Online Communities and Gambling Behaviors — a Systematic Review

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Abstract

Purpose of Review The internet and virtual environments have enabled the formation of online communities around a variety of interests. Online communities focused on gambling are increasingly popular and attract users to interact and share ideas and experiences with likeminded others. This study reviews evidence from the latest research examining the role of online communities in gambling behaviors and gambling problems.

Recent Findings A systematic literature search resulted in 17 studies. Research shows that online communities are used for diverse reasons like discussing gambling experiences and problems, sharing tips, and celebrating winnings with others. These reasons of online community use can have both adaptive and maladaptive implications. Online gambling communities often grow through social means by inviting friends or social media contacts to join. Active users of online gambling communities are more likely at-risk or problem gamblers.

Summary Online communities have an increasingly central role in learning about gambling, continuing, and spreading of gambling behaviors. Participation in communities that support harmful gambling habits involves risks for problem gambling.

Introduction

The rise and development of the internet has drastically transformed the gambling industry and activities [1–3]. There has been a huge growth in the gambling industry as well as discussion about gambling-related harms globally [4, 5]. Different forms of gambling are aggressively marketed online [6, 7] and much of the potential growth in gambling markets is based on the internet [8]. At the same time, internet and social media have changed how gamblers form and maintain their social relationships, and how they interact about matters related to gambling. These changes have potentially very far-reaching implications. Social media provides fast access to online discussions and enables individuals to find and connect with similar-minded others without the restrictions of space and time. Early research on the internet has noted the growing role of different online communities in networked communication [9, 10]. Furthermore, research in social psychology has underlined a change in human behavior in anonymous online settings [11]. Online interaction is considered to promote a shift from personal to group self [12 p. 527, 13] and conformity to group norms [14, 15].

Online communities are defined as social aggregations that have emerged from and exist within the internet, and in which interaction takes place or is enabled by technology [16]. Online communities consist of a number of people large enough to "carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace" [9 p. 5, 17]. To that effect, for an online discourse to be considered an online community, participants must participate in it often and communicate regularly with each other [17]. Different types of virtual spaces, such as discussion forums, sub forums, and chatrooms can also form online communities, as they can provide a means of identification and enable users to build meaningful connections [18]. In addition, prior research has noted that

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different groups consisting of similar minded people can come together to form online communities [19]. Online communities typically share heterogeneous characteristics, but they are homogeneous in interests and attitudes [20].

Online groups consist of more than two individuals who share reciprocity and have a similar definition of who they are [21, 22]. Online groups are formed around shared interests and characteristics of the group members, and communication between the group members is carried out through the internet and online systems, such as social networking sites [23, 24]. Online group behavior is characterized by ingroup bias (e.g., favoring one's own ingroup in relation to outgroups which, in turn, are typically evaluated negatively), and conforming to the ingroup's norms [25, 26].

Online communities and groups may either encourage users to partake in harmful activities or help them to overcome and cope with existing problems [15]. According to a review on online gambling and gaming communities done by Sirola et al., some online communities may normalize harmful gambling and gaming behaviors, but there are also online communities that are supporting in nature and help people cope with gambling problems [27]. Another review study [6] focused on the role of social media in gambling. The review indicates that online forums are specifically attractive to users due to their constant accessibility. The ability to share one's thoughts and provide and seek gambling advice, or receive support for gambling problems from other gamblers, are additional features users are drawn towards. Research on the area is rapidly expanding, and it is therefore highly important to review new findings on the role of online communities and groups in gambling problems. We aim to contribute to this gap by reviewing research from the past 5 years. Our research questions are:

RQ1: What is the role of online communities and groups in gambling behaviors?
RQ2: How is the involvement in online communities and groups associated with problem gambling?

Methods

We conducted a systematic data collection by using the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) as a guideline [28, 29]. We conducted literature searches from five comprehensive databases: EBSCOhost (EBSCO), PsycINFO (APA), Scopus (Elsevier), Social Science Premium Collection (ProQuest), and Web of Science (Clarivate). Advanced document searches were set to search scholarly articles published in English in peer-reviewed journals between years 2017 and 2022, and find query string hits from titles, abstracts, and keywords. The query string "((gambl*) OR (internet gambl* OR

online gambl* OR virtual gambl* OR digital gambl*) AND ("online communities" OR "online community") OR ("virtual communities" OR "virtual community") OR ("online group" OR "online groups") OR ("virtual group" OR "virtual groups") OR ("online discussion" OR "online discussions") OR ("chat room" OR "chat rooms") OR ("online social network*" OR "forum*"))" was used in each database. Supplementary data search was conducted on Google Scholar using the same search methods in order to identify possible additional articles not listed on the other five databases. This search yielded 38 search results. After removing duplicates or otherwise unsuitable search results (such as dissertations, review articles, articles not published in English, or articles that did not mention gambling), five articles were included in the final screening list from the Google Scholar search.

Initial database search was executed by the first author and one co-author between February 28th and March 7th, 2022. In the screening phase, two reviewers independently read the abstracts of all listed articles and selected suitable articles based on three inclusion criteria: (1) gambling or gambling problems are empirically analyzed in the article, (2) involvement in established online groups or communities is empirically analyzed in the article, and (3) empirical analysis involves investigation of the role of established online groups or communities in gambling or gambling problems. Concerning criteria 1, in addition to studies investigating traditional forms of gambling (i.e., placing risk-based bets in the hopes of winning greater amounts, such as wagering on casino or card games, or sports [30], articles examining trading, investment, or cryptocurrency trading or -investing were also considered, because these activities share similarities with gambling by being speculative, involving risk, and involving the chance of gaining something of greater value (money, cryptocurrency, shares) after making initial trade/investment [31]. Studies investigating only hypothetical online communities or groups (e.g., willingness to use such online platforms) were excluded because they did not fall under the definition of established online communities where participants communicate regularly with each other and share reciprocity. Quality of the selected articles was assessed separately. The author group decided to keep all inclusions based on their quality.

In the first phase of identification of studies, abstracts were screened. If all three inclusion criteria were not evident based on the abstract, the full text was read also during the first phase. Fifteen studies were found eligible from the first phase abstract and full text screening. Eleven studies went through an additional full text screening due to discrepancy in ratings by the two independent reviewers. After additional screening and discussing among the research group about disagreements and borderline cases, full agreement was achieved, and the final sample size ($n = 17$) was reached. The

final sample was based on the consensus that all three inclusion criteria were met. Inter-rater reliability was calculated after first screening and found moderate with 91% agreement on final inclusion (Cohen's kappa = 0.66). To identify additional relevant articles, the reference lists of the 17 articles included were screened and assessed. Citation search yielded no additional studies for the review. See Fig. 1 for details on data collection.

Results

In total, 17 articles were selected for this review based on the inclusion and exclusion criteria. Of the articles, 47% (8/17) were quantitative and an equivalent amount, 47% (8/17), were qualitative. One study utilized both quantitative and qualitative methods. Almost half (41% [7/17]) of the studies were conducted in Finland, 18% (3/17) in Australia, 12% (2/17) in the USA, 12% (2/17) in the UK, 6% (1/17) in Canada, 6% (1/17) in Switzerland, and 6% (1/17) in Sweden. Surveys were used in 41% (7/17) of the studies and 35% (6/17) analyzed online forum posts or social interactions

within an application. Respondents were from multiple countries (Australia, Finland, Spain, South Korea, the UK, and the USA), or not otherwise specified in the study design due to data drawn from international online forums or message boards within an application. The majority of the articles were published in 2020–2022 (59%, 10/17). For more thorough details, see Table 1 of study characteristics.

Role of Online Communities and Groups in Gambling Behavior

Most articles analyzed in this review investigated gambling behavior in general (71%, 12/17), two studies focused on sports betting, and the rest examined online poker [32•], internet gambling [33•], and bitcoin investing and trading [34•]. Types of online communities related to the above-mentioned gambling activities included online discussion forums (e.g., gambling sub-reddits on Reddit), WhatsApp chat groups, online social casinos, and bitcoin online communities.
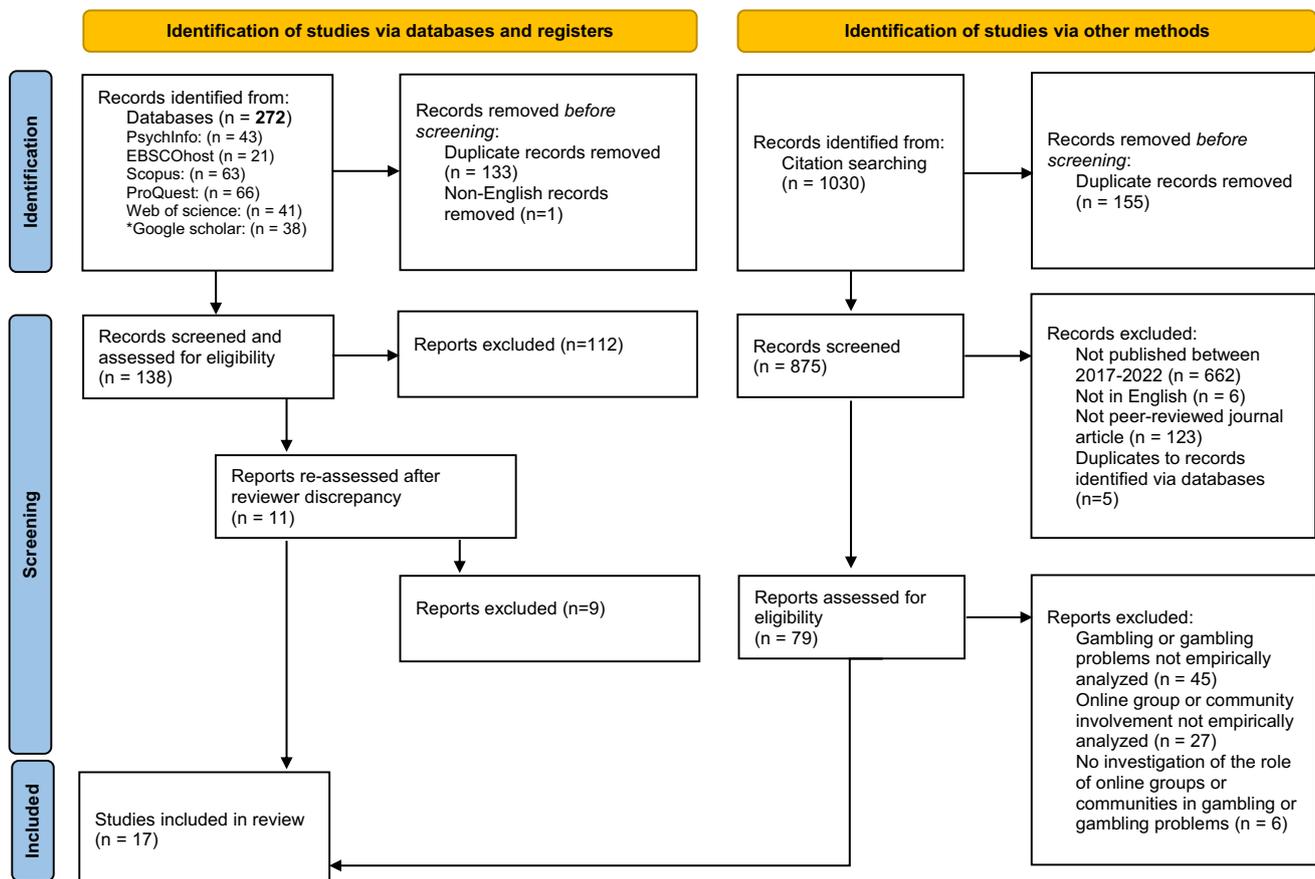

Fig. 1 PRISMA flow diagram depicting the data collection and selection process (as recommended by Page et al. 2020 [29]). *Supplementary data search

Table 1 Descriptive information of the reviewed articles

Reference	Sample (*n*)	Method	Country of study	Type of gambling	Type of online community/group
Bradley and James (2021)	Online posts (2,294)	Web scraping, qual	The UK	General	Online discussion forum
Brown et al. (2021)	Online posts (199)	Sentiment analysis, latent class cluster modeling, qual	Sweden	General	Online discussion forum
Deans et al. (2017)	Males aged 20–37 (50)	Interview, qual	Australia	General	Online gambling forums
Howe et al. (2019)	Victorians aged 18–88 (3,361)	Online survey, quant	Australia	General	Internet discussion boards
Järvinen-Tassopoulos (2020)	Online posts (97)	Content analysis, qual	Finland	General	Online discussion forum
Khazaal et al. (2017)	Internet gamblers (372)	Latent class analysis, quant	Switzerland	Internet gambling	In-game social behavior
Koivula et al. (2021)	Cross-national (4,816)	Survey, quant	Finland	General	Online-gambling communities
Lee (2022)	Bitcoin investors (*na*)	Observation, interview, qual	South Korea	Bitcoin investing	Bitcoin online communities
Oksanen et al. (2021)	Cross-national (4,816)	Survey, quant	Finland	General	Online-gambling communities
Raymen and Smith (2020)	Young males (28)	Ethnography, qual	The UK	Sports betting	WhatsApp chat group
Reynolds (2019)	Extant texts	Ethnography, qual,	Canada	Zynga poker	Online social casino
Rodda et al. (2018)	Online posts (1,370)	Content analysis, qual	Australia	General	Online gambling forum
Savolainen et al. (2020)	Cross-national (4,816)	Survey, quant	Finland	General	Online communities
Sirola et al. (2018)	Young people aged 15–25 (1,200)	Survey, quant	Finland	General	Online gambling-communities
Sirola et al. (2019)	Cross-national (2,412)	Survey, quant	Finland	General	Online gambling-communities
Sirola et al. (2021)	Cross-national (4,816)	Survey, quant	Finland	General	Online gambling-communities
van der Maas et al. (2022)	Online posts (multiple timepoints)	Time series analysis, mixed	The USA	Sports betting	Reddit discussion forum

According to the studies, online communities and groups serve multiple purposes for those engaging in them [32•, 34•, 35•]. For example, discussion forums were found to be appealing environments for gamblers and those interested in gambling due to their accessibility and the possibility for anonymity. These features lowered the threshold of sharing gambling experiences and tips with other users [36•]. Online discussion forums were also used for talking about emotions attached to gambling and expressing sentiments about gambling to which other members may be able to relate to. Brown and colleagues investigated problem gamblers' online comments on a discussion forum dedicated to gambling problems and identified eight clusters of sentiments, representing eight subgroups of individuals who shared common emotions and sentiments [35•]. These eight sentiment clusters were melancholy, surprise, despair, righteousness, revulsion, prejudice, rage, and hatred. The results indicate that problem gamblers are a diverse group dealing with a wide range of emotions and problems. Online forums offer them a common space where to share stories and emotions.

Deans and colleagues found that virtual groups created on online social networking sites, such as Facebook, can be used to get together with other gamblers for the purpose of sharing gambling tips and celebrating wins. These types of online groups differ from larger discussion forums by typically consisting of members who already know each other offline and share an interest in gambling [37•]. New members were included in the online group, for instance, on occasions where a friend of a friend who was also interested in gambling wanted to join. Similarly, Raymen and Smith showed that smartphone and sports-betting apps provide increased opportunities for betting and socializing around betting activities [38••]. Betting apps are interactive and dynamic, keeping users engaged, while communications-based apps such as WhatsApp allow collective and real-time sharing of information. According to the study, modern technology has enabled the development of pathological

relationship to money and the formation of groups called "lifestyle gamblers," as gambling can be done anywhere via computers or mobiles, while socializing through features such as chat forums. Participants of the study [38••] shared information and experiences exclusively related to betting on sports events through a WhatsApp group chat.

Participation in a virtual group requires a certain level of commitment from their members. Raymen and Smith noted that failure to maintain a presence in gambling and consumption behaviors was associated with losing contact with the group [38••]. Breaking ties with betting-based online groups may be an unpleasant experience, cause anxiety, and even result in maintaining gambling activities in order to solve or avoid the conflict following possible leaving of the group.

Lee investigated the online culture of bitcoin investors by following and analyzing online bitcoin communities [34•]. These communities were immensely active and mainly utilized in exchanging up-to-date cryptocurrency news and sharing know-how about investing. The communities' discussion boards were diverse and included various topics around cryptocurrencies. For instance, when bitcoin prices soared or plummeted, the discussions peaked as community members responded with a high immediacy to market fluctuations. Through their posts, community members boasted about gains or expressed anguish about losses using curse words or memes. Discussion boards were also used to speculate on the changing price of bitcoin based on chart analysis. Members of the community were encouraged to attend courses on chart analysis so they could make scientific and rational investments and so that members of the community wouldn't become "hogu," i.e., easy touch in the bitcoin market. The members also organized frequent online and offline meetings where they could learn together how to interpret the price chart.

In the context of Lee's study, online community discussion activity typically occurred in correspondence with the real-time fluctuations of the bitcoin market [34•]. In similar fashion, discussions taking place on online communities could also be activated by and tied to larger societal situations or events. This was found by van der Maas and colleagues who examined participation on a problem gambling sub-reddit before and after an expansion of legal sports betting outside of Nevada in the USA [39•]. According to the study, a significant jump in discussion activity was recognized around the time when legal sports betting was launched in different locations. The authors acknowledged that the increase in discussion activity was probably not solely attributed to the event of legalization, but the concurrent large media attention over the legalization of sports betting likely increased general interest toward gambling, which manifested in higher activity on online forum discussions.

This was further supported by the finding that showed an increase in activity over time on the discussion board [39•].

Reynolds investigated the influences of game design on young online poker players and considered the ethical and risk concerns involved [32•]. The author utilized virtual ethnographic methods and participated in a social casino community built around online poker, *Zynga*. The poker community emphasized social connections within the game and immediately upon entry, the player could interact with the dealer or start chatting with other players by using the chat box feature. Players could also see and connect with other poker players given design features of the game and interact with each other by sending and receiving gifts. The game was network-based where players were invited by the game to play via their personal Facebook homepages. Players were also able to invite their friends to join with a monetary incentive offered for every friend that joined the game. By harnessing the potential of social network connections, a social game such as Zynga can grow the size of its community and the size of its business in an effective manner.

Online discussion forums also emerged as a valuable source of support for gamblers and particularly for those who experience gambling problems or harms. Bradley and James analyzed posts from a discussion forum provided by a gambling help website [40•]. The study found that the most common topic discussed was negative emotions caused by gambling. Posts included such feelings as shame, hopelessness, and anguish. Members also actively shared information concerning aid recovery resources, including how to utilize online forums in ways that help and support recovery (e.g., seeking posts demonstrating positive results and commitments). Similar results were reported by Rodda and colleagues who investigated change strategies for problem gambling by analyzing posts of problem gamblers from two discussion forums [41•]. The study discovered that when gamblers started to experience problems related to gambling, they were most likely to try to solve the problems themselves. Discussing the situation online with others who have similar experiences was a natural and helpful resource that was also easily available. The study [41•] identified 27 discrete change strategies gamblers discussed on the forums. The most popular posts were related to the action phase which included coming up with alternative activities to gambling and managing the urge to gamble. Other popular posts on change strategies related to the pre-decisional (e.g., contemplating about change and removing barriers to change) and multi-phased (e.g., seeking external and social support) stages.

Online communities were also found to be beneficial for gamblers' close ones. One study examined help-seeking behaviors of concerned significant others of gamblers. The study analyzed messages partners had posted on an online

forum. According to the results, the online forum was often the first source of help concerned partners sought. Main reasons for posting on the forum were to share stories with others who have similar experiences and to seek peer support [42•]. Posting on an online forum was also considered easier than talking with friends or relatives, because of feelings of shame that gambling caused in the concerned partners.

Multiple articles found that using gambling-themed online communities and showing interest in gambling was particularly common among males [33•, 36•, 37•, 38••, 43••]. To that effect, in the study analyzing online messages of gamblers' significant others, 38/40 online community messages were written by concerned female partners [42•]. Collectively, the results showed that involvement in gambling communities online has contributed to the normalization of gambling, especially among younger men who perceived gambling as part of an identity-based lifestyle.

Association of Online Community and Group Participation with Problem Gambling

Multiple studies (41%, 7/17) investigated the connection of online community participation to problem gambling. Study by Sirola and colleagues examined the significance of visiting gambling-related online communities to excessive gambling among Finnish young people between ages 15 and 25 [36•]. Results showed that visiting gambling-related online communities was associated with both at-risk gambling and probable pathological gambling. Most popular discussion topics in the gambling-themed online communities were gambling tips followed by gambling experiences and gambling in general. Similar results were also reported by an Australian study examining predictors of gambling and problem gambling among a sample of adults [44•]. According to the findings, discussing gambling online (e.g., on internet discussion boards) was correlated with gambling participation. Furthermore, participating in online discussions about betting on gaming tables at casinos was among the top five predictors of problem gambling among the sample.

Another study by Sirola and colleagues examined Finnish and US participants' (aged 15–30) daily participation in online gambling-communities and motivating factors of using such communities [45•]. They found that excessive gambling was associated with daily online gambling-community participation across the samples. Daily users of online gambling-communities were also found to prefer pro-gambling content in a behavioral measure assessment. Among Finnish online gambling-community users, loneliness moderated the relationship between daily online gambling-community participation and excessive gambling and the association between the two was stronger among those who experienced higher levels of loneliness.

A cross-national study by Oksanen and colleagues applied a social ecological model to analyze problem gambling among young people in Finland, Spain, South Korea, and the USA [46••]. The social ecological model considers the development of gambling problems from the perspective of four nested spheres: individual, interpersonal, organizational, and societal. According to the model, online communities belong to the organizational sphere. The study showed that out of all the predictors included in the model, participation in online gambling communities had the strongest association with problem gambling. Spanish young people were most active in participating in online gambling communities, followed by Finnish and US youths, participation being lowest among South Korean young people. Echoing the findings by Sirola and colleagues [36•], online communities were mainly used for sharing gambling tips and experiences [46••].

A related study investigated problem gamblers' life satisfaction [47•]. Samples consisted of young people aged 15–25 from Finland, Spain, South Korea, and the USA. The study analyzed online-gambling community participation in relation to life satisfaction, and how these are related to gambling status categorized as those with no gambling problems, at-risk gamblers, or probable pathological gamblers. The analyses showed that those young individuals who were daily users of online-gambling communities were also more satisfied with their lives. The analyses further revealed an interaction between online-gambling community participation and problem gambling by indicating that problem gamblers who used online-gambling communities reported higher life satisfaction. The authors also tested the meaning of offline relationships in gambling-related activities. The effect of online-gambling community participation was found to be smaller among those young gamblers who reported higher belonging to offline groups (i.e., family, friendships, school, or work community). Examining country differences revealed that the association between weak offline relationships and problem gambling was strongest among Finnish young people.

In another study examining cross-national samples of young people, problem gambling was found to be associated with belonging to any online community via involvement in social media identity bubbles [48•]. These results were further elaborated by Sirola and colleagues who examined whether involvement in online social media identity bubbles predicts interest in gambling content and following observed group norms on social media [43••]. Analyses were based on samples of young people from Finland, Spain, South Korea, and the USA. The study also included an experimental part observing group effects taking place in online interaction. According to the results, self-reported involvement in social media identity bubbles associated positively with interest toward gambling content seen online. Conformity towards

perceived positive group norm about gambling (i.e., stance where majority seems to like gambling), was related to respondents' positive interest towards gambling. Combined, the results of these two studies [43••, 48•] suggest that concurrent involvement in social media identity bubbles which are based on shared identity, homophily, and reliance on ingroup information, and belonging to an online community is associated with a higher rate of problem gambling. The identity bubble effect might be a factor that makes online communities influential for their users [15, 25]. Especially young people are likely to be susceptible to social influence within online groups and conform to observed group norms more often than individuals who do not perceive to share commonalities with other group members [43••].

Discussion

This systematic review explored the role of online communities and groups in gambling behaviors. An additional aim was to investigate how involvement in online communities and groups is associated with problem gambling. Systematic literature search identified 17 articles that qualified for analyses based on inclusion criteria. According to the results, online discussion forums are easily accessible and mostly used for sharing gambling experiences, tips, and sentiments, and learning together about betting and gambling techniques. Some online communities are based on real-life gambling contacts that have extended to online spaces. These types of online groups expand gambling and betting opportunities and support gambling habits, thus strengthening the notion of gambling as a lifestyle. Discussion forums offered by gambling help websites and authorities are helpful for those seeking support and are often the first source of help for problem gamblers and their significant others. We further found that online gambling community participation was consistently and positively associated with problem gambling in several studies using samples from different countries.

With the rise of the internet and social media, it has become considerably easier to form and join communities where people with similar interests can interact. Because of peoples' communication patterns and algorithms of social media platforms, the communities tend to become homophilic and users are more likely to rely on information coming from other community members. One-sided communication among perceived similar others and without contrasting views may influence online community users' thoughts, beliefs, and decisions about gambling. Providing opposing views to the group or removing oneself from gambling activities could mean the end of online community's friendship that is based on a shared interest in gambling [38••].

Online discussion forums are convenient outlets for problem gamblers to express feelings they might not feel comfortable sharing in face-to-face situations. They offer gamblers and problem gamblers a place to share their stories without the fear of being judged, talk about how gambling has affected their lives, and disclose how they currently feel about themselves. These notions were also supported in this review. Also consistent with prior research [6, 27, 49], gambling was mostly portrayed and perceived in a positive light in various online contexts examined in this study. This perception seems to be supported in communities that engage in gambling behaviors and subsequently attract more users who have a pre-existing interest toward gambling. Joining a gambling-themed online community is a socially transmitted behavior, as community members invite their friends or online contacts to join. Sports betting in particular is socialized through peers [37•]. As found in this review, gambling communities are likely to help individuals establish new gambling rituals and behaviors.

The sense of belonging that online communities and groups offer might be an important factor for individuals participating in gambling communities and groups. A number of research so far [e.g., 36•, 47•, 48•] show that a weaker belonging to primary groups offline, such as family, friends, school, or community is associated with using gambling-themed online communities. Strong social relationships offline could thus function as a buffer against experiencing gambling problems.

Results of the reviewed studies support past research by showing that gambling and problems related to it are typically associated with male gender [50, 51]. It should be noted, however, that majority of gambling-related online community users are male which may deter female or other gendered members from engaging in the community discussions as they may consider the online community environment intimidating [33•]. At the same time, studies are more likely to focus on investigating samples consisting of male participants [37•, 38••] while female and other minority perspectives remain unexamined. Therefore, there is a need to further explore gender differences in the motivations of use and involvement in gambling-themed online communities. Future research should also increasingly consider online communities involving non-traditional forms of gambling, such as cryptocurrency trading, as more ways to speculate on the markets are being developed [52]. Future research should also further consider the role of social media in gambling, as gambling opportunities and activities are becoming more attached to social media networking. Methodologically, there is a lack of longitudinal studies. Future studies should include longitudinal research designs in investigating the meaning of online communities in gambling. Also, investigations using experimental designs are

welcomed. Further approaches could involve large-scale social media datasets and methods of computational social sciences. Due to emerging technologies, it can be expected that the field of gambling research requires responding to these old challenges in new settings.

Limitations

This study reviewed literature from the past 5 years, but some relevant articles might have gone unnoticed in the literature search given the specifications of the search phrase. Our inclusion criteria left out studies investigating hypothetical online communities or groups (e.g., how willing individuals would be to use gambling-themed online platforms if they were offered or invited to). Thus, additional information regarding motivations of use and the need for use of such communities might have been missed. Future reviews should investigate the perceived advantages and harms of online community participation of gamblers.

Conclusions

Currently, there is an ecosystem available for online gamblers, extending from gambling opportunities to online communities that give gamblers and individuals interested in gambling a chance to meet and discuss about their experiences and thoughts. The proliferation of gambling-themed communities online is concerning especially when considering the young generation who uses the internet and social media platforms at a high rate. Based on this systematic review, active participation in online communities that support harmful gambling habits involves risks for gambling problems. The results imply that gambling-themed online platforms could be better utilized to reach at-risk gamblers and problem gamblers and offer them information about the intervention and treatment resources available. Stricter policies about gambling companies using social media profiles to promote and spread invitations to social gambling are needed.

Declarations

Conflict of Interest The authors declare no competing interests.

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.

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• Of importance
•• Of major importance

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