



Global Review of Assessments of Online Gambling Policies Affecting Youths: Bans, Legalisation, Advertising Restrictions, and ‘Responsible Gambling’

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Abstract

Purpose of Review Online gambling regulation has become more permissive in many regions, particularly in Western countries, and stakeholders are concerned about young people (aged ≤25) and other vulnerable consumers experiencing harm. Some regions continue to maintain an online gambling ban, whilst others have adopted regulatory policies with a focus on consumer protection and harm minimization. Following a systematic search strategy, we reviewed empirical evaluations of international gambling policies to better understand their implementation and possible impact.

Recent Findings Legalization leads to increased gambling participation and harm and has limited impact on reducing participation in illegal gambling. Bans on online gambling are difficult, if not impossible, to enforce. So-called ‘responsible gambling’ interventions have limited or no impact on behavior, even though they are widely touted by industry interests. Policies specifically impacting youths focus on preventing underage gambling access. However, young people manage to circumvent these restrictions. Insufficiently regulated gambling advertising is shown frequently to children, including through sports sponsorship.

Summary We cannot recommend any gambling regulatory approach as being obviously better than its alternatives based on current evidence. Empirical evaluations of the gambling policies of many other countries have either never been conducted or never been reported in English. A policy that works in one country might not work as well in a different cultural context. More research is needed, and governments that have legalized gambling should impose a levy on gambling revenue to fund healthcare and independent scientific investigations to address and hopefully reduce harm.

Keywords Gambling regulation and policy · Youth problem gambling · Gambling legalization · Gambling advertising · Responsible gambling · Behavioral addiction · Addictive behavior

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Introduction

Gambling can cause financial and psychological harm to people who participate and those around them, and is now recognised as a global public health issue affecting the wider society [1]. Online gambling is more easily accessible than traditional gambling in physical venues: for example, an online gambling app on a phone can be used from anywhere at any time. Conceivably, it is also easier for a young person who is not allowed to participate in licensed gambling, due to being underage, to instead participate in online gambling due to insufficiently robust age verification measures. Evidence suggests that online gambling is more likely to contribute to problem gambling than offline

gambling, and involvement in both simultaneously leads to exacerbated harm [2, 3]. The availability of online gambling also makes it easier for people to access illegal gambling that is not licensed and permitted in the jurisdiction that they physically reside in but are provided by ‘offshore’ providers outside their jurisdiction [1]. As a consequence of this technological development, restrictions on gambling have therefore become more difficult to enforce.

In recent years, a broad trend towards the liberalisation of gambling regulation (i.e., legalisation) has been observed across the world, including in particular the legalisation and popularisation of online gambling [1, 4]. By permitting licensed and legal gambling operators, countries may reduce their population’s participation in less safe illegal gambling and generate more taxes. However, this change may also lead to wider participation in gambling and increasing the harm that the population experiences overall, thereby taking up more healthcare resources than previously and causing more harm than good. Some countries, in contrast, continue to maintain a complete ban on many forms of gambling, including online gambling, but it is unclear whether people are circumventing such regulatory restrictions and participating in offshore illegal gambling anyway.

In this paper, we focus on the situation in relation to youths (defined as those aged ≤ 25) because they are known to be more vulnerable to gambling harms and may experience negative mental health issues through gambling participation [2, 5]. Considering the various concerns stakeholders have surrounding online gambling and young people in particular, regulatory policies have been adopted to address them with a view of protecting young people’s mental health. The effectiveness of these policies has been empirically assessed in some studies. However, there has been no review of all such empirical studies, which would help advise policymakers as to which policies have been effective and why, thus ensuring future policymaking is supported with an evidence base. This review aims to synthesise available evidence on the effectiveness of current gambling regulatory and policy frameworks and the challenges faced when implementing them.

Method

Systematic Search Strategy

We searched the titles, abstracts and keywords of the records in three databases, Web of Science, Scopus, and PubMed, using the following search string: ‘(regulat* OR Polic* OR legislat* OR law*) AND (“microtransaction*” OR “loot box*” OR lootbox* OR “online gambl*” OR “video gam*”

OR videogam*” OR “online gam*” OR “internet gam*” OR “computer gam*” OR “mobile gam*” OR “digital gam*” OR “gaming”)).’ The last search was done on 29 December 2024. Our search string included both online gambling- and online video gaming-related terms to efficiently produce two separate but complementary reports using the same method. The present one deals with online gambling, whilst a sister review deals with online video gaming [6]. ‘Gambling’ is sometimes described as ‘gaming,’ so this approach also prevented possible incorrect omissions and misclassifications due to vocabulary choices [7]. The records were later separated as explained below.

Identified papers were screened for duplicates using Mendeley, a reference management software [8], and Rayyan.ai, an online application for systematic reviews [9]. The abstracts and titles of papers were screened by two independent reviewers, followed by a full-text screen of the remaining papers by one reviewer. All inclusion decisions were confirmed by two independent reviewers.

Inclusion and Exclusion Criteria

We included all peer-reviewed English language journal articles in the review regardless of their year of publication that met the following inclusion criteria: (i) empirical studies that (ii) evaluated policies, legislations, or regulations on (iii) online gambling (iv) relevant to the mental health of young people aged 25 or under (i.e., any paper that includes this age group). Many policies were directed towards the general population, or all those aged over 18 and were therefore included because they could potentially impact someone aged 25 or under. Studies that dealt with any policy that would not obviously impact upon mental health were excluded.

Our literature review focused on empirical evaluations of policy implementation that assessed product offerings, consumer experiences, and the opinions of stakeholders on those policies. Papers that only discussed policy, including those that critically examined policies but only based on argumentation (e.g., traditional doctrinal legal research), were excluded as these do not obviously present empirical evidence on the effectiveness of the adopted policies [10]. Future research with fewer resource- and time-related constraints could consider including those broader perspectives. We did not aim to comprehensively state what policies have been implemented because that aim cannot be achieved based on a review of the scientific literature as the policies of many countries would not have been mentioned even once. We did, however, seek to comprehensively present all policy evaluations that have been conducted and synthesise their findings because that is achievable through a literature review.

Results

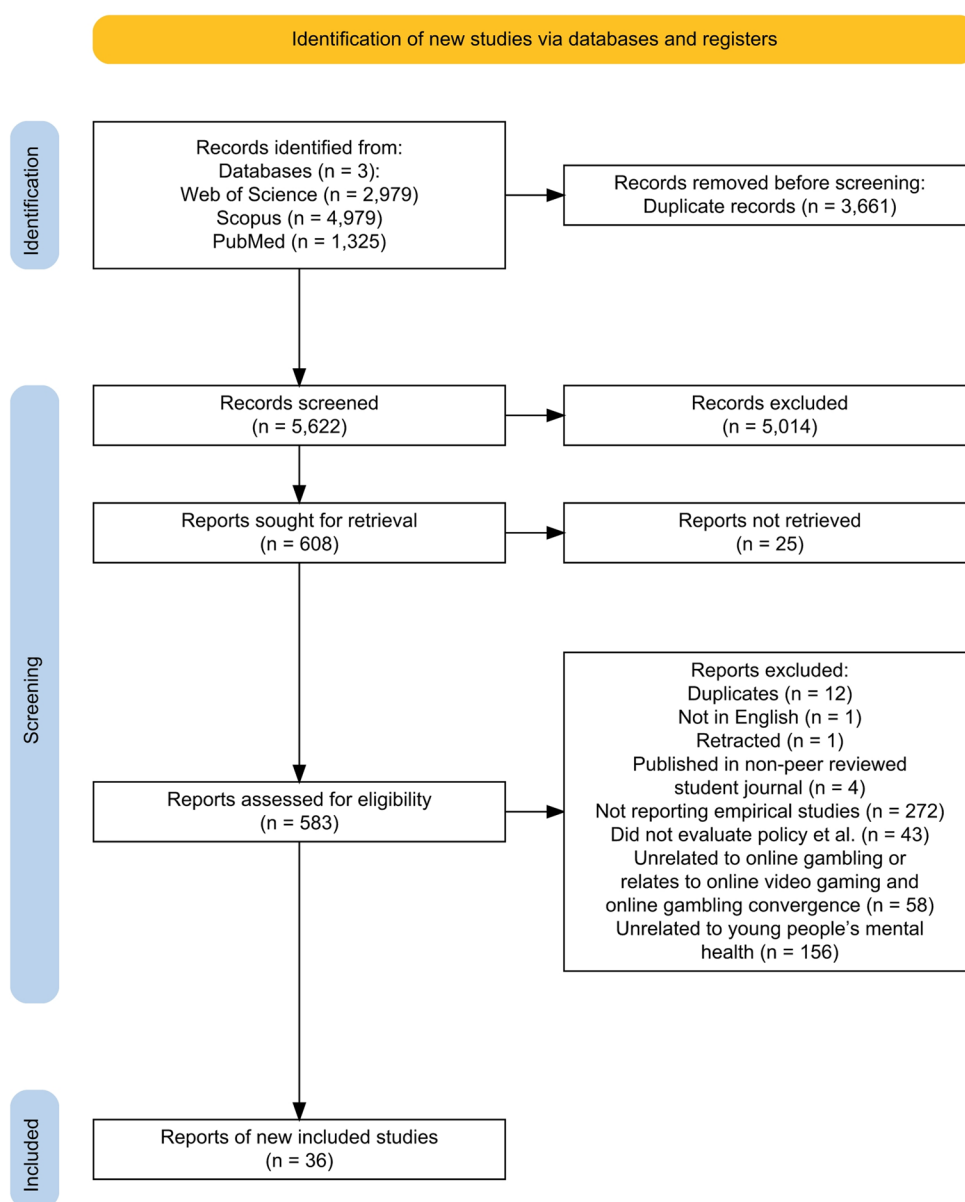
Record Selection

Figure 1 details the selection process. We identified a total of 9,283 records, 2,979 from the Web of Science, 4,979 from Scopus, and 1,325 from PubMed. After removing duplicates using Mendeley and Rayyan.ai, 5,622 records remained. At the initial screening stage, two independent reviewers agreed to exclude 5,014 records after reviewing their titles and abstracts. In 5,007 excluded records, there was no discussion of online video gaming or online gambling policy, legislation, or regulation (the vast majority of records claimed that the results have ‘policy’ implications or referred to ‘regulation’ in psychological and emotional

contexts, which are irrelevant for present purposes but inevitably caused these records to be returned as a result using the search string, which could not have been improved to resolve this problem without risking missing relevant records that should be included). Further, four records were not empirical studies; two records were not in English; and one record was retracted, all of which were excluded.

We sought to retrieve the full text of 608 records. We could not retrieve 25 records nor determine that they should be excluded; these were mostly book chapters that were highly unlikely to have reported original empirical evaluations of online gambling policy. Of the remaining 583 records that were assessed for eligibility, 12 were excluded for being duplicates; one was excluded for not being in English; one was retracted; four were published in non-peer reviewed student

Fig. 1 PRISMA diagram of the report selection process created using the PRISMA2020 Shiny app [11]



journals (i.e., US law journals); 272 did not report empirical studies; 43 did not evaluate policy, legislation, or regulation; and 58 were either unrelated to online gambling or related to the online video gaming and online gambling convergence that was dealt with in an accompanying literature review on online video gaming policy [6]; and 156 were unrelated to young people's mental health. Many of the records that were excluded could have been excluded on multiple aforementioned bases but was recorded as having been excluded under only one for accounting purposes. This left a final sample of 36 records that were included in this literature review.

Record Characteristics

The records' main characteristics are shown in Table 1. Amongst the 36 included records, 16 dealt with various aspects and consequences of the legalisation of online gambling (44.4%); nine dealt with 'responsible gambling' design features (25.0%); five dealt with bans on online gambling (13.9%); four dealt with advertising restrictions (11.1%); and one each dealt with a prohibition on online in-play betting and 'responsible gambling' education specifically (2.8%, respectively). There was some overlap between these topics: for example, 'responsible gambling' is only relevant because of the broader context of legalisation; however, given how many records specifically dealt with that topic, it was separated out.

As to the jurisdiction(s) that the policy concerned, the majority of records focused on Western countries (88.9%): six dealt with Spain (16.7%); another six dealt with Sweden (16.7%); five concerned Australia (13.9%); three were about France (8.3%); another three were about the US (8.3%); two dealt with the UK (5.6%); and one each was about Canada, Finland, Germany, Israel, Norway, Switzerland, and Europe generally (2.8%, respectively). One record each dealt with India and Indonesia, both in Asia (2.8%, respectively). The final two records were international in nature (5.6%). We present the findings of the literature review by jurisdiction.

Indonesia

Ban on Online Gambling

Online gambling is banned in Indonesia, but an unreported number of government officials and enforcement officers expressed that the ban is difficult to enforce due to the lack of (i) training in online gambling-related expertise, (ii) technological software to support monitoring efforts, and (iii) collaborations between regulators and other stakeholders, such as internet service providers that could more effectively block access to online gambling [12].

India

Ban on Online Gambling

Gambling is regulated differently in various parts of India: for example, Kerala permits certain types of gambling, whilst the legal status of other types of gambling, like online gambling, remains uncertain [13]. Amongst 100 Kerala college students aged 18–24, 17% participated in online gambling. Online gambling participants were mostly men (82%); generally accessed online gambling through their mobile phone (90%); and usually gained entry by following links shared on social media (82%). There was low awareness of the relevant regulation and the risks involved.

Australia

Ban of Unlicensed Gambling

Australia has a regulated online gambling market where operators need to obtain a licence to provide services [14, 15]. However, 52.7% of 1,001 Australians aged 18+ who gambled online in the past four weeks reported using unlicensed offshore online gambling websites in the past month [15]. Offshore gamblers were younger and reported that (presumably better) payout rates and game experiences contributed to their decision when picking websites. Consumer protection standards and the complaint/dispute process were not viewed as important by either domestic or offshore gamblers. In another study, 25.8% of 3,199 online gamblers aged 18+ self-reported as having used offshore gambling providers, of which 20% used offshore sites exclusively, whilst 80% used a combination of licenced and offshore sites [14]. Offshore gamblers are more likely to experience problem gambling, be male, and be younger. Additional reasons influencing offshore gamblers' site selection included, amongst others, that the site offered more gambling types and required few personal details to be provided.

Mandated Responsible Gambling Features

Australia requires certain consumer protection tools to be implemented as a licensing condition [16]. However, even though 60.5% of 564 online gamblers aged 19+ were aware of such tools and reviewed their activity statements, few amongst them used more restrictive tools like deposit limits (24.5%) or time-outs, i.e., temporary self-exclusion (8.1%). People experiencing a higher risk of gambling problems were more likely to use these tools; however, they had limited impact on behavioural change. People predominately did not use the restriction tools because they were seen as

Table 1 Characteristics of the selected records ($N=36$)

Author(s)	Publication Year	Policy	Jurisdiction(s)	Method of Evaluation	Sample Characteristics	Sample Size
Wilson	2003	Ban	International	Reviewing online gambling website registration details	Gambling websites	1122
Ludwig et al.	2012	Ban	Germany	Survey	18–64	15,817
Bonny-Noach	2024	Ban	Israel	Survey	18+	1251
Prakash et al.	2024	Ban	India (Kerala)	Survey	18–24	100
Ahyani et al.	2025	Ban	Indonesia	Stakeholder interviews	Law enforcement and related officials	Unreported
Svensson & Romild	2011	Legalisation	Sweden	Survey	16–84	8165
Planzer et al.	2014	Legalisation	Europe	Survey	Experts in gambling law across 34 European jurisdictions	51
Chóliz	2016	Legalisation	Spain	Survey	16–82 (help-seeking)	1277
Costes et al.	2016	Legalisation	France	Survey	18–75	3860
Arvidsson et al.	2017	Legalisation	Sweden	Survey	Gambling companies	Unreported
Kairouz et al.	2017	Legalisation	Canada (Québec)	Survey	18+	23,896
Gainsbury et al.	2018	Legalisation	Australia	Survey	Online poker accounts	24,389
Gainsbury et al.	2019	Legalisation	Australia	Survey	18+ (gambled online)	3199
Barrera-Algarín & Vázquez-Fernández	2021	Legalisation	Spain	Reviewing patients' medical records	18+ (gambled online)	1001
Engebø et al.	2021	Legalisation	Norway	Survey	18–30 (receiving treatment)	188
Chóliz & Marcos	2022	Legalisation	Spain	Survey	15+	28,251
Narros-González et al.	2022	Legalisation	Spain	Survey	15–17	6053
Jeannot et al.	2023	Legalisation	Switzerland	Survey	18+, but discussing their families including youths	591
Choi	2024	Legalisation	US	Reviewing patients' medical records	18+ (help-seeking)	630
Russell et al.	2024	Legalisation	US (Pennsylvania)	Reviewing online gambling website characteristics	Websites	125
Macey et al.	2023	Monopoly or oligopoly	Finland	Survey	18+	1147
Gainsbury, Abarbanel & Blaszczynski	2020	Prohibition on online in-play betting specifically	Australia	Survey	15–74	8483
Kim et al.	2013	Advertising restrictions	US	Survey	18+ (past 4-week sports betting)	501
Thomas et al.	2018	Advertising restrictions	Australia	Reviewing online gambling ads shown on TV	Advertisements	836
García-Pérez et al.	2024	Advertising restrictions	Spain	Survey	11–16	111
González Díaz et al.	2024	Advertising restrictions	Sweden	Stakeholder interviews	Gambling accounts	Unreported
van Schalkwyk et al.	2022	'Responsible gambling' education	UK	Reviewing educational materials	Government, industry, media, and mutual support group stakeholders	12
Caillon et al.	2019	'Responsible gambling' design features: Self-exclusion	France	Experiment	Programmes and resources provided by industry-funded charities	6
Håkansson & Widinghoff	2020	'Responsible gambling' design features: Self-exclusion	Sweden	Survey	18+ (at risk)	60
Håkansson et al.	2022	'Responsible gambling' design features: Weekly deposit limit	Sweden	Survey	18+ (past year gambling)	997
					18+ (gambled online)	619

Table 1 (continued)

Author(s)	Publication Year	Policy	Jurisdiction(s)	Method of Evaluation	Sample Characteristics	Sample Size
Newall et al.	2022	'Responsible gambling' design features: Warning labels	UK	Reviewing online gambling website design	Online roulette games	363
Marionneau & Järvinen-Tassopoulos	2017	'Responsible gambling' design features: Various	France	Reviewing online gambling website design	Websites	18
Forsström & Cisneros Örnberg	2019	'Responsible gambling' design features: Various	Sweden	Stakeholder interviews	'Responsible gambling' managers from industry bodies	11
Gainsbury, Angus, et al.	2020	'Responsible gambling' design features: Various	Australia	Survey	19+ (gambled online)	564
Hernández-Ruiz	2020	'Responsible gambling' design features: Various	Spain	Reviewing online gambling website design	Websites	40
Catania & Griffiths	2023	'Responsible gambling' design features: Various	International	Reviewing online gambling website design	Websites	50

Note. References to 'help-seeking,' 'receiving treatment,' and 'at risk' all relate to (online) problem gambling.

intended for other people experiencing worse problems rather than for themselves.

Prohibition on Online In-Play Betting

Australia prohibits online in-play betting, meaning betting on a sporting event after it has started and as it happens [17]. Despite the ban, 17.2% of 501 past-month Australian gamblers aged 18–83 reported having placed an in-play bet online, thus showing the rule could be circumvented. People who participated in in-play betting are at higher risk of harm and may overlap with those who use illegal offshore online gambling operators.

Gambling Advertising Restrictions

Australia imposes restrictions on gambling advertising during live sports broadcasts and online streams between 5 AM and 8:30 PM with the view of better protecting young people by reducing their exposure to gambling ads [18]. However, 83.7% of 111 participants aged 11–16 reported continuing to watch sports after 8:30 PM, and 79.3% of young people said there were too many gambling ads in sports and that there should be none or less. The advertising restriction did not achieve its aim; extending the limit past 8:30 PM to cover the whole sporting event ('whistle to whistle' bans) might prove more productive.

United States

Prohibition of Online Gambling (Since Overturned)

Online gambling was prohibited in the US, particularly after 2006 when a law confirmed the illegality of accepting

payment in relation to online gambling [19]. However, companies continued to find disingenuous ways to advertise online gambling during TV programmes showing poker tournaments. Specifically, companies advertised an adjacent .net website that did not offer paid online gambling services but allowed players to practice engaging in the activities. At the same time, the corresponding .com website, which was technically not advertised per se, did offer online gambling. Despite the 2006 law, online gambling advertising actually increased in prevalence in the years since. The advertising of supposedly educational and seemingly harmless websites for practicing gambling behaviour that can actually easily lead to illegal online gambling services is misleading, circumvents the law, and frustrates the regulatory aim.

Legalisation of Online Gambling

Within the last decade, many US states have legalised various forms of online gambling (e.g., Delaware and New Jersey); however, despite this regulatory development, offshore illegal online gambling remains accessible from the US and are accessed by US users [20]. More robust enforcement is needed to combat such criminal operations. In 2017, Pennsylvania legalised online gambling, and this market gradually grew as the years passed [21]. When surveyed between 2020 and 2021, 11.1% of 1,147 adult Pennsylvanian residents reported online gambling participation, and 1.2% still engaged in illegal online gambling, despite legalisation. Just under half (43.8%) of people who participated in online gambling expressed having 'at least one problem with their gambling.' Illegal online gambling was the riskiest, whilst fantasy sports was the least risky. The Covid-19 pandemic may have affected the aforementioned results.

Canada

Legalisation in Québec

In 2010, Québec permitted the state-owned monopoly to provide online gambling and compete with unregulated operators [22]. Following the introduction of legal online gambling, the prevalence of gambling participation did not increase. However, legalisation also did not effectively channel online gamblers away from unregulated sites towards regulated options. In one dataset ($n=23,896$), 82.5% of online gamblers in Québec continued to play on unregulated sites, with 58.3% doing so exclusively [22]. Another dataset ($n=24,389$) analysed in the same study reveals the same: around 90% of Québécois real money online poker players continued to play on unregulated sites [22].

Spain

Legalisation of Gambling

Spain has a regulated gambling market. Online gambling and advertising thereof were legalised in 2011 [23]. Since 2015, a rapidly growing number of young people have sought treatment for gambling disorder in relation to online gambling. Nearly all (97.0%) 188 gambling disorder treatment-seeking young people aged 18–30 engaged in sports betting with their mobile devices. The impact of advertising (95.0%), the proliferation of sports betting facilities (92.0%), and negative family circumstances (84.0%) were identified as relevant in most of these 188 cases. The legalisation of online gambling, its greater availability and accessibility, and gambling advertising were associated with increased treatment seeking for gambling disorder by Spanish young people. The same rise was also identified amongst older people albeit less rapidly, who also more frequently sought treatment following the legalisation of online gambling [24]: 11% of 1,277 participants aged 18–82 undergoing treatment for pathological gambling in another study were aged 25 or under.

Even though the minimum legal age for participating is 18, minors can still circumvent that restriction and access online gambling: 54% of 6,053 youths aged 15–17 already gambled at least once, and 18.2% gambled monthly, with 28.9% of boys and 7.8% of girls doing so [25]. The most popular form was online sports gambling, engaged with monthly by 11% of all schoolchildren (19.7% of boys and 2.4% of girls). Indeed, 1.9% of schoolchildren were ‘pathological gamblers,’ which rises to 10.4% amongst those who engaged in sports betting monthly (11.0% of boys and 5.6% of girls). Legalisation and promotion of online gambling

caused harm. Legally mandated responsible gambling features did not effectively eliminate harm.

Contextually, 92.7% of Spanish households considered minors’ access to online gambling to be too easy, thus posing risks for children [26]. The vast majority of 591 households sampled considered that (i) the increase in advertising promotes gambling amongst young people (88.5%); (ii) gambling advertising needs to be restricted (83.6%); (iii) legal measures are needed to protect minors from excessive online gambling (94%); and (iv) current regulations were insufficient by being overly permissive (80.9%).

Mandated Consumer Protection Features

After online gambling was legalised in 2011, the first licences were granted in 2012. Spanish law requires that online gambling be offered with corporate social responsibility [27]. A review of the websites of licensed online gambling operators revealed that compliance was high for various requirements, such as providing the operators’ physical address; email contacts; minimum age warnings; responsible gambling messaging and resources; and the ability to set deposit limits. However, compliance was not perfect. Concerningly, the provision of a link to self-exclusion from future participation, in particular, was complied with by less than half of the operators studied. Further, even when the resources were provided, their visual prominence and accessibility were not optimal due to a lack of formal guidance and could be improved.

Gambling Advertising Restrictions

Spain placed restrictions on gambling advertising at the end of 2020, including a prohibition on sports sponsorship [28]. In the short term, the law was partially effective in diminishing and eliminating some correlations between expenditure on various marketing strategies and online gambling behaviours. Companies may have changed marketing strategies to adapt to the law. Long-term effects of the law remain to be evaluated, and notably, aspects of the law have already been annulled by the court (e.g., gambling advertising on the internet has since become permitted again, as is the use of famous people in gambling advertising), citing a lack of scientific evidence justifying advertising restrictions.

France

Ban of Unlicensed Gambling

In 2010, France enacted a law to regulate online gambling using a licensing system with the aim of directing gamblers

towards legal sites; however, 46.3% of 3,860 online gamblers reported using at least one unlicensed site [29]. These gamblers are more likely to report more intense gambling activities and more gambling problems compared to gamblers who only use licensed sites. Based on these findings, Costes et al. argued that certain gambling products, such as online slots and casino games, not being available on legal sites may explain some use of unlicensed sites, and that state regulated operators cause less harm to gamblers [29].

Self-Exclusion Scheme

France legalised online gambling in 2010 but obliges operators to provide features to help reduce harm, including self-exclusion [30]. There are two types of self-exclusions. The first, long-term type lasts for three years and requires taking legal action to implement, whilst the second, shorter-term type lasts for a minimum of 7 days and can be implemented through the online gambling website, but it only applies to that website. In experimental conditions, imposing (rather than allowing gamblers to voluntarily apply for it) the short-term self-exclusion scheme on 60 at-risk gamblers aged 18+ did not have an obvious impact on gambling behaviour and harm in the short term, although the majority said the experience allowed them to consider the role of gambling in their lives. Two months after experiencing a 7-day self-exclusion, there were medium-term reductions in gambling cravings and of gambling-related cognitive distortions, amongst other subjective measures, but these did not lead to practical changes in gambling behaviour or harm. Caillon et al. suggested that a longer self-exclusion period might have a bigger impact [30].

Mandated Responsible Gambling Features

Besides self-exclusion, other features are also required to be implemented by French law [31]. An analysis of 18 gambling websites found that, generally, operators indeed followed the requirements of, *inter alia*, verifying players' identities, warning about the risks of gambling, and providing limit-setting tools. Additional information about problem gambling and responsible gambling software was also provided by most sites. However, these tools were difficult to find and use. Their non-mandatory nature also reduces their effectiveness and inappropriately emphasises player responsibility.

Switzerland

Legalisation

Online gambling was generally prohibited in Switzerland until 2019 [32]. However, even before legalisation occurred,

people in Switzerland were increasingly participating in illegal online gambling and experiencing harm, thus indicating the prohibition was not wholly effective. Online gambling may be more harmful than other forms of gambling. An increasing number of people totalling 630 were referred for treatment for online gambling harms between 2001 and 2018: approximately 14 people per year between 2001 and 2006, as compared to 62 people annually between 2013 and 2018, i.e., nearly 3.5 times more. The online gambling market continues to grow following legalisation, whose impact remains to be assessed.

Germany

Prohibition on Online Gambling

In 2008, Germany prohibited the provision of online gambling by the state-owned monopoly [33]. However, this ban did not lead to a reduction in overall gambling participation, which remained stable, amongst 15,817 participants of which 3,624 (31.3%) were past-year gamblers aged 18–64. Internet card games even increased in popularity. Considering that online gambling gained popularity globally around that time, it is possible that the ban was still effective at dampening a potential growth in popularity even though it was not effective at preventing the behaviour entirely. As a result, a system of licensed online gambling was introduced in 2021, but the consequences of this are yet to be analysed.

United Kingdom

Mandated Warning Information Was Not Optimally Presented

The UK gambling regulator requires that warning information be provided to participants for online roulette and slots to better educate them about associated risks and costs [34]. This was perfectly complied with by all 363 online roulette games studied. However, because gambling operators were allowed discretion as to how to present the information, the warnings were not visually prominent and were not phrased using easily understandable language, thus reducing their potential efficacy and frustrating the regulatory intent.

Statutory Duty to Teach School Students About the Risks of Gambling

From 2019, the UK Department of Education has required state-funded schools to teach young people about the risks of gambling [35]. Analysis revealed that the 'responsible

gambling' education programme is aligned with industry interests by focusing on a personal responsibility and agency narrative, whilst diminishing the gambling companies' responsibility. The funding of such education programmes by the gambling industry and its involvement in the curriculum raises ethical and public health concerns and should be scrutinised.

Sweden

Legalisation

In 2006, Sweden permitted online gambling to be offered by the state-owned oligopolies; however, unlicensed operators remained easily accessible [36]. The prevalence rate of internet gambling amongst 16–84-year-olds increased from 8.6% to 13.3% from 2008 ($n=8,165$) to 2010 ($n=6,017$), with men (19.1% in the more recent phase) being more than twice as likely to have gambled online than women (7.5%). There was no statistically significant change in the problem gambling rate overall; however, the problem gambling rate amongst online gamblers decreased from 11.4% to 6.8%, possibly due to an increase of female gamblers engaging in less risky forms of gambling, such as the lottery. A small minority of online gamblers used unregulated sites, and the use of such sites is associated with gambling problems. Arvidsson et al. [37] suggest that gamblers do not tend to shift away from using the regulated system to using the unregulated sites, and gamblers using foreign online gambling is a separate group of consumers.

Mandated Responsible Gambling Features

Gambling regulation was further liberalised in Sweden in 2019 when the state-owned monopoly system was changed to a licensing system of commercial providers. Operators are required to provide various responsible gambling features [38]. When operators that were duly licensed in Sweden and unlicensed operators were compared, there were little differences between their implementation of responsible gambling features, although admittedly the unlicensed operators studied were relatively well-known. There were major differences in terms of the visibility of responsible gambling information, but whether the operator was licensed did not appear to have affected this. How operators view their responsibilities and obligations as to responsible gambling differs and should be improved upon.

Self-Exclusion Scheme Specifically

Alongside the further liberalisation of gambling, Sweden introduced a multi-operator system allowing people

to self-exclude from gambling participation with licensed operators in the country, as compared to such a feature being available in relation to only one specific operator at a time [39]. Just 7% of 997 past-year online gamblers aged 18+ reported having used the self-exclusion feature; however, 38% of whom still gambled during their self-exclusion period, with a majority having used online casinos to do so. This shows that the system could be circumvented. People who self-excluded were more likely to experience gambling problems.

Gambling Advertising Restrictions

Sweden has a regulated gambling market, and the law states that gambling advertising should be 'moderate' [40]. However, this legal requirement was poorly defined resulting in uncertainty as stakeholders interpret it differently. It is unclear whether the requirement applies to the content of the advertising and/or the volume of content and which authority is responsible for enforcing the regulation, leading to confusion. Many different interests conflict in this context: freedom of expression, economic benefits, consumer protection, and public health. Industry self-regulation has potential, but stakeholders hold different views as to what role it should play.

Weekly Deposit Limit During Covid-19

In response to the Covid-19 pandemic, in July 2020 and until November 2021, Sweden introduced a maximum weekly deposit limit of 5,000 SEK in relation to online casino services offered by licensed gambling operators [41]. About 60% of 619 gamblers aged 18+ were aware of this policy, with people experiencing higher risks of problem gambling being more likely to know about the policy. The majority of Swedish gamblers were positive or felt neutral about the rule, with a minority disliking it, but its effectiveness was limited by the presence of multiple operators. Upon reaching the limit with one operator, gamblers could simply switch to a different, second operator if they wished to avoid the original limit imposed against the first operator. Indeed, 83% of participants gambled with more than one operator. People experiencing problem gambling more commonly engaged in this avoidance behaviour.

Finland

State-Owned Gambling Monopoly

Subject to potential future changes, Finland regulates gambling by permitting only state-owned entities to provide

services [42]. Three competing gambling operators were merged into one in 2017, i.e., a triopoly was restructured into a monopoly. The attitudes of 8,483 participants aged 15–74 towards the state-owned oligopoly (and later monopoly) system became increasingly negative despite the reform, possibly due to ‘heightened awareness of gambling harms in Finnish society and of the ethical issues associated with [the monopoly].’ There was increasing support for more restrictive gambling regulatory measures.

Norway

Legalisation of Online Gambling

In 2014, online gambling in Norway was legalised and started being provided by the state monopoly [43]. A study consisting of 28,251 participants, of which 4.0% were under-18s, and 11.2% were aged 18–24, found that this led to a marked increase in online gambling participation from about 4.5% in 2014 to 7% in 2018, with men being more than twice as likely to participate than women. The use of foreign operators that provided illegal online gambling remained relatively stable and did not decrease. Considering the overall increasing popularity of online gambling, it is likely that the legalisation effort meant that participants chose to use the legal channel and gambled with the state monopoly, rather than engaging more with illegal foreign operators (which would have happened without legalisation).

Israel

Ban on Most Forms of Online Gambling

Israel prohibits online gambling, except certain forms of online lottery and sports betting [44]. Amongst 1,251 Israeli gamblers aged 18+, 13% reported illegal gambling participation (which would have included some forms of illegal online gambling). As to participation rates for specific forms of illegal gambling (e.g., illegal casinos or illegal animal betting), very low individual rates ($\leq 2.5\%$) were reported, except for illegal poker, whose legal status is confusing (10% participation). Precise data for illegal online gambling are not available. Most gamblers therefore preferred available forms of legal gambling. Bonny-Noach concluded that participation in illegal gambling is not necessarily associated with problem gambling, but those who participate in online and illegal gambling are more at risk than others [44].

International

Variety of Regulatory Approaches

In 2014, European jurisdictions had different regulatory approaches towards online gambling [45]. Certain types of online gambling, such as online sports betting and online poker were prohibited in some jurisdictions but permitted in others. Countries adopting similar regulatory approaches did not necessarily experience similar outcomes in terms of gambling participation and problem gambling rates. Other environmental factors beyond national gambling policies are relevant to people’s gambling behaviour.

Responsible Gambling Design Features

Internationally, in jurisdictions where gambling has been legalised, licensing bodies tend to demand the provision of some responsible gambling tools, even though requirements vary [16]. The specific rules were discussed under the respective jurisdiction’s section above. Online gambling providers are providing these more frequently and effectively compared to before. However, the provision of these features could still be improved: for example, conducting better identity and age verification (as no gambling operator actually required the submission of identity documents for review, and all merely relied on the user’s unevidenced self-declaration of age); not promoting gambling on dedicated responsible gambling pages; and training customer support to provide more responsible gambling-oriented assistance [46].

Offshore Online Gambling Provision

Early research from 2003 on offshore gambling websites already identified that these websites were registered in different jurisdictions making enforcement of gambling bans and restrictions difficult [47]. Geo-blocking of users using IP (Internet Protocol) addresses might be useful, although, more than twenty years since that study was conducted, the now widespread use of VPNs (Virtual Private Networks) that obfuscate one’s own real IP address for data privacy and other reasons might render this measure less effective.

Discussion

Only three identified studies explicitly dealt with young people’s experience of gambling regulation [13, 18, 25], which may be explained by the lack of specific policies that address young people experiencing gambling harms [48],

perhaps due to an incorrect assumption that blanket prohibitions on underage gambling effectively prevents participation and consequent harm [25]. The majority of included studies therefore often dealt with how adults, including young adults, experienced gambling regulation. Accordingly, this review is better positioned to provide an overview on gambling regulation implementation in general.

Many countries have regulations (e.g., laws, licensing conditions, and industry self-regulations) addressing mental health concerns associated with online gambling. Broadly, there are two positions: (a) prohibiting all online gambling and (b) legalising online gambling with a licensing system. Reports from countries that continue to prohibit online gambling indicate that such laws and restrictions are difficult to enforce, and are often circumvented by gamblers through illegal providers, which may cause additional harm. There is a trend, particularly in Western countries, towards the liberalisation of online gambling.

As to legalisation, there are multiple ways to approach this, including (a) only permitting a state-owned monopoly or oligopoly to provide online gambling or (b) opening the market to competition by many commercial providers using a licensing regime. Generally, legalisation by either method appears to increase gambling participation and gambling harm. Legalisation has limited impact on reducing participation in illegal online gambling, as people who already use offshore providers do not tend to transition to legal operators. Notwithstanding, legalisation might help direct new gamblers towards licensed operators, rather than illegal ones, thus controlling illegal online gambling from gaining more popularity.

Various so-called ‘responsible gambling’ features are legally required to be—or have been voluntarily—implemented by online gambling operators. Compliance with the letter of the ‘law’ is generally high in the sense that most operators do indeed provide what they are required to provide. However, these tools and informational disclosures are often not provided with sufficient visual prominence and accessibility, thus reducing their potential efficacy. Operators could draw more attention to these features in order to maximise gamblers’ potential use of them. Operators do not necessarily comply with the ‘spirit’ of the law, which is to reduce and eliminate harmful gambling to the maximum extent that is practically possible. Further, these features are often voluntary and so are not used even by people who are aware of them, thus further reducing their potential efficacy. The voluntary nature of these tools means that the burden is placed on the individual gambler to protect themselves from a harmful product that is commercially offered, which has been criticised as a poor and inappropriate framing of the issue from a public health perspective.

The only youth-dedicated online gambling policy is to prevent young people under a certain age from participating in gambling, even when older people are permitted to gamble. However, evidence suggests that young people who are not supposed to be allowed to gamble do manage to circumvent these restrictions and participate, which is likely easier to do in the online gambling context than the physical gambling context, where barriers to entry are higher (e.g., manual identity document checks). Gambling advertising restrictions are also relatively lax in most countries, meaning that many young people do see gambling adverts in public spaces and through sports sponsorship and may be influenced into increased participation.

Limitations of the Literature

The literature we reviewed has various limitations, which consequently also caused this review to have certain limitations. Firstly, we know for certain that many other countries not mentioned herein (e.g., Brazil) continue to prohibit gambling in general (including online gambling) by law, which is the historical default position, so these countries do have applicable gambling regulatory policies. However, we were unable to find any empirical assessments of the implementation of any such policies within the peer-reviewed academic literature. Consequently, we can only conclude that there is lack of relevant research, which might be partly due to the lack of any relevant policies in certain countries but may also be due to lack of research funding to support assessments of those policies. We cannot say that there is no policy dealing with online gambling in the countries that have not been mentioned.

Secondly, certain policies may have been inaccurately or even incorrectly described in the literature, as is known to have occurred in some previously published peer-reviewed works. Our description of the regulatory position of certain jurisdictions (e.g., Israel) hinged on only one secondary source and without us having consulted the primary source (which has not been duly referenced or archived by the study assessing it), which is not ideal. Those sections of this review are less reliable than other sections that relied upon multiple independent sources that corroborated each other. Indeed, the publications we reviewed often failed to identify and reference the specific policy document from which the policy being evaluated originated from (i.e., the primary source), making it difficult for other researchers like us to later verify the information. Future research should ensure that any relevant policy document is properly referenced and ideally archived in a data deposit repository for public sharing without any access restrictions. We did not conduct

independent legal research, which would have been highly time-consuming and likely required foreign language and local research skills, to verify whether the policies were correctly described or were updated since the original research was published (and thus became incorrect even though it was originally correct) due to research resource constraints. We took the descriptions of the policies mentioned in and evaluated by the scientific literature at face value and as read, except that we did rely upon our pre-existing expertise and knowledge of the policies in certain jurisdictions that we were already familiar with.

Limitations of this Review

Although a systematic search strategy was adopted to identify relevant records, we did not strictly follow any protocols for either systematic or scoping reviews due to resource constraints and in order to present a more practical country-by-country summary. Future studies should conduct quality assessments on the included empirical studies following systematic review protocols [49] and identify topics and themes that may emerge following scoping review protocols [50].

Globally, besides blanket prohibitions restricting under-18s or under-21s from gambling participation, very few policies specifically addressed young people [48], and only three identified studies had only young people aged under 26 as their participants [13, 18, 25]. Therefore, justifiably, the only exclusion criterion relating to participant demographics that we applied was that the study must be relevant to the mental health of young people, meaning that we only excluded from this review studies whose participants were all aged 26 or above (i.e., exclusively non-youths) and that many studies we included reported results derived from mixed samples of both youths aged under 26 and non-youths. We were often unable to determine what percentage of the samples were under-26s. Therefore, these results do not necessarily reflect what an exclusively youth sample would have produced.

The convergence of video games and gambling is a widely observed recent phenomenon that raises many concerns, particularly in relation to young people and children. This includes, for example, gambling-like in-game purchases (such as ‘loot boxes’ and ‘gacha’) and using in-game items as currency to gamble or ‘skin gambling,’ which may infringe pre-existing gambling regulations [51–57]. As those types of gambling or gambling-like activities are usually found within or adjacent to video games, they are addressed in an accompanying report on online video gaming regulatory policies adopting the same review methodology [6].

Conclusions and Future Directions

Based on the current evidence base, we cannot recommend either a prohibitive or a permissive regulatory approach to online gambling. Each has its benefits and disadvantages. A strict ban on online gambling appears unenforceable in practice, whilst legalisation may cause more harm to the wider population, including to people who otherwise may not have participated in online gambling at all.

The online gambling regulatory landscape varies by country, and differing cultural contexts further differentiate jurisdictions. Not only are the laws different, but their impact on consumers also differs, even when the policies are highly similar. Evidence on policy implementation from other countries may be informative and should be consulted to ensure evidence-based policymaking. However, policy-makers ought to keep in mind that conditions vary across countries, so even when the same law is implemented, its effects must be continually monitored and assessed. Laws that are ineffective at achieving the regulatory aim must be promptly reconsidered either for improvement or repeal.

More gambling policy research should be conducted [58]. Many aspects of online gambling regulation remain untested, and the situation in many countries is not known. The empirical studies that have been conducted have only looked at very limited aspects of a few jurisdictions. Older studies conducted many years ago should be replicated to further assess any developments that may have occurred since then, given that the industry and the regulatory landscape both develop quickly globally. Any online gambling regulation should be accompanied with earmarked funding for research into the impacts of that regulation on citizens (particularly vulnerable populations like young people), the gambling operators, the healthcare system, and the economy in general. The recently introduced statutory levy on gambling operators’ profits in the UK to fund healthcare and research provides a model for generating funding for research and mental health services that could be emulated by other countries [59].

Key References

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- A policy evaluation highlighting the increasing intersection between gambling and video games and the popularisation of gambling-like products affecting youths.

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Author contributions LYX: Conceptualization, Data curation, Formal Analysis, Investigation, Methodology, Project administration, Resources, Software, Supervision, Visualization, Writing – original draft, Writing – review & editing; ZD: Conceptualization, Funding acquisition, Methodology, Project administration, Supervision, Writing – review & editing; CD: Investigation, Validation, Writing – review & editing; CH: Investigation, Validation, Writing – review & editing; OK: Conceptualization, Funding acquisition, Methodology, Writing – review & editing; DK: Writing – review & editing; AC: Conceptualization, Funding acquisition, Methodology, Project administration, Resources, Software, Supervision, Writing – review & editing.

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Declarations

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