

A Systematic Mapping of Game-based Interventions for Social Connection

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Abstract. Introduction: Many people experience negative impacts on their mental health due to lack of social connection related to social barriers and social exclusion, difficulties in socializing, inter-relational problems, pre-existing mental health conditions among other factors. And many of those people are players who resort to gaming as a tool for socializing and connecting. **Objective:** The objective of this review was to investigate if and how that social aspect of video games has been used in game-based interventions for promoting social connection as the intended outcome. **Methodology:** For that purpose, a systematic review was conducted based on a semantic field around the terms connection, connectedness, social, intervention and video games, narrowed down into a concise syntax and applied to six relevant databases for health research, followed by a screening protocol with selection criteria based on one guiding question (GQ) and a thematic synthesis based on seven elaborative questions (EQ). **Results:** Only four studies met the inclusion criteria, but provided quantitative and qualitative data to map the literature on game-based interventions for social connection. The review process demonstrated a striking lack of research aimed at investigating the potential of social gaming interventions in the context of mental health. But that lack also represents a rich opportunity offered by video games to expand the scope of strategies to mitigate isolation and loneliness.

Keywords: Game-based Interventions, Mental Health, Social Connection, Systematic Review, Video Games.

1. Introduction

Social connection is an important health determinant [CDC 2024] that can be undermined by multiple factors, such as an increase in the prevalence of loneliness as individuals age and their social networks shrink [Wickramaratne 2022] and even by intersectional factors. Evidence has shown associations between racial discrimination, lack of social connection and negative health outcomes [RANSOME 2023]. Many people experience negative impacts on their sense of well-being due to lack of social connection related to social barriers and social exclusion, difficulties in socializing (like social anxiety, poor social skills), inter-relational problems, pre-existing mental health conditions among other factors. Also, many of those people are players who resort to gaming as a social interaction facilitator.

Players have been using video games to bridge connections and build community

[Jansen 2025]. Video games have helped people cope with isolation [Lufkin 2020] and mental health challenges, especially after the COVID pandemic [Gliosci and Silva 2023]. Online multiplayer games help develop empathy through exposure to different people and cultures [Knorr 2020], and gaming has been a significant socialization tool for diverse communities [Hossain and Al Fahad 2025]. For digital natives, gaming has become a ubiquitous aspect of contemporary social life [Dominguez 2025].

It has been observed that players often develop interpersonal relationships within the digital worlds of games [Choi and Williams 2025], but they also like to expand their communal experience across streaming platforms (e.g., participating in live gameplay streams on Twitch or YouTube) and social networks like the forum Reddit, where we have noticed an increase in threads related to social gaming over the last few years. Discussions found on Reddit suggest that social gaming can facilitate socialization and mitigate loneliness for many players who experience social challenges in physical life. We have selected a few illustrative examples from a thread on how players perceive the game *Sky: Children of the Light* to help them cope with social anxiety [Reddit 2024]:

1. “I like that I can mentally prepare before chatting on a bench with someone, and that chat has to be unlocked without one. I’m cursed with introversion, social anxiety, and abandonment trauma that tears me apart when alone.”
2. “I found an amazing welcoming and wholesome community, especially back then when it was still fairly small and niche, that I enjoyed playing with.”
3. “Sky helped me resocialize myself by giving the choice to be anonymous and letting me choose who I want to interact with. I can change my appearance based on my mood which is harder for me to do irl, but I’m still me no matter what I look like. The game helps me express myself in a safe space.”
4. “if there’s one thing I like about sky’s lack of actual speaking communication it’s that you don’t have to worry about saying something wrong, emotes are pretty good at NOT giving anxiety and even if you mess up an emote it’s generally easy to correct or people will usually just find it silly [...] obviously you can still talk, it’s just a bit harder to talk on sky than other games and so less likely to cause massive anxiety [...] the blacked out figures and lack of actual expressions on the characters just kinda help me not feel too pressured”
5. “It’s also easier to start advocating for myself in a game before irl [...] Like if I’m uncomfortable, I can just leave or if I’m not being treated right, I can easily do something about it, it’s like starting smaller for in real life.”

From such discussions, we infer that gaming might be a particularly helpful tool that could be applied in game-based interventions for social connection. Nonetheless, despite the popularity of video games, its applied therapeutic potential seems overlooked regarding the social aspect of gaming. We have conducted preliminary exploratory searches and found literature on socialization mediated by internet technology use, mobile phones and social media [Wu et al. 2016], and by board games [Bodner et al. 2024] – yet there is an apparent lack of research gathering specific evidence on socialization mediated by gaming to support decision-making on the implementation of interventions for mental health aimed at players.

Therefore, we proceeded to conduct this study to map how the social aspect of video games has been used in mental health interventions in general, to identify gaps and opportunities. The methodology of this review consisted of the steps described in the next section.

2. Method

The main objective of this review was to investigate if and how the social aspect of video games has been used in mental health interventions in general, but secondarily, we aimed to identify if there were game-based interventions specifically designed to foster social connection and social well-being as the intended outcomes.

For that purpose, we mapped the recent literature on game-based interventions with a focus on the social aspect of video games. Our methodological approach combines characteristics of systematic review with systematic mapping, as we wanted to dissect the results to highlight relevant areas but also significant gaps in the literature [Khalil et al. 2025], which will be further addressed in the Discussion section.

Our method was guided by the following PICO [Cochrane n.d.] components:

- P (patient): people of all sex/gender who experience negative impacts on their sense of well-being due to lack of social connection.
- I (intervention): game-based interventions with a focus on the social aspect of video games.
- C (comparison): traditional interventions for social connectedness, not game based.
- O (outcomes): mitigation of loneliness, reduction of social isolation, increase in the general sense of wellbeing.

2.1. Research question and search strategy

First, a Guiding Question (GQ) was defined to represent the general goal of this review: what does the recent scientific literature inform about game-based interventions focused on social connection?

We determined the last 10 years (2015-2025) as the period, then selected six highly relevant, widely consulted databases for mental health research: PubMed, LILACS, SciELO, PsycNet, SCOPUS and ScienceDirect. We created a semantic field of fourteen relevant keywords — *wellbeing, connection, connectedness, social connection, social connectedness, intervention, game-based intervention, games, digital games, video games, youth, young people, adolescent, adolescence* — and performed preliminary search tests with different combinations. We noticed that the more specific the terms applied in regard to the phenomenon (such as *connectedness* or *social connection*) the less relevant results could be retrieved, so we used the broader term *social*. Conversely, the specific term *video games* was a better filter for retrieving studies related to digital games and excluding other types such as board games. Finally, the term *intervention* guaranteed the retrieval of studies specifically related to game-based interventions, which are the focus of this review. Hence, the most effective combination of keywords proved to be the concise syntax of ("video game") AND ("intervention") AND ("social").

2.2. Inclusion and exclusion criteria

Studies must be written in Portuguese or English, the languages the authors are proficient in. Although this language/regional bias presents a limitation to the review, as it might exclude potentially relevant studies published in other languages, it aims to guarantee that the authors can fully comprehend and thoroughly analyze the retrieved studies. Also, the studies must be published in peer-reviewed, qualified journals, and be available full-text.

Study design filters: clinical trials (RCTs), observational studies and longitudinal studies aimed at identifying and/or measuring impacts of game-based interventions on connection and wellbeing. Eligible studies can be either qualitative or quantitative, and regarding the type of study, they must be either observational or experimental studies that describe the implementation of game-based interventions and the results obtained. Interventions must also be socially based: whether the goal is to foster social connection itself or to improve general well-being through social interactions.

Inclusion criteria:

- Studies must be available in full;
- Studies must be original, published in peer-reviewed journals;
- Studies must have been published between 2015 and 2025 (last 10 years);
- Studies must be written in Portuguese or English;
- Studies can be qualitative or quantitative peer-reviewed research papers, and must describe the interventions and outcomes (clinical trials, case studies, reports);
- Studies must specifically use digital games as intervention tools.

Exclusion criteria:

- Studies published in languages other than Portuguese or English;
- Studies that use other types of games (non-digital) or apps as intervention tools;
- Studies unrelated to the research questions.

Study selection: the authors first screened titles and abstracts of all retrieved records to verify if studies met the inclusion criteria and were available in full text. After eliminating duplicates, the authors proceeded to full-text reviewing of the eligible records. The study selection process was documented on a PRISMA flow diagram [Haddaway et al. 2020] shown in Figure 1, which describes the number of studies retrieved, screened, included, excluded, and the reasons for exclusion.

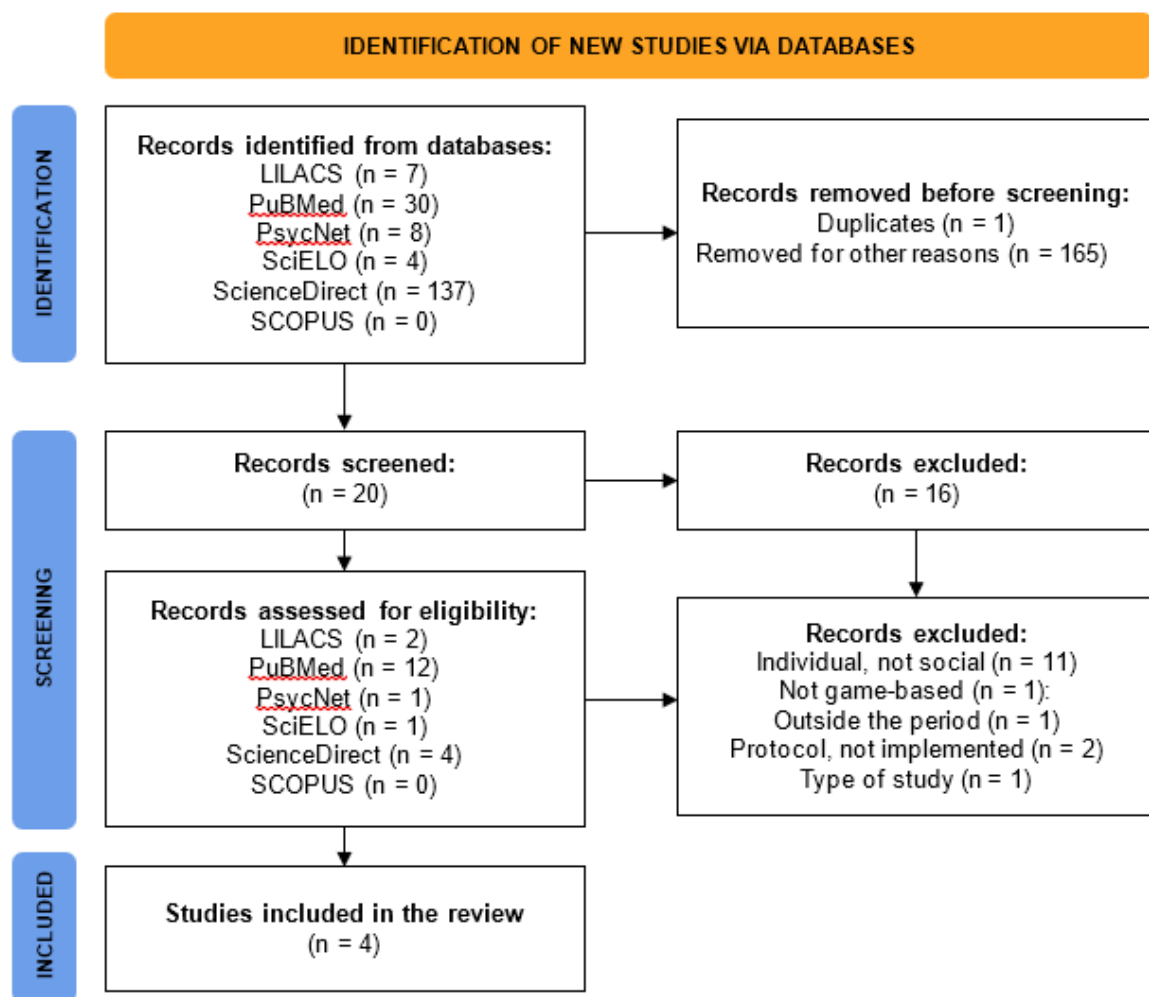


Figure 1. Flow diagram of the review process.

2.3. Results and thematic synthesis

The aforementioned search strategy was applied to the selected databases, and 186 studies published between 2015-2025 were found. Those were filtered by the information contained in titles, keywords and abstracts; full texts were analyzed when preliminary information was not sufficient to determine if the study truly met the inclusion criteria. Twenty studies were found to be valid for further screening [Gliosci and Murta 2026].

After the screening process, we obtained 4 studies that were eligible for review: Liang et al. (2020) from Hong Kong; Beaumont et al. (2021) from Canada; Vaghetti et al. (2022) from Brazil; and Babichenko et al. (2023) from the United States.

We defined the following elaborative questions (EQ) to dissect the studies and to guide a thematic synthesis:

- EQ1: What type of game was used? (E.g., serious, casual.)
- EQ2: For which audience/demographic? (E.g., how many interventions aimed at young people?)
- EQ3: The intervention was carried out in which context? (E.g., clinic, school.)

- EQ4: How was the intervention carried out? (E.g., implementation, the instruments used to measure results, and which aspects are evaluated.)
- EQ5: The intervention was based on any theory/theoretical framework?
- EQ6: Is there evidence of efficacy of game-based interventions in increasing social connection and well-being among players?

The EQs enabled us to identify research variables (e.g., demographics) and extract key qualitative data to map the literature for relevant evidence but also significant gaps. Also, a narrative combination of quantitative and qualitative data serves to support a critical view on the topic, which is presented in the Discussion section. The following topics synthesize information gathered from the thematic synthesis of the data.

Types of games

Liang et al. (2020) used *Kinect Adventures* and *Kinect Sports* on the Xbox 360 Kinect. Vaghetti et al. (2022) also used *Kinect Sports*, along with *Just Dance* on the Xbox 360 with Kinect, *Shape Up* on the Xbox One with Kinect, and *Mario Kart 8* on the Nintendo Wii U. Beaumont et al. (2021) used a gamified, computer-based social skills program called *Secret Agent Society* [Social Science Translated n.d.], which is aimed at children. One study, Babichenko et al. (2022), used a tabletop RPG rather than a digital game, and although it contradicts the inclusion criteria that studies must (specifically) use digital games as interventions tools, we decided to make an exception and include it due to its remote synchronous social experience being analogous to that of online multiplayer games and digital RPGs. This intervention could also be replicated with a video game.

Demographics

Liang et al. (2020) involved 87 voluntary participants in the intervention group, children aged 9-12 years old, 54 boys and 33 girls. Beaumont et al. (2021) involved child-parent pairs, with children aged 7-12, 60 boys and 10 girls. Vaghetti et al. (2022) involved 18 adults with cognitive disabilities and disorders aged between 25 and 59 years old. Babichenko et al. (2023) involved a small sample, since the study was a preliminary protocol test for a larger cohort study. The sample was composed of adolescents with chronic physical or mental conditions aged 14-19 years old, 1 male (cis), 1 female (trans), 1 nonbinary.

Contexts

Two studies, Liang et al. (2020) and Vaghetti et al. (2022), were conducted in public contexts (school, university) and two, Beaumont et al. (2021) and Babichenko et al. (2023), were conducted in private contexts (home, remotely).

Implementation

In Liang et al. (2020), a quasi-experimental study, Xbox consoles connected to TVs and projectors were set up in classrooms. The children attended two 1h sessions a week for 8 weeks, and those were provided as after-school classes. After 10-15 min warm-ups, children could play together, 2 pairs in each room so that no child would have to wait for their turn. Children could freely select their preferred playing partners to enhance their perceived social support. Biofeedback instruments (such as accelerometers) and scales

(such as the Social Support for Exercise scale) were used for objective data; the social aspect served mostly to measure participant enjoyment and engagement in the physical activity.

In Beaumont et al. (2021), a randomized control trial conducted in the context of the pandemic, the study was carried out remotely. Each child-parent pair played on their own computers over a period of weeks. This implementation was designed to overcome financial and geographical barriers. Behavioral changes were observed by the parents and social skills improvement were assessed using the Mean Parent-Reported Social Skills (SSQ-P) score and the Mean Parent-Reported Social and Emotion-Regulation Skills (ERSSQ-P) score.

In Vaghetti et al. (2022), an exploratory qualitative research, the intervention was implemented at an Exergame Lab at the Department of Physical Education at a Brazilian university. Participants played exergames for two hours, once a week, along 25 sessions. The participants were instructed to follow the natural narrative and gameplay flow of the games, all based on body movements (sports, dance). Upon arriving, individuals were incentivized to just start playing freely and interacting with each other, which was easier for more communicative individuals, but the research team took care to help the shyer individuals engage. In the final session, the parents were invited to participate in the exergame activities. The participants and their parents answered semi-structured interviews on their previous expectations versus how they felt about the experience, and if they noticed positive behavior and mood changes in the participants. Interviews underwent content analysis.

In Babichenko et al. (2023), a cohort study, the participants gathered on a private Discord server and used the text and voice chat functionalities to interact. They participated in 5 moderated sessions assuming roles of superheroes. The study relied mostly on self-report. After each game session, participants completed surveys to assess changes in anxiety, depression, and social isolation, such as the Generalized Anxiety Disorder Questionnaire. Aspects of user experience were also rated, such as player behavior, comfort, and engagement. Postgame survey data underwent qualitative analysis to assess participants' levels of engagement and enjoyment.

Theory

A specific theory or theoretical framework was cited in one study. The *Secret Agent Society* [Beaumont et al., 2021] is said to be based on a number of different theories of child development, psychopathology, therapy, and behavior change [Social Science Translated n.d.] and it is, itself, a cognitive behavior therapy based framework.

Evidence

In Liang et al. (2020), main outcomes included sedentary time, percentage body fat, body mass index; but enjoyment, self-efficacy and social support were analyzed as psychosocial variables. The study found evidence that social intervention increased activity levels among children. It also suggests that future studies should examine in what circumstances such interventions can influence psychosocial factors, for example, the effects of combining school and family settings or implementing the intervention with different genders and cultures.

In Beaumont et al. (2021), the social aspect was limited to parent-support, with children playing with their parents at home. But it improved participants' social skills in comparison to a program applied by a professional caregiver.

Vaghetti et al. (2022) found that participants improved their independence and socialization, and noted that such intervention could also be applied at home to help parents and caregivers improve aspects of the daily life of adults with cognitive deficits and disorders.

In Babichenko et al. (2023), participants demonstrated a significant increase in levels of engagement and enjoyment of the social activity, which improved their perception of anxiety and depression symptoms, thus, improving their mood along the time

3. Discussion

There seems to be a lack of specific literature on social connection mediated by video games, as the construct of social connection seems scarcely studied in the context of game-based interventions. We started testing the more specific terms "connection" and "social connection" in the search syntax, but had to apply the broader term "social" to find relevant results related to game-based interventions.

In light of our preliminary empirical observation, this review demonstrated that scientific research has a lot to advance in exploring the social aspect of video games specifically in the context of game-based interventions for mental health. A recent review by Gonçalves et al. (2023), while addressing social gaming in a broader sense, had already identified a *lack of constructs and established methodologies* to assess social outcomes in social gaming experiences. A report on social connection published by the WHO in 2025 has also highlighted a lack of interventions *specifically designed to foster social connection or develop socially cohesive communities*, noting that *more evidence is available on how interventions affect loneliness than on how interventions affect social isolation or forms of social connection*.

Our review searched for studies that used social gaming in interventions aimed at producing/assessing social connectedness outcomes, but found very few results – only four studies in the past ten years. While it has been shown that online gaming has had significant impact on different people and cultures, and for diverse communities, there is also a lack of demographic diversity.

The samples are generally small, a limitation that could potentially be overcome by testing the feasibility of larger social interventions in communal spaces (like schools) or using online multiplayer games. Most studies are aimed at children and adolescents, with almost no studies focused on adults, who are the largest consumer demographic of games [Statista 2025].

Boys seem to be generally the more engaged participants in research with games. Some studies showed girls were more likely to drop out before research completion. With adults, the gender ratio was more balanced. There is room for investigating potential biases or barriers at play in making game-based interventions more appealing to young girls. Only one study took sexual/gender diversity into account and included gender non-

conforming participants. There is room for more inclusivity either integrating the LGBTQ+ public in mixed interventions or implementing interventions suited to their specific needs.

Studies used more commercial games (mostly exergames) than serious games, offering more familiar gaming experiences that seem to increase participant engagement. But there was no intervention with online multiplayer games, only one with a tabletop RPG played remotely. That is a missed opportunity, as online multiplayer games are extremely popular and often serve as social bridges in casual contexts [Gregerson 2024].

Regarding context, game-based interventions are commonly applied in schools and clinics. A sense of greater peer support might arise within groups from a shared social environment (e.g., students from the same school). However, after the COVID-19 pandemic, studies have been conducted remotely, overcoming access barriers (social, economic, geographical) and helping people with less socialization options. There is opportunity for online game-based interventions to gather larger groups and promote interaction between people of different backgrounds (cultural, ethnic) or even different personality types (e.g., extroverts and introverts), with the aim of fostering empathy and teamwork. Remote interventions may also be beneficial to people with social anxiety, who could practice social skills in safe virtual spaces guided by mental health professionals before exposure in physical life.

Most game-based interventions aim to assess objective aspects of the gaming experience (e.g., decrease in sedentary time through playing exergames). The social aspect of gaming is more used as a motivating element that increases participant engagement, almost as a form of gamified research. Social connection is rarely the intended outcome itself. There was only one qualitative study, as little investigation is made into the subjective aspects of the social gaming experience. Another opportunity are longitudinal studies to track long-term effects of socialization mediated by video games – for example, whether the bonds formed in social gaming interventions can extend beyond the virtual space.

Lastly, the studies provide evidence of effectiveness for game-based interventions aimed at specific audiences such as autistic individuals and people with cognitive deficits, with the social aspect used as a motivational or functional element (e.g., social skills training), but not social connection itself as the main outcome.

4. Conclusion

The mapping of the most recent literature on game-based interventions in the context of mental health highlighted a striking lack of research exploring the therapeutic potential of social gaming. Social connection is a significant protective factor in mental health, but very few studies seem to consider the social aspect of video games in their methodology or implementation. Furthermore, there are almost no interventions specifically focused on fostering social connection as their outcome. According to the WHO (2025), this is an important gap in the field that requires further work.

Usually, game-based interventions for mental health are delivered individually, and there is opportunity for implementation of group interventions with peer support. We believe that young populations could particularly benefit, as they are already accustomed

to gathering in online communities and sharing their gaming experiences on social media.

Social gaming interventions could also favor various contexts and challenges to socialization, even approach intersectionality. For example, it could be applied in schools with the aim of connecting diverse student groups (e.g., gender non-confirming, ethnic, neurodivergent students) through a shared hobby. Also, studies during the COVID-19 pandemic [Gliosci and Silva 2023; Ballard and Spencer 2023] have demonstrated social gaming can be particularly helpful in contexts of social isolation.

There is a lot of important, necessary research being conducted on potential adverse effects of gaming, with gaming disorder being an issue of particular interest to mental health researchers [Stevens et al. 2021]. But gaming can also offer opportunities for promoting health, socialization, inclusion [Fortim 2025]. This study proposes that it is equally important to further research on the potential benefits that players themselves have been spontaneously reporting.

More scientific studies should be conducted to explore the viability of social gaming interventions and measure its social outcomes. Decision-makers seeking to expand strategies available to mitigate the adverse effects of isolation and loneliness, especially among youth, could benefit from looking more into digital games and virtual communities.

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