



How to create safer online gambling

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Cover art:

Dairy – free II

By emerging artist Stuart Lee who, as part of the ESRC Festival of Social Science 2020, created a collection of contemporary artwork to envision a current world of online gambling.

The cow's markings symbolise problem gamblers being 'milked' worldwide, using online data that empowers the industry to advertise and continuously promote gambling, which may lead to an acceleration of problem gambling amongst the wider population.

To date, data enables the industry to continuously 'milk' the customers. However, 'milk' or data belongs to customers who, according to GDPR (General Data Protection Regulation), have the right to manage the use of their data. Understanding this simple notion: 'milk belongs to a cow,' presents a chance for the industry to operate more responsibly and empower customers.

The dairy products from the cow portray online gambling's complexity, with multiple gaming solutions, attractive design, and enticing promotions used to expand its influence. Online gambling has undoubtedly benefited from many developments in immersive and sophisticated technology (i.e., AI, VR-casinos), which increase consumption of online gambling and enhance the experience.

However, 'milk' or data presents an opportunity for the industry to focus on the dairy products' quality - which accounts for individuals' tolerance to 'dairy'. Technology can also act as a responsible agent to minimise harm and inform the consumer of their behaviour.

Executive summary

Who this is aimed at:

We want to collaborate with key players in online gambling, like the gambling industry, to create better, more responsible practices for customers.

Content audit of gambling websites:

We conducted an analysis of UK gambling websites to find out what information and resources to promote safer gambling are available.

We looked at pages that are publicly available (i.e. without logging in), considering presence, visibility and positioning of safer gambling information and links; types of content and format; how messages are framed (positively or negatively); and Covid-related information.

Here are our key findings:

- All websites are displaying the legally required age warnings, and icons and links to safer gambling organisations.
- Because of the way that sites are designed for mobile versus desktop browsers, information can be harder to find on mobile browsers.
- Safer gambling information is most often presented using text and icons, rather than images or video. The text is usually smaller than the other text on the page.
- Many websites use text or icons to link to either dedicated safer gambling pages or external sources of information, though a few include icons without links.
- Safer gambling webpages are generally designed as separate from the main site, and provide positive experiences for users. However, the signposting to these pages is often quite poor and inconsistent.
- Most of the companies we looked at did not provide Covid-related information.

Key recommendations for the gambling industry



Make sure safer gambling information is clearly visible on websites.



Create clear, accurate information for gamblers so they correctly understand their likelihood of success and can make informed decisions.



Consult with experts (like researchers) when designing tools and resources for safer gambling.



Carry out more research on the links between gaming and gambling.



Collect and analyse behavioural data to promote safer gambling and minimise harm.

Introduction

The problem: is online gambling a risk factor for problem gambling?

The global online market is now huge – its estimated value in 2020 was \$66.67 billion. As internet access has increased, so has access to online gambling.

In the UK, online gambling is regulated by the UK Gambling Commission. Despite this, questions about transparency and unethical practices are regularly raised. Previous research has highlighted the use of unfair or misleading practices, such as ‘free play’ promotions and unclear pay-out rates. Operators have also been criticised for prioritising making money from problem gamblers, rather than adhering to the best corporate social responsibility (CSR) practices.

Public health authorities are concerned about whether gambling online increases the risk of developing a gambling problem. The characteristics of online gambling versus in-person gambling in a bricks and mortar establishment (‘land based gambling’) could increase the risk of harm. In particular, the fact that people are generally alone when they gamble online could make it easier to engage in problematic behaviour compared to land-based gambling: e.g. rapid continuous play, gambling while intoxicated, simultaneous betting. Harms from problem gambling can stretch beyond the gambler to their partners, family, and friends.

The question of how to make gambling safer is generally broken down into two categories: responsible consumption of gambling (RCG), which focuses on the individual and how to make their behaviour safer; and responsible provision of gambling (RPG), which focuses on the gambling industry and its practices. However, we prefer the term ‘safer gambling’, which doesn’t place the onus solely on the individual to moderate their gambling, and recognises that there is no state of perfectly safe gambling – we can only strive to make it safer.

Risk factors

Among high-risk gamblers, we found that the risk factors most closely associated with problem gambling are:

- Moderate to severe anxiety and depression
- Gambling while using cannabis or alcohol
- Risky gambling motivations associated with mental health concerns
- Game characteristics (for example, faster speeds of play are particularly attractive to problem gamblers)
- Reduced working hours as a result of the Covid pandemic



How we reviewed the existing research

In the first phases of our research, we carried out a scoping exercise to identify recurring keywords in research literature on gambling-related harms, gambling behaviour, policy and safe/safer gambling tools, and corporate responsibility.

We used this to inform a narrative review. Because the scoping review found a lack of relevant keywords, particularly relating to transparency, we broadened the narrative review to encompass three related areas relevant to our topic:

- **Persuasive technology** – the use of technology to change attitudes and behaviours
- **Immersive technology** – technologies that digitally extend or replace reality for the viewer, such as virtual reality
- **Online marketing** - organic and paid content that is designed to push people to gambling activities and organisations

Both of these reviews then informed our systematic overview, in which we used keywords to search eight databases of research literature, including quantitative and qualitative studies, review papers and position papers.

We used all of the above to inform our content analysis of UK gambling websites.

What we learned about transparency from existing research

Our scoping review found that evidence around transparency for safer gambling is limited – there isn't even a consensus across disciplines on what the term means, nor how it can be achieved. For that reason, we widened our narrative review to look at the related areas of persuasive and immersive technology and online marketing.

Persuasive technology can be designed so that the subject doesn't realise that an attempt is being made to change their behaviour. In this case, transparency would entail making the subject aware of this. With both persuasive and immersive technology, people can only make informed decisions when there is transparency about how the technology is working. This can be difficult when full transparency or user control might harm health or safety.

In the field of marketing, organisational transparency has been defined as openness of business practices and values, organisational efforts, and relationships. Most relevant is information transparency, which involves the availability and accessibility of market information – both the quantity of information available and the quality of how it is communicated contribute to transparency.

Online gambling uses targeted marketing based on the person's online behaviour. Some marketing masquerades as non-marketing content, or embeds itself in non-marketing content (e.g. in the form of sponsorship) and customers may not realise that the content they are engaging with is paid advertising. In some contexts, it is obligatory to clearly label paid content.

Within persuasive technology, immersive technology and online marketing, data privacy is a common concern. Users may not be aware of how their data is stored and used, and sometimes emotive language is used to induce users to agree to share their data. Users should be in a position to give informed consent before their data is collected, and they should be told what will be collected, and how and when it will be stored, anonymised, used and deleted.

Our narrative review found ways that transparency can be improved in persuasive systems. Data collection processes can be made comprehensible to users, and they can be given the ability to modify or stop data collection, storage and processing at will. User-centred design and tools help with this. One way of making advertising more transparent would be to inform players of why they've been sent a particular offer or game recommendation. This would help them understand how their data is being used.

Transparency

Accessibility and availability of safer gambling information

There is no single agreed definition of 'transparency', within or between subject areas. Based on our scoping exercise and narrative review, we created a checklist for transparency, in order to inform future best practice and regulations for promoting safer gambling:

- ✓ Accurate information about the probability of winning a game
- ✓ Clear and accurate explanation of how each game works
- ✓ Information about how to access and use safer gambling tools, how they work, and how effective they are
- ✓ Clear information about how users' data is collected and used, including use of AI and data algorithms
- ✓ Accurate advertising that doesn't exaggerate the chances of winning, and includes educational content about risks and safer gambling
- ✓ A full explanation of which responsibilities fall on government, operators and individuals
- ✓ Effective tools and policies to promote safer gambling
- ✓ Full disclosure of funding for future research



Availability and accessibility of safer gambling tools

From our systematic review, we found that there needs to be full transparency around gambling tools. These should be easily accessible and usable for gamblers through clear instructions on dedicated webpages. Tools should be promoted alongside websites' marketing materials. And there should be transparency around how to access resources – for example, websites and phone numbers for care organisations for problem gamblers, and current information about gambling regulations.

Data use

Personalisation

Safer gambling messages can be personalised using the information that operators have about gamblers. One study we looked at found that players who voluntarily set limits gambled significantly less money than those who didn't – although without longitudinal studies to explore this question in more detail, it's hard to know which direction the causality flows in (i.e. did the limits help the gamblers gamble less, or are gamblers who gamble less money more likely to voluntarily set limits).

Nonetheless, the findings of our systematic review suggest that gamblers should be targeted with personalised safer gambling strategies – for example, a gambler who chases losses could be recommended a deposit-limiting tool. Messages could also be targeted according to the type of game being played.

These targeted recommendations should themselves be transparent in terms of how user data is being used – they should be accompanied by an explanation of why the individual has been recommended these particular strategies.

Users and what they want

Individuals should be given clear information about how their data will be handled, including the risks of leaks, so that they can make informed decisions.

One qualitative study we looked at found that participants wanted to be able to choose their level of consent, including what data would be stored, how it would be used, time frames, and who the data would be shared with.

Participants also wanted to be able to access their own behavioural data, including betting history (e.g. wins and losses), the amount of time and money they spent on a given platform, and (where available), multi-modal sensor data like emotion and stress level. Making this data available to individual gamblers would help them make informed choices about their gambling behaviour, rather than relying on their own feelings about how they have been playing, which may be inaccurate.

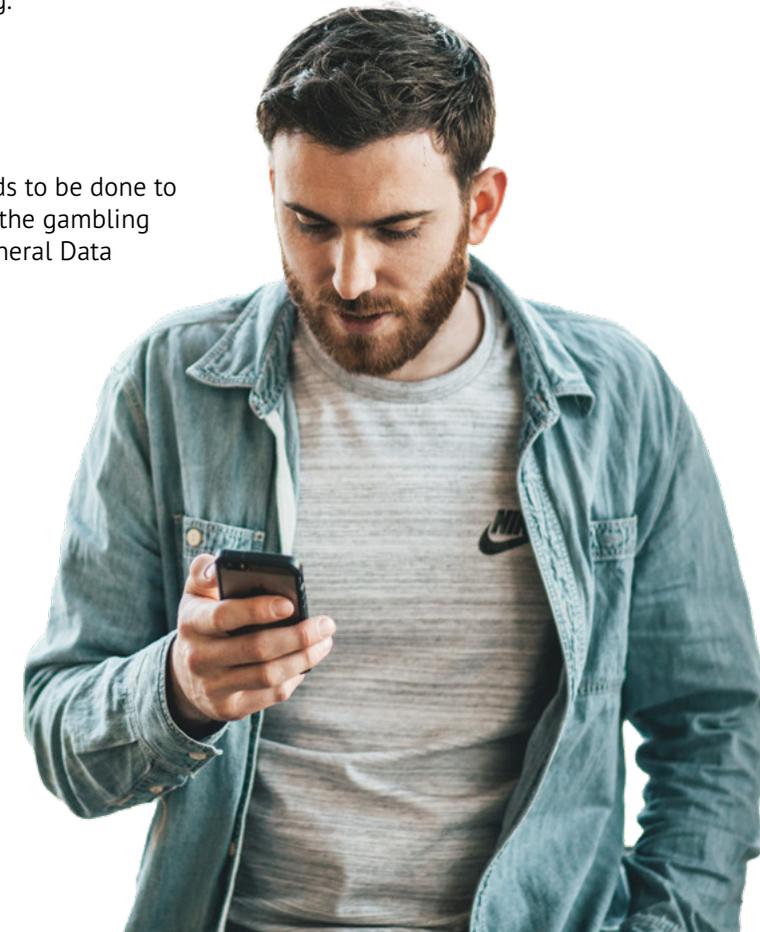
Algorithms

Artificial Intelligence (AI) techniques, like machine learning, can be used to recognise possibly problematic gambling, so that operators can intervene.

The same level of transparency should apply to AI-based safer gambling initiatives: individuals should be informed about how their data will be processed, and the possible outcomes from that processing.

Data privacy

We found that more work needs to be done to ensure that the use of data in the gambling industry complies with the General Data Protection Regulation (GDPR).



Balancing transparency with other goals

There are many trade-offs to consider when balancing transparency with other goals. For example, increasing the complexity of algorithms might make them more effective, but might also make it harder to explain how they work to customers. Increasing the frequency of safety-based pop-ups might increase safety, but also might end up annoying the user. And there is a trade-off to be considered between the autonomy of individual gamblers and their safety – for example, mandatory limits versus voluntary limits.

On the latter point, we suggest that pop-ups should be displayed regularly to promote safer gambling, although these shouldn't disrupt users, otherwise they may just quit and move to a different game or operator. Data collected by operators may help to establish optimal timing for these messages – the nature of online gambling makes it much easier to research these kinds of questions compared to land-based gambling.



Website content audit

Methodology

Our research was carried out as part of the EROGamb 2.0 project at Bournemouth University. It consisted of three phases:

- **An initial scoping exercise to map the existing research into online gambling, including safer gambling practices, followed by a narrative review of transparency in persuasive technologies, immersive technologies, and online marketing**
- **A systematic review of research into transparency in safer and responsible gambling, out of which we drew recommendations for best practice**
- **An analysis of the transparency of the websites of UK gambling operators (both desktop and mobile versions)**

These phases built on one another. The initial scoping review gave us an overview of which areas have and have not been explored in the academic literature around online gambling.

We found that there was limited existing research into transparency in online gambling is quite limited, so we expanded our narrative review to include transparency in the related areas of persuasive and immersive technology and online marketing, in the hope that these would provide insights that could be applied to online gambling. The narrative review helped us to understand and refine the terminology applied to transparency, especially the ways in which it may be present in some socio-technical systems without necessarily being identified as such.

Insights from the scoping exercise helped us to refine our search terms for our systematic review. The scoping exercise made it clear that the academic literature on transparency in online gambling is not extensive, but we felt it would be beneficial to systematically review the research that does exist. The findings from all of this research then fed into our analysis of transparency on UK gambling operator websites. All of this research informed our recommendations.

Analysis

What we did and how we did it

We carried out our website analysis in June–July 2020. We analysed information openly available on public-facing websites (not including information requiring users to log in), and looked at both desktop and mobile browsers.

Four researchers carried out the analysis. Each website was examined by at least two researchers, who ‘coded’ the website according a coding template that evaluated its transparency with regard to safer gambling communication and information. The template assessed:

- **Presence, visibility and positioning of safer gambling links, icons, messages, age restriction warnings, and links to safer gambling organisations (e.g. GambleAware)**
- **Types of safer gambling content, specifically whether they were informational (a simple presentation of safer gambling warnings and prevention strategies) or educational (content encouraging reflection and action)**
- **Whether the safer gambling information was framed by a focus on winnings/benefits (e.g. encouraging the gambler to use assess their gambling knowledge to better understand the mechanics of play) or losses (e.g. the negative consequences of risky behaviour in gambling)**
- **The format of the information – whether it was text, image, video or multimedia**
- **The presence of Covid-related info on homepages and safer-gambling-related pages, including info about opening of betting venues, the impact on sports, and changes to availability of customer services**

We defined ‘transparency’ to include both the availability of information and its accessibility – if key information is technically available but very hard to find, it is not transparent. Specifically in terms of web communication, transparency refers to the visibility, display, and overall user experience around safer gambling information on a website.

The user experience was evaluated by four researchers based on Nielsen’s ten usability principles (defined by Jakob Nielsen in 1994), which is the most widely used framework for evaluating user experience (UX) and identifying usability issues.

To assess how consistent the evaluations were among the four researchers, we calculated their ‘inter-rater reliability’ with weekly discussion meetings and statistical analysis to evaluate how their coding compared.

To complement these quantitative coding assessments, our researchers also gathered examples of safer gambling messages, screenshots of homepages and safer gambling pages, and a list of safer gambling messages in order to provide further insights into patterns and variations throughout the content analysis.

What we found

We looked at both website homepages and dedicated safer gambling pages. We found that the information on dedicated pages tends to be largely good and provides a positive experience for users. In general, those pages:

- **Allow users to feel in control and take appropriate actions to fulfil their goals and trust the organisations – e.g. providing safer gambling tools like deposit limits**
- **Are written in a clear, conversational style likely to be understood by users, are organised in a logical order, and demonstrate empathy for users**
- **Help users feel in control of their experience, even if they make mistakes and need a way out of ‘trouble’ – e.g. asking for confirmation if a user makes a much larger bet than they ever have before**
- **Tell users what to expect from the site – e.g. explaining game mechanics**
- **Keep objects, actions and options visible throughout the page, so users don’t have to remember information from one part of the page to another**

However, to engage with dedicated safer gambling pages, customers need to know that they are available and how to find them, and we found that signposting and information on website homepages were much more variable in quality. This needs to improve.

–Positioning of information in menus

We found that the most frequent way that safer gambling information is displayed on desktop homepages is to put it at both the top and bottom of the page.

Information at the top of the page is generally likely to be seen by users. But where information is only displayed at the bottom of the page, we are concerned that it might be missed by users who don't scroll down far enough. The webpage footer often includes important general information, like disclaimers, copyright notices, 'about us' and 'contact us' information/links. Footers are often replicated across all pages, which is helpful in promoting safer gambling. But users may click through to other pages on the site without ever scrolling to the bottom of the page.

Multiple positioning of safer gambling information with 'sticky' banners could help to draw users' attention to it.

–Content types

Text and icons are the most frequently used forms of display for safer gambling information. Often, these are presented in text that is smaller than the rest of the text on the page, making them harder to spot

Two companies whose websites we looked at presented this information in the same size and font as the rest of the content on their homepages, which we found actually made it harder to spot, because it blended in with the other content on the page. Nonetheless, embedding the information and tools within the overall gambling experience may lead to customers using them effectively rather than seeing them as features which disrupt their experience. This is consistent with research into technology acceptance and 'flow states' in the use of consumer websites, which suggests that consumers more fully engage with them when they find them intuitive.

If safer gambling information is mainly displayed in text form, it should be clean and simple and broken down into sections to make it easy for consumers to understand. We found that some companies are doing this already, but we found a few websites whose text-based content lacked logical structure and was difficult to digest.

Colours and other design choices could have an impact on how easy it is for users to find and read information. Safer gambling information could also be integrated into websites through a much more diverse range of content formats, such as multimedia images and video. Research into other areas of advertising and online user experience has found that multimedia messaging can improve user engagement and understanding of website features. A small number of gambling companies do use a more diverse range of content types to communicate this information.

–What kind of information is included

We found that all companies are displaying the required age warnings and icons and links to safer gambling organisations. Most websites have icons and/or text links to either dedicated safer gambling pages on the website or external sources of information like safer gambling groups – although we found a small number of websites with icons that didn't link to anything.

The organisations that are most often linked to are GambleAware, GamStop and GamCare. A wide range of additional organisations are linked to on one or more websites, including groups focused on regulating gambling (the Gambling Commission), safer gambling messages (BetFilter), gambling health and peer support (the National Gambling Helpline and Gambling Therapy) and targeted gambling support and education (YGAM).

– Mobile is less accessible than desktop

We compared desktop and mobile versions of gambling websites. There was variation between operators, but overall it took longer to find information on mobile sites. This is likely to be because information and menus on mobile versions are organised around the smaller size of the screen, which means that it's often not possible to see a page's full menu on one screen, so more scrolling is required and it takes longer to navigate.

Also, most desktop websites are organised in a 'broad and shallow' configuration, where more tabs and links are available on the front page, whereas mobile versions tend to be 'narrow and deep', requiring more click-throughs to reach a given destination, taking longer.

Narrow and deep organisation requires choosing which links and pages to prioritise. We recommend that safer gambling information should appear at the top of mobile versions of websites, for operators to best support their customers, and to highlight that they prioritise their safeguarding.



Recommendations

We recommend that operators should collaborate with each other, with safer gambling organisations and academia to create more responsible gambling:

Gambling companies should collaborate with each other, with safer gambling organisations and academia

- Use data to promote safer gambling and minimise harm.
- Where algorithms are used online, make them transparent and explain clearly how they affect the user.
- Bring together industry, academics and behaviour change experts to create safer gambling information and tools.
- Support long-term studies to build evidence for the effectiveness of these interventions.
- Provide information accurately and responsibly, so that it doesn't mislead or create a false impression of control.
- Provide information about games that is targeted at common misunderstandings.
- Provide safer gambling information in an accessible manner.
- Carry out further research into the relationship between gaming and gambling, including whether involvement in gaming is correlated with later problem gambling.

We also have recommendations for improving transparency:

- Safer gambling links and icons on gambling websites should be clear and prominent. Icons should have clear, obvious, working links to safer gambling information.
- Content should not be relegated to the bottom of webpages, and the text should be the same size as the rest of the web content.
- For mobile versions, safer gambling content should appear at the tops of webpages.
- Operators should signpost to a variety of external websites and groups and organisations.

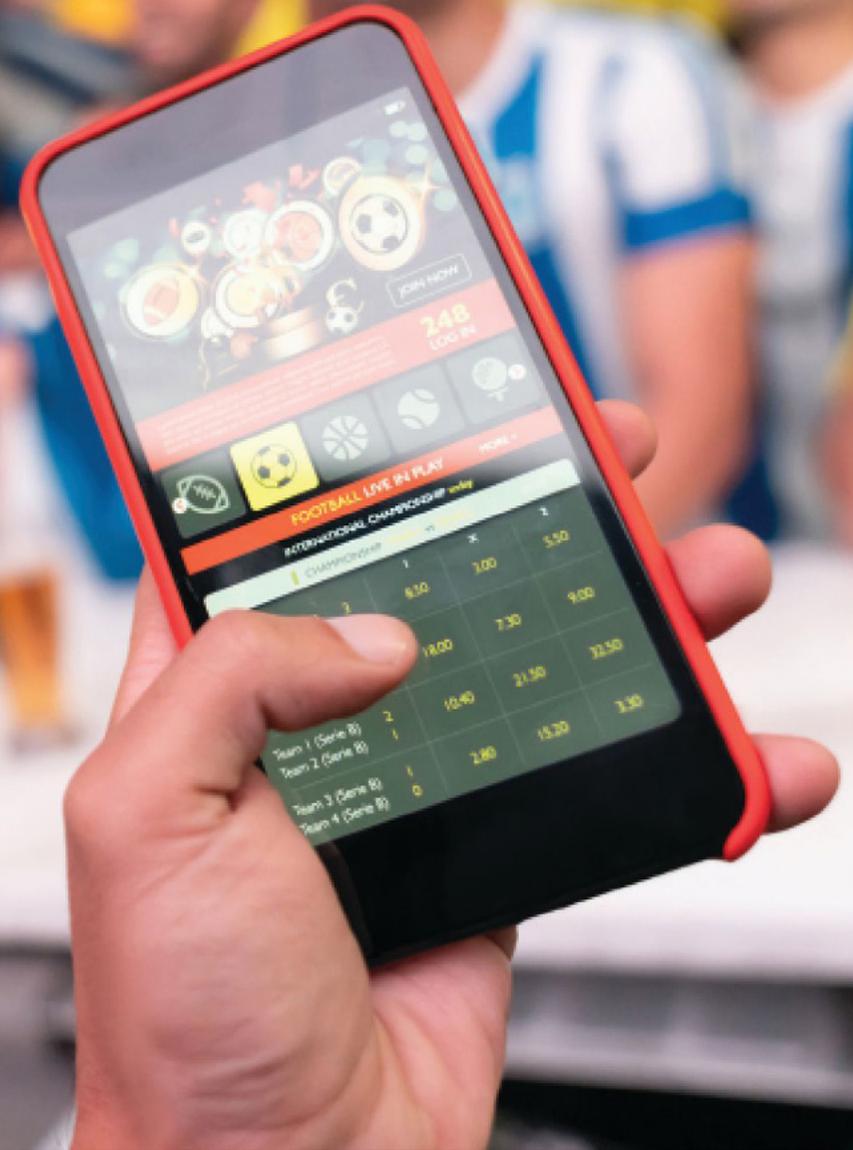
Safer gambling content on gambling websites is often presented in a way that is boring, text-heavy and hard to engage with. We recommend:

- Using videos and images
- Making the information consistent with the look and feel of the rest of the website
- Personalising information using web tracking data

Future research

There needs to be more research to understand how individuals engage with gambling websites, especially in relation to safety. The existing research has methodological limitations.

Eye-tracking has potential to help address these questions. It provides a non-intrusive tool to assess the usability of websites, and has been used to examine other questions relating to website use. It could help to understand how users engage with safer gambling information on websites, and help improve the usability and accessibility of that information.



Conclusion

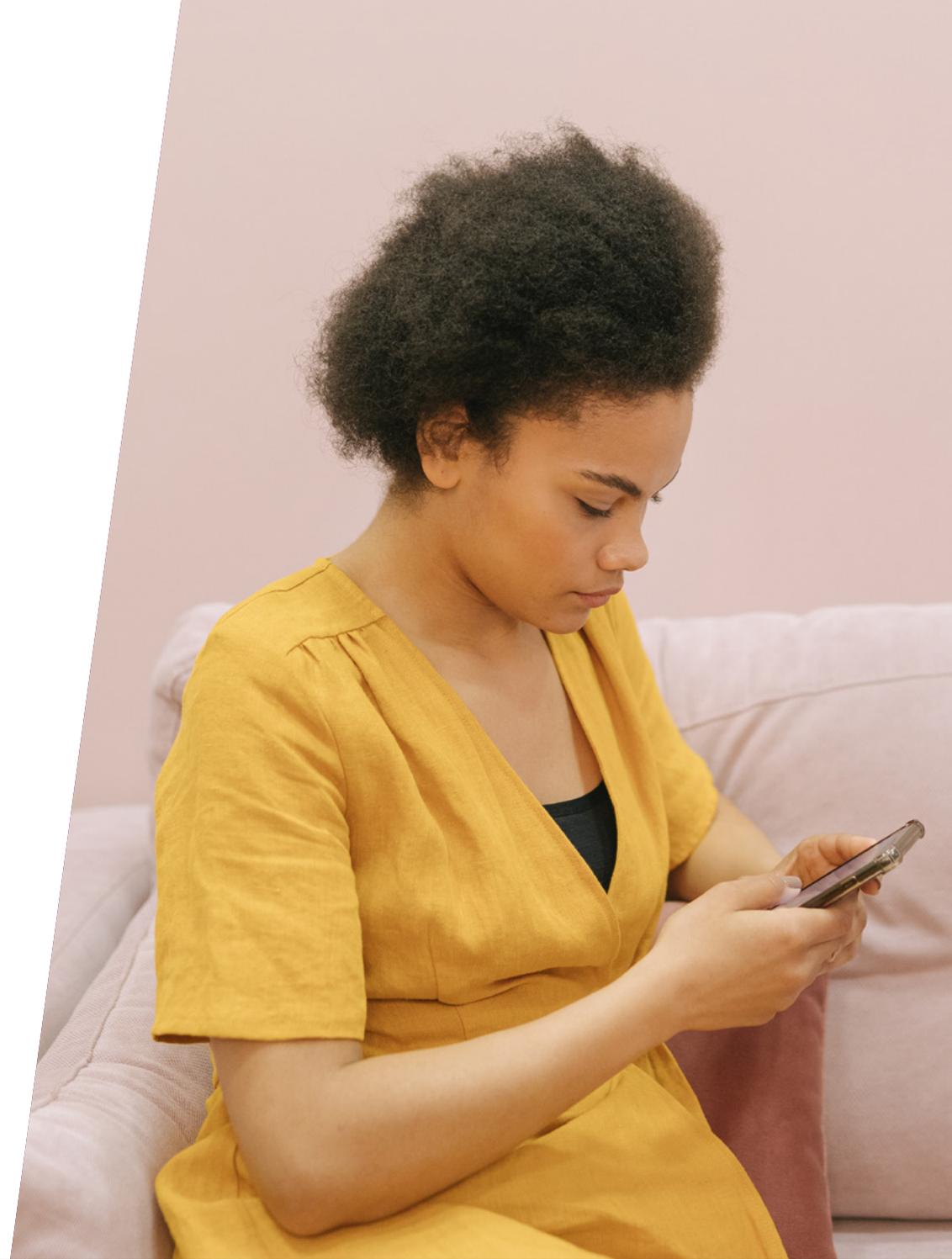
Next steps

Ensuring that individuals have access to transparent information within games and promotional materials is not only essential for helping them to make informed decisions while gambling; it is essential for reducing gambling-related harm.

Research and discussions about these questions are still scarce in the academic literature. Our systematic review of transparency for safer gambling and our analysis of operators' websites are both the first of their kind.

Our research informed our recommendations about how gambling operators should provide transparency to encourage safer gambling. We have advocated for greater transparency, and offered recommendations about how safer gambling messages should be presented, and have argued for further research using a human-centred, personalised approach to evaluate different approaches to using transparency to reduce gambling-related harm.

We advocate for collaboration between industry bodies and professionals with multidisciplinary backgrounds (e.g. psychology, computer science, human-computer interaction, communication science) to develop the design of safer gambling information, tools and interventions. We believe this can result in practical and detailed guidelines for how gambling operators can embed safer gambling tools and interventions into their games and promotional materials, and thus facilitate long-term, sustainable, positive changes in behaviour.



About the researchers

Professor John McAlaney is a social and cyber psychologist based in the Department of Psychology.

Dr Emily Arden-Close is a Health Psychologist based in the Department of Psychology.

Dr Elvira Bolat is a digital marketing and communication expert based in the Department of Marketing, Strategy and Innovation.

Dr Ruijie Wang is a cyber psychologist, with a specialty in human-computer interactions based in the Department of Psychology.

Dr Reece Bush-Evans is a social and organisational psychologist based in the Department of Psychology.

Dr Sarah Thomas is a research psychologist based in the Faculty of Health & Social Sciences.

Professor Keith Phalp has a background in mathematics, software engineering, applications of AI, and social computing. He is Dean of the Faculty of Science & Technology and Professor of Software Engineering.

Dr Sarah Hodge is a cyber psychologist based in the Department of Psychology.

Abi Hamson-Ford is a Research Assistant based in the Department of Psychology.

Other gambling research underway at Bournemouth University

Participatory design of interactive persuasive gambling awareness: Enabling gambler-centred innovation (Gaminnovate) – Using participatory design and data-driven approaches to evaluate and improve upon online responsible gambling messaging. This work is funded by the International Center for Responsible Gaming.

The Mindful Resilience project – An initiative to enable health care professionals to have access to quality training on health risks associated with gambling and gaming harm, digital addiction, and unhealthy online behaviour. The Mindful Resilience project is a collaboration with YGAM, Betknowmore UK, the Responsible Gambling Council, Playtech, and Bournemouth University.

Gender differences and stereotypes in gambling: An eye-tracking study on reactivity to inducements and attentional bias on webpages – Using eye-tracking methodology to investigate gender stereotyping on gambling webpages and whether there is gender variation in terms of reactivity to inducements and attention to different types of gambling products on webpages. This work is funded by the Department of Psychology QR Fund at Bournemouth University.

Personality and gambling: An eye-tracking study on attention to responsible gambling messages and promotional content on webpages – Using eye-tracking methodology to investigate how personality differences influence attention to and awareness of safer gambling messaging and promotional material on gambling websites and social media advertising. This work is funded by the ACORN fund at Bournemouth University.

Gambling, personality and wellbeing – Using a longitudinal approach to investigate the relationships between narcissism, beliefs about gambling (i.e., social norms), sensation-seeking, quality of life, impulsivity, and levels of gambling. This work is funded by the Academic Forum for the Study of Gambling.

More information about research being undertaken by the group can be found at www.bournemouth.ac.uk/research/projects/responsible-gambling-projects

Contact

To contact the gambling research group please email: gam@bournemouth.ac.uk

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.

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Artwork: Dairy – free I

The keys that hang from the cow's nostrils represent an online gambling world that is very difficult to escape from once you are there. Thankfully, there is a broader ecosystem of support - but the ecosystem requires further development and investment: problem gamblers have an opportunity to pick the 'milk bottle lock' by way of engagement with the treatment. However, in this image access to online gambling and availability of your data means you cannot escape, the grey cloud which hovers over depicts just that - inability to escape the world of gambling! The umbrella, hidden under the grey clouds, symbolises education and the understanding that gamblers themselves have the power to control their data being collected, managed, and used in the online world.

