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SOCIAL NORMS AND UNINTENDED EFFECTS IN AUDIOVISUAL GAMBLING PREVENTION CAMPAIGNS

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ABSTRACT

Audiovisual public health campaigns on social media often employ normative information to discourage unhealthy behaviours. While prescriptive norms suggest appropriate behaviours, descriptive norms highlight the prevalence of undesirable actions. Previous research indicates that descriptive norms can produce counterproductive outcomes, reinforcing the behaviours they aim to reduce (boomerang effect). However, their impact on gambling prevention remains underexplored. To address this issue, a theoretical review was conducted using Web of Science, Scopus, Medline, and PsycInfo via EBSCO Discovery. This review examines their effect on preventive campaigns and provides evidence-based recommendations to enhance gambling prevention messaging.

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1. Introduction

Although gambling behaviour is widespread, it can become problematic when it exceeds an individual's control. In such cases, it is referred to as pathological gambling or gambling disorder (APA, 2013). Gambling disorder is characterised by a persistent need to gamble increasing amounts of money, irritability when gambling is not possible, concealing the behaviour from others, accumulating debt, or losing control over it. Furthermore, it is frequently associated with a range of negative consequences for both the individual and their immediate environment, including significant psychological and emotional distress (Ste-Marie et al., 2006), severe financial difficulties (Goh et al., 2016), and disruption of social support networks, including close family and friends (Quigley, 2022; Tulloch et al., 2023). Additionally, the negative impact on the health of individuals with gambling disorder has been estimated to be equivalent to more than twice the cost associated with a condition such as diabetes, proportional to its severity (Browne et al., 2017).

Although gambling behaviour was traditionally classified among impulse control disorders, it has recently been reclassified within the nosological group of addictive disorders, specifically within the cluster of behavioural addictions. This reclassification is supported by neuropsychological evidence highlighting similarities in brain activation patterns between individuals with substance and behavioural addictions (García-Castro et al., 2023). Recent prevalence studies on gambling disorder indicate that 2.34% of the adult population is at moderate risk of developing problematic gambling behaviour, while 1.29% exhibit behaviour consistent with the disorder (Gabellini et al., 2023), translating to an international average of 2.3% for this issue (Williams et al., 2012). Moreover, the rise of online gambling via mobile devices has increased engagement among younger, more vulnerable populations due to its ubiquity, easy accessibility, and continuous real-time interaction (González-Roz et al., 2017). The growing incidence of gambling among younger populations, coupled with its associated negative consequences, has led to problem gambling being recognised as a public health priority (John et al., 2020). Consequently, problem gambling has a significant societal impact in terms of economic and social costs. For instance, in European countries, the direct and indirect costs associated with problem gambling reached £1.77 billion in the UK in 2022 (Office for Health Improvement & Disparities, 2023), while in Sweden, social costs amounted to €1.42 billion in 2018, equivalent to 0.30% of the country's gross domestic product (Hofmarcher et al., 2020).

As a result of these concerns, governments and other public bodies regularly disseminate prevention messages and audiovisual campaigns through various media to discourage gambling behaviour or promote responsible gambling (García-Castro et al., 2022; Mejías-Martínez & Cuesta-Díaz, 2023). Among the various types of messages used in these campaigns, those based on social norms are among the most prevalent. Social norms generally refer to implicit or explicit rules of behaviour tailored to a specific social context. Cialdini and colleagues (Cialdini et al., 1990) distinguished two types of social norms: descriptive norms, which indicate the prevalence of a particular behaviour, and prescriptive norms, which reflect the degree of social approval for that behaviour. The former provides quantitative information about the number of individuals engaging in a specific behaviour. According to Festinger's (1954) social comparison theory, individuals assess the appropriateness of their behaviour by comparing it with that of their peers. Therefore, presenting a message that highlights the number of people engaging in a particular behaviour should encourage recipients to conform to that behaviour. However, when such messages highlight undesirable behaviours, they may inadvertently normalise actions that lack social approval, despite their high prevalence in society. For example, a hotel aiming to reduce towel usage might state: "Let's care for the environment; 70% of customers use more than one towel during their visit." Such messages are common in prevention campaigns targeting behaviours such as unhealthy product consumption, tax evasion, or addictive behaviours like smoking (Cialdini et al., 2006). However, their effectiveness may be limited and could even trigger what is known as the boomerang effect. The boomerang effect is defined as a phenomenon in which a message produces the opposite effect to its intended purpose, impacting behaviour, attitudes, or both (Byrne & Hart, 2009). This effect has been observed in preventive messages related to addictive behaviours, including alcohol (Snyder & Blood, 1992), marijuana (Kang et al., 2009), and tobacco (Erceg-Hurn & Steed, 2011) prevention.

The boomerang effect can be explained through several mechanisms (for a comprehensive review, see Byrne & Hart, 2009). Of particular interest here is the activation of social norms. In this case, the

boomerang effect results from exposure to a preventive message in which the recipient interprets the harmful behaviour as a social norm, i.e., as highly prevalent (Byrne & Hart, 2009, p. 22). Consequently, recipients may feel validated by the perception that their harmful behaviour is shared by a majority of similar individuals. Indeed, research has shown that campaigns based on descriptive norms can produce a boomerang effect, increasing the harmful behaviour they aim to reduce. For instance, Perkins et al. (2010) found in a sample of university students (N = 3831) that those who overestimated sugar-sweetened beverage consumption among peers had higher consumption themselves. Similarly, Byrne et al. (2018) found evidence of a boomerang effect in an intervention using social comparison information to promote responsible energy consumption, resulting in increased consumption post-intervention. These effects have also been observed in studies on tax compliance (P. John & Blume, 2018), responsible water consumption (Chabé-Ferret et al., 2019), and sustainable food consumption (Richter et al., 2018). However, while many studies report the occurrence of the boomerang effect in campaigns using social norms, particularly descriptive norms, the issue remains controversial, as other research has found contradictory results. Moreover, literature on this topic in the context of gambling behaviour is limited, making it challenging to draw definitive conclusions.

Therefore, the aim of this study is to provide an updated review of the effectiveness of audiovisual messages and campaigns using social norms in reducing the frequency, severity, and intensity of gambling behaviour and gambling.

2. Method

An updated literature search was conducted using the Web of Science, Scopus, Medline, and PsycInfo databases via the EBSCO Discovery search engine. The search covered the last ten years (2015–2025) using the following descriptors: "social norm," "descriptive norm," "gambling prevention," "boomerang effect," "prevention campaigns," or "social norm preventive messages." Articles published through the peer-review system, including randomised empirical trials, reviews, and meta-analyses, were considered. Studies were selected based on a critical analysis of their abstracts and after applying the inclusion and exclusion criteria defined for this review.

For the final selection, studies focused on prevention interventions, messages, or campaigns based on social norms, whether descriptive or prescriptive, were included. These studies had to be related to gambling behaviour and gambling, regardless of the population level (general population, occasional gamblers, at-risk gamblers, or problem gamblers). Research measuring gambling frequency, severity, behavioural intentions, attitudes towards gambling, amounts wagered, or gambling-related problems was selected as indicators of intervention or message effectiveness. Articles were excluded if: (1) interventions did not explicitly include descriptive or prescriptive messages; (2) studies included participants with comorbid conditions other than addictive behaviours (substance or behavioural); (3) gambling behaviour was not measured; (4) studies provided insufficient information on the intervention type; (5) the sample included children or young people under 18; or (6) the study was a conference paper, abstract, book, or book chapter. After applying these criteria, seven articles were selected for this review.

3. Results

In the last decade, several studies have explored the use of social norms in gambling prevention campaigns to assess their effectiveness and the potential for a boomerang effect. The findings are contradictory. On one hand, a recent systematic review highlighted that social norms-based interventions either have no effect or may produce adverse outcomes consistent with the boomerang effect (Lemmel & Morina, 2024). This review aimed to evaluate the efficacy of interventions based on normative personalised feedback in reducing the frequency and symptom severity of addictive behaviours, including alcohol consumption and gambling. A total of 30 studies were selected based on inclusion and exclusion criteria. The review concluded that there is a scarcity of research on gambling behaviour in this context and that, while earlier studies showed promising results for normative interventions, this review found no significant reductions in gambling frequency.

However, other research using meta-analysis methodology (Saxton et al., 2021) concluded that social norms interventions produce a modest but statistically significant beneficial effect in the context

of addictive behaviours, including alcohol use, marijuana use, and gambling. This study analysed 37 randomised controlled trials, showing a statistically significant, albeit modest, benefit of social norms-based interventions compared to control (non-treatment) groups. A limitation of this work is that the selected studies included comorbid behaviours (e.g., alcohol consumption and gambling in the same sample), which may have restricted the scope of the conclusions. Similarly, the scarcity of studies on gambling behaviour limits the generalisability of these findings.

The study by Meisel and Goodie (2014) involved 252 university students (59.1% male) who completed questionnaires on gambling behaviour using the South Oaks Gambling Screen (SOGS; Lesieur & Blume, 1987), gambling frequency (assessed by a single item on a 1–10 scale), perceptions of descriptive norms regarding gambling behaviour relative to reference groups (peers, other university students, or family and friends), and perceptions of prescriptive norms by reference group. The results indicated that descriptive norms had a greater influence than prescriptive norms in predicting gambling frequency when participants estimated the number of similar individuals (e.g., university students) who gambled. This suggests that the more participants believed their peers gambled, the more frequent their own gambling behaviour, reflecting an overestimation of the descriptive norm. This effect was reversed for prescriptive norms. Additionally, moderation analysis showed that the descriptive norm, when tied to perceptions of peers (university students), was associated with higher gambling frequency, regardless of the level of approval (prescriptive norm). However, when the descriptive norm was lower, it was more influenced by the prescriptive norm, such that gambling frequency was higher when normative approval was lower. These findings suggest that descriptive norms significantly predict the frequency and severity of gambling behaviour, particularly when referencing socially relevant peers. More recently, De Jans et al. (2023) found in a sample of 212 participants (4.3% at moderate risk for problem gambling) that the prevention message "Play in moderation" increased normative perceptions (e.g., if moderation is possible, many people gamble), which in turn increased gambling intentions compared to a control condition (no prevention message).

Conversely, some studies have found that social norms-based interventions, such as normative personalised feedback, may effectively reduce gambling behaviour. Although these interventions do not strictly adhere to the standard of preventive messages using descriptive norms, their reliance on prevalence data comparisons makes them relevant. For instance, Neighbors et al. (2015) found in a sample of 252 university students that normative personalised feedback reduced perceptions of the descriptive norm and gambling-related problems at a 3-month follow-up, as measured by the SOGS. Similarly, Martens et al. (2015) reported that participants in a normative feedback group (N = 333 university students) gambled lower amounts and reported fewer gambling-related problems at a 3-month follow-up.

Some subsequent studies have explored the effectiveness of online interventions. For example, Luqiens et al. (2016) examined the efficacy of three online intervention modalities in a sample of problem gamblers with a preference for online poker (N = 992). Participants were identified as problem gamblers based on a Problem Gambling Severity Index (PGSI; Ferris & Wynne, 2001) score ≥ 5. They were randomly assigned to a control group (waiting list), a normative personalised feedback group (receiving information about their PGSI score and their position relative to the normative group), or a group receiving a cognitive-behavioural therapy guide (self-guided or guided by an online psychotherapist). No significant differences were found in the efficacy of the three interventions, as measured by changes in PGSI scores, although a modest average reduction of 1.35 points was observed across all groups. The authors highlighted challenges in standardising these protocols, noting that variables such as comorbid psychiatric conditions, the course of the disorder, quit attempts, abstinence status, relapses, or motivation could be critical for future studies.

4. Discussion and Conclusions

This study provides an updated review of the effect of social norms (descriptive and prescriptive) in audiovisual prevention messages or campaigns targeting gambling behaviour and gambling. It also examines the potential occurrence of the boomerang effect associated with exposure to such messages. Several theories, such as the social norm theory and the focal theory of normative behaviour, have been proposed to explain the mechanisms underlying their effectiveness and potential to produce adverse effects, such as the boomerang effect. Specifically, the theory of normative social influence (Berkowitz, 2003) suggests that individuals are influenced by what they perceive as the most common behaviour in

a reference population, although this influence may operate in the opposite direction (boomerang effect) when variables are not adequately controlled. The focal theory of normative behaviour (Cialdini et al., 1990) posits that social norms directly influence behaviour when they are salient in an individual's consciousness, such as when informed about the prevalence of a behaviour or exposed to social sanctions for disapproved behaviour.

This review reveals that the number of studies focusing on the impact of descriptive and prescriptive social norms in prevention messages to reduce or prevent problem gambling is limited. This scarcity imposes significant constraints on both the analysis of results and the scope of conclusions. Future research should aim to increase the number of publications on the effect of social norms on gambling behaviour to build a more robust knowledge base.

Many studies reviewed here exhibit shortcomings relative to the initial research criteria. Firstly, many rely on self-reported data on participants' perceptions of descriptive and prescriptive norms concerning gambling behaviour, either among peers or family and friends, rather than experimental designs. Previous literature supports the link between overestimating gambling prevalence among peers (descriptive norm) and increased gambling frequency, expenditure, and related problems (Larimer & Neighbors, 2003). However, greater experimental manipulation of conditions would enhance result validity and ensure more standardised application of variables and stimuli. Regarding prescriptive messages, Neighbors et al. (2007) found that overestimating social approval of gambling (prescriptive norm) was negatively associated with gambling frequency, contrary to earlier studies. These conflicting findings underscore the controversy in this field, where similar assessment methods yield opposing results.

Studies employing randomised group assignments have primarily used normative personalised feedback interventions. While these interventions use normative information (e.g., an individual's gambling compared to their reference group), they often combine with cognitive-behavioural interventions, support groups, or online supervision, focusing more on clinical intervention than persuasion. Future research should more precisely define variables, methodologies, and domains to align conclusions with these objectives, which, while complementary, belong to distinct professional practices.

The online delivery of these interventions is a strength, given the rise of online gambling, particularly since 2020 during the COVID-19 pandemic (Håkansson, 2020). Targeting younger populations, who are increasingly at risk due to the accessibility of mobile gambling, enhances the relevance of online interventions.

Regarding the effects studied, evidence suggests the potential for a boomerang effect. Individuals overestimating gambling prevalence among peers exhibit higher gambling frequency, severity, and related problems. Consequently, exposure to descriptive norm-based messages may increase acceptance and predisposition to gamble, particularly among those with below-average gambling frequency (Schultz et al., 2007). For example, Richter et al. (2018) found that a descriptive norm message (e.g., "69% of customers buying seafood yesterday chose MSC/ASC") reduced sales of sustainable products compared to baseline. However, results are inconsistent, with some studies finding no significant differences in intervention effectiveness, suggesting other unconsidered variables may influence outcomes. Further research is needed to identify critical elements in variable selection, sampling, and measurement to draw firmer conclusions.

Another key consideration is that most studies used general population samples, primarily university students, limiting the generalisability of results. Only one study included participants with severe gambling problems diagnosed via the PGSI. Larger, more heterogeneous samples would enable more robust analyses.

The study of social norms in gambling behaviour is relatively novel due to the limited literature. There is also a lack of homogeneity in methodologies, ranging from self-reported studies to clinical trials. The boomerang effect has been observed, particularly in relation to descriptive norm perceptions, but not consistently. The predominant use of university student samples further restricts result applicability.

Future studies should refine understanding of when and why the boomerang effect occurs in social norm-based messages, focusing on the context, target population characteristics, and optimisation strategies to avoid reinforcing harmful behaviours. This is critical due to the rising prevalence of

problem gambling, particularly among younger populations, and its associated social, economic, and health impacts, including loss of relationships, academic issues, debt, and mental health disorders (Ferrara et al., 2019). Additionally, the significant economic investment in prevention campaigns necessitates evidence-based designs that account for the potential boomerang effect to ensure effectiveness.

In conclusion, while social norms, both descriptive and prescriptive, have the potential to reduce gambling-related harm, their effectiveness hinges on careful design. The boomerang effect remains a significant risk, and further research is needed to optimise the use of social norms in audiovisual gambling prevention campaigns.

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