

Online Gambling In Europe: Prevalence, Risk and Regulatory Challenges In The Digital Era

AL KHOURI, I.¹, IANNACCONE, B.², KAŠČÁKOVÁ, I.³

- 1 | Shams Orthopaedic Clinic Cesta k nemocnici 1, 974 01, Banská Bystrica, Slovakia
- 2 | Technical University of Košice, Faculty of Mining, Ecology, Process Control and Geotechnologies, Institute of Earth Resources, Department of Geotourism and Mining Tourism, Letná 9, 042 00, Košice, Slovakia
- 3 | Technical University of Košice, Faculty of Mining, Ecology, Process Control and Geotechnologies, Institute of Earth Resources, Department of Earth Resources Management, Letná 9, 042 00, Košice, Slovakia

Citation | Al Khouri, I., Iannaccone, B., & Kaščáková, I. (2026). Online gambling in Europe: Prevalence, risk and regulatory challenges in the digital era. *Adiktologie*, 26(1), 41–54.

INTRODUCTION: Digital transformation and market liberalisation have intensified the growth of online gambling and related risks, underscoring the need for targeted research, regulation, and prevention. This study synthesises evidence on the prevalence, regional differences, and effectiveness of digital regulatory measures. **METHODS:** This study was designed as a comprehensive secondary analysis and systematic review of available empirical data on online gambling in Europe, focusing on prevalence, risk behaviours, and regulatory policies. **RESULTS:** Online gambling in Europe is rising, especially among young people and men. Apparent regional differences exist: Western and Northern Europe show higher participation, while Central and Eastern Europe show more dynamic growth. Adolescent exposure is increasing. Regulatory models that combine state restrictions with mandatory data sharing appear more effective than voluntary approaches. **CONCLUSIONS:** Online gambling in Europe is rapidly expanding and

constitutes a serious public health concern, requiring a coherent, evidence-based, and ethically responsible policy that protects vulnerable populations.

Keywords | Online gambling – Prevalence – Problem gambling risk – Regulatory frameworks

Submitted | November 17, 2025

Accepted | March 16, 2026

Grant affiliation | This research was funded by the Ministry of Education, Research, Development and Youth of the Slovak Republic and the Slovak Academy of Sciences as a part of the research project VEGA No. 1/0700/25.

Corresponding author | Barbora Iannaccone, Technical University of Košice, Faculty of Mining, Ecology, Process Control and Geotechnologies, Department of Geotourism and Mining Tourism, Letná 9, 042 00, Košice, Slovakia

barbora.iannaccone@tuke.sk

1 INTRODUCTION

Europe has the largest number of gambling establishments, by a significant margin. The steady growth of online gambling revenues is reflected in the segment's growing share of the overall market. Although the COVID-19 pandemic hit the gambling industry hard, it has since returned to pre-pandemic levels. While traditional land-based establishments are in gradual decline, the online gambling industry continues to expand significantly (EGBA, 2024; Statista, 2024).

The digital transformation of the gambling industry has spurred the rapid development of online formats, which now constitute a significant and fast-growing segment of the European market—according to statistics from the European Gaming and Betting Association (EGBA), online gambling in the EU and the UK generated approximately €38.2 billion in 2022, accounting for 35% of total European gambling market revenues (EGBA, 2022). This trend not only entails technological or aesthetic changes in the business environment but also the emergence of new challenges in areas such as public health, consumer protection, and regulation.

In a broader sense, the gambling industry encompasses activities in which consumers wager money or other valuables on events with uncertain outcomes, primarily to win cash or tangible assets. This industry encompasses casinos, lotteries, sports betting, online gambling, and other forms (Statista, 2024; Gainsbury, 2015). In recent decades, there has been a significant increase in online gambling, driven by digitalisation and the liberalisation of legislative frameworks (Gainsbury et al., 2012; Kim & King, 2020). Technology has facilitated the diversification and exponential growth of remote betting options, eliminating the need for a physical presence in gaming clubs or casinos. The expansion of online platforms has simultaneously increased the accessibility, anonymity and variety of games (Mora-Salgueiro et al., 2021; Gainsbury et al., 2013; Ghelfi et al., 2024).

Online gambling, operated via the internet on various devices (computers, mobile phones, tablets or digital televisions), represents a phenomenon with a higher risk profile than traditional forms of gambling (Gainsbury et al., 2013; Gabellini et al., 2023). The digital environment enables faster, more intense, and uninterrupted engagement with the game, increasing the likelihood of negative consequences (Council of Europe, 2024). Although most adults consider gambling a socially acceptable form of recreation, for some players it can become problematic or addictive with severe impacts on financial, relational, psychological and physical aspects of life (Guillou-Landreat et al., 2021; Garcia Pérez et al., 2024).

The World Health Organisation (WHO) recognised the seriousness of this phenomenon by including “*Gambling Disorder*” - including its online form - in the International Classification of Diseases ICD-11 (WHO, 2018). This refers to a persistent pattern of gambling behaviour despite the presence of significant distress or impairment of functioning in various areas of life.

The increasing prevalence of online gambling and the risk of developing problematic behaviour are becoming the subject of intensive research. Analyses across 20 European jurisdictions point to the need for harmonisation of measurement tools and systematic monitoring (Carran, 2022). Further studies emphasise the growth of market share for online formats, their social acceptance, and, at the same time, a worsening balance between exploitation and regulatory protection (Mordor Intelligence, 2025).

In recent years, European regulatory frameworks have increasingly focused on public health protection principles, but remain fragmented, differing in licensing regimes, advertising, deposit limits, and the degree of responsibility transferred to the player. Measures such as restrictions on advertising, the introduction of deposit limits, or the obligation to share data for research purposes represent positive steps; however, their implementation and effectiveness are uneven (Marionneau et al., 2025).

This study aims to analyse the state of online gambling in Europe from the perspective of prevalence, risks and regulatory challenges in the digital era. The first part focuses on the extent of online gambling involvement and the prevalence of problem gambling at the regional level. The second part examines the risk mechanisms associated with digital formats, including mobile devices, game speed, incentive structures, and user tracking via algorithmic systems. The third part maps the regulatory responses of European countries, from legislative frameworks, advertising controls, and deposit limits to data sharing and market monitoring.

With the increasing digitalisation and expansion of online gambling in Europe, research, regulation, and prevention must keep pace with market dynamics. This work contributes to a deeper understanding of online gambling in the European context. It offers a starting point for more effective protection of vulnerable groups and the reduction of gambling-related harm in the digital era.

2 LITERATURE REVIEW

The epidemiology of online gambling in Europe has been characterised by significant dynamics in the last decade, driven by digitalisation, liberalisation of the gambling market and the availability of internet platforms. The rapid growth of online gambling, particularly in sports betting and online casinos, has altered player behaviour patterns and increased the risk of developing problem gambling, as highlighted by several meta-analyses and systematic reviews (Tran et al., 2024; Gabellini et al., 2023).

According to a comprehensive meta-analysis by Tran et al. (2024), which included 3692 publications and 380 representative samples from 68 countries, 46.2% of the adult population engaged in gambling in the past 12 months, with 8.7% showing patterns of risky gambling and 1.41% classified as problem gamblers. The authors state that the highest rate of problem gambling is associated with online gambling formats, especially online casinos and slot machines, where the prevalence

reached 15.8%. The Lancet Public Health Commission also draws similar conclusions *regarding gambling (2024), highlighting a significant shift toward increased risky gambling in the online environment and emphasising* the need for stricter regulation at the European Union level (Wardle et al., 2024).

Research by Gabellini et al. (2023) provides additional insight into the prevalence of problem gambling during 2016-2022. In a meta-analysis of 23 studies, the authors found that 1.29% of adults showed signs of problem gambling and 2.43% of risky gambling. Given the methodological differences across countries, they emphasised the need to harmonise measurement tools and classification criteria. These findings confirm an earlier systematic review (Calado et al., 2016), which identified wide variation in the prevalence of problem gambling across European countries (0.12-3.4%) and noted an association between the liberalisation of the gambling market and the growth in population participation in these activities. In the context of the European adolescent population, research on online gambling focuses on risky behaviour and the emergence of addiction. The systematic review by Calado et al. (2017) reports that 0.2-12.3% of adolescents meet the criteria for problem gambling. Montiel et al. (2021), in a review of 16 international studies, emphasise that the online environment is hazardous for young players due to high availability, anonymity and aggressive marketing strategies of operators. More recent data from Testa et al. (2025), based on an ESPAD survey in 28 countries, show that 13.74% of European adolescents gamble, with the frequency of gambling correlated with alcohol and tobacco consumption and low levels of parental supervision.

Jurisdiction-specific studies confirm regional differences in both prevalence and risk factors. Aragay et al. (2021) found that online sports betting is the most prevalent form of gambling among young people, and that it is more common among men with higher levels of education and higher weekly spending. Choliz et al. (2021) show that after the legalisation of online gambling in Spain (2012), there was an increase in the incidence of gambling disorders, with 6% of adults participating in online gambling. Sociodemographically, a higher risk is associated with younger men. Similarly, Tomei et al. (2022) in a Swiss study demonstrated a higher prevalence of problem gambling among young men involved in online forms of gambling, which underlines the need for targeted prevention in higher-risk populations. An important contribution to the discussion is also made by Price et al. (2021), who point out that although problem gamblers represent a minority, most of the social harm comes from so-called low-risk recreational gamblers. This phenomenon has significant implications for public health, as gambling affects a wide range of social determinants, from financial instability to psychological distress. Molina-Fernández et al. (2023) emphasise that the widespread social acceptance of gambling, driven by economic and political interests, leads to a regulatory shift, transforming gambling from an individual addiction to a broader epidemiological problem. With respect to risk mechanisms, the design features of online products and platforms are crucial. Dark patterns, manipulative personalisation, and elements of online choice architecture increase exposure and make it harder to control gambling; this conclusion is supported by regulatory and behavioural analyses (DG JUST, CMA, Citizens Advice) and

by Wardle et al. (2024). Research also points to the convergence of video games and gambling (e.g., loot boxes) and to new hybrid forms of risk (e.g., crypto casinos, gamblified crypto-assets). Marketing overviews suggest that stricter advertising policies can reduce harms, particularly for young and vulnerable groups. Regulatory trends are shifting toward a greater public health orientation, with comparative analyses reporting increases in deposit/stake limits, player identification rules, and data sharing for research purposes. However, implementation remains uneven (Tran et al., 2024).

From a regulatory perspective, the European Union faces a growing need to harmonise approaches to responsible gambling. A recent review by Marionneau et al. (2025) analysed gambling limits and their implementation in EU Member States. The findings show that a minority of countries have practical tools to prevent risky behaviour. The authors call for strengthening regulatory frameworks that reflect the digital environment and protect the most vulnerable groups.

The above research suggests that online gambling in Europe is a multifaceted phenomenon influenced by social, technological, and health factors. Given the documented increase in prevalence and regional disparities, it is necessary to approach this field as a public health issue, with an emphasis on research, regulation, and prevention targeting high-risk groups and young players.

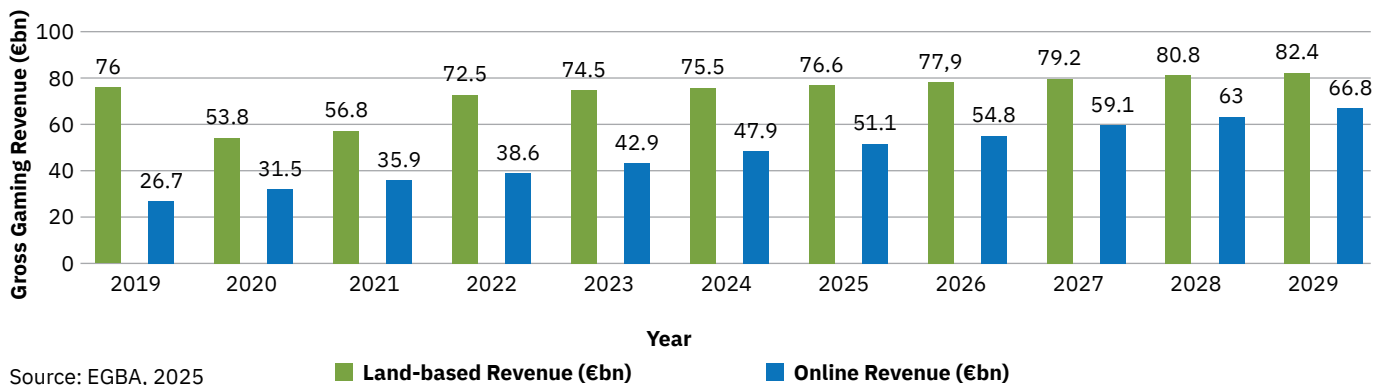
Building on the evidence summarised above, the objective of this study is to synthesise and compare (i) the prevalence of online gambling and problem gambling across European regions, (ii) key digital risk mechanisms associated with online formats, and (iii) regulatory responses and their apparent effectiveness in reducing harm.

Accordingly, the study addresses three guiding questions: (1) How do participation in online gambling and the prevalence of problem gambling differ across European regions? (2) Which platform and product characteristics are most consistently associated with elevated risk? (3) Which regulatory tools (e.g., advertising restrictions, mandatory limit-setting, self-exclusion systems, and data sharing) show the strongest evidence of public health benefit in the European context?

3 THEORETICAL BACKGROUND

3.1. QUANTIFICATION OF THE RANGE OF ONLINE GAMBLING INVOLVEMENT AND THE DEGREE OF PROBLEM GAMBLING AT THE REGIONAL LEVEL

The digitalisation of the gambling industry has fundamentally transformed the gambling environment in Europe. The last decade has seen a significant increase in involvement in online forms of gambling, which is reflected in the growing revenues from this segment and the increasing prevalence of problem gambling. According to the European Gaming and Betting Association (EGBA, 2025), total gross gambling revenue in the EU-27 and the UK is expected to reach €123.4 billion in 2024, with online formats accounting for 39% of the total market in

Figure 1 | Development of Gross Gaming Revenue in Europe by Type of Platform (2019-2029)

Source: EGBA, 2025

2024 – and projected to increase to 45% by 2029 (Fig. 1). This shift to digital platforms is not only an economic phenomenon, but also a significant public health challenge.

The most recent systematic meta-analysis by Tran et al. (2024), which analysed 380 sample studies from 68 countries, estimated that globally 46.2% of adults and 17.9% of adolescents had engaged in gambling in the past 12 months, with 1.41% of adults meeting criteria for problem gambling. In Europe, gambling involvement rates range between 41% and 49% depending on the region, with online gambling tending to grow rapidly (Wardle et al., 2024). The prevalence of problem gambling has stabilised at 1.3% according to regional data. However, in populations actively involved in online gambling, it reaches up to 8.6%, and even 15.8% for online casinos or slots (Tran et al., 2024).

Regional differences reflect variability in regulatory approaches and the availability of gambling. Abbott (2020) points out that the expanded offer of gambling leads to an increase in both participation and the occurrence of risky behaviour, especially in so-called “toxic forms of gambling, such as electronic slot machines and online betting Western Europe, where the market has been liberalized for a long time, shows higher rates of online participation than Eastern Europe, where traditional, terrestrial forms still dominate (Wardle et al., 2024). Demographically, online gambling is dominated by young men aged 18-34 (Tomei et al., 2022). These players show a higher risk of developing addiction, which is related to the social normalisation of digital betting and the high availability of online platforms. Within the group of adolescents, the online gambling involvement reached 10.3%, and problem gambling reached up to 26.4%, with online sports betting being the dominant form (Aragay et al., 2021; Calado et al., 2016). This trend is also confirmed by the *Lancet Public Health Commission* (Wardle et al., 2024), which warns of the rapid expansion of gambling through digital channels and the insufficient effectiveness of regulation in protecting juveniles.

The European gambling market is among the largest in the world, with significant regional variation in digitalisation and online penetration. According to EGBA (2025), the Nordic countries, notably Sweden (68.3%), Finland (68.1%) and Denmark (68.1%), have the highest shares of online gambling. These countries are considered leaders in the regulated digitalisa-

tion of gambling, implementing public health models based on centralised self-exclusion registers, mandatory limits, and monitoring of gambling behaviour. In contrast, Southern Europe, represented by Italy (21.7%) and Spain (14.2%), remains largely dependent on traditional land-based establishments. Italy is the largest gambling market in Europe with revenues of €21.0 billion in 2023, followed by the United Kingdom (€19.8 billion), Germany (€14.4 billion) and France (€14.0 billion). The United Kingdom has the most developed online segment, which in 2023 accounted for €11.1 billion, i.e., more than half of the country’s total gambling turnover. This trend is a consequence of a liberalised legal framework, a transparent licensing policy, and the development of data mechanisms (UK Gambling Commission, 2024). Central European countries, such as Poland, the Czech Republic, Slovakia, Hungary, and Austria, are in a transitional phase; the share of online gambling ranges from 40% to 55%, indicating a gradual adaptation to the digital environment.

In terms of problem gambling rates, significant differences are observed across countries. Tomei et al. (2022) found that 3.6% of young men in Switzerland meet the criteria for problem gambling, with 21.4% of them engaging in online gambling. Similarly, Wardle et al. (2024) report that the rate of problem gambling among online gamblers is three times higher than in the general population. These data confirm that the intensity of online gambling engagement is closely correlated with the level of risky behaviour, especially in countries with high technological availability and low levels of regulatory control. Marionneau et al. (2025) emphasise that centralised deposit limits and mandatory identification systems (as in Finland or Germany) significantly reduce the prevalence of problem gambling compared to more liberal models based on voluntary self-regulation. From a public health perspective, therefore, the quantification of gambling engagement and the level of problem gambling is not just a statistical indicator, but an indicator of structural inequalities in access to risky products. Harmonisation of data and a standardised measurement methodology within the EU are necessary for effective cross-country comparisons and the implementation of prevention policies.

The current situation shows that, although online gambling accounts for less than half of the total market, its impact on public health is disproportionately high given the nature of risky products, continuous availability and aggressive digital marketing.

The quantification of involvement thus confirms the need for a common European approach to data collection, player monitoring and the evaluation of regulatory measures.

3.2. RISK AND IMPACT OF ONLINE FORMATS

Online gambling (OG) represents a dynamically developing form of gambling that is fundamentally changing player behaviour and patterns of risk behaviour in the European context. OG has increased accessibility and frequency and reduced monetary and spatial constraints, thereby contributing to the development of problem gambling. Thanks to mobile devices (tablets, smartphones), OG is accessible anytime, anywhere, often anonymously and exclusively using “virtual money” (Aragay et al., 2021; Tomei et al., 2022). These characteristics remove the traditional barriers associated with physical presence in casinos and support more intense, faster, and continuous player engagement, which increases the risk of addiction and financial harm.

Findings from recent meta-analyses suggest that online casino games and slot machines (also known as slots) pose the highest risk of developing problem gambling (Lopez-Fernandez & Kuss, 2020). Approximately 15.8% of adult online casino players were classified as problem gamblers, while the overall problem gambling rate among all online gamblers reached 8.6% (95% CI 6.0-11.5) (Tran et al., 2024). Among adolescents, who represent a particularly vulnerable group, the rate of online gambling involvement reached 10.3%, with problem gambling within online casinos or slots estimated at up to 26.4% (95% CI 22.3-30.7) (Aragay et al., 2021). These data confirm that digital gambling formats carry a significantly higher risk of harmful consequences than their traditional (offline) equivalents.

Digital technologies and online infrastructures are fundamentally changing the nature of gambling behaviour. Online formats are fast, interactive, and highly stimulating, which reduces perceived risk and encourages impulsive decision-making. Platforms are designed to maximise engagement time and minimise moments of self-reflection for the player. The use of virtual money and automatic functions (e.g., autoplay or repeat bet) can weaken players’ financial awareness (Tomei et al., 2022).

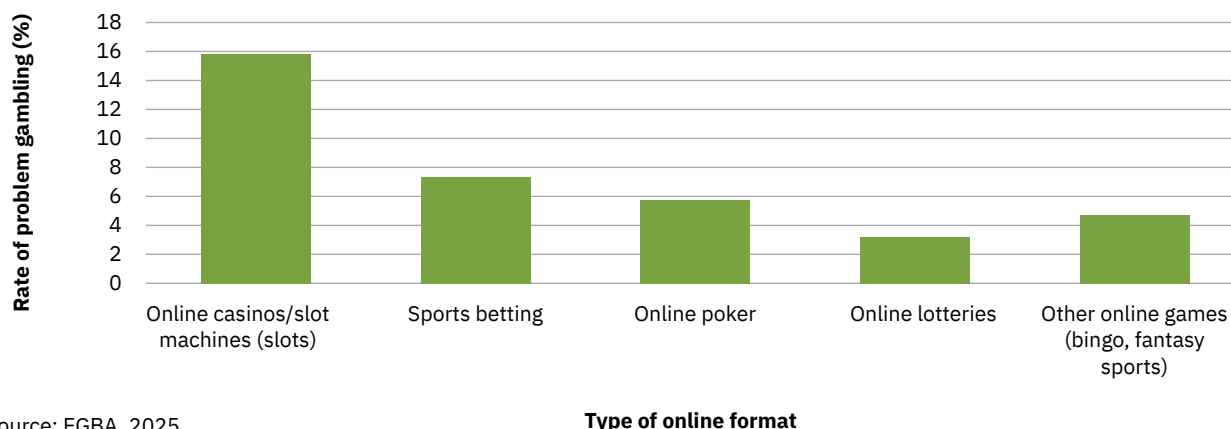
In addition to the structural elements of games, digital marketing strategies also play a fundamental role. Advertisements, sponsorship and personalised offers create a psychological environment that normalises gambling behaviour and stimulates more frequent gaming (Mallorqui-Bagué, 2017; McGrane et al., 2023). At the same time, the online environment enables unprecedented tracking and targeting of users, allowing gambling platforms to predict and influence consumer behaviour through online choice architecture. This architecture uses behavioural design elements (e.g., visual stimuli, rewards, notifications) that can make it harder for a player to regulate their gaming and reduce impulse control (Cemiloglu et al., 2022).

Empirical studies show that online problem gamers more often suffer from psychological distress, anxiety and depression, with the rate of psychological distress correlating with the intensity of gaming (Cameron & Ride, 2023; Håkansson et al., 2020; Sharma & Weinstein, 2025). Several studies in clinical psychology indicate that increased anxiety, depression, and psychological distress complicate functioning within satisfactory social relationships (Boleková & Chlebcová, 2021; Boleková & Chlebcová, 2024; Boleková, Chlebcová & Ciceková, 2023). Increased impulsivity, low self-regulation, and stimulation-seeking are among the personality traits most frequently associated with problem OG (Jiménez-Murcia et al., 2021; Hing et al., 2022; Čerešník, Čerešníková & Lenghart, 2021). Problematic online gaming also has a significant impact on social functioning, causing family conflicts, work difficulties and financial problems, which can lead to secondary mental disorders (Ropovik et al., 2022; Gooding & Williams, 2024; Chlebcová & Topor, 2022).

At the same time, it is shown that OG has strong links to other forms of risky behaviour, especially excessive consumption of alcohol, drugs, and tobacco (Fluharty et al., 2022; Swanton et al., 2021). Research suggests that excessive media use, frequent computer game play, and early exposure to digital environments increase the likelihood of gambling (Mantere et al., 2025; Oksanen et al., 2024).

From the comparison of the various online gambling formats (Fig. 2), it follows that online casino games and slot machines (slots) represent the highest risk of developing problem gam-

Figure 2 | The rate of problem gambling by type of online format



Source: EGBA, 2025

bling. Approximately 15.8% of adult gamblers in this category meet the criteria for problem gambling, more than twice the rate for sports betting (7.2%) and triple the rate for online poker (5.6%). Online lotteries exhibit the lowest rate of problem gambling (3.1%), likely attributable to their lower frequency of play, longer intervals between bets, and reduced interactivity (Tran et al., 2024).

The riskiest aspect of online casinos and slot machines is their design architecture, which includes fast game cycles, visual stimulation, and the use of virtual currencies, “which weakens the perception of real financial value” (Tomei et al., 2022). These factors, combined with the permanent availability of games via mobile devices, reduce control over gaming and support impulsive decision-making (Cemiloglu et al., 2022).

Special attention should be paid to the age group of adolescents and young adults, who are expanding online gambling as a part of digital culture (Aragay et al., 2021). The rate of involvement in any online gambling among adolescents reaches approximately 10.3%, with up to 26.4% of adolescents who play online casino games or slot machines meeting the criteria for problem gambling. These values are three to four times higher than in adult populations, indicating the extreme vulnerability of young gamblers. The risk in adolescents is determined by several factors, including lower cognitive self-regulation, higher impulsivity, and insufficient financial literacy (Jiménez-Murcia et al., 2020; Hing et al., 2022). Additionally, the online environment offers young players anonymity and a sense of social acceptance, particularly through gaming forums, influencer marketing, and gamified elements (Mallorquí-Bagué et al., 2017; McGrane et al., 2023). These mechanisms increase the likelihood that young people will progress from experimental gaming to regular or problem gambling.

From a public health perspective, this group is significant because early onset of gambling behaviour is one of the strongest predictors of later development of gambling disorder (Ghelfi et al., 2024). Research also confirms that adolescent gamblers are more likely to suffer from comorbid psychological problems, such as depression, anxiety, and conduct disorders (Augner et al., 2022; Allami et al., 2023).

The overall results point to the need for a differentiated approach to regulation and prevention. While for the adult population, it is appropriate to focus on gambling limits, data monitoring, and warning systems, for young people, education, parental supervision, and regulation of digital marketing are key. The differences between the individual gambling formats clearly show that the technological and behavioural characteristics of the online environment significantly influence the riskiness of gambling, which confirms the need for a public health and systemic approach to the regulation of online gambling in Europe.

The risk profile of online gambling formats is multi-dimensional, combining technological, behavioural, psychological and social factors that together increase the likelihood of developing problem gambling. The increasing availability of online gambling characterises the European context, intense digital advertising and the proliferation of mobile games, which weaken traditional barriers to control. These findings underline the

need to strengthen a public health approach to regulating online gambling, including prevention, monitoring and education aimed at vulnerable groups, especially young people.

3.3. REGULATORY RESPONSES OF EUROPEAN COUNTRIES

This section of the study analyses the development, state and policy direction of online gambling regulation in Europe. It points to the transition from economic-licensing models to approaches based on public health and consumer protection. It focuses on the main pillars of regulatory practice, including legislative frameworks, advertising control, the introduction of financial and time limits, monitoring of payment flows, and data sharing between regulatory bodies.

The analysis reveals significant differences between European countries and indicates a trend of gradual convergence toward an integrated regulatory model. Particular emphasis is placed on examples of good practice in countries such as Germany, Sweden, and Finland, which have implemented centralised systems for limits, self-exclusion, and data transparency. The chapter also highlights persistent challenges, including legislative fragmentation, uneven implementation of measures, and the need to establish a single European framework for online gambling regulation.

3.3.1. LEGISLATIVE FRAMEWORKS AND THEIR DEVELOPMENT

The regulation of online gambling in Europe has undergone a significant transformation in the last decade. Countries in the European Union and the European Economic Area (EU/EEA) have undertaken extensive legislative reforms to mitigate the risks and harms associated with digital gambling. Between 2018 and 2021, up to 67 countries worldwide adopted significant legislative or regulatory changes, with Europe among the regions with the highest number of restrictive measures (Ukhova et al., 2024). More than 40% of European jurisdictions have introduced advertising restrictions, and nearly 30% have adopted new rules for the processing of player data, as well as spending and loss limits.

Although regulatory approaches vary across countries, a common trend is a shift from a purely economic licensing approach to a public health model. Nevertheless, most new laws remain focused on individual player responsibility, rather than systemic interventions (Van Schalkwyk et al., 2021; Delfabbro & King, 2019). Regulations are often implemented as non-binding guidelines or recommendations that aim to promote “responsible gaming”, but rarely address structural determinants of the market, such as game design, accessibility, or systemic spending limits.

European countries differ in the degree of centralisation, their approach to limits, and their understanding of responsibility for harm. Germany and Finland represent system-oriented models that integrate financial limits, mandatory self-exclusion and centralised databases. Sweden employs a hybrid model that combines mandatory self-exclusion and recommended limits

Table 1 | Comparative Overview of Regulatory Frameworks for Online Gambling in Selected European Countries

Country	Main Legislative Framework	Advertising Regulation	Deposit / Loss / Time Limits	Self-Exclusion and Player Protection	Data Sharing and Supervision	System Characteristics
Germany	<i>Interstate Treaty on Gambling (Glücksspielstaatsvertrag 2021)</i>	Strict restrictions; advertising banned during live sports broadcasts and at night; mandatory risk warnings	Mandatory monthly deposit limit of €1,000 across all operators; mandatory time limits for slot games	Central self-exclusion register OASIS ; registered individuals prohibited from gambling	Central player account database; mandatory reporting of deposits, winnings, and limit breaches	One of the most comprehensive systems in the EU, integrating limits, data, and supervision
Sweden	<i>Gambling Act (Spelagen 2019) & Gambling Ordinance</i>	Advertising permitted but restricted; ban on targeting minors; mandatory risk and help information	Weekly deposit limit of 5,000 SEK (approx. €450) for online casinos; players may set lower personal limits	National self-exclusion system Spelpaus , unified across all providers	Mandatory data sharing with Spelinspektionen ; monitoring of player behavior	Combination of mandatory and voluntary limits with strong consumer protection
Finland	<i>Lotteries Act (Arpajaislaki); monopoly model of Veikkaus</i>	Restricted advertising; strict oversight of content and placement	Mandatory daily and monthly limits for online games (€500/day; €2,000/month); system-level limits per account	Mandatory identification and registration; immediate self-exclusion option	Central database operated by Veikkaus , used for prevention and targeted alerts	Public-health-oriented model with state monopoly and strong prevention mechanisms
Italy	<i>Legislative Decree No. 96/2017; "Decreto Dignità" (2018)</i>	Total advertising ban on gambling across all media and online platforms	No centralized limits; operators must provide voluntary deposit and time limits	Self-exclusion through the National Player Register (Registro Unico Autoesclusione)	Limited data sharing; supervision by Agenzia delle Dogane e dei Monopoli	Restrictive model focused on reducing exposure rather than system-wide limits
Spain	<i>Royal Decree 958/2020 on Commercial Communications of Gambling Activities</i>	Advertising allowed only during late-night hours; ban on sports team sponsorships; restrictions on influencers	Mandatory loss and deposit limits upon account registration; players may adjust limits	Self-exclusion via the General Directorate for Gambling Regulation (DGOJ)	Mandatory sharing of player account data with DGOJ ; regular audits	Balanced model emphasizing advertising control and responsible gam

Source: (Ukhova et al., 2024; Marionneau et al., 2025).

with strict operator supervision. In contrast, Italy and Spain employ more restrictive marketing strategies, with regulatory interventions focused on consumer protection and reducing exposure to advertising, rather than on system limits. A common trend across the region is the increasing emphasis on data sharing and analytical oversight, which facilitates connections among regulation, public health, and scientific research. This approach forms the basis for European harmonisation towards a common framework that would enable coordinated measures in the prevention, limits, and control of risky gaming.

Table 1 summarises the main legal frameworks, approaches to advertising, limits on deposits and losses, self-exclusion systems and data sharing, as described in relevant studies (Ukhova et al., 2024; Marionneau et al., 2025).

3.3.2. REGULATION OF ADVERTISING AND MARKETING

Advertising and marketing are among the most debated areas of online gambling regulation. Research indicates that aggressive advertising strategies, including personalised advertising on social media, contribute to the normalisation of gambling and risky behaviour (Council of Europe, 2024). More than 40% of European countries have introduced partial or complete restrictions on gambling advertising since 2018 (Ukhova et al., 2024). An example of a comprehensive approach is the United Kingdom, which, through the Gambling Act Review, tightened advertising rules for sports betting and online casinos, including a ban on advertising aimed at minors. Italy and Spain have implemented an almost complete ban on gambling advertising in mainstream media. In contrast, Nordic countries (e.g., Sweden, Norway) promote a "social responsibility" approach, in which advertising is permitted but must include warnings about risks and information about support services for individuals struggling with addiction (Forsström & Örnberg, 2018).

3.3.3. FINANCIAL AND TIME LIMITS

Another pillar of regulatory strategies is the setting of limits for gambling – whether deposit, loss, bet or time limits. According to a comparative analysis by Marionneau et al. (2025), 27 out of 30 European countries have some form of limits, but only 11 implement them mandatorily. Germany is currently the only country with a fully systemic limiting regime that applies to multiple licensed operators. The European Commission issued a recommendation in 2014 (2014/478/EU) under which players should have the opportunity to set financial and time limits at registration, with reductions taking effect immediately, while increases should take effect within 24 hours. (No sooner than 24 hours after.) These principles have become a reference framework for many EU countries. However, research shows that the effectiveness of limits depends on how they are implemented, calibrated, and integrated with other player protection tools (Delfabbro & King, 2019; Wohl et al., 2017; Rockloff et al., 2024).

3.3.4. CONTROL OF DEPOSITS, PAYMENTS AND DIGITAL TRANSACTIONS

Modern regulatory frameworks also include controls on payment flows to limit unauthorised operators' access. The European Commission study (2019) highlights the importance of tools such as website blocking, payment blocking and cooperation with digital payment services (DPS). New forms of payment, particularly cryptocurrencies, pose a significant challenge to regulatory control, as they enable anonymous, rapid transactions outside banking supervision (Kerr et al., 2023; Davies, 2024). According to Lakew et al. (2024), DPS can paradoxically increase risky gambling by accelerating deposits and simplifying access to money, thereby circumventing traditional "moments for reflection". Some countries are therefore experimenting with restrictions on linking gambling accounts to certain payment methods or with requiring pre-authorisation of transactions via bank filters.

3.3.5. DATA SHARING AND MARKET MONITORING

The current discussion on online gambling regulation is increasingly focused on data sharing among operators, regulators and research institutions. The lack of transparency in player behaviour data has repeatedly been identified as a key obstacle to effective prevention (Aimo et al., 2023; Reynolds, 2019). Models of mandatory data reporting are emerging in Europe, including measures on gaming frequency, bet volume, limit breaches, and self-exclusions. This data enables the development of early-warning systems and enhances market oversight. Finland and Germany are already testing central gambling account registries, which serve as analytical databases for supervisors. Despite progress, data sharing remains fragmented, and many countries face legal and technical challenges in complying with the GDPR.

3.3.6 MOVING TOWARDS AN INTEGRATED APPROACH

Overall, regulatory responses in Europe can be characterised as heterogeneous but gradually approaching. While individual approaches focused on responsible gambling have traditionally dominated, more and more countries are moving towards comprehensive public health frameworks that combine legal, techno-

logical and behavioural tools. Countries such as Sweden, Norway, and Germany are pioneers in implementing systemic measures, including mandatory limits, centralised self-exclusion, blocking of unlicensed sites, and real-time data sharing. In contrast, other jurisdictions, such as Malta and Cyprus, continue to favour an economically liberal approach, with an emphasis on competitive markets. The future challenge remains the creation of a coordinated European framework that ensures the harmonisation of rules and the effective enforcement of cross-border measures. As Ukhova et al. (2024) note, the success of these initiatives will depend on whether the EU's policy priorities shift from a market-based to a public health-based understanding of gambling.

4 MATERIALS AND METHODS

This study was designed as a comprehensive secondary analysis and systematic review of available empirical data on online gambling in Europe, focusing on prevalence, risk behaviour and regulatory policies. The methodological framework combines a quantitative meta-analysis of existing epidemiological data with a qualitative comparative analysis of regulatory approaches across European Union (EU) and United Kingdom (UK) Member States. The aim was to synthesise the current state of knowledge on the extent of online gambling involvement, identify regional differences and assess the effectiveness of regulatory measures adopted in the digital environment.

The primary data sources were:

- 1. International databases and reports** – European Gaming and Betting Association (EGBA, 2022; 2025), European Commission (2019), World Health Organisation (2018), and Council of Europe (2024).
- 2. Published scientific studies** – searched through the Scopus, PubMed, Web of Science and ScienceDirect databases with an emphasis on the period 2018-2025.
- 3. Secondary analyses** – meta-analyses and systematic reviews (Tran et al., 2024; Gabellini et al., 2023, The Lancet Public Health Commission on Gambling, 2024).
- 4. Regulatory documents and national reports** – legislative frameworks, European Commission recommendations (2014/478/EU) and national gambling surveys (e.g. UK Gambling Commission, 2024; Buth et al., 2023).

Only sources published after 2018, which met scientific criteria (peer-reviewed) and provided representative data for at least one European country, were included in the analysis.

The selection of studies for analysis was guided by precisely defined inclusion and exclusion criteria, ensuring the high quality and relevance of the included sources.

The research included only studies that focused on the issue of online gambling, defined as gambling via the internet, either via a computer or via mobile devices. Another condition for inclusion was the availability of data on prevalence, risky,

and problem gambling, which were determined based on national or internationally recognised diagnostic standards, such as the DSM-5 (Diagnostic and Statistical Manual of Mental Disorders), PGSI (Problem Gambling Severity Index), or ICD-11 (International Classification of Diseases; WHO, 2018). Only studies that used representative samples of the adult population or adolescents in individual European countries were included, thereby ensuring comparability of data across regions.

Conversely, all studies that did not use verified or standardised questionnaires were excluded from the analysis, potentially compromising the reliability of the results. Similarly, studies published before 2010 were not included, unless their authors provided updated data reflecting the current state of the digital gambling environment. The analysis also excluded studies that focused exclusively on the economic aspects of the gambling industry, such as market trends, marketing strategies, or tax benefits, as they lacked data on the health or behavioural impacts of gambling. This selection framework enabled us to focus exclusively on high-quality studies that directly contributed to assessing the risks of online gambling in the European context.

Data analysis procedure

The acquired data was processed in three steps.

Quantitative synthesis of epidemiological data: Data on participation rate, risky and problem gambling (% PGSI, DSM-5, ICD-11) were extracted from published studies. Values were standardised according to the methodology of Tran et al. (2024) and Gabellini et al. (2023). Results were subsequently aggregated by geographical region in Europe (Northern, Western, Southern, and Central/Eastern Europe) and analysed using weighted averages.

Regional comparison and quantification of market trends:

The EGBA report (2025), which provided data on Gross Gaming Revenue (GGR) for online and land-based forms of gambling for the period 2019-2029 (projections), was used for regional analysis. The data were recalculated as the online segment's share (%) of total GGR and visualised in a trend chart.

Analysis of regulatory frameworks. In the third phase of the research, a comparative regulatory analysis was conducted, encompassing 27 EU member states and the UK. The following indicators were identified for each country:

- the existence of a central self-exclusion system,
- type of limits (voluntary/mandatory),
- restrictions on advertising and marketing,
- data sharing and oversight mechanisms.

Data were obtained from reviews by Ukhova et al. (2024), Marionneau et al. (2025), Council of Europe (2024) and Aimo et al. (2023).

The main limitation is the methodological heterogeneity across countries, including different sampling procedures, varying data-collection periods, and different measurement tools. Another limitation is the lack of data availability on illegal forms of online gambling and on microtransactions (e.g. loot boxes, crypto casinos). Nevertheless, the analysis provides the most up-to-date and comprehensive overview of the state of online gambling in Europe.

5 DISCUSSIONS

The results of this analysis confirm that online gambling represents a growing public health challenge in Europe, with the combination of technological accessibility, aggressive marketing and regulatory heterogeneity creating an environment with a high potential for the emergence of problem behaviour. In accordance with international meta-analyses (Tran et al., 2024; Wardle et al., 2024), the prevalence of online gambling in the European population is increasing, with a particularly pronounced rise among younger age groups and males. This trend correlates with the expansion of digital platforms and a shift in cultural patterns of free-time spending, with gambling increasingly integrated into the online environment (Abbott, 2020; Gabellini et al., 2023).

The findings also point to clear regional differences in levels of engagement and problem gambling. Western and Northern Europe exhibit higher rates of online participation, which can be attributed to higher digitalisation, liberal regulation, and a wider range of online products (EGBA, 2025). Conversely, online gambling has developed more slowly in Central and Eastern European countries, although growth has been more pronounced there in recent years (Tomei et al., 2022). This regional difference suggests that the development of the online gambling market is closely linked to technological availability, the country's economic strength, and the level of regulatory supervision. According to Wardle et al. (2024), the risk of problem gambling is significantly higher in online formats, especially in casino games, slot machines and online sports betting. The online environment allows for continuous access, instant payments and personalised marketing, which increases the frequency of gambling and weakens self-control mechanisms (Ghelfi et al., 2023). Several studies (Chóliz et al., 2021; Aragay et al., 2021) warn that online gamblers more often exceed financial limits and show a faster transition from recreational to problem gambling. This phenomenon has intensified in recent years, driven by the proliferation of mobile applications that combine gambling and gamification (Spicer et al., 2022).

Another significant finding is the increasing exposure of adolescents to online gambling. Testa et al. (2025) demonstrated that almost 14% of European adolescents aged 15-16 years had used online gambling in the last year, with some of them exhibiting symptoms of problem gambling. These results were confirmed by earlier findings (Calado, Alexandre and Griffiths, 2017), who identified a strong relationship between the availability of online gambling and the risk of developing addiction at a young age. Operators' marketing strategies also play a significant role, particularly through sports influencers, social media, and gaming environments, thereby promoting the normalisa-

tion of gambling among young people (McGrane et al., 2023; Molina-Fernández et al., 2023). The discussion on regulatory approaches shows that European countries respond differently. While some jurisdictions (e.g., Germany, Finland, Norway) are introducing strict deposit limits, mandatory self-exclusion systems, and advertising restrictions (Marionneau et al., 2025), other countries are adopting selective regulatory approaches, thereby reducing the effectiveness of protections for vulnerable groups (Ukhova et al., 2024). Analyses indicate that models combining state restrictions with mandatory data sharing for research and monitoring are effective, whereas voluntary measures by players have only limited impact (Aimo et al., 2023).

These findings are consistent with jurisdiction-specific studies reporting heightened vulnerability in online formats. For example, after the legalisation of online gambling in Spain, an increase in gambling disorder presentations was reported, with higher risk concentrated among younger men and online bettors (Chóliz et al., 2021). Swiss data similarly indicate elevated problem gambling among emerging adult males engaged in online gambling (Tomei et al., 2022). Evidence from COVID-19-related restrictions also suggests that shifts between land-based and online gambling are heterogeneous and may be shaped by sex, mental health and motivational factors (Fluharty et al., 2022; Allami et al., 2023).

From a methodological perspective, the lack of uniform diagnostic tools and differences in the operationalisation of the term “problem gambling” remain a challenge. As Gabellini et al. (2023) suggest, the variation in prevalence across countries is often more a consequence of differences in methodology than of fundamental behavioural differences. The unification of measurement tools (PGSI, DSM-5, ICD-11) and the harmonisation of data collection at the EU level would enable more accurate monitoring of trends and more effective planning of prevention policies (Ukhova et al., 2023).

From a public health perspective, the current situation necessitates an integrated approach that combines epidemiological monitoring, regulatory interventions, and preventive measures. As Abbott (2020) emphasises, focusing solely on problem gamblers is insufficient, as a significant portion of societal harm also occurs among so-called “recreational gamblers”. It is therefore essential that regulatory policies shift from an individual-responsibility model to a systemic public health approach that considers structural factors and the commercial determinants of risk (Wardle et al., 2024; Marionneau et al., 2025).

This review has several limitations. First, it is based on secondary sources, and the availability, timing and quality of national data vary substantially across countries. Second, prevalence estimates are not fully comparable due to differences in screening instruments (e.g., PGSI, DSM-5, ICD-11), sampling frames and reporting periods, which may contribute to ob-

served between-country variation. Third, market indicators from industry and association reports (e.g., GGR projections) may be affected by modelling assumptions and cannot capture informal or illegal online gambling activity. Finally, the synthesis is descriptive and does not allow causal inference about the effects of specific regulatory interventions; stronger conclusions will require harmonised data collection and longitudinal evaluations of policy changes.

Overall, online gambling in Europe is becoming a strategic public health challenge that extends beyond individual behaviour and requires a coordinated policy, regulatory, and research response. It is a multidimensional phenomenon in which social determinants of health, digital technologies, and commercial factors intersect, and current policies in many countries are unable to respond to the rapid expansion of digital gambling adequately. Despite regional differences, the common denominator remains the increasing rate of population involvement, the growth of risky forms of gambling and the persistent fragmentation of legislative frameworks that often lag behind technological developments. From a public health perspective, it is therefore essential to adopt a European harmonised framework for regulating online gambling that combines the principles of consumer protection, addiction prevention, and responsible marketing. At the political level, the EU could support the creation of a central monitoring system to collect and exchange data on gambling behaviour, analogous to projects such as ESPAD or Eurobarometer. This approach would enable long-term monitoring of trends, identification of risk groups, and evaluation of the effectiveness of regulatory interventions across Member States. Concurrently, future research should focus on longitudinal, multidisciplinary monitoring of gambling behaviour, integrating epidemiological, psychological, economic, and technological factors. The evaluation of the effectiveness of existing regulatory measures is also critical, particularly mandatory deposit limits, self-exclusion systems, and advertising restrictions. Their effectiveness should be assessed according to public health criteria, not just market parameters.

Prevention strategies should emphasise the protection of young people and digitally vulnerable groups, through stricter marketing restrictions, digital literacy and the availability of professional services. Only through an integrated and data-driven approach can the harms associated with online gambling be reduced, while ensuring that regulation in the digital era is not only reactive, but also proactive and adaptive to new forms of risky behaviour.

6 CONCLUSIONS

The analysis showed that online gambling is a complex and rapidly developing phenomenon in the European context, the impacts of which extend beyond individual behaviour and are becoming a serious public health problem. The digitalisation

Authors' contributions: Author IAK designed the study and performed the analysis. Author IK contributed to data collection. Author BI wrote the initial draft, and all authors revised and approved the final manuscript.

Declaration of interest: The authors declare no conflicts of interest

of the gambling industry has fundamentally transformed the market, increased the availability of risky forms of gambling and weakened traditional control mechanisms. Consequently, there is an increase in the prevalence of risky and problem gambling, especially in online casinos, sports betting and gamified digital platforms. Empirical data confirm that the risk profile of online gambling is shaped by a combination of technological, behavioural, psychological and social factors. Younger men and adolescents exhibit the highest risk of addiction development, for whom online gambling is integrated into the broader framework of digital culture and media socialisation. These groups also most often face secondary consequences, including financial losses, psychological distress, and social conflicts. The growing share of online formats and the convergence between gaming, gamification, and cryptocurrencies highlight the need to expand regulatory definitions and revise existing diagnostic categories.

From a regulatory perspective, it is evident that despite progress in several countries, the European framework remains fragmented and unevenly implemented. Models based on a public health approach, with mandatory gambling limits, central self-exclusion registries, transparent data sharing, and strict advertising controls, have proven effective. Conversely, jurisdictions that rely on voluntary self-regulation and market mechanisms report higher levels of risky gambling and lower effectiveness of preventive measures. Future directions should therefore include harmonising European legislation, strengthening cross-border cooperation, and creating a common framework for monitoring and researching gambling behaviour.

From a public health perspective, it is essential that gambling is no longer understood exclusively as a form of leisure activity or as an individual responsibility, but rather becomes the subject of a strategic policy of prevention and regulation. The creation of a pan-European data collection system, similar to the ESPAD or Eurobarometer projects, would enable more effective monitoring of trends, assessment of policy impacts, and identification of risk groups in real-time. At the same time, interdisciplinary cooperation among public health, psychology, sociology, law, and digital sciences should be strengthened to understand the dynamics of online gambling better.

In conclusion, the digital era has brought about a fundamental paradigm shift in gambling - from a local and physically confined phenomenon to a global, continuously accessible system of digital consumption. An effective response to this phenomenon requires a coherent policy grounded in evidence, ethical responsibility, and the protection of vulnerable groups. Only through the integration of research, regulation and public health can the societal harms associated with online gambling be reduced and a sustainable balance between technological progress and the protection of human well-being in a digital society be ensured.

REFERENCES

- Abbott, M. W. (2020). *The changing epidemiology of gambling disorder and gambling-related harm: Public health implications*. Public Health, 184, 41–45. <https://doi.org/10.1016/j.puhe.2020.04.003>
- Aimo, N., Bassoli, M., & Marionneau, V. (2023). *A scoping review of gambling policy research in Europe*. International Journal of Social Welfare, 33(2), 169–185. <https://doi.org/10.1111/ijsw.12632>
- Allami, Y., Légaré, A.-A., Williams, R., & Hodgins, D. (2023). *Migrating from land-based to online gambling: Sex, mental health, and motivational predictors*. International Journal of Mental Health and Addiction, 23(2), 1275–1291. <https://doi.org/10.1007/s11469-023-01168-x>
- Aragay, N., Pijuan, L., Cabestany, Á., Ramos-Grille, I., Garrido, G., Vallès, V., & Jovell-Fernández, E. (2021). *Current addiction in youth: Online sports betting*. Frontiers in Psychiatry, 11, 617569. [10.3389/fpsy.2020.590554](https://doi.org/10.3389/fpsy.2020.590554)
- Augner, C., Vlasak, T., Aichhorn, W., & Barth, A. (2022). *Psychological online interventions for problem gambling and gambling disorder – A meta-analytic approach*. Journal of Psychiatric Research, 151, 86–94. <https://doi.org/10.1016/j.jpsychires.2022.04.006>
- Boleková, V. & Chlebcová, V. (2021). *Odpúšťanie a posttraumatický rozvoj odličných onkologických pacientov*. In M. Blatný, P. Květon & M. Jelínek (Eds.) *Sociální procesy a osobnost 2020* (pp. 20–26). Masarykova univerzita.
- Boleková, V. & Chlebcová, V. (2024). *Predictors of forgiveness in cancer patients after treatment*. Health Psychology Report 12(3), 219–226. <https://doi.org/10.5114/hpr/177729>
- Boleková, V., Chlebcová, V. & Ciceková, J. (2023). *Predictors of Posttraumatic Growth in Cancer Patients Post Treatment*. Polish Psychological Bulletin 54(3), 192–200. <https://doi.org/10.24425/ppb.2023.148051>
- Cameron, L., & Ride, J. (2023). *The role of mental health in online gambling decisions: A discrete choice experiment*. Social Science & Medicine, 329, 115885. <https://doi.org/10.1016/j.socscimed.2023.115885>
- Calado, F., & Griffiths, M. D. (2016). *Problem gambling worldwide: An update and systematic review of empirical research (2000–2015)*. Journal of Behavioural Addictions, 5(4), 592–613. <https://doi.org/10.1556/2006.5.2016.073>
- Calado, F., Alexandre, J., & Griffiths, M. D. (2017). *Prevalence of adolescent problem gambling: A systematic review of recent research*. Journal of Gambling Studies, 33(2), 397–424. <https://doi.org/10.1007/s10899-016-9627-5>
- Council of Europe. (2024). *Policy paper on strategies and regulatory options aimed at reducing risks and harms related to online gaming and online gambling*. Pompidou Group.
- Carran, M. (2022). *Regulation of Online Gambling in the European Union: Harmonisation and Fragmentation*. European Gambling Studies, 14(2), 101–118.
- Cemiloglu, D., Arden-Close, E., Hodge, S., & Ali, R. (2022). *Explainable persuasion for interactive design: The case of online gambling*. Journal of Systems and Software, 195, 111517. <https://doi.org/10.1016/j.jss.2022.111517>
- Čerešník, M., Čerešníková, M. & Lenghart, D. (2021). *Prejavy hrania digitálnych hier a rizikové správanie dospelých v systéme nižšieho sekundárneho vzdelávania*. In E. Aigelová, L. Viktorová, M. Dolejš (Eds.), *PhD existence 11: Jedeme dál...* (pp. 156–167). Univerzita Palackého v Olomouci.
- Chlebcová, V. & Topor, S. (2022). *„Som vďačný za to, aký som.“ Prežívanie vďačnosti mladými dospelými*. In E. Gajdošová (Ed.), *Pozitívna psychológia pre pozitívny život* (pp. 337–347). Paneurópska vysoká škola.
- Council of Europe. (2024). *Online gambling and player protection in Europe: Policy perspectives*. Strasbourg: Council of Europe Publications.
- Chóliz, M., Marcos, M. & Lázaro-Mateo, J. (2021). *The Risk of Online Gambling: A Study of Gambling Disorder Prevalence Rates in Spain*. International Journal of Mental Health and Addiction, 19, 404–417. <https://doi.org/10.1007/s11469-019-00067-4>
- Davies, N. (2024). *An assessment of cryptocurrencies as a global commercial determinant of health*. Health Promotion International, 39(6), daae190. <https://doi.org/10.1093/heapro/daae190>
- Delfabbro, P., & King, D. L. (2019). *Challenges in the conceptualisation and measurement of gambling-related harm*. Journal of Gambling Studies, 35(3), 743–755. <https://doi.org/10.1007/s10899-019-09844-1>
- European Gaming and Betting Association (EGBA). (2022). *Annual report 2022: The European online gambling market*. Brussels: EGBA.
- European Gaming and Betting Association (EGBA). (2024). *European Gambling Market Outlook 2024*. Brussels: EGBA.
- European Commission (2019). *Evaluation of regulatory tools for enforcing online gambling rules and channelling demand towards controlled offers*. Online: <https://ec.europa.eu/newsroom/growth/items/643501/en>
- Fluharty, M., Paul, E., & Fancourt, D. (2022). *Predictors and patterns of gambling behaviour across the COVID-19 lockdown: Findings from a UK cohort study*. Journal of Affective Disorders, 298, 1–8. <https://doi.org/10.1016/j.jad.2021.10.117>
- Gabellini, E., Lucchini, F., & Gattoni, M. E. (2023). *Prevalence of problem gambling: A meta-analysis of recent empirical research (2016–2022)*. Journal of Gambling Studies, 39(3), 1027–1057. <https://doi.org/10.1007/s10899-022-10180-0>
- Gainsbury, S. (2012). *Internet gambling: Current research findings and implications*. International Gambling Studies, 12(3), 211–229. <https://doi.org/10.1080/14459795.2012.698295>
- Gainsbury, S. M. (2015). *Online gambling addiction: The relationship between Internet gambling and disordered gambling*. Routledge.
- Gainsbury, S. M., Wood, R. T., Blaszczynski, A., & Parke, J. (2012). *Internet gambling: Past, present and future*. Frontiers in Public Health, 2(14), 1–11.
- Gainsbury, S. M., Russell, A., Hing, N., Wood, R., Lubman, D., & Blaszczynski, A. (2013). *The impact of Internet gambling on gambling problems: A comparison of moderate-risk and problem Internet and non-Internet gamblers*. Computers in Human Behaviour, 29(1), 138–148. <https://doi.org/10.1016/j.chb.2012.07.011>
- García-Pérez, J., Morales, J., & Salgado, R. (2024). *Online gambling and everyday play: Public health implications of digital leisure*. European Journal of Public Health, 34(1), 58–65.
- Ghelfi, E., Kuss, D. J., & Pontes, H. M. (2024). *Digital gambling harms and prevention strategies: A European perspective*. Addictive Behaviours Reports, 19, 101623. <https://doi.org/10.1016/j.abrep.2024.101623>
- Ghelfi, M., Scattola, P., Giudici, G., & Velasco, V. (2024). *Online gambling: A systematic review of risk and protective factors in the adult population*. Journal of Gambling Studies, 40(2), 673–699. <https://doi.org/10.1007/s10899-023-10258-3>
- Gooding, N. B., & Williams, R. J. (2024). *Are there risky types of gambling?* Journal of Gambling Studies, 40(2), 555–569. <https://doi.org/10.1007/s10899-023-10231-0>
- Håkansson, A., Jönsson, C., & Kenttä, G. (2020). *Psychological distress and problem gambling in elite athletes during COVID-19 restrictions: A web survey in top leagues of three sports during the pandemic*. International Journal of Environmental Research and Public Health, 17(18), 6693. <https://doi.org/10.3390/ijerph17186693>

- Hing, N., Rockloff, M., Russell, A. M. T., Browne, M., Newall, P. W. S., Greer, N., King, D. L., & Thorne, H. (2022). Loot box purchasing is linked to problem gambling in adolescents when controlling for monetary gambling participation. *Journal of Behavioural Addictions*, 11(2), 396–405. Advance online publication. <https://doi.org/10.1556/2006.2022.00015>
- Jiménez-Murcia, S., Giménez, M., Granero, R., López-González, H., Gómez-Peña, M., & Fernández-Aranda, F. (2021). Psychopathological status and personality correlates of problem gambling severity in sports bettors undergoing treatment for gambling disorder. *Journal of Behavioural Addictions*, 10(3), 422–434. <https://doi.org/10.1556/2006.2020.00101>
- Kim, H. S., & King, D. L. (2020). Online gambling and digital convergence: Trends, challenges, and policy implications. *Journal of Gambling Issues*, 45, 1–22. <https://doi.org/10.4309/jgi.2020.45.1>
- Kerr, D. S., Loveland, K. A., Smith, K. T., & Smith, M. (2023). *Cryptocurrency risks, fraud cases, and financial performance*. *Risks*, 11(3), 51. <https://doi.org/10.3390/risks11030051>
- Lakew, N., Jonsson, J., & Lindner, P. (2024). *Probing the role of digital payment solutions in gambling behaviour: Preliminary results from an exploratory focus group session with problem gamblers*. *JMIR Formative Research*, 11, e54951. <https://doi.org/10.2196/54951>
- López-Fernández, O., & Kuss, D. J. (2020). *Preventing harmful internet use-related addiction problems in Europe: A literature review and policy options*. *International Journal of Environmental Research and Public Health*, 17(11), 3797. <https://doi.org/10.3390/ijerph17113797>
- Mallorquí-Bagué, N., Fernández-Aranda, F., Lozano-Madrid, M., Granero, R., Mestre-Bach, G., Baño, M., Del Pino-Gutiérrez, A., Gómez-Peña, M., Aymamí, N., Menchón, J. M., & Jiménez-Murcia, S. (2017). *Internet gaming disorder and online gambling disorder: Clinical and personality correlates*. *Journal of Behavioural Addictions*, 6(4), 669–677. <https://doi.org/10.1556/2006.6.2017.078>
- Marionneau, V., Luoma, E., Turowski, T., & Hayer, T. (2025). *Limit-setting in online gambling: A comparative policy review of European approaches*. *Harm Reduction Journal*, 22, Article 15. [10.1186/s12954-024-01150-3](https://doi.org/10.1186/s12954-024-01150-3)
- Mantere, E. S., Savolainen, I., & Oksanen, A. (2025). *The Internet of problem gambling: A mixed-methods study of the role of Internet-enabled risk factors among Finnish adults*. *New Media & Society*. Advance online publication. <https://doi.org/10.1177/14614448251333739>
- McGrane, E., Wardle, H., Clowes, M., Blank, L., Pryce, R., Field, M., Sharpe, C., & Goyder, E. (2023). *What is the evidence that advertising policies could have an impact on gambling-related harms? A systematic review of the literature*. *Public Health*, 218, 82–92. <https://doi.org/10.1016/j.puhe.2022.11.019>
- Molina-Fernández, A. J., Robert-Segarra, A., Martín-Herrero, J. A., Sánchez-Iglesias, I., Saiz-Galdós, J., & Fernández-Mora, K. (2023). *Regulating gambling through the Overton window: From an addictive behaviour to a social and epidemiological problem*. *International Journal of Environmental Research and Public Health*, 20(8), 5481. <https://doi.org/10.3390/ijerph20085481>
- Montiel, I., Ortega-Barón, J., Basterra-González, A., González-Cabrera, J., & Machimbarrena, J. M. (2021). Problematic online gambling among adolescents: A systematic review about prevalence and related measurement issues. *Journal of Behavioural Addictions*, 10(4), 902–919. <https://doi.org/10.1556/2006.2021.00055>
- Mora-Salgueiro, J., López, M., & Pérez, C. (2021). Accessibility and anonymity in online gambling: Behavioural consequences. *Computers in Human Behaviour Reports*, 4, 100138. <https://doi.org/10.1016/j.chbr.2021.100138>
- MordorIntelligence. (2025). *Europe Online Gambling Market – Growth, Trends, and Forecast (2025–2030)*. MordorIntelligence. <https://www.mordorintelligence.com>
- Oksanen, A., Vuorinen, I., Hagfors, H., Mantere, E. S., & Savolainen, I. (2024). *Colliding harms of gambling and gaming: A four-wave longitudinal population study of at-risk gambling and gaming in Finland*. *BMC Public Health*, 24, Article 1163. <https://doi.org/10.1186/s12889-024-1163-5>
- Price, A., Hilbrecht, M., & Billi, R. (2021). Charting a path towards a public health approach for gambling harm prevention. *Zeitschrift für Gesundheitswissenschaften / Journal of Public Health*, 29(1), 37–53. <https://doi.org/10.1007/s10389-020-01437-2>
- Reynolds, J. (2019). *Gambling on big data: Designing risk in social casino games*. *European Journal of Risk Regulation*, Cambridge University Press, 10(3), 421–439.
- Rockloff, M., Browne, M., Russell, A. M. T., Newall, P., Hing, N., & Armstrong, T. (2023). *Testing the effectiveness of different safer gambling messages for sports and race betting: A five-week experiment*. *Addictive Behaviours*, 146, 107893. <https://doi.org/10.1016/j.addbeh.2023.107893>
- Ropovik, I., Martončik, M., Babincak, P., Banik, G., & Halamová, J. (2022). *Risk and protective factors for (internet) gaming disorder: A meta-analysis*. *OSF Preprints*. <https://doi.org/10.31234/osf.io/pg3rf>
- Spicer, S. G., Nicklin, L. L., Uther, M., et al. (2022). *Loot boxes, problem gambling and problem video gaming: A systematic review and meta-synthesis*. *New Media & Society*, 24, 1001–1022. <https://doi.org/10.1177/14614448211027175>
- Sharma, R., & Weinstein, A. (2025). *Gambling Disorder Comorbidity: A Narrative Review*. *Psychiatry and Clinical Neurosciences*, 79(2), 1–18. <https://doi.org/10.1080/19585969.2025.2484288>
- Statista. (2024). *Online gambling market in Europe – Statistics & facts*. Hamburg: Statista Research Department.
- Swanton, T. B., Burgess, M. T., Blaszczynski, A., & Gainsbury, S. M. (2021). *An exploratory study of the relationship between financial well-being and changes in reported gambling behaviour during the COVID-19 shutdown in Australia*. *International Gambling Studies*, 21(3), 467–485.
- Testa, G., Ruiz-Iniesta, A., García, O., Tarragón, E., Soriano, V., Benedetti, E., Cerrai, S., Molinaro, S., Brand, M., Potenza, M. N., & Mestre-Bach, G. (2025). Cross-jurisdictional factors linked to gambling frequency in adolescents from 28 European countries: A machine learning approach. *Psychiatry Research*, 341, 116602. <https://doi.org/10.1016/j.psychres.2025.116602>
- Tomei, A., Petrovic, G., & Simon, O. (2022). *Offline and online gambling in a Swiss emerging-adult male population*. *Journal of Gambling Studies*, 38(4), 1215–1228. <https://doi.org/10.1007/s10899-022-10106-w>
- Tran, L. T., Wardle, H., Colledge-Frisby, S., Taylor, S., Lynch, M., Rehm, J., Volberg, R., Marionneau, V., Saxena, S., Bunn, C., Farrell, M., & Degenhardt, L. (2024). *The prevalence of gambling and problematic gambling: A systematic review and meta-analysis*. *The Lancet Public Health*, 9(8), e594–e613. [https://doi.org/10.1016/S2468-2667\(24\)00126-9](https://doi.org/10.1016/S2468-2667(24)00126-9)
- Tulloch, H., Doyle, R., & Thomas, S. (2022). *Gambling and public health: Understanding the burden of harm*. *Public Health Reviews*, 43(12), 1–16. <https://doi.org/10.3389/phrs.2022.160419>
- Ukhova, D., Marionneau, V., Nikkinen, J., & Wardle, H. (2023). *Embracing public health approaches to gambling? A review of global legislative and regulatory trends*. *The European Journal of Public Health*, 33(Supplement_2), ii44–ii50. <https://doi.org/10.1093/eurpub/ckad160.1644>
- Ukhova, D., Marionneau, V., Nikkinen, J., & Wardle, H. (2024). *Public Health Approaches to Gambling: A Global Review of Legislative Trends*. *The Lancet Public Health*, 9(1), e57–e67. [https://doi.org/10.1016/S2468-2667\(23\)00221-9](https://doi.org/10.1016/S2468-2667(23)00221-9)
- Van Schalkwyk, M. C. I., Petticrew, M., Cassidy, R., Adams, P., McKee, M., & Reynolds, J. (2021). *A public health approach to gambling regulation: Countering powerful influences*. *The Lancet Public Health*, 6(8), e614–e619. [10.1016/S2468-2667\(21\)00098-0](https://doi.org/10.1016/S2468-2667(21)00098-0)

Wardle, H., Degenhardt, L., Marionneau, V., Reith, G., Livingstone, C., Sparrow, M., et al. (2024). *The Lancet Public Health Commission on gambling*. *The Lancet Public Health*, 9(11), e950 - e994 [10.1016/S2468-2667\(24\)00167-1](https://doi.org/10.1016/S2468-2667(24)00167-1)

Wohl, M. J. A., Davis, C. G., & Hollingshead, S. (2017). *How much have you won or lost? Personalised behavioural feedback about gambling expenditures regulates play*. *Computers in Human Behaviour*, 70, 437–445. <https://doi.org/10.1016/j.chb.2017.01.025>

World Health Organisation (WHO). (2018). *International Classification of Diseases for Mortality and Morbidity Statistics (11th Revision)*. Geneva: WHO. <https://icd.who.int>