples (teens who engage in gambling monthly).

### **Discussion**

Online gambling was legalized in Spain in 2011. Since then, many venues and types of gambling have appeared nationwide. Gambling companies are required by law to have a responsible gambling strategy that includes providing information regarding the risks of gambling, providing recommendations for responsible gambling (e.g., “Do not gamble more than you can afford,” “Do not drink alcohol while gambling,” and “Gamble for fun”), and prohibiting gambling by minors. Nevertheless, Spanish minors continue to gamble and develop gambling disorders. Recent forms of online gambling, especially online sports betting, are the most prevalent forms of gambling by minors; the prevalence of gambling disorders among minors in this study (1.9%) is almost triple the prevalence in the overall Spanish population (0.72%; Chóliz et al., 2019). The reason for this trend is that adolescents and minors have easy access to gambling because slot machines are present in all bars in Spain. There are currently 210,000 slot machines in Spanish bars, where access is completely free. In many regions, there are also online gambling machines in bars, where identification is not required as a prerequisite for gambling. This state of affairs is a public health problem caused by the economic interests of the gaming industry (generally transnational companies), which considers adolescents to be a lucrative market niche. The situation is aggravated because the administration recognizes gambling as a leisure alternative, rather than a public health problem.

This study showed that boys had higher rates of pathological gambling than girls did when the total sample was considered. Gambling, both offline and online, is less attractive for women than for men; consequently, women gamble less frequently and with less money than men do. Cultural aspects related to gender may also be involved. These gender differences appear in the majority of epidemiological studies in Spain.

Among minors who engaged in any form of gambling monthly, however, there was no sex difference in the rate of gambling addiction. Compared with girls, boys may have higher overall gambling prevalence rates because they are more frequently exposed to gambling. Nonetheless, among minors who engaged in gambling regularly, there was no difference between boys and girls in the prevalence of gambling addiction. This finding implies that gambling itself is truly harmful for adolescents. Female sex is a protective factor mainly because girls are less frequently exposed to gambling, but for minors who engage in gambling regularly, the prevalence of gambling addiction is similar in boys and girls.

Most Spanish children with gambling disorders would not have encountered problems if online gambling had not been legalized and promoted. Sports betting has become a new leisure activity for young people, and it serves as a gateway to other types of gambling that many adolescents would otherwise never have accessed.

Responsible gambling strategies are based on providing truthful information to the gambler regarding the consequences of gambling and what the gambler should do to avoid the onset of problems with gambling. However, there are theoretical arguments and empirical evidence that these strategies are insufficient to prevent gambling addiction in society, or even to reduce excessive gambling.

Regarding the theoretical arguments, information should always be accompanied by regulatory measures based on the principles of learning psychology applied to social contexts. In the case of gambling, there are at least three additional features that explain why the information is insufficient to prevent gambling addiction.

First, gambling is potentially addictive (APA, 2013; WHO, 2018). This means that regardless of the information provided, exposure to gambling and the consequences thereof will result in the need to gamble. Therefore, some people will gamble repeatedly and will experience problems with gambling.

Second, most of the diagnostic criteria for gambling disorder (e.g., tolerance, withdrawal syndrome, “chasing,” or an inability to control gambling) are also characteristics that induce excessive gambling, especially by pathological gamblers. Such gamblers recognize the risks of gambling, as they have already suffered first-hand. Many pathological gamblers want to stop gambling but cannot.

Third, gambling companies encourage excessive gambling. Considering that the expected value of all games is in the companies’ favour, the more a player gambles, the more likely he or she is to lose. In market economies, gambling companies prioritize profits (the money that gamblers lose) by means of gambling rules and conditions that always favour the companies. It is naive to suggest that such companies (many of which are transnational corporations based in tax havens) are concerned about anything other than their profit (money from gamblers). Thus, the most profitable clients are the pathological gamblers (Williams & Wood, 2004, 2007b, 2016).

Regarding the empirical evidence, this study has shown that the information-based responsible gambling strategies implemented in Spain have not prevented gambling addiction in minors. In Spain, online gambling was legalized in 2011; the government demanded that online gambling companies develop a responsible gambling strategy based, principally, on notices about the risks of gambling and sensible recommendations, but this strategy has not worked. On the contrary, in Spain, online gambling has become the second most common cause of addiction in the general population and the first cause in persons under 26 years of age (Chóliz, 2016). Addiction is at the level of an epidemic among young people and adolescents (Chóliz, & Marcos, 2019).

In this study, we found that, although the companies complied with the recommendations of the conservative Government of Spain (2011–2018) regarding responsible gambling, and although they had self-awarded quality seals, the prevalence of



gambling addiction in minors is threefold greater than the prevalence of gambling addiction in the general population. Minors suffer more than the general population, despite the recommendations and suggestions on all online gambling webpages. Although the government established a Responsible Gambling Advisory Council, the gambling companies offer awards for gambling skill and organize conferences and symposia, all for show; no evidence-based procedure preventing gambling addiction has been implemented.

Responsible gambling policies should feature strategies that allow gamblers to make appropriate decisions. However, information that gamblers should consider is usually offered only on web pages or in brochures placed on the information counters of gambling rooms. Some of the most common recommendations are as follows: (a) “Play in moderation as a means of entertainment,” (b) “decide how much money you can lose and do not exceed this figure,” (c) “do not play to recover losses,” (d) “do not play to avoid boredom or overcome discomfort,” and (e) “do not drink alcohol while you play.” These are the responsible gambling strategies determined by gambling companies and required by the Spanish government. The recommendations are logical, but very difficult to implement, especially if they are only recommendations printed in a brochure or hidden on a web page. A gambler does not read brochures prior to playing and does not search gambling websites for information on how to gamble responsibly. Such recommendations are much less effective than the marketing and advertising strategies used to induce gambling. Gambling companies meet the responsible gambling standards required by the Spanish government, but this has not prevented the growth of pathological gambling among adolescents. On the contrary, a new public health problem has been generated (Chóliz & Marcos, 2019).

Strategies designed to prevent or minimize gambling-related problems should target the local contextual environment, rather than solely focusing on the gamblers themselves (Marshall, 2009). This may include restricting gambling speed (Mentzoni et al., 2012), increasing the time between the bet and the outcome (Chóliz, 2010), reducing the maximum bet size (Sharpe et al., 2005), diminishing the percentage of win, and reducing the frequency of “near-miss” outcomes on EGMs. The main strategies to prevent gambling harm have been described in some excellent reports (Livingstone et al., 2019; Williams et al., 2012).

During the last decades of the 20<sup>th</sup> century, gambling in the United Kingdom was transformed “from an activity that was tolerated, to a business to be encouraged” (Cassidy, 2020, p. 21). This meant that gambling legislation “was domesticated” and that gambling policies were primarily designed to promote business, despite general agreement that gambling constituted a public health problem (Korn & Shaffer, 1999). The adjustment of gambling legislation to promote gambling, rather than to prevent the problems caused by its excessive use, is a phenomenon that has spread widely, especially since the appearance of online gambling (Chóliz & Sáiz-Ruiz, 2016). Livingstone noted that “it is timely to move from the ‘responsible gambling’ discourse to a discourse of gambling harm prevention and minimization”

(Livingstone et al., 2019). Nevertheless, only a few countries have implemented measures to prevent pathological gambling in society (Rintoul, 2019).

Perhaps the most effective measures were implemented in Norway. The Norwegian government introduced a ban on banknote acceptors on EGMs, removed slot machines from public spaces, and expanded the state gambling monopoly. This allowed the reintroduction of lower impact interactive video terminals in which multifactor authentication was used, requiring a code to be sent via SMS when logging into a video lottery terminal. These measures resulted in a drastic decrease in the number of pathological gamblers (Rossow & Hansen, 2016).

Others, such as the Finnish government, have established a loss limit for the most harmful online gambling. In 2022, a registration card will be required for EGMs. In the United Kingdom, the maximum stake on fixed odds betting terminals was reduced from £100 to £2 per “spin,” and the term “responsible gambling” was banished. Finally, in Sweden, the return to the gambler in sport bets is 50% to 80%, whereas international companies offer 95% (Rintoul, 2019).

This study had some limitations that must be considered. It was not an epidemiological study; therefore, the prevalence figures should be cautiously considered. However, the study was based on a large sample that was collected in an appropriate environment because most Spanish adolescents are in secondary education. In addition, the educational centres used in this study were located in both rural and urban settings in various Spanish regions. Nonetheless, the results should not be regarded as prevalence indicators; rather, they should be considered representative of an existing problem in Spanish society.

In conclusion, this study has revealed the emergence of a public health problem in Spain: online gambling addiction in underage males. Three main factors contribute to this problem: (a) Adolescents tend to be vulnerable to addiction, (b) gambling companies have a commercial interest in gamblers, and (c) there is an absence of adequate gambling regulations intended to prevent addiction.

To prevent gambling addiction, measures other than the provision of truthful information are required. The main problem with responsible gambling models is that they consider gamblers responsible for their disorder, while placing little or no emphasis on harm-inducing gambling policies (Livingstone et al., 2014). The focus of attention should be not on the patient (i.e., the gambler) but on the cause of the addiction (i.e., the gambling companies). Therefore, health policies should move beyond the current responsible gambling model (Hancock & Smith, 2017) and instead regulate gambling according to the principles of ethical gambling (Chóliz, 2018). They should also adopt effective gambling policies based on scientific evidence and on public health criteria (Livingstone et al., 2019), thereby applying moral limits to the market (Sandel, 2012).

As noted by Adams (2008), “the current rapid proliferation of gambling throughout the majority of Western-style democratic nations poses, in the long term, a range of threats to the vibrancy and integrity of the very base that supports their democratic structures and processes” (p. 15). Adams referred to the risks of gambling when economic interests converge between local companies and their respective governments. Currently, online gambling is dominated by transnational companies that exert their influence in much broader spaces, such as the European Union. It is doubtful that the boards of directors of the companies are willing to reduce the benefit of their shareholders, even if this benefit is related to the development of public health problems among both adults and minors.

### References

- Abbott, M., Binde, P., Hodgins, D., Korn, D., Pereira, A., Volberg, R., & Williams, R. (2013). *Conceptual framework of harmful gambling: An international collaboration*. Ontario Problem Gambling Research Centre (OPGRC).
- Abbott, M. W., Volberg, R. A., & Rönnerberg, S. (2004). Comparing the New Zealand and Swedish national surveys of gambling and problem gambling. *Journal of Gambling Studies*, 20(3), 237–258. <http://dx.doi.org/10.1023/B:JOGS.0000040278.08853.c0>
- Adams, P. J. (2008). *Gambling, freedom and democracy*. Routledge.
- American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders* (3rd ed.).
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). <https://doi.org/10.1176/appi.books.9780890425596>
- Blaszczynski, A., Collins, P., Fong, D., Ladouceur, R., Nower, L., Shaffer, H. J., Tavares, H., & Venisse, J. L. (2011). Responsible gambling: General principles and minimal requirements. *Journal of Gambling Studies*, 27(4), 565–573. <https://doi.org/10.1007/s10899-010-9214-0>
- Blaszczynski, A., Ladouceur, R., & Shaffer, H. J. (2004). A science-based framework for responsible gambling: The Reno Model. *Journal of Gambling Studies*, 20(3), 301–317. <https://doi.org/10.1023/B:JOGS.0000040281.49444.e2>
- Brooks, G., Ellis, T., & Lewis, C. (2008). Pachinko: A Japanese addiction? *International Gambling Studies*, 8, 193–205. <https://doi.org/10.1080/14459790802168958>
- Cassidy, R. (2020). *Vicious games: Capitalism and gambling (anthropology, culture and society)*. Pluto Press.

- Chóliz, M. (2010). Experimental analysis of the game in pathological gamblers: Effect of the immediacy of the reward in slot machines. *Journal of Gambling Studies*, 26(2), 249–256. <https://doi.org/10.1007/s10899-009-9156-6>
- Chóliz, M. (2016). The challenge of online gambling: The effect of legalization on the increase in online gambling addiction. *Journal of Gambling Studies*, 32(2), 749–756. <https://doi.org/10.1007/s10899-015-9558-6>
- Chóliz, M. (2017). *Ludens: Gambling addiction prevention program* [Ludens: programa de prevención de adicción al juego]. Psylicom.
- Chóliz, M. (2018). Ethical gambling: A necessary new point of view of gambling in public health policies. *Frontiers in Public Health*, 6, 12. <https://doi.org/10.3389/fpubh.2018.0001>
- Chóliz, M., & Marcos, M. (2019). The epidemic of online gambling addiction in adolescence: An empirical study of gambling disorder [La epidemia de la adicción al juego online en la adolescencia: un estudio empírico del trastorno de juego]. *Revista Española de Drogodependencias*, 44(4), 20–37.
- Chóliz, M., Marcos, M., & Bueno, F. (2021). Ludens: A gambling addiction prevention program based on the principles of ethical gambling. *Journal of Gambling Studies*. <https://doi.org/10.1007/s10899-021-10066-7>
- Chóliz, M., Marcos, M., & Lázaro-Mateo, J. (2019). The risk of online gambling: A study of gambling disorder prevalence rates in Spain. *International Journal of Mental Health and Addiction*, 1–14. <https://doi.org/10.1007/s11469-019-00067-4>
- Chóliz, M., & Sáiz-Ruiz, J. (2016). Regulating gambling to prevent addiction: More necessary now than ever. *Adicciones*, 28(3), 174–181.
- Dickerson, M., J. Hinchy, S. L., England, J., Fabre, & Cunningham, R. (1992). On the determinants of persistent gambling behavior, I. High-frequency poker machine players. *British Journal of Psychology*, 83, 237–248. <https://doi.org/10.1111/j.2044-8295.1992.tb02438.x>
- Dowling, N., Smith, D., & Thomas, T. (2005). Electronic gaming machines: Are they the ‘crack-cocaine’ of gambling? *Addiction*, 100(1), 33–45. <https://doi.org/10.1111/j.1360-0443.2005.00962.x>
- Gerstein, D., Volberg, R. A., Toce, M. T., Harwood, H., Johnson, R. A., Buie, T., Christiansen, E., Chuchro, L., Cummings, W., Engelman, L., & Hill, M. A. (1999). *Gambling impact and behavior study: Report to the National Gambling Impact Study Commission*. National Opinion Research Center.

- Griffiths, M. D. (1993). Fruit machine gambling: The importance of structural characteristics. *Journal of Gambling Studies*, 9, 101–120. <https://doi.org/10.1007/BF01014863>
- Griffiths, M. D. (2003). Internet gambling: Issues, concerns, and recommendations. *CyberPsychology & Behavior* 6(6): 557–568. <https://doi.org/10.1089/109493103322725333>.
- Griffiths, M. D. (2008). *Impact of high-stake, high-prize gaming machines on problem gambling: Overview of research findings*. Report prepared for the Great Britain Gambling Commission.
- Griffiths, M. D., Parke, A., Wood, R., & Parke, J. (2006). Internet gambling: An overview of psychosocial impacts. *UNLV Gaming Research & Review Journal*, 10(1), 27–39.
- Hancock, L., & Smith, G. (2017). Critiquing the Reno Model I-IV international influence on regulators and governments (2004–2015)—the distorted reality of “responsible gambling.” *International Journal of Mental Health and Addiction*, 15(6), 1151–1176. <https://doi.org/10.1007/s11469-017-9746-y>
- Korn, D. A., & Shaffer, H. J. (1999). Gambling and the health of the public: Adopting a public health perspective. *Journal of Gambling Studies*, 15(4), 289–365. <https://doi.org/10.1023/a:1023005115932>
- LaBrie, R. A., LaPlante, D. A., Nelson, S. E., Schumann, A., & Shaffer, H. J. (2007). Assessing the playing field: a prospective longitudinal study of Internet sports gambling behavior. *Journal of Gambling Studies*, 23(3), 347–362. <https://doi.org/10.1007/s10899-007-9067-3>
- Livingstone, C., Rintoul, A., de Lacy-Vawdon, C., Borland, R., Dietze, P., Jenkinson, R., Livingston, M., Room, R., Smith, B., Stooze, M., Winter, R., & Hill, P. (2019). *Identifying effective policy interventions to prevent gambling-related harm*. Victorian Responsible Gambling Foundation.
- Livingstone, C., Rintoul, A., & Francis, L. (2014). What is the evidence for harm minimisation measures in gambling venues? *Evidence Base*, 2, 1–24. <https://doi.org/10.21307/eb-2014-002>
- Livingstone, C. H., Woolley, R., Zazryn, T. R., Bakacs, L., & Shami, R. G. (2008). *The relevance and role of gaming machine games and game features on the play of problem gamblers*. Independent Gambling Authority.
- Marshall, D. (2009). Gambling as a public health issue: The critical role of the local environment. *Journal of Gambling Issues*, 23, 66–80. <https://doi.org/10.4309/jgi.2009.23.4>

- McBride, J., & Derevensky, J. (2009). Internet gambling behavior in a sample of online gamblers. *International Journal of Mental & Health Addiction*, 7, 149–167. <https://doi.org/10.1007/s11469-008-9169-x>
- Mentzoni, R. A., Laberg, J. C., Brunborg, G. S., Molde, H., & Pallesen, S. (2012). Tempo in electronic gaming machines affects behavior among at-risk gamblers. *Journal of Behavioral Addictions*, 1(3), 135–139. <https://doi.org/10.1556/JBA.1.2012.004>
- Meyer, G., Fiebig, M., Hafeli, J., & Morsen, C. (2011). Development of an assessment tool to evaluate the risk potential of different gambling types. *International Gambling Studies*, 11(2), 221–236. <https://doi.org/10.1080/14459795.2011.584890>
- Monaghan, S. (2009). Responsible gambling strategies for Internet gambling: The theoretical and empirical base of using pop-up messages to encourage self-awareness. *Computers in Human Behavior*, 25(1), 202–207. <https://doi.org/10.1016/j.chb.2008.08.008>
- Morgenstern, O., & Von Neumann, J. (1944). *Theory of games and economic behavior* (Vol. 60). Princeton University Press.
- Parke, J., & Griffiths, M. (2007). The role of structural characteristics in gambling. In G. Smith, D. C. Hodgins, & R. J. Williams (Eds.), *Research and measurement issues in gambling studies* (pp. 217–249). Elsevier.
- Petry, N. M. (2006a). Internet gambling: An emerging concern in family practice medicine? *Family Practice*, 23, 421–426. <https://doi.org/10.1093/fampra/cml005>
- Petry, N. M. (2006b). Should the scope of addictive behaviors be broadened to include pathological gambling? *Addiction*, 101, 152–160. <https://doi.org/10.1111/j.1360-0443.2006.01593.x>
- Potenza, M. N. (2006). Should addictive disorders include non-substance-related conditions? *Addiction*, 101, 142–151. <https://doi.org/10.1111/j.1360-0443.2006.01591.x>
- Rintoul, A. (2019). *Modernising harm prevention for gambling in Australia: International lessons for public health policy and improved regulation of gambling*. Report to Winston Churchill Memorial Trust.
- Rossow, I., & Hansen, B. H. (2016). Gambling and gambling policy in Norway – An exceptional case. *Addiction*, 111, 593–598. <https://doi.org/10.1111/add.13172>
- Sandel, M. J. (2012). *What money can’t buy: The moral limits of markets*. Macmillan.
- Schüll, N. D. (2012). *Addiction by design: Machine gambling in Las Vegas*. Princeton University Press.

- Shaffer, H. J., & Korn, D. A. (2002). Gambling and related mental disorders: A public health analysis. *Annual Review of Public Health, 23*(1), 171–212. <https://doi.org/10.1146/annurev.publhealth.23.100901.140532>
- Sharpe, L., Walker, M., Coughlan, M. J., Enersen, K., & Blaszczynski, A. (2005). Structural changes to electronic gaming machines as effective harm minimization strategies for non-problem and problem gamblers. *Journal of Gambling Studies, 21*(4), 503-520. <https://doi.org/10.1007/s10899-005-5560-8>
- Smith, A. D., & Rupp, W. T. (2005). Service marketing aspects associated with the allure of e-gambling. *Services Marketing Quarterly, 26*(3), 83–103.
- Spanish Official State Gazette (2011, 27 May). *Gambling Regulation Act 2011*. Order under Section II, article 8.1. <https://www.boe.es/eli/es/l/2011/05/27/13/con>.
- Williams, R. J., West, B. L., & Simpson, R. I. (2012). *Prevention of problem gambling: A comprehensive review of the evidence and identified best practices*. Ontario Problem Gambling Research Centre and the Ontario Ministry of Health and Long Term Care.
- Williams, R. J., & Wood, R. T. (2004). The proportion of gaming revenue derived from problem gamblers: Examining the issues in a Canadian context. *Analyses of Social Issues & Public Policy, 4*(1), 33–45. <https://doi.org/10.1111/j.1530-2415.2004.00033.x>
- Williams, R. J., & Wood, R. T. (2007a). *Internet gambling: A comprehensive review and synthesis of the literature*. Report prepared for the Ontario Problem Gambling Research Centre, Guelph, Ontario.
- Williams, R. J., & Wood, R. T. (2007b). The proportion of Ontario gambling revenue derived from problem gamblers. *Canadian Public Policy, 33*(3), 367–387.
- Williams, R. J., & Wood, R. T. (2016). *What proportion of gambling revenue is derived from problem gamblers?* [Presentation]. Alberta Gambling Research Institute Conference, Banff, AB, Canada.
- Wood, R. T., & Williams, R. J. (2007a). How much money do you spend on gambling? The comparative validity of question wordings used to assess gambling expenditure. *International Journal of Social Research Methodology, 10*, 63–77. <https://doi.org/10.1080/13645570701211209>
- Wood, R. T., & Williams, R. J. (2007b). Internet gambling: Past, present and future. In G. Smith, D. C. Hodgins, & R. J. Williams (Eds.), *Research and measurement issues in gambling studies* (pp. 486–502). Elsevier.

Wood, R. T., & Williams, R. J. (2007c). Problem gambling on the Internet: Implications for Internet gambling policy in North America. *New Media & Society*, 9(3), 520–542. <https://doi.org/10.1177/1461444807076987>

Wood, R. T., & Williams, R. J. (2009). *Internet gambling: Prevalence, patterns, problems, and policy options*. Final Report to the Ontario Problem Gambling Research Centre. Ontario Problem Gambling Research Centre. <http://hdl.handle.net/10133/693>

Wood, R. T., Williams, R. J., & Parke, J. (2012). The relationship between problem gambling and Internet gambling. In R. J. Williams, R. T. Wood, & J. Parke (Eds.), *Routledge international handbook of internet gambling* (pp. 200–211). Routledge.

World Health Organization. (1979). *International statistical classification of diseases and related health problems* (9th ed.). <https://icd.who.int>

World Health Organization. (2018). *International statistical classification of diseases and related health problems* (11th ed.). <https://icd.who.int>

\*\*\*\*\*

Submitted December 17, 2020; accepted December 2, 2021. This article was peer reviewed. All URLs were available at the time of submission.

For correspondence: Mariano Chóliz, Ph.D., Psicología Básica, University of Valencia, Blasco Ibáñez, 21, 46010, Valencia, Spain.  
E-mail: [Mariano.Choliz@uv.es](mailto:Mariano.Choliz@uv.es)

Competing interests: None reported (all authors).

Ethics approval: This research was approved by the ethics committee of the University of Valencia, Spain (Procedure number: H1482079199937). This certificate confirms that the research respects the fundamental principles established by the 1964 Helsinki Declaration, and its later amendments, and by the Council of Europe Convention on human rights; it also complies with Spanish legislation in the field of biomedical research, the protection of personal data, and bioethics. All data are anonymous and are in accordance with Law 15/1999 regarding the protection of personal data. The questionnaires were answered voluntarily by the adolescent participants. Informed consent was obtained from the parents of the minors.

Acknowledgements/Funding Source(s): This research project has been funded in part by the Addiction Service (PMD) of the Valencia City Council (Spain). In the past three years, the authors have received funding for other projects involving gambling addiction from the Health Department of Mapfre Foundation and the Youth Council of the Government of Valencia. The authors declare that they have not received funding from gambling companies.