Mental Health Professionals' Views on Gaming to Inform the Design of Game-Based Interventions: Qualitative Study

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Abstract

Background: Game-based digital mental health interventions deliver therapeutic mechanisms of action using video games as a medium, making them distinct from traditional psychotherapies and pharmacotherapies. Mental health professionals' (MHPs) views influence the adoption of such novel treatments, but their perceptions have yet remained underexplored.

Objective: This qualitative study investigates how MHPs view video games and gaming, aiming to inform the design and implementation of game-based digital mental health interventions.

Methods: We combined three qualitative interview datasets (n = 19, n = 16, n = 6) capturing Finnish MHPs' views on video games, and analyzed the data (n = 41) using Reflexive Thematic Analysis (RTA). Additionally, two post hoc analyses were conducted with complementary qualitative questionnaire data (n = 80) collected alongside the first dataset.

Results: RTA generated three themes. 1) Personal recreation, clinically harmful. MHPs' personal gaming experiences were largely positive, while their clinical encounters often linked gaming to problems. 2) Adverse technology and meaningful culture. MHPs framed gaming as both a potentially harmful technology and a significant cultural phenomenon. 3) Holistic exploration of clients' gaming. MHPs evaluated gaming within the broader context of clients' lives, identifying two courses through which gaming could evolve into a problem: from connection to loneliness and from comfort to avoidance. The first post hoc analysis reinforced the observed self-client attitude asymmetry, and the second described the benefits MHPs expected from game-based interventions and for whom.

Conclusions: MHPs' views on video games reflect self-client attitude asymmetry, conflicting frames, and holistic exploration, revealing tensions that extend beyond a simple positive-negative spectrum. Addressing these nuanced perceptions may support the effective design and implementation of game-based digital mental health interventions.

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Mental Health Professionals' Views on Gaming to Inform the Design of Game-Based Interventions: Qualitative Study

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Results: RTA generated three themes. 1) *Personal recreation, clinically harmful.* MHPs' personal gaming experiences were largely positive, while their clinical encounters often linked gaming to problems. 2) *Adverse technology and meaningful culture.* MHPs framed gaming as both a potentially harmful technology and a significant cultural phenomenon. 3) *Holistic exploration of clients' gaming.* MHPs evaluated gaming within the broader context of clients' lives, identifying two courses through which gaming could evolve into a problem: from connection to loneliness and from comfort to avoidance. The first *post hoc* analysis reinforced the observed self-client attitude asymmetry, and the second described the benefits MHPs expected from game-based interventions and for whom.

Conclusion: MHPs' views on video games reflect self-client attitude asymmetry, conflicting frames, and holistic exploration, revealing tensions that extend beyond a simple positive-negative spectrum. Addressing these nuanced perceptions may support the effective design and implementation of game-based digital mental health interventions.

Keywords: Clinical practice; Digital interventions; Mental health; Mental health professionals; Implementation science; Qualitative study; Serious games; Thematic Analysis; User-centered design; Video Games

Introduction

Game-based interventions as a new treatment modality

Game-based digital mental health interventions use elements from entertainment games to achieve health-related aims (1). They include both fully-fledged serious games and gamified interventions (2), and here we focus on the former category, referred to as game-based interventions. The rationale for designing such interventions includes increasing intervention appeal to facilitate treatment access (3), increasing user engagement with digital interventions to alleviate the well-known challenge of low user engagement (4), and establishing new modes of treatment to complement psychological interventions and pharmacotherapy, which do not help all clients (5,6). Preliminary evidence supports the efficacy of game-based interventions for depression (7), anxiety (8), and other mental disorders (9,10). However, few such interventions have been integrated into clinical practice. The translation from the controlled research environments to real-world settings remains a central challenge for many digital interventions (11), including game-based interventions.

Beyond clinical efficacy, the success of game-based interventions depends on their acceptability (12–14). The evaluation of acceptability has typically focused on end-users (13), but in healthcare, clinical stakeholders also hold sway: they act as gatekeepers who recommend and prescribe digital interventions (15). As healthcare providers' attitudes and consequent behavior can make or break the implementation of novel digital tools (16,17), it is vital to understand their perceptions (18–22). This is particularly significant considering that game-based interventions suggest a change of meaning (23): what looks like an entertainment video game can be therapeutic. Such a category shift offers opportunities for reconceptualizing and renewing mental health interventions (24), but it can also provoke resistance. Our aim in this study is to examine mental health professionals' (MHP) views on video games and gaming in clinical contexts to inform the user-centered design of game-based interventions.

MHPs' views on game-based interventions are mixed

Game-based interventions are still relatively uncommon in clinical practice, and there are few studies examining MHPs' views on them. Surveys indicate that only 12–16% of psychotherapists know of the existence of such treatments, and only 1–7% use them (25–27). Game-based interventions are perceived to offer opportunities for clients to engage with therapeutic content, foster self-efficacy and responsibility, and improve therapy access and patient motivation (26). However, they are also viewed as potentially increasing avoidance and isolation, promoting gambling addiction and dependence, and devaluing of therapy. One study found that 5% of psychotherapists exhibit unfavorable and 10% favorable attitudes towards game-based interventions (27).

MHPs' mixed views on game-based interventions may arise from their perceptions of the

underlying media, namely video games. MHPs are concerned about their addictive and violence-inciting potential, as well as their negative influence on children, but they are simultaneously open to using them in clinical contexts (28). MHPs identify both disadvantages and benefits related to gaming: *"Paradoxically, it seems that the way gaming benefits one individual may disrupt another and vice versa,"* summarize Alho and Mankinen (29). Such conflicting attitudes mirror lay perspectives regarding video games (28,30): that they are associated with aggressive (31,32) and addictive behavior (33,34), while also being popular entertainment (35,36) and linked to positive effects on affective well-being (37), cognitive skills (38,39), and even intelligence (40,41). Przybylski encapsulates this attitudinal tension concisely: *"Whether electronic games are on balance a good or bad thing remains an open question, but is a topic about which people hold strong opinions"* (42). This contradiction may be a key distinction between MHPs' views on game-based and non-game-based interventions, and it calls for further investigation using qualitative interviews. Because many MHPs are not familiar with game-based interventions, this study examines their views on video games, the medium on which these treatments are based.

Research question

The research question of this study is: how do MHPs view video games in clinical contexts? This study aims to inform researchers, developers, and designers working with game-based digital mental health interventions and their implementation.

Methods

Research design

This qualitative study investigated the views of Finnish MHPs on video games and gaming. This aimed to inform the design and development of game-based interventions: both the pre-development (43) and the later implementation phase (22). The study data included three distinct interview datasets, which were gathered independently by Lukka et al. (n = 19) (15), Alho and Mankinen (n = 16) (44), and Siutila et al. (n = 6) (45), for a total of 41 MHP interviews (**Table 1**). All three datasets concerned MHPs' views on video games but used slightly different interview guides as described in detail below. The inclusion of three complementary datasets enabled data source and investigator triangulation (46). The combined datasets were analyzed using Reflexive Thematic Analysis (RTA) (47,48), which led to the generation of three themes. After the interview data analysis, two *post hoc* analyses were conducted using questionnaire data (n = 80) that was gathered with the first dataset.

Table 1. Interviewee demographics.

	Dataset 1	Dataset 2		Dataset 3	Datasets 1–3
	Interviewees 1–19: MHPs (n = 19)	Interviewees 20–25: Psychology students (n = 6)	Interviewees 26–35: Psychologists (n = 10)	Interviewees 36–41: MHPs (n = 6)	Interviewees 1–41 (n = 41)
Gender					
Woman	13 (68%)	3 (50%)	6 (60%)	1 (17%)	23 (56%)
Man	6 (32%)	3 (50%)	4 (40%)	5 (83%)	18 (44%)
Age					
18-29	1 (5%)	0	4 (40%)	0	5 (12%)
30-39	3 (16%)	0	4 (40%)	0	7 (17%)
40-49	6 (32%)	0	1 (10%)	0	7 (17%)

50-59	7 (37%)	0	1 (10%)	0	8 (20%)
60-66	2 (11%)	0	0	0	2 (5%)
Unknown	0	6 (100%)	0	6 (100%)	12 (29%)
Years of working experience					
0	0	6 (100%)	0	0	6 (15%)
<5	4 (21%)	0	7 (70%)	0	11 (27%)
5-10	3 (16%)	0	1 (10%)	0	4 (10%)
10-15	2 (11%)	0	1 (10%)	0	3 (7%)
>15	10 (53%)	0	1 (10%)	0	11 (27%)
Unknown	0	0	0	6 (100%)	6 (15%)
Plays games					
Yes	9 (47%)	3 (50%)	6 (60%)	6 (100%)	18 (51%)
No	10 (53%)	3 (50%)	4 (40%)	0	17 (49%)

Dataset 1: 19 interviews

Dataset 1 was gathered to study the role digital tools and video games had on Finnish MHPs' clinical practices. It was generated by the first author of the present study, which ensured that the analysis had direct access to all contextual factors of the interview setting and elements that were not interpretable from the transcribed text files. The study was approved by the Aalto University research ethics committee (D/508/03.04/2022), and pre-registered on the Open Science Framework (49).

The study participants were recruited through professional associations, healthcare organizations, social media, and snowballing. 80 MHPs completed an online questionnaire, which included an informed consent form: 46 (58%) wanted to participate only in the questionnaire, 34 (43%) also in the interview. The first author contacted 24 MHPs in the latter group via email primarily in registration order and received 21 (88%) responses of whom 2 withdrew before the interview. The 19 (79%) interviewed MHPs were licensed healthcare professionals working in mental healthcare and had at least one client contact per week. We refer to the prior paper for the detailed demographic characteristics of these participants (15).

The first author conducted the semi-structured interviews (50) using an interview guide (available at (15)). The interview included two sections: one on digital tool use, and another on video games. A prior study (15) analyzed the former section, but not the latter, which is under investigation in the present study. The interviews were conducted in Finnish via Zoom (Zoom Video Communications Inc.) between May and September 2022, and they had an average duration of 57 minutes (SD = 9 min). They were audio recorded with the interviewee's explicit permission, and the first author transcribed the recordings verbatim for analysis.

Dataset 2: 14 interviews

Dataset 2 was gathered to study psychologists' and psychology students' attitudes toward video games, problematic gaming, and gaming disorder (29). The study did not involve any of the six criteria that lead to ethics review in Finland, therefore ethics review was not applied for (51). The second author acted as the supervisor for this work.

The study recruitment occurred in two parts. First, psychology students were recruited through the university email list, which led to 8 responses of whom 6 were interviewed. Then, gaming and non-gaming licensed psychologists were recruited using social media and emails.

Two researchers conducted the structured interviews. The interview guide (available at (29)) had four sections: background questions explored the participant's clinical background and gaming experience, the adapted attitudes toward gambling scale (52) that was used to study the participant's

attitudes to video games, further questions on attitudes to video games, and questions about the new diagnostic category of gaming disorder. The interviews had an average duration of 35 minutes and they were conducted in Finnish via Zoom between February and March 2021. The interviews were audio-recorded with permission from the interviewee and transcribed verbatim.

The dataset 2 has been published in the Finnish Social Science Data Archive with permission for secondary analysis (44). The dataset reuse (53) was justified by the rationale that the current study was guided by a different and more interpretive research question.

Dataset 3: 6 interviews

Dataset 3 was gathered to study the difference between two types of intensive play: one related to treatment-seeking and the other related to thriving well-being. The research effort was led by the second author (54). The primary participants in the study were people who played digital games actively and had sought help for their gaming-related problems, and those who actively played esports without health problems. These two samples of video game players were contextualized with interviews from Finnish MHPs who had experience in treating at least one client with gaming-related health problems. MHPs (n = 6) were recruited through healthcare institutions and snowballing. Three MHPs were therapists, rest were psychologists. The research received a positive appraisal from the Human Sciences and Ethics Committee of the University of Jyväskylä.

Two researchers interviewed MHPs using a semi-structured 12-item interview guide (available at (45)). The interview examined MHPs' work context, their experiences and practices with treating clients who suffered from gaming-related problems, and MHPs' personal experiences with video games. The interviews had an average duration of 48 minutes (SD = 8 min) and they were conducted remotely on Zoom between June and November 2021. The interviews were recorded with the interviewees' permission and transcribed verbatim.

The dataset 3 has been published in the Finnish Social Science Data Archive with permission for secondary analysis (45). The dataset 3 reuse was justified because it was earlier analyzed via completely different research questions and analytical process, which focused primarily on players rather than MHPs.

Interview data analysis

The analytic approach was exploratory, inductive, interpretative, and pragmatic. We decided to use an exploratory, as opposed to hypothesis-driven, approach due to the characteristics of the research domain (55): there is little prior research on MHPs' attitudes toward video games and game-based digital interventions, and the existing research is somewhat contradictory (56). Therefore, we decided to use an interpretative, ground-up data analysis approach (57) while acknowledging that no research can be fully inductive (58). The analysis was also influenced by the pragmatic aim of furthering game-based digital intervention development, which is derived from the pragmatist stance in healthcare (59), which aims to alleviate suffering and improve well-being.

The data was analyzed using RTA (47,48). The methodological choice was based on our overall evaluation of the research aims, the quality and nature of the data, and our familiarity with the method. We chose to use RTA over coding reliability thematic analysis or codebook thematic analysis (58) due to our inductive and interpretative approach. RTA emphasizes the researchers' active role in the interpretation of data that occurs at the intersection of theoretical assumptions, analytic resources and skills, and the data (58,60). The researcher does not discover, but develops, constructs, and generates themes that are defined as *"patterns of shared meaning, united by a central concept or idea"* (58). This should lead to a *"compelling, insightful, thoughtful, rich, complex, deep, and nuanced"* analysis, which acted as a quality criterion (61).

The first author conducted the analysis (47,58). It began with combining the datasets 1–3 and familiarization with them while making notes. Then, the combined data was systematically coded using Atlas.Ti 23 software (ATLAS.ti GmbH). RTA emphasizes deep engagement with the data (58) and considerable time was given to generating the themes over a period of over half a year. During this time the researcher engaged with the data, coded it, took distance to it, and returned to review the themes several times. The first and the second author reviewed and revised the generated themes in four sense-making sessions. Through this process, three themes eventually became stable and they were illustrated with translated interview quotes with numbers (e.g. #1) that connected them to a particular interviewee and dataset (see **Table 1**). The manuscript was reviewed and revised with the Standards for Reporting Qualitative Research (SRQS) (62) (**Additional file 1**).

The first author rooted the analysis in the data while being mindful that their own experiences in the domain inevitably contribute to their interpretations—in RTA, this awareness acts as a resource (58). Considering positionality, the first author is a Finnish psychologist who has worked in Finnish mental healthcare, which allowed them to relate to the participant's clinical working context. On the other hand, they are experienced in games: they play analog and digital games, have a degree in game design and production, and they have worked with entertainment games (63), serious games (1), and gaming disorder (64). This allowed them to connect with the participant's personal and professional experiences regarding video games. The second author was an interdisciplinary researcher of play and games, with a specific focus on clinical and psychological approaches to gaming. A personal history of active gaming has also contributed to the second author's researcher position.

Post hoc analysis of complementary questionnaire data

After the interview data analysis, two qualitative *post hoc* analyses were designed. They aimed to provide complementary perspectives to the primary interview data analysis. The *post hoc* data consisted of an online questionnaire (**Additional file 2**) that was gathered with Dataset 1. The respondent characteristics were: 80% identified as women, 81% were 30–59 years old, 73% were psychologists, 78% worked full time, 40% worked in specialized healthcare, 39% played video games daily or weekly, 35% did not play video games at all, and the respondents had an average of 16 years of mental health working experience (SD = 12 y) (**Additional file 3**).

The first theme generated with the RTA found that MHPs' personal and professional gaming experiences differed, suggesting self-client attitude asymmetry. The gathered questionnaire data allowed for the methodologic triangulation of this theme (46). Therefore, the first *post hoc* analysis compared the questionnaire respondents' attitudes toward video games in their personal lives (question 22: *"What does playing digital games mean to you?"*) and in their professional context (question 25: *"How does video game play exhibit itself in your client work?"*). The analysis was conducted by deductively coding MHPs' responses by their emotional valence from positive to neutral to negative (65). The results were reported as domain summaries (60).

The three themes generated with the RTA did not provide insights into what kind of benefits game-based interventions could have and for whom. Therefore, we decided to complement the interview data analysis with the second *post hoc* analysis, which analyzed MHPs' responses to the questions regarding the expected benefits of game-based interventions (question 27: *"What benefits in particular would you expect from game-based digital therapies?"*) and their target audience (question 30: *"For whom do you think game-based digital therapies would be most useful and why?"*). This data was categorized with descriptive coding (65), and reported as domain summaries.

Results

The RTA of interview data generated three themes (**Table 2**).

Table 2. The three themes generated with RTA are summarized and illustrated with quotes.

Theme	Description	Illustrative quotes
Personal recreation, clinically harmful	MHPs' views on video games were influenced by the context of their gaming experiences. MHPs' self-selected personal gaming experiences were typically positive and associated with recreation and pastime. In contrast, MHPs' professional experiences with gaming occurred in a problem-focused clinical environment, which associated their clients' gaming with mental health challenges, harm, and potential addiction. However, the client cases could also expand MHPs' views on gaming.	*"Games are close to my heart and I have played since I was a kid. My earliest memories are associated with gaming: I played Super Mario Bros 2 on the Nintendo Entertainment System when I was 4–5 years old."* (#14)
		"I have two children and they play video games. I see what they are doing, and I have learned about that world through them, and I know what it is about." (#17)
		"In my work, I am mostly faced with the problems gaming causes." (#1)
		"[In the clinical context] I have maybe seen the breadth of problematic gaming more than what I would have seen in a hobby. This has broadened my views on how different people benefit from and have problems with games." (#26)
Adverse technology and meaningful culture	MHPs framed video games as both adverse technology and meaningful culture. Here, framing refers to a process of meaning-making through comparison and association. When MHPs framed video games as technology, gaming was associated with smartphones and digital media, which were perceived to have the potential for excessive use and harms. When MHPs framed video games as culture, gaming was compared to storytelling, hobbies, and arts, which were characterized as meaningful activities and recreation. Many MHPs acknowledged the simultaneous presence of both frames, which reflected the complexity of gaming as a societal phenomenon.	*"We encourage people to read, watch movies, listen to music, and engage in other cultural experiences. I think games could very well be in the same category."* (#27)
		"I am occasionally frustrated that gaming is presented alongside snus, cannabis, and alcohol in a preventative substance abuse event. Gaming does not belong to that category, it is a hobby." (#40)
		"Schools have pretty negative views on gaming. The teachers are concerned that children play a lot and spend a lot of time with digital devices." (#32)
		"Games are not a black-and-white thing, but a new phenomenon to cope with. The same goes for smartphones, some people spend

		way too much time on them." (#16)
Holistic exploration of clients' gaming	MHPs explored their clients' lives holistically: their responsibilities, social interactions, rest, exercise, and recreation. Particular attention was paid to whether any of these activities, including but not limited to gaming, had a detrimental effect on other life domains. Thus, the positive and adverse effects of any activity could only be identified by examining life as a whole. The balance between activities could change over time, and MHPs identified two courses where gaming could evolve from a recreational activity to a problem: from connection to loneliness and from comfort to avoidance.	*"I try to think about life as a whole, about all the things that are important to the person. If you miss out on important because of playing, you play too much. This is true for other things as well: sleeping, working, seeing friends, and spending time with the spouse; so I don't think it merely concerns playing."* (#33)
		"I think more important than the hours played is whether gaming has a negative influence on other fields of life." (#24)
		"I don't believe that [excessive] gaming is the root cause, but a symptom." (#14)
		"Most people do not have problems [with gaming]. Those children who have, have other mental health problems or risk factors to them, such as anxiety disorders, social anxiety, maybe difficulties in forming friendships, domestic challenges." (#29)

Personal recreation, clinically harmful

MHPs' views on video games depended on whether they considered their own experiences (as players or spectators) or those of their clients. Gaming represented a long-term interest and hobby for several MHPs: *"I have played quite a lot, for as long as I can remember. My first memory, in fact, is of a video game,"* (#23) explained one interviewee. Such a close relationship with gaming was understandably associated with perceiving the activity positively, even enthusiastically. Other MHPs played digital games more casually or had a more distant, spectator-relationship with gaming. Their second-hand gaming experiences involved observing the gaming of their friends, siblings, spouse, and children, and such connections fostered familiarity with gaming and the perception of it as a meaningful recreational activity. Few MHPs associated video games with themes of threat and control, and they discussed the necessity of and challenges with limiting their children's playtime to ensure moderation and daily rhythm.

The positive connotations associated with gaming in personal contexts were less present in problem-focused professional clinical contexts. Working with people who had mental health challenges often focused attention on problems, implicitly associating gaming with risks, harms, procrastination, interpersonal problems, and addiction. One participant reflected: *"A psychotherapist always faces things that have become a problem. Then, the first association is that someone has a problem with games, that they are addicted or something."* (#17). Such a perspective was reinforced by the clients having little need to explore gaming when it was recreational, positive, and

meaningful. Therefore, MHPs' professional perspective on gaming could be limited, and some felt their views were not representative of the general population. However, this did not necessarily mean their views were negative. Many MHPs acknowledged that gaming could offer their clients a meaningful way to pass the time, relax, socialize, and manage emotional states, but they commonly considered gaming a conflicted or divided topic that was shadowed by its potential harms.

MHPs' personal gaming experiences were often self-affirmingly positive, whereas their professional context was associated with greater possibility for attitudinal change and enrichment. Some MHPs enthusiastic about video games found that their professional experiences had made them more aware of potential problems associated with gaming. One participant described: *"Before [running a video game-related group intervention] I was more open-minded and liberal regarding problematic gaming. Now, I recognize and understand its divisiveness better: even if gaming is meaningful, it is potentially harmful"* (#27). Conversely, a clinician with initial reservations about video games described how they came to appreciate the value gaming offered their clients: *"If I was not working here at the neuropsychiatric clinic, I would probably think differently. I would think that games do more harm than good"* (#9). These attitudinal changes stemmed from client cases that broadened MHPs' perspectives beyond their usual social circumstances. Indeed, some MHPs reflected on case stories, which included cautionary examples, such as a compulsively playing mother and a boy walking into a ditch while playing on their phone, but also inspiring anecdotes such as a physically disabled youth who found rich social contact through games and highly-talented players who earned their living from competitive gaming. These exceptional case stories expanded MHPs' views on gaming through idiosyncratic examples.

Adverse technology and meaningful culture

MHPs framed games as both adverse technology and meaningful culture. By framing we refer to a process in which the interviewee associated and compared gaming with other activities, thus establishing categorical similarity and connection. This allowed MHPs to make sense of gaming by positioning it within broader societal developments and phenomena, which in turn also rationalized their attitudes and cyclically maintained them. Some MHPs emphasized one frame over another, while others acknowledged that gaming exhibited characteristics of both frames. This introduced tension and made it difficult to make sense of gaming as it was not merely harmful or beneficial, but rather had the simultaneous potential for both. Thus, gaming was a complex, divisive, and even polarizing topic, that could not be described in black-and-white terms.

When MHPs framed video games as technology, they grouped and compared them to smartphones, television, streaming services, and social media. Video games were viewed as an inseparable part of societal technologization and digitalization as well as the growing use of digital media and smartphones—in a negative sense. *"I think that the problems with video game playing are part of a broader discussion on the use of technology. – – The same types of addictive features are also present in other digital software, not only in games. Therefore, examining video games independently does not capture the whole they are a part of,"* (#23) reflected one interviewee. Some MHPs considered this change to be linked to the technology and gaming industries, which aimed to design highly engaging products to increase their revenues while presenting themselves favorably as providers of employment and tax revenue. The frame of technology was associated with concerns about excessive digital device use, which could disrupt sleep, detach patients from their bodily experiences, and encourage social withdrawal. *"I am afraid of what kind of a country or world this will become if there is too much digital interaction. It feels as if there is a technological religiosity, and digital playing is only a part of it,"* (#21) explained one participant. When gaming was framed as technology, it was associated with the disproportionate, pervasive, and adverse influence of digital devices on society.

In contrast, some MHPs framed video games as culture. They described gaming as a hobby,

pastime, and recreational activity, which associated it with widely accepted activities such as storytelling, reading, doing crossword puzzles, listening to music, going to the movies, and doing handcrafts. This normalized and depathologized gaming, and linked it with positive, life-enriching, and meaningful experiences, relaxation, and ways to pass the time. Video games were seen as the latest manifestation of the continuous cultural evolution of recreational activities. *"My generation played with dolls, cars, and in sandboxes—these activities have shifted [to video games]"* (#19), described one interviewee. Concerns regarding the ill influence of gaming were perceived as an instance of media panic, where the latest form of media was unnecessarily feared and blamed. Within the frame of culture, the distinct feature of video games was their capability to invite participation in an immersive and sensory-rich story. One clinician characterized this as follows: *"Video games are a form of art that enables processing different themes, telling stories, and stepping into another person's shoes. They do it in a way that is different or unique compared to literature, movies, theater, or other forms of art"* (#31). These features set video games apart from other forms of culture to which they were compared.

Holistic exploration of clients' gaming

MHPs explored their clients' lives holistically. They found that the universal pillars of a good life consisted of sufficient sleep, nutrition, exercise, social relationships, pursuing livelihood through studies or work, and recreation. MHPs consistently positioned video games within recreation where gaming offered challenges, feelings of competence, opportunities for social interaction, and a way to unwind and relax. However, they found that evaluating the overall impact of gaming required considering it against the other life domains, because well-being was a matter of balance. One participant described this as *"a golden middle way"* (#32). Another elaborated: *"If you have a lot of social relationships, do sports, play an instrument, and then sometimes play video games, even a lot, things are in balance. [The influence of gaming] depends on the whole"* (#21). Vice versa, MHPs agreed that disturbances to the balance between activities lead to problems. This meant that one activity, such as gaming, could cause *"harm to other fields of life"* (#9). This included negative influence on responsibilities such as work or studies, or the fulfillment of basic human needs such as nutrition, rest, daily rhythm, exercise, and social contact. Therefore, the activity itself was not perceived as a problem, but its influence on other necessary and intrinsically valuable domains of life. Moreover, the participants did not find that this principle was specific to video games, because anything in excess could be detrimental.

Therapeutic interaction included exploring the position and role video games played in the client's life. The interviewees found that challenges in regulating gaming were rarely the primary reason for help-seeking, but other mental health issues, such as depression and anxiety, were. These symptoms, in turn, had predisposing factors, such as developmental and neuropsychological problems, learning disabilities, and external stressors such as challenging domestic environments, bullying, bereavement, breakup, and loneliness. From this perspective, an existing behavioral problem, such as excessive gaming, could be a coping attempt to an emotional, social, or cognitive issue. Over time, the role of playing may have changed from an initial solution to a rigid, unsuccessful coping mechanism. *"The motivation to playing may not be the same as it once was. It may be more compulsive and routinized, and you may not enjoy it as much,"* (#41) characterized one clinician. Thus, using games as self-help could turn from the alleviation of symptoms to the maintenance of the client's issues.

MHPs described two problematic dynamics in which initial recreational gaming could evolve into a problem: from connection to loneliness and from comfort to avoidance. Regarding the former, MHPs found that players may seek social connection from digital games, for instance, due to shyness or social anxiety. However, finding such online connections may lead to further withdrawal from social contacts outside gaming and exacerbate social anxiety, because the patients do not get

exposure to real-life social situations. *"Multiplayer games are an opportunity to find friends and community from the other side of the world – – but it can also offer an easy way out so that you don't have to think about your feelings of loneliness and find other solutions as you can withdraw to the game world,"* (#31) described one clinician. Considering the latter dynamic, the clients may also struggle with stress and depression, and fail to experience meaning in their lives, which can lead to seeking comfort, feelings of competence, and motivation from digital games. However, because gaming requires less effort than studying or working, this may lead to detrimental avoidance behavior, which prevents solving the underlying issues. Using gaming to manage stress, anxiety, and depression may end up aggravating the problems through self-defeating behavior: *"At least initially, gaming may have been therapeutic. You may have anxiety, depression, or a life crisis, and then you seek comfort from playing. But over time the amount of gaming may increase and become a problem of its own,"* (#37) one clinician portrayed. Differentiating between gaming as avoidance behavior and a coping strategy could be challenging, but it was considered important in understanding the influence of gaming.

Post hoc analysis of questionnaire data

Do MHPs' views on their own and their clients' gaming differ?

This first *post hoc* analysis triangulated the first theme generated in the RTA, investigating whether MHPs' views on their own and their clients' gaming differed. The *post hoc* analysis found that MHPs associated their own video game experiences with more positive meanings compared with their clients' gaming (**Table 3**). When thinking about their own life, 73% of MHPs associated gaming with positive meanings such as recreation, relaxation, benefits, and a way to spend time, whereas considering their clients only 38% made such positive associations. Examining their own life, 16% viewed video games in a negative light as uninteresting, uninspiring, addictive, and a waste of time, whereas when thinking about their clients, 64% were concerned about excessive gaming, gaming-related interpersonal problems, avoidance behavior, and problems with daily rhythm. Overall, this analysis provided further evidence of the self-client attitude asymmetry concerning video games.

Table 3. MHPs (*n* = 80) associate their own and their clients' video game playing with different meanings. The quotes are annotated with the questionnaire respondent number (e.g. #q1).

	"What does playing digital games mean to you?" (question 22)			**"How does video game play exhibit itself in your client work?" (question 25)**		
Categories	**Quote**	***n***	**%**	**Quote**	***n***	**%**
Positive or beneficial	*"A way to spend time with my spouse and friends. Pleasant recreation."* (#q54) *"An opportunity to momentarily disrupt my thoughts by intensively focusing on something else."* (#q46)	58	73	*"Some clients consider playing a meaningful hobby."* (#q9) *"It offers many people a way to relax like watching TV did earlier."* (#q39)	30	38
Neutral	*"I don't have a relationship with playing."* (#q29) *"It is not currently a part of my life at all. I last played in the 90s."* (#q17)	19	24	*"It only shows itself in conversations with clients."* (#q44) *"Almost all clients play."* (#q21)	25	31
Negative or harmful	*"They are something I don't want to give any time from*	13	16	*"People increasingly use these games to avoid real social*	51	64

	my life." (#q6) *"Senseless waste of time and a residue of childhood."* (#q64)			*contacts."* (#q6) *"It maintains insomnia."* (#q20)		

What benefits could game-based interventions have and for whom?

This second *post hoc* analysis complemented the RTA of interview data. It used the questionnaire data to investigate what kind of benefits game-based interventions could have and for whom. Many MHPs (*n* = 37, 46%) found that game-based interventions could be approachable and lower the threshold to participate in treatment. Some MHPs (*n* = 20, 25%) expected that game-based interventions could create therapeutic impact by motivating the client to take care of themselves, be more active, build new skills, and self-reflect. Some MHPs (*n* = 18, 23%) found that game-based interventions could augment and complement traditional therapies by providing structured content between sessions. Few MHPs (*n* = 4, 5%) considered that game-based approaches were not feasible because they do not incorporate the crucial salutatory component of therapeutic, interpersonal interaction.

Many MHPs (*n* = 34, 44%) considered that game-based interventions were particularly suitable for children and youth. This view was occasionally rationalized with younger generations being digitally native, and many MHPs (*n* = 33, 41%) considered that competence with computers or playing video games could facilitate the uptake of game-based interventions. While the mentions of gender were infrequent, MHPs exclusively mentioned boys and men (*n* = 6, 8%) when making such remarks. The participants also considered that game-based interventions could be feasible for clients who were hard to reach, withdraw, or have challenges with interpersonal interaction (*n* = 25, 31%), or have neuropsychological challenges (*n* = 5, 6%). In contrast to these cases that exhibited rather severe psychiatric problems, some participants suggested that the client's symptoms should be mild and that the client should be proactive and capable of using such interventions (*n* = 9, 11%). See **Additional file 4** for quotes.

Discussion

This qualitative study explored Finnish MHPs' views on video games and gaming to inform the user-centered design of game-based interventions. We combined three distinct qualitative interview datasets (*n* = 41) for data source triangulation and analyzed them with RTA. This analysis generated three themes: 1) Personal recreation, clinically harmful, 2) Adverse technology and meaningful culture, and 3) Holistic exploration of clients' gaming (see **Table 3**). We conducted two complementary *post hoc* analyses using questionnaire data (*n* = 80). The first provided further evidence of the self-client attitude asymmetry identified in the first theme (see **Additional file 4**), the second described the kinds of benefits MHPs expected from game-based interventions and for whom. Overall, this study has numerous implications for the user-centered design of game-based interventions.

Interpretations for game-based intervention design

Context influences clinicians' views

This study described how experience context shapes MHPs' attitudes. MHPs' personal gaming experiences were often positive and associated with recreation, which is more common than gaming-related problems (66). In contrast, professional gaming experiences were commonly associated with

a focus on gaming-related problems. Indeed, psychiatry has been described as a *"problem-oriented discipline"* (67), which may mask the potential positive experiences associated with gaming. Consequently, making generalizations about video games from either context alone can lead to attitudinal biases.

This study also found that professional experiences with clients had the potential for enriching MHPs' attitudes through narratives that extended beyond MHPs' usual social circumstances. Gaming-related attitudes thus do not vary only on the positive-negative-spectrum but also in terms of their richness, and game-based intervention designers and developers could seek lead users and champions (68) who have rich and versatile experience and nuanced views on the topic.

A previous study found the lack of gaming experience to be associated with negative assumptions of play (42). However, attitude change can occur through exposure. Ferguson et al. (69), invited older adults to play a video game and measured their attitudes before and after playing. They found that first-hand exposure led to attitudes growing more positive and concluded: *"negative attitudes toward video games exists mainly in the abstract and do not survive direct exposure to individual games"*. This suggests that creating opportunities to try and experience game-based interventions can be an important factor in challenging gaming-related preconceptions and catalyzing acceptability (14).

Exploring gaming motivations

MHPs acknowledged that the impact of gaming was related to playing motivation. Prior studies have found that extrinsic gaming motivations, such as playing to feel better, to control emotional states, or as escapism, are associated with symptoms of gaming disorder (70–72). Our study expands on these studies by describing two clinician-identified courses where recreational gaming could evolve into problematic behaviors: from connection to loneliness and from comfort to avoidance. They illustrate how gaming motivations are not static, but dynamic, shifting states influenced by the players' life context. Such an explorative approach examining patients' motivations is also supported by a recent study that found individual-related factors to explain more of the variance regarding game disorder than the game-specific factors (73). Distinguishing problematic gaming from gaming that acts as a personal resource (74) requires exploring the meaning of gaming with the client.

The impact of gaming being associated with playing motivation suggests an opportunity for intervention developers. The intervention could measure the user's gaming motivations to identify potentially harmful playing styles (70), facilitate self-awareness of the motivations, catalyze insight into the impacts of gaming, and help make behavioral changes when necessary. Such an approach may also be feasible due to the game-based intervention target audience. In an earlier study, we found that a novel game-based intervention appealed particularly to those who already played video games, some of whom already used entertainment games functionally to manage their emotional states (75). Thus, game-based interventions could potentially intervene with both gaming behavior as well as providing support with other life domains. However, intervention designers and developers may need to emphasize the difference between entertainment games and game-based interventions. Entertainment games are played for a range of recreational reasons (70,76), whereas game-based interventions pursue health-related benefits while evoking similar positive game experiences (1). To avoid confusion, it is important to explicitly differentiate the intervention or treatment from entertainment games by positioning them within healthcare and clearly describing their mechanisms of action.

Overcoming player stereotypes

MHPs' attitudes appeared to reflect common stereotypes about video game players as male, young, and socially withdrawn—a perception that has been upheld by the media (77). The second *post hoc*

analysis found that when the MHPs mentioned a player's gender, they exclusively referenced boys and men (see **Additional file 4**). This may be aligned with the marginalization of female video game players. Males more actively exhibit a gamer identity, and female identity may be incongruent with video game playing (78). However, half of video game players are female (36), and a Finnish report found that 59% of females and 71% of males actively play video games (35). Furthermore, depressive and anxiety disorders are more common in females than in males (79), which suggests that the users of game-based interventions for the most common mental disorders could have more female than male users. Indeed, we found that a game-based intervention for depression invited 68% more female sign-ups compared to males, and, 7% of participants chose a non-binary alternative (75). Many MHPs considered gaming as an activity primarily for children and youth. However, while the frequency of playing video games declines with age (35), an average player is 33 years old (36), and 48% of Finns in their 30s play video games at least weekly (35). We found that a game-based intervention for adult depression attracted two-thirds of participants who were in their 20s and 30s—and a fourth of the participants were in their 40s and 50s (75), which suggests that the target audience for game-based interventions may be broader than expected age-wise. Thirdly, some participants associated video game playing with social anxiety, withdrawal, and awkwardness. However, an earlier study that examined the differences in the number of important persons, good friends, and exercise between online players, offline players, and non-players failed to find statistically significant differences between groups (77). Thus, video game player stereotypes do not hold against empirical data, and the finding in this study raises clinically relevant concerns about whether the clients' game-related behaviors and motivations are underexplored when the client does not match the video game player stereotype, which can further maintain the marginalization of non-male and older players.

This finding has implications for game-based intervention research, design, and development: there is a need to study who tries, uses, and benefits from game-based interventions and share the results to expand the understanding of the actual intervention user characteristics. Such target audience profiling through the user journey (75,80) can be complemented by studies on video game playing in the general population.

Examining gaming holistically

The present study found that the MHPs used two non-exclusive and conflicting frames to make sense of gaming: technology and culture. Entmann defines: *"To frame is to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation"* (81). Thus, framing allowed the MHPs to make sense of the complex topic of video games by placing them within the broader societal context (82). When MHPs framed games as technology, it was associated with excessive digitalization and technology use, whereas when they framed gaming as culture, it was associated with beneficial recreation and arts. The present study expands on a previous study, which described four frames for serious games (83), by highlighting two frames salient for MHPs in the clinical contexts. Game-based intervention developers may need to explicitly acknowledge and address the tension between these frames in stakeholder communications and intervention implementation.

Considering that the two frames were conflicting and complementary, the MHPs' sentiment regarding video games may not be meaningfully simplified to a positive-negative -continuum. Indeed, an earlier study (29) indicated that MHPs' views exhibited attitudinal ambivalence (84). However, here we suggest approaching MHPs' perceptions through dialectical thinking, which is characterized by acknowledging change, accepting contradictions, and holism (85). These features were present in how the MHPs explored their clients' lives: they focused on the temporal changes and fluctuations, they considered that activities have the ambivalent potential for both positive and

negative influence, and they examined their clients' lives holistically consisting of numerous activities that related to human needs. Thus, the potential impact of gaming is simultaneously positive and negative, can change, and depends on the client and their context. This kind of dialectical approach may characterize the therapeutic perspective, allowing the uncovering of the multiplicity of meanings associated with gaming (76), and may be hard to capture with Likert-scale measurements.

The dialectical therapeutic approach may also be considered transdiagnostic. The MHPs did not single video games out, as gaming disorder has been suggested to do (56). Rather, they examined the whole of their clients' lives using a simple heuristic: does a specific activity cause harm to other fields of life? This perspective reflects an approach to mental health as a function of the network, where symptoms, activities, and life events influence each other (67,86). Addressing such *"complex, biopsychosocial processes that unfold in individuals over time"* (86) requires transdiagnostic and transtheoretical principles. Indeed, fostering hope, therapeutic alliance, and encouraging insight are generally accepted principles in psychotherapy practice (87), and may be among the common factors for their effectiveness (88,89). The implication for game-based intervention development, and digital intervention development in general, is to continue advancing the theoretical basis for mental disorders and mental health to uncover mechanisms of action that can catalyze change.

Game-based interventions may learn from the transdiagnostic approach, but they may not need to emulate it: the advantages of game-based interventions may differ from those of psychotherapeutic approaches (1,15). Therefore, game-based intervention researchers, designers, and developers may need to reimagine solutions that are native and synergistic with the medium. This may include customizing in-game characters to facilitate user identification (90), encouraging prosocial and collaborative multiplayer interactions to address loneliness, which is a transdiagnostic symptom behind many mental challenges (91), and using generative models to create virtually endless content (92,93). Mohr et al. elaborate further: *"A true paradigm shift cannot be achieved by clinging to old models, however; innovation will require new models of behavior change that move away from traditional psychotherapy models and incorporate more granular understanding of the lives of patients and applications of these technologies"* (24). Consequently, game-based interventions need to find novel ways of responding to the clients' needs. **Table 4** summarizes this study discussion for the user-centered design of game-based interventions.

Table 4. Interpreting the study results to inform the user-centered design of game-based digital mental health interventions.

Seeking lead users and champions who have both	• Personal experience of gaming • Professional experience of gaming-related phenomena in the clinical context
Facilitating first-hand gaming experiences	• Allow MHPs to try entertainment games and game-based interventions in the implementation phase
Challenging video game player stereotypes	• Describing the variance in video game players • Conducting studies to describe and profile game-based intervention users
Focusing on the role of gaming	• Considering the role gaming plays in the client's life, and the influence of gaming motivation • Fostering understanding of both positive and negative influences of gaming • Awareness of the problematic dynamics: from connection to loneliness and from comfort to avoidance

Considering contrasting frames to gaming	• Acknowledging the multiplicity of frames relevant to game-based interventions • Considering the technology-vs-culture tension related to video games
Positioning game-based interventions	• Positioning game-based interventions as digital interventions or therapeutics • Differentiating game-based interventions from entertainment games • Differentiating gamified, serious game, purpose-shifted, and non-game-based interventions • Describing the intervention mechanisms of action clearly
Reimaging solutions	• Integrating the intervention design with research on mental health • Innovating new solutions native and synergistic with the medium

Limitations

The study participants were drawn from a limited geographical area, Finland, that is digitally advanced (94) and where the usage of digital solutions is rather common, also in healthcare (95). Finland also has an active entertainment game industry which employs 4100 people in 2022 (96). These contextual factors may increase familiarity with digital tools and video games. The interview participation may also be associated with self-selection, and interviews may attract participants with an interest in and favorable attitudes toward the topic (97). Follow-up studies are needed to investigate whether the MHPs' frames and self-client attitude asymmetry can be found in other populations and with different methods. Furthermore, we consider it important to conduct follow-up studies that expand the attention from individual MHPs to broader organizational factors and study the implementation efforts of game-based interventions.

Conclusions

This study investigated the views of Finnish MHPs on video games and gaming to inform the user-centered design of game-based digital mental health interventions. We combined three interview datasets and analyzed them using reflexive thematic analysis, generating three themes (see **Table 3**):

1) *Personal recreation, clinically harmful.* MHPs' personal gaming experiences were positive and associated with recreation and leisure, whereas in the problem-focused clinical context, client's gaming was linked to mental health challenges, risks, and potential harms.

2) *Adverse technology and meaningful culture.* When framed as technology, video games were associated with the negative effects of excessive digitalization. When framed as culture, they were linked to beneficial activities, hobbies, and recreation.

3) *Holistic exploration of clients' gaming.* MHPs evaluated gaming in relation to its role, position, and influence on their clients' broader life domains. They identified two dynamics in which gaming could shift from recreation to a problem: from connection to loneliness and from comfort to avoidance.

Post hoc analyses provided complementary evidence. The first confirmed the self–client attitude asymmetry identified in the first theme (see **Table 3**), while the second detailed the benefits MHPs anticipated from game-based interventions and the populations likely to benefit (see **Additional file 4**).

Overall, this study provides practical insights for researchers, designers, and developers working on the user-centered design and implementation of game-based interventions (see **Table 4**). While the medium allows for innovative products and services, their design and implementation should be sensitive to stakeholder expectations and views.

Additional files

Additional file 1: Standards for Reporting Qualitative Research
Additional file 2: Questionnaire content
Additional file 3: Questionnaire respondents
Additional file 4: Game-based intervention benefits and target audience

Declarations

Ethics approval and consent to participant

The study includes 3 datasets, which were gathered independently and analyzed here together. The study that gathered the dataset 1 was approved by the Aalto University research ethics committee (D/508/03.04/2022). The study that gathered the dataset 2 did not involve any of the six criteria that lead to ethics review in Finland (see: The ethical principles of research with human participants and ethical review in the human sciences in Finland. Finnish National Board on Research Integrity TENK guideline 2019. Available at https://tenk.fi/en/ethical-review), therefore ethics review was not applied. The study that gathered the dataset 3 gained a positive appraisal from the Human Sciences and Ethics Committee of the University of Jyväskylä. Informed consent to participate was obtained from all study participants.

Consent for publication

Not applicable.

Availability of data and materials

The dataset 1 used and/or analysed during the current study are available from the corresponding author on reasonable request.

The dataset 2 supporting the conclusions of this article is available in the Finnish Social Science Data Archive repository, https://urn.fi/urn:nbn:fi:fsd:T-FSD3671.

The dataset 3 supporting the conclusions of this article is available in the Finnish Social Science Data Archive repository https://urn.fi/urn:nbn:fi:fsd:T-FSD3685

Competing interests

LL and JMP are co-founders in Soihtu DTx Ltd. that develops game-based digital mental health interventions.

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Authors’ contributions

The contributions are listed using the CRediT statement (98).

LL: Conceptualization, methodology, investigation, writing – original draft, writing – review and editing, visualization, project administration. **VMK:** Writing – review and editing, supervision. **JMP:** Funding acquisition, supervision, writing – review and editing.

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List of Abbreviations

MHPs Mental Health Professionals
RTA Reflexive Thematic Analysis
TAM Technology Acceptance Model

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Supplementary Files

Multimedia Appendixes

Standards for Reporting Qualitative Research.
URL: http://asset.jmir.pub/assets/5f4cf05ca96a3550362b4cce6c34cf2c.docx

Questionnaire content.
URL: http://asset.jmir.pub/assets/2176ef287036c9e539aac235c95f1753.docx

Questionnaire respondents.
URL: http://asset.jmir.pub/assets/ee8a8a9ac6814a0d88b238e813dc1b7c.docx

The second post hoc analysis summary - Game-based intervention benefits and target audience.
URL: http://asset.jmir.pub/assets/057bd053347956bb9fcf4171a38f6dc0.docx