



“Safeguarding Children and Young People from Gambling Harms: A Scoping Review of the Grey Literature”

Kevin Davidson¹ · Christina Davis² · Emily Arden-Close³ · Elvira Bolat³ · Constantina Panourgia³

Accepted: 28 October 2024
© The Author(s) 2025

Abstract

Purpose of Review This scoping review aims to assess the range and effectiveness of interventions in the UK or relevant to the UK context designed to prevent or reduce gambling-related harms among children and young people (CYP) aged up to 25 years based on grey literature. Grey literature captures practical strategies and innovations not documented in academic literature, offering a comprehensive understanding of existing interventions.

Recent Findings The review identified fourteen organisations offering interventions primarily focused on prevention and treatment. Educational interventions, delivered through workshops, online courses, and digital resources, were most prevalent. Innovative approaches, such as interactive web-based games, showed higher engagement levels among CYP. However, most interventions lacked rigorous evaluation data, especially concerning CYP’s developmental needs.

Summary The review indicates the importance of multi-systemic approaches involving various stakeholders to mitigate gambling-related harms. It highlights the need for tailored, evidence-based strategies addressing CYP’s vulnerabilities, incorporating robust evaluation methods. Future research should include diverse linguistic and cultural contexts to ensure comprehensive protection for CYP from gambling-related harms.

Keywords Gambling-related harm · Children and young people (CYP) · Prevention and treatment interventions · Scoping review · Grey literature

Introduction

Recent decades have seen significant growth and diversification in commercial gambling markets, with gambling becoming popular among children and young people (CYP). CYP includes children (8–13), adolescents (13–18 years) and emerging adults (18–25 years) [1]. Despite gambling being illegal for those under 18 [2], young people are frequently exposed to and engage in gambling. For example, in the UK, 1.7% of 11–16-year-olds experience gambling-related problems, and 31% had gambled in the past year [3]. Additionally, 82% of the United Kingdom (UK) children aged 12–15 play online video games with gambling-like activities, such as loot boxes, which are not legally classified

as gambling [4]. These entities can entail significant financial burdens [5], but are often overlooked by adults, who are unequipped to identify warning signs due to lack of awareness [6, 7].

The growing accessibility of both regulated and unregulated gambling has expanded the range of opportunities available to CYP, increasing their susceptibility to developing problematic gambling [8]. Additionally, gambling advertisements featuring celebrities and social media influencers [9] enhance visibility among CYP, portraying gambling as socially acceptable and desirable for socialising, entertainment [10, 11], and financial independence [12]. Emerging adults and university students have been identified as high risk groups for problematic gambling [13], with 21% of GB university students classed as ‘problem gamblers’ [14]. The combination of widespread accessibility, targeted marketing, and the glamorisation of gambling, combined with youth developmental traits — such as sensation-seeking, risk-taking [1], and limited understanding of probabilities [15, 16], risks and consequences [17, 18] — intensifies CYP’s vulnerability to gambling-related risks.

✉ Constantina Panourgia
cpanourgia@bournemouth.ac.uk

¹ Goldsmiths College, University of London, London, UK

² University of the West of England, Bristol, UK

³ Bournemouth University, Poole, UK

Despite significant short-term [19, 20] and long-term [21] consequences of gambling for CYP these effects may be obscured due to CYP's limited financial resources and the misconception that age restrictions effectively prevent gambling [22]. Government endorsement, pervasive advertising, and media have normalised gambling, further masking its risks [23–25]. Therefore, targeted interventions are crucial to protect CYP from gambling-related harm.

To safeguard CYP from gambling-related harm, various interventions have been proposed, including psychological interventions, family support mechanisms, public education, advertising restrictions, and safer gambling features [16]. However, few strategies are specifically designed for CYP, excepting some educational initiatives [26]. Systematic reviews provide an overview of existing programs [27–33], but raise concerns about the long-term effectiveness of school-based programs due to limited follow-up [30] and a lack of family-focused strategies, particularly for children of parents experiencing problem gambling [29]. These reviews highlight the need to investigate prevention programmes which are integrated into school curricula [28, 31] as well as public health interventions outside of educational settings [32], both of which may exist outside of the scope of academic reviews due to methodological inclusion criteria.

Given the rapidly evolving gambling landscape and the lack of comprehensive evidence on intervention efficacy for CYP at risk of gambling-related harm [32], we conducted a scoping review of grey literature. This approach aimed to capture a broader range of interventions, including those not documented or empirically validated in academic literature [33]. This is due to the fact that practitioners are able to respond to issues of concern more quickly than the time it takes to conduct high-quality research [34]. Such reviews can reveal practical strategies and innovations that have not been widely disseminated, highlight existing interventions and evaluations, and identify gaps for further development [35, 36]. In doing so, reviews of grey literature may also address the risk of publication bias inherent in reviews of traditional academic journals controlled by commercial publishers [37].

To address the gaps in interventions for gambling-related harm among CYP, we propose the following review questions:

Research Question 1: What type of organisations are delivering interventions to prevent or reduce gambling-related harm among CYP?

Research Question 2: What type of interventions are being delivered to prevent or reduce gambling-related harm among CYP, how are they delivered and how successful are they?

By addressing these questions, our research aims to illuminate the current interventions for CYP and stakeholders in the UK and relevant to the UK context, highlighting effective strategies, their organisation, and evaluation, and offering potential blueprints for broader implementation.

Methodology

A scoping review of international grey literature was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) extension for scoping reviews [38] and Arksey and O'Malley's [39] 5-stage protocol:

- Phase 1: formulated research questions and established inclusion/exclusion criteria (see Table 1).
- Phase 2: developed search terms (see Fig. 1), in consultations with contributing authors and a Project Advisory Group (PAG) of healthcare and education professionals experienced in child issues and/or gambling.
- Phase 3: searched grey literature from the UK, Canada, and Australia as they are English-speaking jurisdictions with similar approaches to addressing gambling-related harms. Although this study aims to examine gambling-related issues within the UK context, the grey literature analysed primarily originates from organisations and regulatory frameworks in Great Britain (GB). This reflects the concentration of relevant materials and the legislative variations between GB and Northern Ireland. Sources included websites such as YGAM, Gambling Commission, GamCare, local authorities, Public Health England, Youth Index 2023, National Youth Agency, and relevant children's charities. Google searches were conducted in June and July 2023 using the search terms seen in Fig. 1 and guided by our PAG. Additionally, systematic reviews guided identification of organisations offering interventions, followed by searches of their websites.
- Phase 4: charted data on organisation, type of organisation, location, type of intervention, nature of intervention, audience, mode of delivery and evaluation/accreditation.
- Phase 5: analysed data to identify common themes and suggest future research and practice directions; synthesised our findings into actionable recommendations and identified ways to address gambling-related harms among CYP.

Table 1 Inclusion and exclusion criteria

Inclusion Criteria	Exclusion Criteria
<ul style="list-style-type: none"> ● Reports on interventions on children and young people up to 25 years ● Interventions for children and young people experiencing gambling-related harm. ● Reports in English language. 	<ul style="list-style-type: none"> ● Reports on interventions involving participants aged over 25 years. ● Interventions conducted before 2008. ● Countries that are not comparable to the United Kingdom (UK*) (e.g., countries where gambling is illegal for all ages, not just children aged under 18 years).

UK refers to the United Kingdom and includes countries such as England, Wales, Scotland, and Northern Ireland

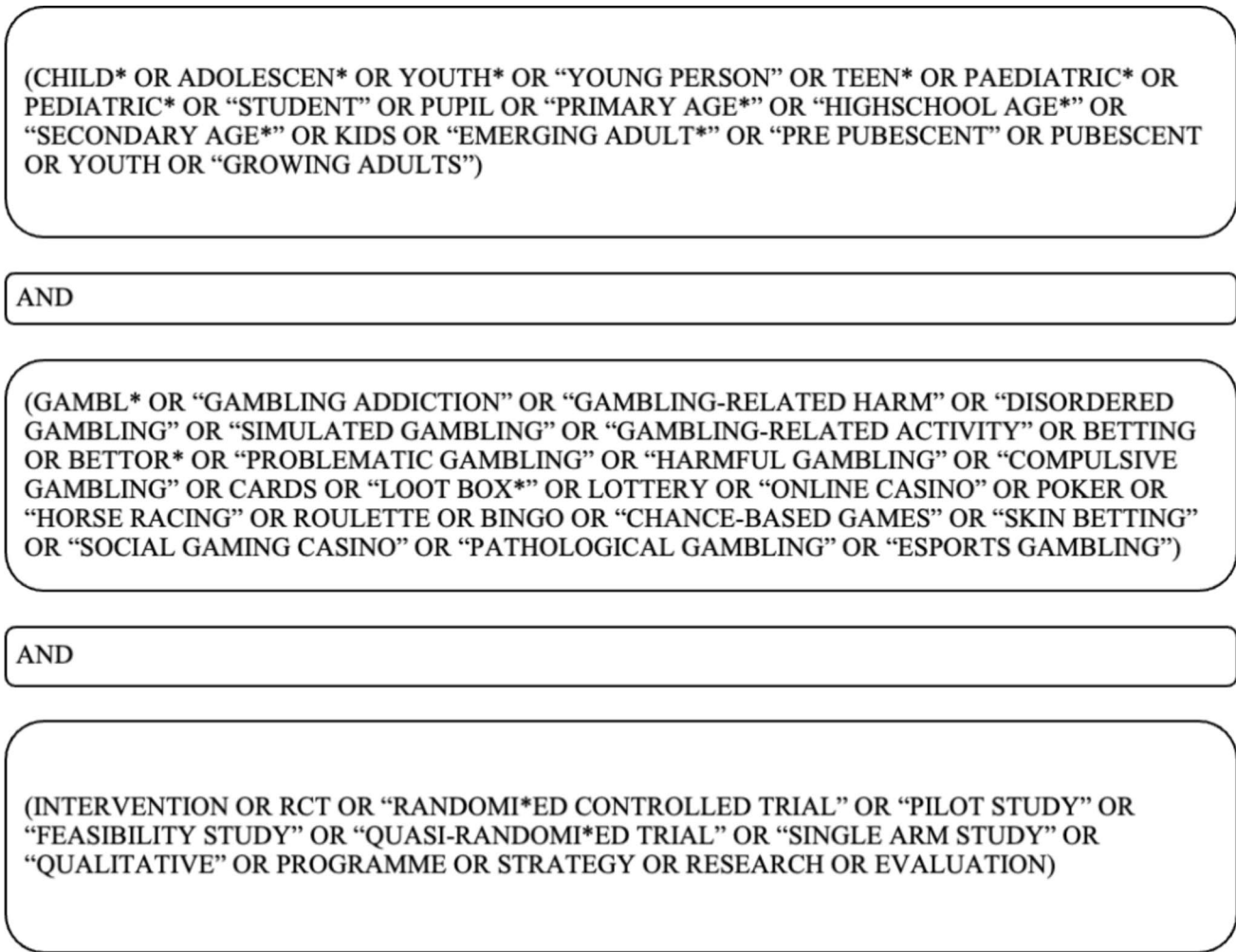


Fig. 1 Search terms

Search Terms

(CHILD* OR ADOLESCEN* OR YOUTH* OR “YOUNG PERSON” OR TEEN* OR PAEDIATRIC* OR PEDIATRIC* OR “STUDENT” OR PUPIL OR “PRIMARY AGE*” OR “HIGHSCHOOL AGE*” OR “SECONDARY AGE*” OR KIDS OR “EMERGING ADULT*” OR “PRE PUBESCENT” OR PUBESCENT OR YOUTH OR “GROWING ADULTS”)

AND

(GAMBL* OR “GAMBLING ADDICTION” OR “GAMBLING-RELATED HARM” OR “DISORDERED GAMBLING” OR “SIMULATED GAMBLING” OR “GAMBLING-RELATED ACTIVITY” OR BETTING OR BETTOR* OR “PROBLEMATIC GAMBLING” OR “HARMFUL GAMBLING” OR “COMPULSIVE GAMBLING” OR CARDS OR “LOOT BOX*” OR LOTTERY OR “ONLINE CASINO” OR POKER OR “HORSE RACING” OR ROULETTE OR BINGO OR “CHANCE-BASED GAMES” OR “SKIN BETTING” OR “SOCIAL GAMING CASINO” OR “PATHOLOGICAL GAMBLING” OR “ESPORTS GAMBLING”)

AND

(INTERVENTION OR RCT OR “RANDOMI*ED CONTROLLED TRIAL” OR “PILOT STUDY” OR “FEASIBILITY STUDY” OR “QUASI-RANDOMI*ED TRIAL” OR “SINGLE ARM STUDY” OR “QUALITATIVE” OR PROGRAMME OR STRATEGY OR RESEARCH OR EVALUATION)

Establishing the Parameters of the Scoping Review

A scoping review protocol was developed to define the review question and inclusion/exclusion criteria. A preliminary literature search revealed a focus on adult gambling interventions, with few targeting CYP, likely due to the legal gambling age of 18 in many jurisdictions. In order to cover vulnerable groups like university students and ‘emerging adults’, interventions for individuals aged up to 25 years were included. However, interventions that were specifically designed for adult populations which were available to those over 18 were excluded. For example, if an intervention was designed for university students, it was included. However, if an intervention was designed for adults and happened to be available to university students, it was excluded.

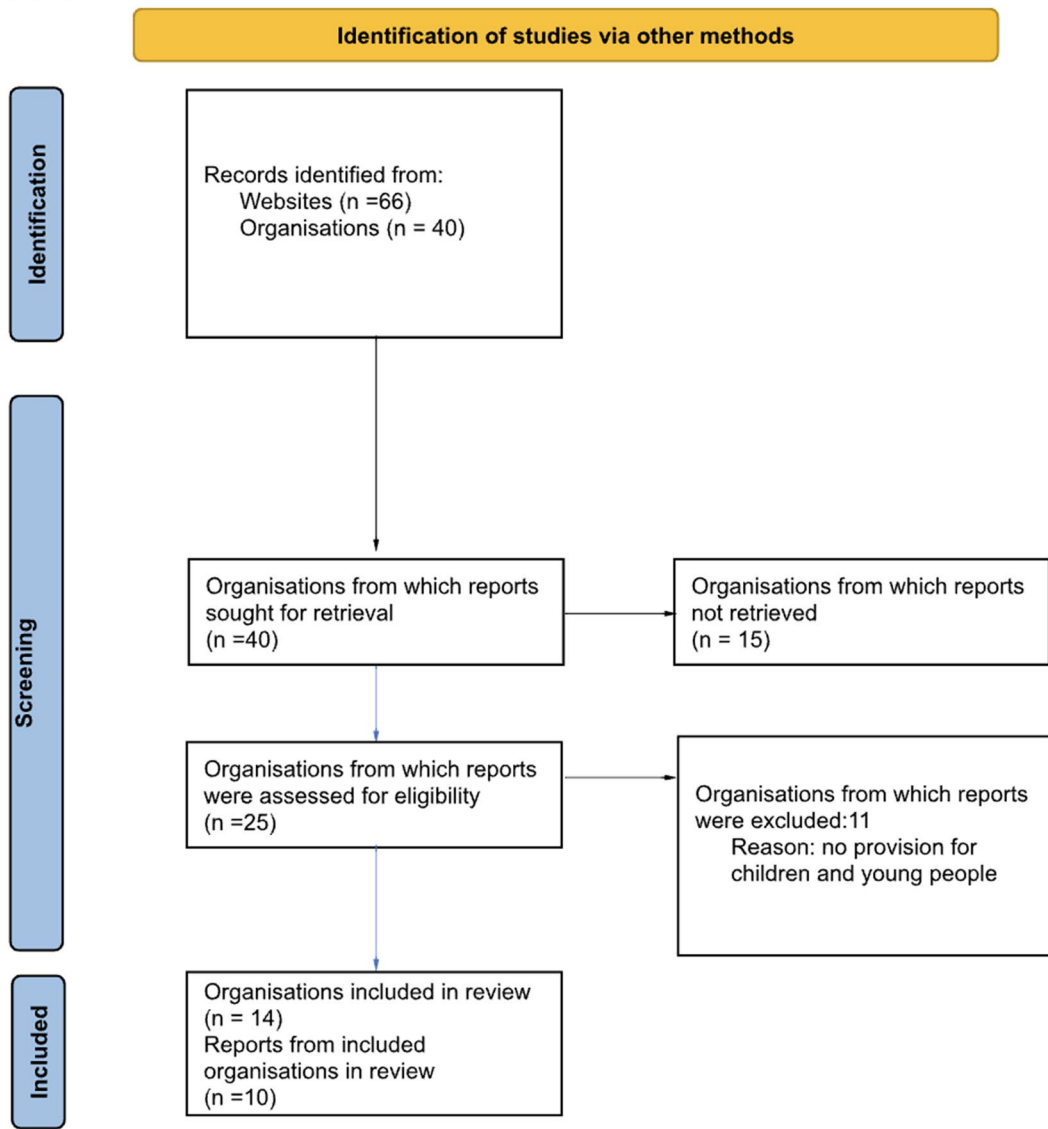
Interventions from before 2008 were excluded due to the significant changes in gambling-related harms for CYP following the release of the first Apple iPhone in 2007 [40] and the increasing access to smartphones which followed [41]. Given CYP’s high engagement in online gaming [4,

42, 43] and the recognition of Gaming Disorder as a clinical condition [44], we considered whether to include interventions for gaming-related harm. Preliminary searches showed extensive reviews on gaming disorder interventions [45–47]. However, due to differences between gaming and gambling (gaming primarily involves skill rather than chance and may not necessarily entail significant monetary expenditures), this review focused on interventions for gambling-related harm in CYP, excluding those targeting gaming-related harm.

Screening, Data Charting and Synthesis of Results

The PRISMA flow diagram is presented in Fig. 2. The first two authors screened the grey literature, with discrepancies resolved by another team member. Data from the selected literature were organised in Microsoft Excel. Each organisation providing a qualifying intervention was treated as a single data unit, irrespective of the diversity of interventions offered. This was because organisations

PRISMA 2020 flow diagram for exploration of grey literature, which included searches of databases, registers and other sources



*As numbers of reports varied by organisation, it was considered more consistent for organisation to be the unit of assessment.

Fig. 2 PRISMA Diagram

often presented a variety of intervention strategies through a range of online platforms. This approach accounted for the dynamic nature of the data, which organisations often edited and was not statically documented in peer-reviewed studies or policy reports.

Data were analysed using the PAGER framework, encompassing patterns, advancements, gaps, practical evidence, and research recommendations [48]. Tabular representation was supplemented with a narrative summarising methodologies and outcomes. Extracted information included organisational details, program titles, geographic distribution of

recipients, target demographics, intervention modality and nature, and assessment methods.

Results

The search identified 14 organisations offering interventions for CYP. Data was collected on type of organisation, geographic availability, nature and type of interventions, target audience and delivery modes (see Table 2), as well as effectiveness of interventions, source of data relating

Table 2 Organisations identified in the grey literature

#	Organisation	Type of Organisation	Location	Type of Intervention	Nature of Intervention	Audience	Mode of Delivery
1	National Gambling Clinic (NGC)	NHS Foundation Trust.	Greater London, England	Treatment	Psychological	CYP (13–18)	In-person Counselling
2	Addiction Recovery Agency (ARA)	Registered Charity	South-West England	Prevention, Treatment	Educational, Psychological	CYP (11–19), Practitioners	In-person Counselling, Workshops, Online Resources
3	Big Deal	Registered Charity	Great Britain (GB)*	Prevention	Educational, Psychological	CYP (11–18), Parents/Carers, Practitioners	Online Resources, Online Chat, Telephone counselling,
4	GamCare Young People's Support Service	Registered Charity	GB	Prevention, Treatment	Psychological, Harm minimisation	CYP	Online Resources, Online Chat, Telephone counselling, Blocking Software
5	Beacon Counselling Trust (BCT) (+GamCare)	Registered Charity	North-West England	Prevention, Treatment	Educational, Psychological	CYP, Practitioners, Parents/Carers	Online Resources, In-person counselling, Telephone counselling, Workshops
6	The Young Gamers and Gamblers Education Trust (YGAM)	Registered Charity	GB	Prevention	Educational	CYP, Practitioners	Online Resources, Workshops
7	Fast Forward (+ GambleAware)	Registered Charity	Scotland	Prevention	Educational	Practitioners	Online Resources
8	Demos	Registered Charity	GB	Prevention	Educational	Practitioners	Online Resources
9	Epic Risk Management	Limited Company	GB	Prevention	Educational	CYP	Workshops
10	Gambling Harm UK	Registered Charity	GB	Prevention	Educational	CYP, Practitioners	Workshops, Online Resources, Podcast
11	Responsible Gambling Council	Non-for-profit organisation	Canada	Prevention, Treatment	Educational	CYP (12–24)	Online Resources (inc. web-based game), Telephone counselling, In-person counselling (Ontario residents only), Live Game Show Workshop (Ontario residents only)
12	YMCA Canada	Registered Charity	Ontario, Canada	Prevention	Educational	CYP (8–24), Practitioners, Parents/Carers	Workshops, Online Resources, Projects
13	Victorian Responsible Gambling Foundation (VRGF)	Statutory Authority	Victoria, Australia	Prevention, Treatment	Educational, Psychological	CYP, Practitioners, Parents/Carers	Workshops, Online Resources, Telephone counselling, Online chat.
14	Gambleaware New South Wales	Statutory Authority	New South Wales, Australia	Prevention, Treatment	Educational, Psychological	CYP, Practitioners	Workshops, Online Resources, In-person counselling, Telephone counselling, Online Chat

GB refers to Great Britain which includes three countries, England, Wales and Scotland

to effectiveness and accreditation processes (see Table 3). Seven organisations provided interventions that were classified as “treatment” (for CYP already experiencing gambling-related harm) whilst thirteen of the organisations provided interventions which were classified as “prevention” (for those at risk). Twelve of the organisations provided interventions which were categorised as “educational” (information sharing), seven provided interventions categorised as “psychological” (therapeutic processes), and one organisation provided an intervention categorised as “harm minimisation” (limiting gambling access). Twelve of the organisations provided interventions for CYP, nine provided interventions for practitioners, and four for parents/carers. Specific age ranges for CYP were recorded where provided. Twelve of the organisations delivered interventions in the form of online resources (courses, documents, podcasts, games), nine delivered interventions through workshops, six offered telephone counselling, five offered in-person counselling, and four offered online chat. Data was gathered on the effectiveness of the interventions where available. Seven of the organisations provided this information via annual reporting processes, three provided the information on their organisational website, three organisations commissioned independent evaluations, one organisation provided both annual reports and independent evaluation and one organisation did not provide information on the effectiveness of their interventions.

Type of Organisation and Locations

Most organisations were registered charities. Ten organisations are national covering Great Britain (GB: which includes three countries, England, Wales and Scotland and excludes Northern Ireland) and not the entire UK (covers GB countries and Northern Ireland): seven operate GB-wide, one in South-West England, one in North-West England, and one in Scotland. Four organisations are international: two in Canada and two in Australia.

Type of Interventions

Given the focus on prevention and reduction, preventative interventions are summarised first, followed by treatment interventions. The results show overlap between prevention and treatment but distinguishing them was deemed beneficial.

Preventative Interventions

Information about preventative interventions was obtained from gambling-related charities’ websites. In GB, seven national registered charities (GamCare, Big Deal, YGAM, Demos, Gambling Harm UK, Epic Risk Management) and

three regional organisations (Beacon Counselling Trust in North West England, Fast Forward in Scotland, ARA Recovery for All in Wales and South West England) offer preventative interventions for CYP. In Canada, two national organisations (Responsible Gambling, YMCA) were included, and in Australia, two state-level organisations (Victorian Responsible Gambling Foundation, Gambleaware New South Wales).

Nature and Audience Most preventative interventions were educational, including school workshops, online courses, learning resources, and training programs. These materials aimed to inform CYP about the risks of gambling harms and offered behavioural interventions such as phone support for goal setting (Big Deal). One organisation provided a harm minimisation intervention, offering free Gamban blocking software licences via the National Gambling Helpline (GamCare). Of the 14 organisations identified, four provided interventions for CYP, two provided interventions for practitioners, while eight targeted both CYP as well as practitioners and/or parents.

Mode of Delivery Preventative interventions included workshops, downloadable resources, online chat, telephone helplines, and online courses or training programs (self-paced or organisation-delivered). Outside of GB, more advanced delivery methods and digital marketing strategies are evident. For example, Responsible Gambling Canada employs “edutainment”, using live stage shows and digital games for high school students. Evaluations indicate these strategies effectively engage large numbers of young people [49]. The “House of Wisdoms” digital game, raising awareness about gambling risks, reached over 470,000 teenagers in Ontario via social media, while “Check your (Re)flex”, an interactive video game, engaged over 32,000 young people and exceeded 5 million social media impressions [49]. These interactive, digital methods may be more engaging for youth [49]. In Australia, educational material aligned with the upper primary curriculum engages CYP through a fictitious interactive video game [50]. Such digital strategies necessitate interdisciplinary collaboration and funding to produce high-quality, school-oriented digital content.

Source of Evaluative Data The effectiveness of preventative interventions was assessed by sourcing evaluative data. Three organisations provided this information directly on the organisational webpages, which typically contained only headline statistics about the numbers of participants engaged by the intervention(s) and satisfaction levels. Seven of the organisations provided evaluative data via annual reporting processes, through impact or progress reports downloadable from their organisational website. Annual reports typically contained more detailed information to accompany headline quantitative statistics, such as organisational strategies,

Table 3 Evaluation and effectiveness relating to organisations

#	Organisation	Source of Data	Effectiveness	Accreditation
1	National Gambling Clinic (NGC)	N/A	N/A	N/A
2	Addiction Recovery Agency (ARA)	ARA Impact Report 2023/24	<ul style="list-style-type: none"> ● 8,430 CYP and 1340 practitioners engaged in Educational intervention. ● 1,758 people received CBT, with an increased Problem Gambling Severity Index (PGSI) score from 19 (pre-intervention) to 3 (post-intervention). 	N/A
3	Big Deal	Big Deal website	<ul style="list-style-type: none"> ● 133,000+ young people attended a workshop in the last 4 years. ● 28,000+ professionals completed training in the last 4 years. ● 94% of young people attending workshops know how to make safe choices about gambling. 	N/A
4	GamCare Young People's Support Service	GamCare Annual Report 2022/23	<ul style="list-style-type: none"> ● Gambling awareness workshops attended by 45,562 at-risk children and young people, leading to increased understanding of how gambling can harm themselves or their peers (87 – 96%), and increased knowledge about how to make safer choices if they choose to gamble (82 – 93%). ● Trained 8,526 professionals who work with young people, leading to increased understanding of how a young person could develop a problem with gambling (from 27–98%) and increased understanding of how gambling can harm young people (from 68–99%). ● Reached 488 parents and carers of young people. 	<ul style="list-style-type: none"> ● Accredited by the National Youth Agency. ● Awarded 'Advanced' level accreditation. ● Several recommendations made. ● The accreditation will be re-assessed in three years.
5	Beacon Counselling Trust (BCT) (+ GamCare)	BCT Impact Report 2023/24	<ul style="list-style-type: none"> ● Education and early prevention workshops delivered to 4,298 young people. ● Education and early prevention workshops delivered to 1,043 professionals, parents and carers. 	N/A

Table 3 (continued)

#	Organisation	Source of Data	Effectiveness	Accreditation
6	The Young Gamers and Gamblers Education Trust (YGAM)	YGAM Impact Report 2023 NCVO Independent Evaluation Report 2020 [46]	<ul style="list-style-type: none"> ● 991,929 estimated young people reach through delegates trained. ● 5,223 delegates trained in positions of care and influence over children and young people, including 1,636 teachers and 1,035 youth workers. ● 13,493 resources downloaded. ● 1119.5 h of training delivered. ● 99% of delegates felt better, equipped to identify and respond to gambling harms following YGAM training. ● 95% of delegates would recommend YGAM training to a colleague. ● 95% of parents and carers felt that their knowledge had improved following YGAM training. ● 96% of social care professionals felt more confident about spotting the signs of gaming and gambling harms after completing a YGAM workshop. ● 97% of university staff from 45 universities felt better equipped to support students who may be experiencing gaming or gambling harms and signpost them to the correct services, having completed YGAM training. ● Education Programme delivered to over 2,488 practitioners from 2017–2020 and estimated 364,918 young people through YGAM-trained practitioners. ● Young people experiencing intervention had increased understanding of gaming- and gambling-related harms and potential risks and triggers, increased awareness of support and resources, improved financial knowledge, and more confidence in discussing problem gambling with peers and others. ● Practitioners experiencing intervention had increased understanding of the subject matter, improved familiarity with YGAM's work, increased level of confidence to discuss the subject matter with young people, a more sympathetic and understanding approach to the subject matter, receipt of a Pearson accreditation. About 50% have had opportunities to use YGAM materials with young people. ● It is too early to report on the extent to which young people have decreased their risks of gaming and gambling or having better financial capability or increased digital resilience. 	<ul style="list-style-type: none"> ● Pearson accreditation: YGAM practitioners receive Pearson accreditation upon completing a YGAM workshop. ● Pearson Assured: YGAM's education resources, programs, and facilitation are quality-assured and accredited by Pearson. ● YGAM is also accredited by City & Guilds and has Customised Accreditation Centre status from ASDAN.

Table 3 (continued)

#	Organisation	Source of Data	Effectiveness	Accreditation
7	Fast Forward (+GambleAware)	Evaluation Report by IFF Research 2022	<ul style="list-style-type: none"> ● Evidence of improvement in the number of young people understanding and acknowledging gambling risks and being aware of available support. Following the intervention, 85% of young people felt more aware of the consequences of gambling, 90% felt more confident in their ability to identify signs of gambling harms among their friends, and 84% felt more confident about how to access support if needed. Less evidence of young people's improved ability to critically assess risk and make more informed decisions around gambling. ● Improved practitioner awareness of the relevance of youth gambling education to their role; knowledge of and ability to recognise youth gambling risks in the people they support; their awareness of available support services and their confidence in signposting young people to support. 	N/A
8	Demos	Evaluation Report by Demos 2018	<ul style="list-style-type: none"> ● 20% increase in the proportion of pupils able to help someone experiencing gambling problems, relative to pupils at the comparison schools. ● 18% increase in the proportion of pupils who know where to go to talk about gambling problems. ● 11% increase in the proportion of pupils being able to describe what delayed gratification is. ● 10% increase in the proportion of pupils understanding techniques used by the gambling industry to persuade people to gamble. 	N/A
9	Epic Risk Management	Epic Risk Management website	<ul style="list-style-type: none"> ● 97% satisfaction score across all safer gambling programmes. ● 92% of school staff members were completely satisfied with the EPIC session. ● 90% of student-athletes who participated in the program reported an increase in their understanding of the risks associated with gambling. 	<ul style="list-style-type: none"> ● Accredited by Institute of Leadership & Management. ● No further information available.
10	Gambling Harm UK	Gambling Harm UK website	<ul style="list-style-type: none"> ● Time to Learn sessions for primary care practitioners. Thirty-three of those GP trainees who attended the 90-minute awareness training session provided feedback that the training was helpful (82%), the content was relevant (85%), and skills of the trainer were excellent (82%). 	N/A

Table 3 (continued)

#	Organisation	Source of Data	Effectiveness	Accreditation
11	Responsible Gambling Council (RGC)	RGC Impact Report 2023/24	<ul style="list-style-type: none"> ● Educational workshop delivered to 6,000 students through 18 performances across Ontario including indigenous communities. ● Interactive game program in 25 in-person activations drove 3,600 + meaningful interactions, leading to 9,986 entries to the incentive scholarship awards contest and a 400% increase Year on Year page traffic to the RGC young adult webpages. ● Delivered 2 community awareness webinars resulting in high satisfaction (both reaching over 95%), leading to 16% increase in e-newsletter subscriptions and 2,000 educational problem gambling and prevention kits distributed to college and university students. ● Social awareness campaigns aimed at 18–24-year olds resulted in 8.1 M impressions, including targeting at-risk South Asian and Chinese communities. 	N/A
12	YMCA Canada	Evaluation Report by Strategic Science (2017)	<ul style="list-style-type: none"> ● Evaluation of Youth Gambling Awareness Programme found increased awareness of harm related to problem gambling, increased recall of low-risk gambling practices, increased positive attitudes towards treatment, increased awareness of help resources related to problem gambling, and decreased misconceptions of gambling. ● The objective of reducing stigma, that is the negative beliefs that youth hold about problem gamblers, was not achieved by this workshop. 	N/A

Table 3 (continued)

#	Organisation	Source of Data	Effectiveness	Accreditation
13	Victorian Responsible Gambling Foundation (VRGF)	VRGF Impact Report 2022/23	<ul style="list-style-type: none"> ● In 2022–23, 113 schools/education settings were directly engaged in the ‘Be Ahead of the Game’ program, with 323 student/parent/teacher education sessions delivered to 7431 participants. ● Evaluation of Love the Game conducted by La Trobe University Centre for Sport and Social Impact (2020–22) found that: ● 87% of young people who completed a Love the Game education session reported an increase in ‘very good understanding’ of betting risk after completing the session from 18 % (before) to 52 % (after). ● 89% of parents think it is important to have conversations with their child(ren) about the risks of sports betting and two-thirds (66 %) have spoken to their child(ren) about gambling risks. ● 33% of parents who regularly bet on sport stated they had reduced the amount of time they speak about sports betting/ odds in front of their child(ren) as a result of seeing or hearing the Love the Game campaign. ● 224 local Love the Game clubs had developed a gambling harm prevention policy and committed to actions that limit or reduce exposure of young people to gambling promotion at their club. 	N/A
14	Gambleaware New South Wales (GNSW)	GNSW Progress Report 2022/23	<ul style="list-style-type: none"> ● GambleAware for Parents workshop, to educate parents about preventing gambling harm, delivered by five GambleAware providers in nine schools and communities across the state. ● GambleAware for Schools resources released for high-school teachers to use to support young people to be aware of the risks of gambling and make informed decisions. 	N/A

targets and partnerships related to interventions. Three organisations had commissioned independent evaluations of their interventions, highly detailed reports including the methodological processes employed to generate the data. One organisation, Demos, carried out an equally thorough report into the piloting of one specific intervention.

Effectiveness The different ways in which organisations generated and published evaluation data affected the strength/validity of the evidence relating to effectiveness. Firstly, where data was published in greater detail, such as in reports rather than on websites, there was greater scope to include important information such as the methodological processes used to gather the data. Secondly, when the data was produced by an independent evaluator the evidence had greater validity due to the reduced chance of bias and the methodological expertise of

a professional evaluator. Thirdly, when the published data only related to numbers of participants engaged there was limited evidence as to the effectiveness of the intervention. Evidence of intervention effectiveness was improved when data was also gathered post-intervention on participants’ understanding of the content or their satisfaction levels; however, this measure is highly subjective. Fourthly, when data was gathered only at pre- and post-intervention stages, it was not possible to provide any evidence about the long-term effectiveness of the intervention. This highlights the importance of strategic evaluation plans where data is gathered over a number of years in relation to a specific project. For example, VRGF commissioned La Trobe University Centre for Sport and Social Impact (2020–22) to evaluate their ‘Love the Game’ projects leading to evidence relating to longer term effectiveness.

In general, the results highlight the value of independent evaluations in providing stronger evidence relating to the effectiveness of interventions. Four organisations commissioned independent evaluation reports which provide more detailed evidence about effectiveness of interventions. Firstly, the Gamban blocking software's effectiveness has been evaluated; however, data specific to young people's engagement was not isolated [51]. Secondly, the YGAM Education Programme was independently evaluated by NCVO Charities Evaluation Services in three regions (North West, North East and Yorkshire and Humber, London and South East). This evaluation used online surveys, semi-structured interviews with practitioners, and workshops with CYP to assess effectiveness, resulting in evidence-based recommendations [52]. Thirdly, YMCA's Youth Gambling Awareness Program (YGAP) was independently evaluated by Strategic Science [53], using a combination of student focus groups, teacher surveys and interviews, as well as pre- and post-workshop surveys. Fourthly, Fast Forward's Scottish Gambling Education Hub was evaluated by IFF Research [54], through a range of seven online quantitative surveys including pre- and post-intervention surveys. Fifthly, whilst Demos evaluated their own educational intervention pilot project, there was a similarly high level of methodological rigour in the evaluation process, including pre- and post-surveys over a 12-month interval, lesson observations and post-delivery focus groups with teachers and pupils [55].

Accreditation of Practitioner Training In GB, three organisations presented training courses for professional practitioners which carried accreditation by the Institute of Leadership and Management (Epic Risk Management), Pearson Assured (YGAM) and National Youth Agency (GamCare Young People's Support Service). Accreditation and evaluation of training programmes may improve quality of provision and increase practitioner uptake; however, no evidence was found relating to this.

Selectively Targeted Preventative Interventions Selectively targeted interventions are directed towards specific groups of either at-risk CYP or adults uniquely placed to support CYP. GB provision for CYP at risk of harm is limited, with specific interventions available only for students (provided by YGAM). Selectively targeted preventative interventions aimed at specific communities (e.g., South Asian communities, people working in the armed forces, people in the criminal justice system) are designed for all ages. Targeted approaches for specific CYP have been developed outside GB. For example, in Australia, youth gambling interventions have been built around pre-existing community groups with interest in sport or gaming [56]. In Canada, prevention programmes with dedicated websites with neutral messaging have been developed for Chinese, South Asian and Indigenous youth [49].

In GB, interventions have been specifically designed for adults who are uniquely placed to support CYP, most commonly teachers and parents. YGAM offers training programmes for parents/carers, teachers, primary care health professionals, social workers, foster carers and children's residential care teams. This approach is also taken outside GB.

Treatment Interventions

Nature and Audience In GB, treatment for CYP experiencing gambling-related harm operates within existing institutional frameworks primarily tailored for adult treatment, involving collaboration among the National Health Service (NHS), governmental bodies, gambling treatment entities, and charitable organisations like GambleAware, GamCare, and Big Deal. The National Gambling Support Network (NGSN) coordinates GB-based organisations offering confidential, individualised assistance, including the National Gambling Helpline and a Young People's Support Service (YPSS).

Mode of Delivery The 24-hour Helpline, managed by the independent charity GamCare, offers telephone, web chat, WhatsApp, Facebook Messenger, and in-person consultations. YPSS, catering to under-18s, includes Northern Ireland, providing tailored support via a dedicated email, self-referral mechanism, or through the Big Deal website.

In GB the NHS National Problem Gambling Clinic in England provides face-to-face counselling for individuals aged 13+ through seven regional clinics. Seven additional clinics are scheduled to open in England to meet increasing demand [57], with calls for a clinic in Wales [58]. These clinics provide psychological support, including cognitive behavioural therapy (CBT) and psychodynamic psychotherapy, by trained psychiatrists, clinical psychologists, and counselling psychologists. However, they are not tailored specifically for children and young people (CYP).

In analogous jurisdictions such as New South Wales, Australia, services for CYP resemble GB services. GambleAware New South Wales offers a nationwide helpline accessible via telephone, online chat, and social media platforms, alongside regional centres providing face-to-face counselling. Supplementary services include financial counselling, gambling-specific legal advice, and translation services. Similar to the GB model, CYP services are integrated within adult provision, directing towards general children's mental health services such as 'Kidsline', a 24/7 service for children aged 5 and above. The adequacy of counsellors' training on gambling-related harm for CYP remains unclear.

Source of Evaluative Data Evaluative data on the effectiveness of treatment interventions for CYP was scarce. None of the seven organisations which provided treatment interventions in this review provided evaluative data relating specifically to CYP. This was often due to the fact that data provided does not separate out CYP from other populations. For example, in their 2023/24 annual report Addiction Recovery Agency (ARA) in GB recorded that 1,758 people received CBT, with an average increase of Problem Gambling Severity Index (PGSI) score from 19 to 3,¹ but this applies to people of all ages who use their gambling counselling services.

Effectiveness This review found a dearth of evaluative data relating to the effectiveness of treatment interventions for CYP.

Discussion

This scoping review of grey literature aimed to identify what type of organisations are delivering interventions to address gambling-related harm among CYP, what type of interventions are being delivered, how the interventions are being delivered and evaluated, and how effective they are. We identified 14 organisations, mainly GB-based charities, delivering predominantly educational and psychological preventative interventions. Most interventions were evaluated by organisational annual reports which recorded numbers of CYP, or practitioners engaged but lacked evidence about the interventions' long-term effectiveness in reducing gambling harms among CYP. Where independent evaluations were conducted, stronger evidence was provided about the extent to which the intervention may reduce gambling-related harm for CYP.

Grey literature syntheses include public health approaches undertaken by practitioners that are not yet captured by peer-reviewed studies, and can reveal under-researched interventions [35, 37]. Previous research into the mitigation of gambling harm shows that the evidence base is dominated by evaluations of individual-level harm reduction interventions and lacks research on context-based interventions [26]. This review also highlights the need for research into context-based interventions, with over 60% of organisations offering interventions aimed at practitioners and parents, highlighting the importance of supportive and knowledgeable adults in creating safer environments for CYP [59]. This reflects a multi-systemic understanding of human development [60, 61], emphasising the importance of whole systems approaches.

In GB, gambling-related harm among adult populations has been addressed through whole systems strategies [16]. The rebranding of the National Gambling Treatment Service as the National Gambling Support Network emphasises a focus on early intervention and regional connectivity with local government services. For example, the whole council approach implemented by Public Health England and the Local Government Association involves collaboration among various services, including children's, family, adult, treatment, homelessness, housing, and financial inclusion. This approach aims to train frontline staff, map local gambling risks, establish licensing policies, conduct compliance visits, and share local data to develop preventive strategies.

Some of the organisations in this review are pursuing a whole systems approach to reducing the risks of gambling harm for CYP, and collaborative efforts between charitable organisations and governmental bodies at both national and local levels have enhanced support networks. For example, in GB the cross-disciplinary approach to developing the accredited 'Bet You Can Help' (BYCH) training programme combined the local networks of the Beacon Counselling Trust with addiction recovery expertise (ARA), including broader public health perspectives through accreditation by The Royal Society of Public Health (RSPH), and evaluative insights by an international organisation, the Gambling Research Exchange Ontario (GREO). Cross-disciplinary collaboration such as this has the potential to draw together expertise from adult gambling harm reduction into the design of interventions which are appropriate for and relevant to CYP, practitioners and parents.

Innovative funding approaches can also lead to cross-disciplinary collaboration. For example, a school-based intervention program in Victoria, Australia combined funding from the VRGF with additional support from the Victorian Government's Creative Learning Partnerships program as well as public health organisation the VicHealth Future Healthy Award. Significant levels of funding may be required to deliver interventions which draw upon innovative digital modalities to engage CYP more effectively. For example, RGC accessed funding from the Ministry of Health and Long-Term Care to develop a digital web-based educational game, freely available to Ontario high school students and supported by social media campaigns including a collaboration with Kids Help Phone, a national mental health resource for youth. However, whilst there is evidence of high levels of engagement in these interventions among CYP, there is a need for further research into the effectiveness of these approaches in reducing gambling harm.

Whole systems preventative approaches also build on pre-existing networks of support by extending existing CYP services, such as education and mental health services, to include an awareness of gambling-related harm. Organisations such as YGAM, Demos and VRGF have designed

¹ With lower PGSI scores representing a lower gambling risk.

curriculum-aligned interventions for school lessons, drawing on teachers' expertise and established institutional structures to ensure widespread engagement within a supportive environment. The evaluation of these programmes indicate they are effective and have led to suggestions for future development. For example, the evaluation of YGAM's Personal, Social, Health, and Economic Education (PSHE)-aligned programme advises that issues to do with problem gaming and gambling should be reframed to link with health and safeguarding, and that interested practitioners and young people should be involved as much as possible in the design of the evaluation [52]. This supports recommendations for the inclusion of youth voice in the planning of public health interventions related to gambling [62]. The VRGF's 'Be ahead of the Game' programme evaluation gathered anecdotal evidence that the retelling of lived experience of gambling harm and recovery helps create empathy and understanding among CYP. These findings suggest that there is a need for further research to understand factors in the effectiveness of school-based interventions.

Whole systems approaches can generate selective prevention interventions by connecting national funding initiatives with the needs and vulnerabilities of specific groups in society. In GB students have been identified as being particularly vulnerable to gambling-related harm and YGAM's interactive digital intervention designed specifically for students has received positive testimonial feedback but lacks evaluation in terms of effectiveness. There is evidence that minority groups in GB are vulnerable to experiencing gambling problems due to associations with experiences of racism, and less likely to access specialist gambling treatment [63]. Similar findings in Canada have been addressed by conducting research with minority groups to develop culturally sensitive outreach and programming. Research into community-driven solutions [64] has informed other innovative approaches such as YMCA Canada's Youth Gambling Awareness Program (YGAP) which includes a model for youth-led initiatives in existing community groups. This programme has been independently evaluated alongside a theory of change which highlights recommendations for long term impact [53]. Future strategies for selective prevention initiatives for CYP may also draw upon strategies to reduce gambling harm among adult populations such as the Cheshire Criminal Justice Pilot Scheme which uses a screening tool to identify gambling issues among arrestees and connects individuals to intervention services. However, there is a need for evaluative data on the impact of this approach across GB.

Our review revealed a lack of treatment services for CYP in some parts of GB, and where treatment services are available, the expansion of approaches from adult gambling reduction interventions to CYP may fail to cater for CYP's specific developmental needs. For

example, whilst the NHS National Gambling Clinic in England provides treatment for individuals aged 13+, our review found no evidence that practitioners are trained to address the unique vulnerabilities of CYP to gambling-related harms such as brain maturity [15, 16] and impulsivity [65–67] at different developmental stages. Furthermore, where CYP use services designed for adults their engagement is less effective. Data from GamCare clients using the National Gambling Helpline revealed that younger clients tended to skip treatment post-assessment, attend fewer sessions, and exhibit less improvement on the PGSI compared to older clients [68]. Future research on CYP's poorer outcomes is needed as insights were limited. Given CYP's proficiency with digital technologies [9], investigating their preference for accessing gambling treatment via online platforms is warranted. However, empirical evidence on varied intervention access methods is lacking. Our findings corroborate previous research indicating the absence of universally recognised best practices for treating gambling problems in CYP, with most treatments extrapolated from adult-oriented approaches [69]. Notably, in GB the National Centre for Gaming Disorders in London offers tailored treatment pathways for parents of gamers, individuals aged 16+ and individuals under 16, complemented by parent workshops and family therapy. The mean age of referrals is 18.47 years, with most falling within the 13–18 age bracket (66.4%), and a further 21.1% in the 19–25 category [70].

Future Research

Future research should diversify intervention strategies. Interventions must be relevant, engaging, and tailored to young people's perspectives, utilising interactive digital modes of delivery to enhance engagement. Cross-disciplinary partnerships should be fostered, and youth and practitioners should be actively involved in intervention design to ensure their acceptability and relevance. Additionally, culturally sensitive interventions should be developed by recognising specific gambling motivations and vulnerabilities within different ethnic groups. A whole systems approach is advocated, urging collaboration among stakeholders at the local level to improve treatment accessibility and user-friendliness. A broader range of evaluative methods should be utilised to generate stronger evidence about the effectiveness of interventions to reduce gambling related harm over the long term [71]. Emphasising holistic approaches that address environmental, social, and individual factors related to gambling risk is essential for developing effective strategies to mitigate gambling-related harm.

Limitations

This grey literature faces several limitations. First, the search was limited to English-language sources, potentially overlooking relevant interventions in non-English speaking regions. Future research should expand the scope to include diverse linguistic and cultural contexts. Second, we searched online, so could have missed smaller charities or businesses without a web presence. Third, since different interpretations exist about the definition of grey literature, systematic identification is not a straightforward task. Fourth, it is challenging to determine intervention effectiveness due to lack of robust evaluation and evidence of impact. Data regarding preventative services offered for CYP, their utilisation of treatment services and the range of services offered are lacking. The lack of longitudinal evaluative data impedes understanding educational programmes' effectiveness in influencing gambling behaviour over time.

Conclusions

In summary, this scoping review reveals a range of practical interventions designed to mitigate gambling-related harm among children and young people (CYP). The key results indicate that most identified interventions are educational in nature, delivered through workshops, online courses, and various digital resources. These interventions are provided by a mix of national and regional organisations primarily in GB, Canada, and Australia. Additionally, the review highlights that whole systems approaches which include cross-disciplinary partnerships may pave the way for more innovative interventions which are engaging and appropriate for CYP. Despite these interventions, there is a notable gap in robust evaluation data, making it challenging to assess their long-term effectiveness and impact comprehensively.

Key References

- Monreal-Bartolomé A, Barceló-Soler A, García-Campayo J, Bartolomé-Moreno C, Cortés-Montávez P, Acon E, Huertes M, Lacasa V, Crespo S, Lloret-Irles D, Sordo L. Preventive gambling programs for adolescents and young adults: A systematic review. *International Journal of Environmental Research and Public Health* 2023;20:4691 <https://doi.org/10.3390/ijerph20064691> ○ This recent review highlights various preventive programs for adolescents and young adults, offering insights into the latest strategies and their effectiveness in mitigating gambling-related harms.

- Derrington S, Star S, Kelly S. The case for uniform loot box regulation: A new classification typology and reform agenda. *Journal of Gambling Issues* 2021;46:302–332. <https://doi.org/10.4309/jgi.2021.46.15> ○ This reference discusses the regulatory approaches to loot boxes in gaming, which is highly relevant to understanding the intersection of gaming and gambling and its impact on youth.
- Kristiansen S, Severin-Nielsen MK. Adolescent gambling advertising awareness: A national survey. *International Journal of Social Welfare* 2022;31:263–273. <https://doi.org/10.1111/ijsw.12501> ○ This national survey examines the awareness and impact of gambling advertisements on adolescents, providing valuable data on how marketing influences youth gambling behaviours.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s40429-025-00627-w>.

Author Contributions KD is the lead author of the manuscript and has spearheaded the research process, including the search for grey literature and the analysis of identified reports and sources. KD has also been responsible for shaping the content of the paper and finalising all sections of the manuscript. KD has prepared Table 2. KD worked on locating all references and confirming the key references section. KD has led the revisions work. CD, as the second main researcher within the team, has worked closely with KD to conduct the search and analysis of grey literature. CD has worked on reviewing the drafts of the manuscript. EAC has overseen the grey literature search and analysis and has played a crucial role in writing the methodology and results sections. EB has supported the research team with the analysis of literature and has contributed to the writing and finalisation of the manuscript. EB has written abstract, parts of discussion, conclusions and key references sections. EB has prepared Table 1; Fig. 1. EB has formatted the paper and prepared for submission. CP, the head of the research team, has led the overall research process, as well as the writing and submission of the manuscript. CP wrote the introduction section. All authors reviewed the manuscript.

Funding Statement This work was funded by GambleAware. GambleAware is a grant-making charity using best-practice in commissioning, including needs assessment, service-planning, evaluation, and outcome-reporting to support effective, evidence-informed, quality-assured prevention of gambling harms. Guided by a public health model, GambleAware commissions integrated prevention services on a national scale and in partnership with expert organisations and agencies, including the UK National Health Service, across three areas of activity: universal promotion of a safer environment (primary); selective intervention for those who may be 'at risk' (secondary); and, direct support for those directly affected by gambling disorder (tertiary). The authors alone are responsible for the views expressed in this article, which do not necessarily represent the views, decisions or policies of the institutions with which they are affiliated. www.about.gambleaware.org.

Data Availability No datasets were generated or analysed during the current study.

Declarations

Human and Animal Rights and Informed Consent This article does not contain any studies with human or animal subjects performed by any of the authors.

Conflict of Interest The authors report there are no competing interests to declare.

Competing Interests The authors declare no competing interests.

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

References

- Arnett, Arnett JJ. Emerging adulthood: a theory of development from the late teens through the twenties. *Am. Psychol* 2000;55(5):469–480. <https://doi.org/10.1037/0003-066X.55.5.469>
- Gambling A. 2005. In: UK Public General Acts. The National Archives on behalf of HM Government. 2005. <https://www.legislation.gov.uk/ukpga/2005/19/contents> Accessed 1 July 2023.
- Gambling Commission. Young people and gambling report. In UK Gambling Commission 2022. <https://www.gamblingcommission.gov.uk/news/article/2022-young-people-and-gambling-report>. Accessed 28 June 2023.
- Delfabbro P, Delic A, King DL. Understanding the mechanics and consumer risks associated with play-to-earn (P2E) gaming. *J Behav Addictions* 2022;11:716–26. <https://doi.org/10.1556/2006.2022.00066>
- Rolando S, Wardle H. 'That's why it's gambling, because you don't know what you find in it!' Perceptions of the relationship between gaming and gambling among young adult gamers. *J Youth Stud* 2023;1–16. <https://doi.org/10.1080/13676261.2023.2174012>
- Derrington S, Star S, Kelly S. The case for uniform loot box regulation: a new classification typology and reform agenda. *J Gambli Issues* 2021;46:302–32. <https://doi.org/10.4309/jgi.2021.46.15>
- Mik A. Problematising freemiums in digital games. In: Digital Futures Commission. 2021. <https://digitalfuturescommission.org.uk/blog/problematising-freemiums-in-digital-games/> Accessed 28 June 2023.
- Kristiansen, Severin-Nielsen, Kristiansen S, Severin-Nielsen MK. Adolescent gambling advertising awareness: a national survey. *Int J Social Welf* 2022;31:263–73. <https://doi.org/10.1111/ijsw.12501>
- Smith, Smith J, Nairn A, Rossi R, Jones E, Inskip C et al. Biddable youth. Sports and esports gambling advertising on Twitter: Appeal to children, young and vulnerable people. In: University of Bristol. 2019. https://www.bris.ac.uk/media-library/sites/news/2019/aug/D1261_Horne_DEMOS_Management%20report_2019_web.pdf Accessed 1 July 2023.
- O'Loughlin I, Blaszczynski A. Comparative effects of differing media presented advertisements on male youth gambling attitudes and intentions. *Int J Mental Health Addict*. 2018;16:313–27. <https://doi.org/10.1007/s11469-017-9753-z>.
- Parke J, Williams RJ, Schofield P. Exploring psychological need satisfaction from Gambling participation and the moderating influence of game preferences. *Int Gambli Stud*. 2019;3:508–31. <https://doi.org/10.1080/14459795.2019.1633381>.
- Sklar A, Derevensky JL. Way to play: Analyzing gambling ads for their appeal to underage youth. *Canadian Journal of Communication* 2011;35:533–54. <https://doi.org/10.22230/cjc.2010v35n4a2331>
- Murphy, Murphy MP, Murphy R, Roberts A et al. Correlates of Problematic Gambling in Emerging Adult University Students in Ireland. *Journal of Gambling Studies*. 2024;8:1–8. <https://doi.org/10.1007/s10899-024-10323-5>
- Young Gamers and Gamblers Education Trust (YGAM). Annual Student Gambling Survey 2024. In London: YGAM. 2024. <https://www.ygam.org/wp-content/uploads/2024/03/Annual-Student-Gambling-Survey-2024.pdf> Accessed 10 October 2024.
- Kräplin A, Goudriaan AE. Characteristics and risk factors of gambling disorder as basis for responsible gambling strategies. *Sucht*. 2019;4. <https://doi.org/10.1024/0939-5911/a000559>.
- Rogers R, Wardle H, Sharp C, Dymond S, Davies T, Hughes K et al. Framing a public health approach to gambling harms in Wales: Challenges and opportunities. In Bangor University. 2019. https://research.bangor.ac.uk/portal/files/22557842/Public_Health_Approach_to_Gambling_in_Wales_ENG_2_1_.pdf Accessed 28 June 2023.
- Steinberg L, Icenogle G, Shulman EP, Breiner K, Chein J, Bacchini D, Chang L, Chaudhary N, Giunta LD, Dodge KA, Fanti KA. Around the world, adolescence is a time of heightened sensation seeking and immature self-regulation. *Dev Sci*. 2018;21:e12532. <https://doi.org/10.1111/desc.12532>.
- Worthy SL, Jonkman J, Blinn-Pike L. Sensation-seeking, risk-taking, and problematic financial behaviors of college students. *J Fam Econ Issues* 2010;31:161–70. <https://doi.org/10.1007/s10834-010-9183-6>
- Singer J, Kufenko V, Wöhr A. How do Gambling Providers use the Social Network Twitter in Germany? An explorative mixed-methods topic modeling Approach. *J Gambli Stud*. 2023;39(3):1371–1398. <https://doi.org/10.1007/s10899-022-10158-y>.
- Von Meduna M, Steinmetz F, Ante L, Reynolds J, Fiedler I. Loot boxes are gambling-like elements in video games with harmful potential: results from a large-scale population survey. *Technol Soc*. 2020;63(4):101395. <https://doi.org/10.1016/j.techsoc.2020.101395>.
- Blinn-Pike L, Worthy SL, Jonkman JN. Adolescent gambling: A review of an emerging field of research. *Journal of Adolescent Health* 2010;47:223–36. <https://doi.org/10.1016/j.jadohealth.2010.05.003>
- Shi J, Colder Carras M, Potenza MN, Turner NE. A perspective on age restrictions and other harm reduction approaches targeting youth online gambling, considering convergences of gambling and videogaming. *Front Psychiatry* 2021;11:601712. <https://doi.org/10.3389/fpsy.2020.601712>
- Azmier JJ. Canadian gambling behaviour and attitudes: Summary report. In Canada West Foundation. 2000. <https://prism.ucalgary.ca/server/api/core/bitstreams/cfee8d41-60f3-49cf-a7d3-50a46701ee7c/content> Accessed 1 September 2023.
- Wardle H. The emerging adults gambling survey: study protocol. *Wellcome Open Res*. 2020;5:102. <https://doi.org/10.12688/wellcomeopenres.15969.1>.
- Zangeneh M, Griffiths M, Parke J. The marketing of Gambling. In: Zangeneh M, Blaszczynski A, Turner NE, editors. In the pursuit of winning. Boston, MA: Springer; 2008. https://doi.org/10.1007/978-0-387-72173-6_8.

26. McMahon N, Thomson K, Kaner E, Bambra C. Effects of prevention and harm reduction interventions on gambling behaviours and gambling related harm: an umbrella review. *Addict Behav.* 2019;90:380–8. <https://doi.org/10.1016/j.addbeh.2018.11.048>.
27. Grande-Gosende A, Lopez-Nunez C, Garcia-Fernandez G, Der-evensky J, Fernandez-Hermida JR. Systematic review of preventive programs for reducing problem gambling behaviors among young adults. *J Gambl Stud* 2020;36:1–22. <https://doi.org/10.1007/s10899-019-09866-9>
28. Keen B, Blaszczynski A, Anjoul F. Systematic review of empirically evaluated school-based gambling education programs. *Journal of gambling studies* 2017;33:301–25. <https://doi.org/10.1007/s10899-016-9641-7>
29. Kourgiantakis T, Stark S, Lobo DS, Tepperman L. Parent problem gambling: a systematic review of prevention programs for children. *J Gambl Issues* 2016;33:8–29. <https://doi.org/10.4309/jgi.2016.33.2>
30. Ladouceur R, Goulet A, Vitaro F. Prevention programmes for youth gambling: a review of the empirical evidence. *Int Gambl Stud.* 2013;13:141–59. <https://doi.org/10.1080/14459795.2012.740496>.
31. Giménez Lozano JM, Morales Rodríguez FM. Systematic review: preventive intervention to curb the youth online gambling problem. *Sustainability.* 2022;24(14):6402. <https://doi.org/10.3390/su14116402>.
32. Monreal-Bartolomé A, Barceló-Soler A, García-Campayo J, Bartolomé-Moreno C, Cortés-Montávez P, Acon E, Huertes M, Lacasa V, Crespo S, Lloret-Irles D, Sordo L. Preventive gambling programs for adolescents and young adults: a systematic review. *Int J Environ Res Public Health.* 2023;20(6):4691. <https://doi.org/10.3390/ijerph20064691>.
33. Oh BC, Ong YJ, Loo JM. A review of educational-based gambling prevention programs for adolescents. *Asian J Gambl Issues Public Health* 2017;7:1–6. <https://doi.org/10.1186/s40405-017-0024-5>
34. Bartunek JM, Rynes SL. Academics and practitioners are alike and unlike: the paradoxes of academic–practitioner relationships. *J Manag.* 2014;40(5):1181–201. <https://doi.org/10.1177/0149206314529160>.
35. Adams J, Hillier-Brown FC, Moore HJ, Lake AA, Araujo-Soares V, White M, Summerbell C. Searching and synthesising ‘grey literature’ and ‘grey information’ in public health: critical reflections on three case studies. *Syst Reviews* 2016;5(1):164. <https://doi.org/10.1186/s13643-016-0337-y>
36. Haddaway NR, Bethel A, Dicks LV, Koricheva J, Macura B, Petrokofsky G, Pullin AS, Savilaakso S, Stewart GB. Eight problems with literature reviews and how to fix them. *Nat Ecol Evol.* 2020;4:12. <https://doi.org/10.1038/s41559-020-01295-x>.
37. Turner, Turner AM, Liddy ED, Bradley J, Wheatley JA et al. Modeling public health interventions for improved access to the gray literature. *J Med Libr Assoc* 2005;93:487–94.
38. Tricco AC, Lillie E, Zarin W, O’Brien KK, Colquhoun H, Levac D, Moher D, Peters MD, Horsley T, Weeks L, Hempel S. PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation. *Ann Intern Med* 2018;169:467–73. <https://doi.org/10.7326/M18-0850>
39. Arksey H, O’Malley L. Scoping studies: towards a methodological framework. *Int J Soc Res Methodol* 2005;8:19–32. <https://doi.org/10.1080/1364557032000119616>
40. Apple Inc. Apple reinvents the phone with iPhone. In Cupertino (CA): Apple Inc. 2007. <https://www.apple.com/uk/newsroom/2007/01/09Apple-Reinvents-the-Phone-with-iPhone/Statista> of subordinate document. Accessed 10 October 2024.
41. Statista. October. Smartphone owners in the United Kingdom (UK) in 2023, by age group. In Hamburg: Statista 2023. from: <https://www.statista.com/statistics/271851/smartphone-owners-in-the-united-kingdom-uk-by-age/> of subordinate document. Accessed 10 2024.
42. Kim HS, King DL. Gambling-gaming convergence: new developments and future directions. *Int Gambl Stud* 2020;20:373–9. <https://doi.org/10.1080/14459795.2020.1822905>
43. Zendle D, Bowden-Jones H. Loot boxes and the convergence of video games and gambling. *Lancet Psychiatry* 2019;6:724–5. [https://doi.org/10.1016/S2215-0366\(19\)30285-8](https://doi.org/10.1016/S2215-0366(19)30285-8)
44. World Health Organization. Addictive behaviours: Gaming disorder. In Newsroom Questions and Answers. World Health Organization 2019. <https://www.who.int/news-room/questions-and-answers/item/addictive-behaviours-gaming-disorder> of subordinate document. Accessed 1 July 2023.
45. Kuss, Costa S, Kuss DJ. Current diagnostic procedures and interventions for gaming disorders: A systematic review. *Frontiers in Psychology.* 2019;10:578. <https://doi.org/10.3389/fpsyg.2019.00578>
46. Stevens MW, King DL, Dorstyn D, Delfabbro PH. Cognitive–behavioral therapy for internet gaming disorder: a systematic review and meta-analysis. *Clin Psychol Psychother.* 2019;26:191–203. <https://doi.org/10.1002/cpp.2341>.
47. Zajac K, Ginley MK, Chang R. Treatments of internet gaming disorder: a systematic review of the evidence. *Expert Rev Neurother* 2020;20:85–93. <https://doi.org/10.1080/14737175.2020.1671824>
48. Bradbury-Jones C, Aveyard H, Herber OR, Isham L, Taylor J, O’malley L. Scoping reviews: the PAGER framework for improving the quality of reporting. *Int J Soc Res Methodol* 2022:25457–70. <https://doi.org/10.1080/13645579.2021.1899596>
49. Responsible Gambling Canada. GAME BRAiN: The Interactive Live Game Show & Digital Game. In Problem Gambling Prevention by Responsible Gambling Canada (RGC). 2023. <https://www.responsiblegambling.org/for-the-public/problem-gambling-prevention/game-brain-high-school-program/#:~:text=GAME%20BRAiN%20looks%20at%20the,reach%20over%2050%2C000%20Ontario%20students>. Accessed 1 July 2023.
50. Victorian Responsible Gambling Foundation. Years 5 & 6 - The Bridge. In Reducing Harm: Resources for Teachers, Victorian Responsible Gambling Foundation. 2023. <https://responsiblegambling.vic.gov.au/reducing-harm/schools/resources-teachers/> of subordinate document. Accessed 1 July 2023.
51. KPMG. Value for Money evaluation of the blocking software element of the TalkBanStop campaign: KPMG report for GamCare. KPMG Public. 2022. https://d1ygf46rsya1tb.cloudfront.net/prod/uploads/2023/08/FINAL_Blocking-software-VFM-evaluation_221208-vSTC.pdf. Accessed 28 June 2023.
52. Evanics R, Latif S. Evaluation of YGAM’s Education Programme January 2018 to September 2019 Reducing The Risks of Gaming and Gambling for Young People. NCVO, England. 2020. <https://www.ygam.org/wp-content/uploads/2020/02/NCVO-CES-YGAM-Evaluation-Report-Final-January-2020.pdf> Accessed 28 June 2023.
53. Choi K, Glynn J. Evaluation of YMCA’s Youth Gambling Awareness Program (YGAP): Final Report. In Strategic Science. 2017. <https://www.ymcagta.org/files/PDFs/Youth%20Gambling%20Awareness%20Program/YGAP%20Impact%20Study%20Report%20201617.pdf>. Accessed 28 June 2023.
54. GambleAware. October. Student Gambling Education Hub (SGEH) evaluation final report. In London: GambleAware 2022. from: <https://www.gambleaware.org/sites/default/files/2022-04/SGEH%20Evaluation%20Final%20Report.pdf> of subordinate document. Accessed 10 2024.
55. GambleAware. Reducing the odds: an education pilot to prevent gambling harm. In London: GambleAware. 2020. <https://www.gambleaware.org/sites/default/files/2020-12/Reducing-the-Odds-an-Education-Pilot-to-Prevent-Gambling-Harm.pdf> of subordinate document. Accessed 10 October 2024.

56. Victorian Responsible Gambling Foundation. Annual Report 2022/23. In Victorian Responsible Gambling Foundation. 2022. https://responsiblegambling.vic.gov.au/documents/1249/Annual_Report_2022-23_bjxHKkk.pdf. Accessed 1 July 2023.
57. National Health Services England. NHS doubles gambling clinics as referrals soar. In News 2023. <https://www.england.nhs.uk/2023/07/nhs-doubles-gambling-clinics-as-referrals-soar/> of subordinate document. Accessed 1 September 2023.
58. Dymond S, Owen WE, Hoon AE, Roderique-Davies G, John B, Bowden-Jones H. The need for gambling disorder clinics in Wales. *Lancet* 2020;396:e80. [https://doi.org/10.1016/S0140-6736\(20\)32237-6](https://doi.org/10.1016/S0140-6736(20)32237-6)
59. Marmot M. The health gap: the challenge of an unequal world: the argument. *Int J Epidemiol* 2017;46:1312–8. <https://doi.org/10.1093/ije/dyx163>
60. Bronfenbrenner U. The ecology of human development: experiments by nature and design. Harvard University Press; 1979.
61. Bronfenbrenner U. Recent advances in research on the ecology of human development. *Development as action in context: Problem behavior and normal youth development*. 1986:287–309. https://doi.org/10.1007/978-3-662-02475-1_15
62. Pitt H, Thomas SL, Randle M. Young people in Australia discuss strategies for preventing the normalisation of gambling and reducing gambling harm. *BMC Public Health* 2022;22:956. <https://doi.org/10.1186/s12889-022-13201-0>
63. Moss NJ, Wheeler J, Sarkany A, Selvamanickam K, Kapadia D. Minority Communities & Gambling Harms: Qualitative and Synthesis Report. Lived, Experience, Racism, Discrimination & Stigma. 2023. https://www.begambleaware.org/sites/default/files/2023-03/Minority%20Communities%20Final%20Report_0.pdf Accessed 1 July 2023.
64. Sigfusdottir ID, Kristjansson AL, Gudmundsdottir ML, Allegrante JP. Substance use prevention through school and community-based health promotion: a transdisciplinary approach from Iceland. *Global Health Promotion* 2011;18:23–6. <https://doi.org/10.1177/1757975911412403>
65. Blakemore SJ, Choudhury S. Development of the adolescent brain: implications for executive function and social cognition. *J Child Psychol Psychiatry* 2006;47:296–312. <https://doi.org/10.1111/j.1469-7610.2006.01611.x>
66. Chambers RA, Potenza MN. Neurodevelopment, impulsivity, and adolescent gambling. *J Gamb Stud* 2003;19:53–84. <https://doi.org/10.1023/A:1021275130071>
67. Griffiths MD, Parke J. Adolescent gambling on the internet: a review. *Int J Adolesc Med Health* 2010;22:58–75.
68. Hickman B, Chakraborty B, Norrie C. Analysis of GamCare treatment clients. In NIHR Policy Research Unit in Health and Social Care Workforce, The Policy Institute, King's College London. 2021. https://kclpure.kcl.ac.uk/ws/portalfiles/portal/148491160/GamCare_Analysis_Report_Final_2_.pdf Accessed 1 July 2023.
69. St-Pierre R, Derevensky JL. Youth gambling behavior: Novel approaches to prevention and intervention. *Current Addiction Reports* 2016;3:157–65. <https://doi.org/10.1007/s40429-016-0104-0>
70. Sharman S, Roberts A, Harris B, Lockwood R, Bowden-Jones H. The National Centre for Gaming Disorders (UK)-Who is accessing this service? *J Behav Addictions* 2022;11:147–9. <https://doi.org/10.1556/2006.2022.00010>
71. McGill E, Er V, Penney T, Egan M, White M, Meier P, Whitehead M, Lock K, de Cuevas RA, Smith R, Savona N. Evaluation of public health interventions from a complex systems perspective: a research methods review. *Soc Sci Med* 2021;272:113697. <https://doi.org/10.1016/j.socscimed.2021.113697>

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.