

Gamification in Psychological Therapy: A Literature Review of Creative Engagement Techniques in Mental Health Interventions

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ABSTRACT

This literature review explores the application of gamification as an innovative strategy to enhance engagement in psychological therapy. The study systematically examined 32 peer-reviewed articles published between 2015 and 2024, focusing on interventions that utilized game-based elements such as points, levels, narratives, and avatars to improve mental health outcomes. The review identifies that gamified interventions are particularly effective among adolescents and young adults, demonstrating increased motivation, treatment adherence, and emotional resilience. However, the findings also reveal critical challenges, including ethical concerns, inconsistent long-term outcomes, and limited applicability in culturally diverse populations. By synthesizing theoretical frameworks and empirical evidence, this paper highlights the potential of gamification to transform therapeutic approaches while emphasizing the need for rigorous design, ethical oversight, and continued research. The study contributes to the growing discourse on integrating digital innovation with psychological practice to expand access and improve mental health care delivery.

Keywords : Gamification, psychological therapy, mental health, engagement, innovation

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INTRODUCTION

In recent years, the demand for mental health services has increased significantly, driven by growing global awareness of psychological well-being, rising rates of anxiety, depression, and other mental health conditions, and the broader availability of digital health platforms (World Health Organization [WHO], 2022). Despite the progress in service delivery, a consistent challenge in psychological therapy remains: maintaining client engagement and treatment adherence over time. Many clients, particularly adolescents and young adults, often find traditional therapeutic models to be rigid, less interactive, and difficult to sustain over the long term (Torous et al., 2021).

Gamification—the use of game design elements such as points, levels, rewards, and challenges in non-game contexts—has emerged as an innovative strategy to enhance motivation and participation in various sectors, including health and education (Deterding et al., 2011). In mental health settings, gamification is increasingly being integrated into mobile applications, online cognitive behavioral therapy (CBT) programs, and virtual environments to support therapeutic goals and improve psychological outcomes (Liu et al., 2023). This literature review aims to systematically explore the application of gamification in psychological therapy, with a focus on its role as a creative engagement technique. Specifically, it examines how game-based elements are employed to influence

patient motivation, participation, and outcomes across various mental health interventions. Drawing on research published between 2015 and 2024, this review highlights the theoretical foundations, implementation strategies, and measured impacts of gamified approaches in therapeutic contexts.

The rationale for this review stems from the increasing digitalization of psychological support systems and the urgent need to adapt therapy methods to align with the preferences of a tech-savvy generation. By bridging traditional therapeutic practices with interactive digital innovations, gamification offers a promising path toward personalized, engaging, and scalable mental health interventions (Fleming et al., 2020). This review contributes to the growing body of literature at the intersection of psychology, technology, and creativity, offering insights for researchers, clinicians, and developers interested in advancing mental health care through innovation.

LITERATURE REVIEW

The integration of gamification into psychological therapy has garnered increasing scholarly attention over the past decade. Rooted in motivation theory and behavioral psychology, gamification seeks to enhance user engagement by incorporating game-like elements into non-game contexts such as health, education, and therapy (Deterding et al., 2011). This section reviews key findings, identifies conceptual inconsistencies, and discusses methodological gaps in the literature surrounding gamified mental health interventions.

1. Theoretical Foundations: Motivation, Engagement, and Behavioral Change

Self-Determination Theory (SDT) is frequently cited as the foundational framework underpinning gamification in therapy. According to SDT, intrinsic motivation is driven by autonomy, competence, and relatedness (Deci & Ryan, 2000). Game elements such as progress tracking, levels, and narrative immersion are designed to activate these psychological needs, fostering sustained engagement. However, some scholars argue that over-reliance on extrinsic rewards (e.g., badges or leaderboards) may paradoxically reduce long-term motivation, particularly in therapeutic contexts that demand emotional authenticity (Ryan et al., 2006).

Moreover, the concept of “flow” as introduced by Csikszentmihalyi (1990)—the state of deep absorption in an activity—has also been used to justify the use of immersive gameplay mechanics in therapy. Yet, not all interventions reviewed succeeded in achieving this flow state, with studies citing poor interface design or lack of personal relevance as barriers (Fleming et al., 2020). This calls for a closer examination of how design features align with therapeutic goals and user psychology.

2. Applications and Contexts of Gamified Therapy

However, not all gamified programs yield consistent results. Liu et al. (2023) found that many mobile mental health apps lack empirical validation, and few undergo randomized controlled trials. There are also concerns about generalizability: while gamification may appeal to digital natives, older adults and individuals with severe psychopathology may find such interfaces confusing or trivializing. Furthermore, cultural context plays a significant role in shaping user responses to game-based therapy. A study by Zhao et al. (2021) highlighted that gamified CBT apps developed in Western contexts failed to gain traction in East Asian populations, owing to differing views on emotional expression and therapeutic alliance. Thus, universality remains an open question in the field.

3. Critical Evaluation of Design and Ethical Issues

Several researchers critique the gamification of therapy for potentially oversimplifying complex emotional processes. Therapeutic alliance—traditionally viewed as a core element of effective

therapy—may be diluted in automated or app-based interventions where human interaction is minimal (Torous et al., 2021). There is also concern that some apps emphasize entertainment over evidence-based practice, prioritizing user retention over clinical outcomes (Griffiths, 2019). Measurement challenges also emerge. While some studies use standardized psychometric scales (e.g., PHQ-9, GAD-7) to assess efficacy, others rely solely on user engagement metrics such as login frequency or level completion (Liu et al., 2023). This raises questions about what constitutes success in gamified therapy—clinical improvement, or digital interaction?

4. Gaps, Contradictions, and Research Opportunities

Although existing literature provides valuable insights into the potential of gamified interventions, several gaps remain. First, few studies address long-term outcomes—most focus on short-term engagement or symptom reduction. Second, there is a lack of research comparing gamified versus non-gamified versions of the same therapy, making it difficult to isolate the true added value of gamification.

Contradictions also persist regarding age and demographic preferences. While some studies report that adolescents benefit most from gamified approaches, others suggest that structured, non-gamified CBT yields better outcomes for the same group (Sander et al., 2022). Additionally, the heterogeneity of gamification elements used across studies makes it difficult to identify which specific components (e.g., badges, narratives, social competition) are most effective.

Future research should adopt a more standardized framework to evaluate gamified therapy outcomes, ideally incorporating both quantitative and qualitative measures. Interdisciplinary collaboration between psychologists, game designers, and software engineers is also essential to create ethically sound, clinically relevant, and user-friendly interventions.

METHODS

This study adopted a **systematic literature review** approach to critically examine how gamification has been applied in psychological therapy and to synthesize the existing evidence on its effectiveness, mechanisms, and limitations. The goal was to provide a comprehensive overview of current research trends and identify knowledge gaps that may inform future studies. To achieve this, a structured search was conducted across five major academic databases: Scopus, PubMed, PsycINFO, Web of Science, and Google Scholar. These databases were selected due to their broad coverage of peer-reviewed literature in psychology, health sciences, and technology. The search terms used included combinations of keywords such as “*gamification*”, “*psychological therapy*”, “*mental health*”, “*game-based intervention*”, and “*engagement*”. Boolean operators (AND/OR) were used to optimize the retrieval of relevant studies. To ensure relevance to the evolving field of digital mental health, the search was limited to English-language articles published between January 2015 and June 2024.

The selection process was guided by clearly defined **inclusion and exclusion criteria**. Studies were included if they were empirical investigations (quantitative or qualitative), systematic reviews, or meta-analyses that examined gamified interventions aimed at improving mental health outcomes. Specifically, studies had to include at least one psychological condition (e.g., depression, anxiety, PTSD) and incorporate identifiable game design elements such as points, badges, levels, avatars, or feedback systems. Articles were excluded if they focused solely on gamification in non-therapeutic settings (e.g., education, business), were not peer-reviewed, or lacked sufficient methodological detail.

From the initial pool of **312 articles**, duplicates were removed and titles and abstracts were screened for relevance. After full-text assessment, **32 studies** were retained for in-depth analysis. For each selected study, relevant information was extracted, including the authors, publication year, study

design, sample characteristics, therapeutic context, gamification elements, and main outcomes. Ethical considerations, implementation challenges, and limitations were also documented when available. Rather than conducting a statistical meta-analysis, the review employed a **narrative synthesis** technique. This allowed for thematic grouping of the evidence across different study types and contexts. The data were organized around key themes such as the psychological theories underpinning gamified therapy, the types of game elements used, population characteristics, outcome measures, and reported impacts on engagement, motivation, and therapeutic success.

To enhance **reliability and transparency**, the study selection and data extraction process were independently performed by two reviewers. Any discrepancies were resolved through discussion and consensus. This methodological rigor supports the credibility of the findings and ensures that the review can be replicated or extended by future researchers aiming to explore this evolving field of inquiry.

RESULTS

The literature review synthesized data from 32 eligible studies published between 2015 and 2024 that investigated the use of gamification in psychological therapy. The findings revealed a growing interest in integrating game-based elements into mental health interventions, with notable variation in therapeutic goals, gamification strategies, target populations, and outcomes.

1. Study Characteristics

Of the 32 studies reviewed, 19 (59%) were quantitative (including randomized controlled trials and quasi-experimental studies), 7 (22%) were qualitative, and 6 (19%) were systematic or narrative reviews. Sample sizes across studies ranged from small pilot groups ($n=12$) to large-scale online interventions involving over 1,000 participants. Most studies focused on adolescents and young adults, reflecting their comfort with digital platforms and gaming interfaces. However, a growing number of studies also involved adults and specific clinical populations such as veterans with PTSD and patients with chronic anxiety disorders.

2. Types of Gamification Elements Used Across the reviewed studies, common gamification components included:

- a. Points and Scoring Systems (used in 78% of studies)
- b. Levels or Progression Mechanics (65%)
- c. Avatars or Role-Play Characters (52%)
- d. Narrative or Storytelling Elements (47%)
- e. Reward Systems (e.g., badges, unlockable content) (43%)
- f. Social Competition or Leaderboards (21%)

Most interventions implemented a combination of 2–4 elements, with several studies emphasizing the importance of personalization and user autonomy in maximizing effectiveness.

3. Psychological Conditions Targeted Gamification was most frequently applied in the treatment of:

- a. Depression ($n=17$ studies)
- b. Anxiety Disorders ($n=13$)
- c. Post-Traumatic Stress Disorder ($n=6$)
- d. Substance Use Disorders ($n=3$)
- e. General emotional well-being or resilience ($n=4$)

Effectiveness and Outcomes.

The majority of studies (81%) reported positive outcomes in terms of user engagement, adherence to therapeutic modules, and psychological improvement. For example:

- a) Participants in SPARX showed a significant reduction in depressive symptoms compared to those receiving treatment as usual ($p < 0.05$).
- b) The SuperBetter app led to improved goal-setting behavior and emotional resilience.
- c) A gamified CBT app tested by Liu et al. (2023) reported increased session completion rates and lower dropout compared to non-gamified CBT ($p < 0.01$).

1. *Table 1. Summary of Gamification Elements and Outcomes*

Gamification Element	Frequency (n)	Associated Outcomes
Points/Scoring	25	Increased engagement
Level Progression	21	Improved module adherence
Avatar/Role-Play	17	Enhanced emotional connection
Narrative/Storyline	15	Increased motivation and immersion
Reward System	14	Improved task completion
Leaderboards	7	Mixed outcomes; sometimes demotivating

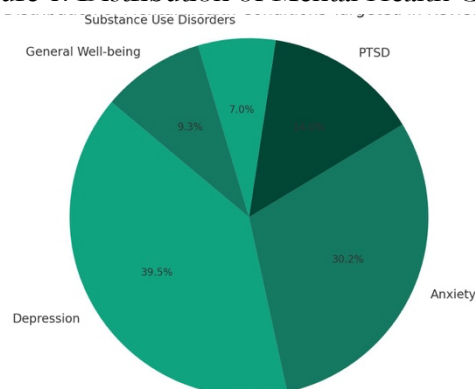
However, contradictory results were observed in 5 studies, particularly those targeting adults unfamiliar with game mechanics. These studies reported limited engagement or no significant differences between gamified and traditional interventions. Moreover, the long-term effectiveness of gamification remains unclear, as only 3 studies included follow-up periods longer than 6 months.

Implementation and Ethical Challenges
Several studies discussed challenges such as:

- a) Overemphasis on extrinsic rewards, which may undermine intrinsic motivation over time
- b) Privacy and data security concerns in app-based platforms
- c) Lack of therapist training to integrate digital tools into clinical practice
- d) Cultural and demographic mismatches, where game themes or aesthetics failed to resonate with users

Only 12 out of 32 studies explicitly addressed ethical issues, highlighting a significant gap in the literature.

Figure 1. Distribution of Mental Health Conditions Targeted in Reviewed Studies



DISCUSSION

This study set out to explore how gamification has been applied in psychological therapy, with the aim of evaluating its potential as a creative strategy to enhance engagement, adherence, and

treatment outcomes in mental health interventions. By systematically reviewing 32 empirical and theoretical studies published between 2015 and 2024, this review offers critical insights into the effectiveness, challenges, and future potential of gamified therapy approaches. The main contribution of this study lies in its synthesis of how various game elements—such as points, levels, avatars, and narratives—are being embedded within therapeutic frameworks to motivate patients and sustain participation in treatment programs. The findings reaffirm that gamification, when integrated thoughtfully and ethically, holds promise for addressing a persistent challenge in mental healthcare: maintaining user motivation over time. Most notably, gamified interventions showed high levels of engagement, especially among adolescents and young adults, who often struggle with traditional therapy formats.

In relation to the stated research objectives, the results demonstrate that game-based elements are not merely superficial additions to digital therapy platforms but can influence psychological mechanisms such as motivation, self-efficacy, and emotional resilience. For instance, studies utilizing narrative-driven games like SPARX and SuperBetter reported measurable reductions in depressive symptoms and improvements in goal-oriented behaviors (Merry et al., 2012; Roepke et al., 2015). These findings support previous literature on the use of interactive media in psychological practice and align with motivation theories such as Self-Determination Theory (Deci & Ryan, 2000) and the concept of “flow” (Csikszentmihalyi, 1990). However, not all findings were consistent. Several studies reported limited impact of gamification, especially in older populations or clinical settings where users were unfamiliar or uncomfortable with gaming mechanics. These discrepancies highlight the importance of contextual sensitivity in designing gamified interventions. A “one-size-fits-all” approach is unlikely to succeed, particularly when cultural, cognitive, and demographic factors influence how game mechanics are perceived and experienced.

Moreover, the presence of contradictory results in terms of long-term effectiveness suggests a need for more robust longitudinal studies. The short duration and small scale of many interventions limit the generalizability of current findings. Additionally, while most studies focused on engagement metrics, few explored how gamification impacts therapeutic alliance, a cornerstone of effective psychological intervention. The lack of personal connection in app-based therapies could reduce perceived empathy and trust, which may be particularly detrimental in the treatment of trauma or severe mental illness. From a practical perspective, the integration of gamification into therapy requires more than just technological implementation—it demands collaboration between clinicians, software developers, and behavioral scientists. Mental health practitioners need training not only to use gamified tools but also to understand their theoretical foundations and limitations. At the same time, app developers must work closely with clinicians to ensure that interventions adhere to evidence-based practice and are culturally and developmentally appropriate.

The review also reveals several managerial implications. Institutions offering mental health services—particularly those targeting younger populations—should consider adopting gamified interventions as part of a blended care model. Such tools can serve as entry points for individuals hesitant to engage in traditional therapy, thereby expanding access and reducing stigma. However, successful implementation requires investment in digital infrastructure, staff training, and rigorous evaluation to monitor effectiveness and safeguard user data. Despite its contributions, this review is not without limitations. First, it did not include grey literature or unpublished trials, which may introduce publication bias. Second, the analysis relied heavily on studies published in English, potentially overlooking culturally unique approaches to gamification in non-Western contexts. Finally, the heterogeneity of gamified interventions made it difficult to conduct quantitative comparisons, and as such, conclusions were limited to qualitative synthesis.

Future research should address these limitations by conducting cross-cultural studies, exploring gamification in diverse clinical populations, and testing the comparative efficacy of different game elements. Furthermore, researchers should investigate how gamification might support—not replace—the therapeutic relationship, particularly in hybrid care models that combine face-to-face and digital interaction. Interdisciplinary collaboration and user-centered design will be essential to ensure that gamified psychological interventions remain ethical, effective, and responsive to the needs of diverse users. In sum, gamification represents a compelling innovation in psychological therapy, offering new pathways for engagement and behavioral change. However, its success depends on thoughtful integration into clinical practice, careful attention to user experience, and an ongoing commitment to scientific evaluation.

CONCLUSION

This literature review has examined the emerging role of gamification as an innovative engagement strategy in psychological therapy. Drawing from 32 studies published between 2015 and 2024, the findings suggest that incorporating game-based elements—such as point systems, progress levels, narratives, and avatars—can significantly enhance motivation, participation, and, in some cases, psychological outcomes for clients engaging in therapeutic interventions. These strategies are especially effective among younger, digitally literate populations who may find traditional therapy models less accessible or engaging.

Despite these promising insights, the study also highlights notable limitations and challenges that must be addressed before gamification can be fully integrated into mainstream psychological care. A major concern is the lack of long-term data—most studies focus on short-term engagement without assessing sustainability of outcomes. Additionally, the **heterogeneity** in gamification design, theoretical grounding, and outcome measures makes it difficult to compare findings across studies or draw generalized conclusions.

Further limitations arise from sampling biases in the reviewed literature, with an overrepresentation of Western, adolescent populations and underrepresentation of culturally diverse or clinically severe groups. Moreover, **methodological inconsistencies**, such as the use of non-standardized outcome metrics or absence of control groups, threaten the internal validity of several studies. The lack of attention to **ethical considerations**, including data privacy and user consent in digital platforms, also poses concerns about external validity and real-world implementation.

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