



Serious games for promoting mental health literacy in children and adolescents: Results of a systematic review and outline of a new intervention

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Background & Aims

Recent definitions of mental health literacy include (a) understanding how to obtain and maintain positive mental health, (b) understanding psychiatric disorders and their treatments, (c) decreasing stigma to mental problems and (d) enhancing help-seeking efficacy including competencies to improve one's mental health [1]. Serious games (= computer- or smartphone delivered interventions using gaming as the primary medium to educate and change behavior) may be particularly useful and engaging to promote mental health literacy among children and adolescents [2]. The project „PSYGESKOM“ in Austria aims to develop a new serious game to promote mental health literacy in 10-14-year-olds. To gain knowledge about existing serious game approaches in this field, we conducted a systematic review summarising relevant game design aspects, efficacy/effectiveness results and implementation aspects.

Methods

Design: Systematic Review

Inclusion criteria:

- Studies describing the development and/or evaluation of a serious game,
- targeting at least one aspect of mental health literacy,
- for use in universal or selected prevention,
- appropriate for 10-14-year-olds,
- published since 2013.

Coding:

- Design aspects according to the co.Lab-framework [3] (learning design, mechanics, game design);
- Efficacy/effectiveness & adherence;
- Fostering & hindering factors for implementation (RE-AIM framework [4])

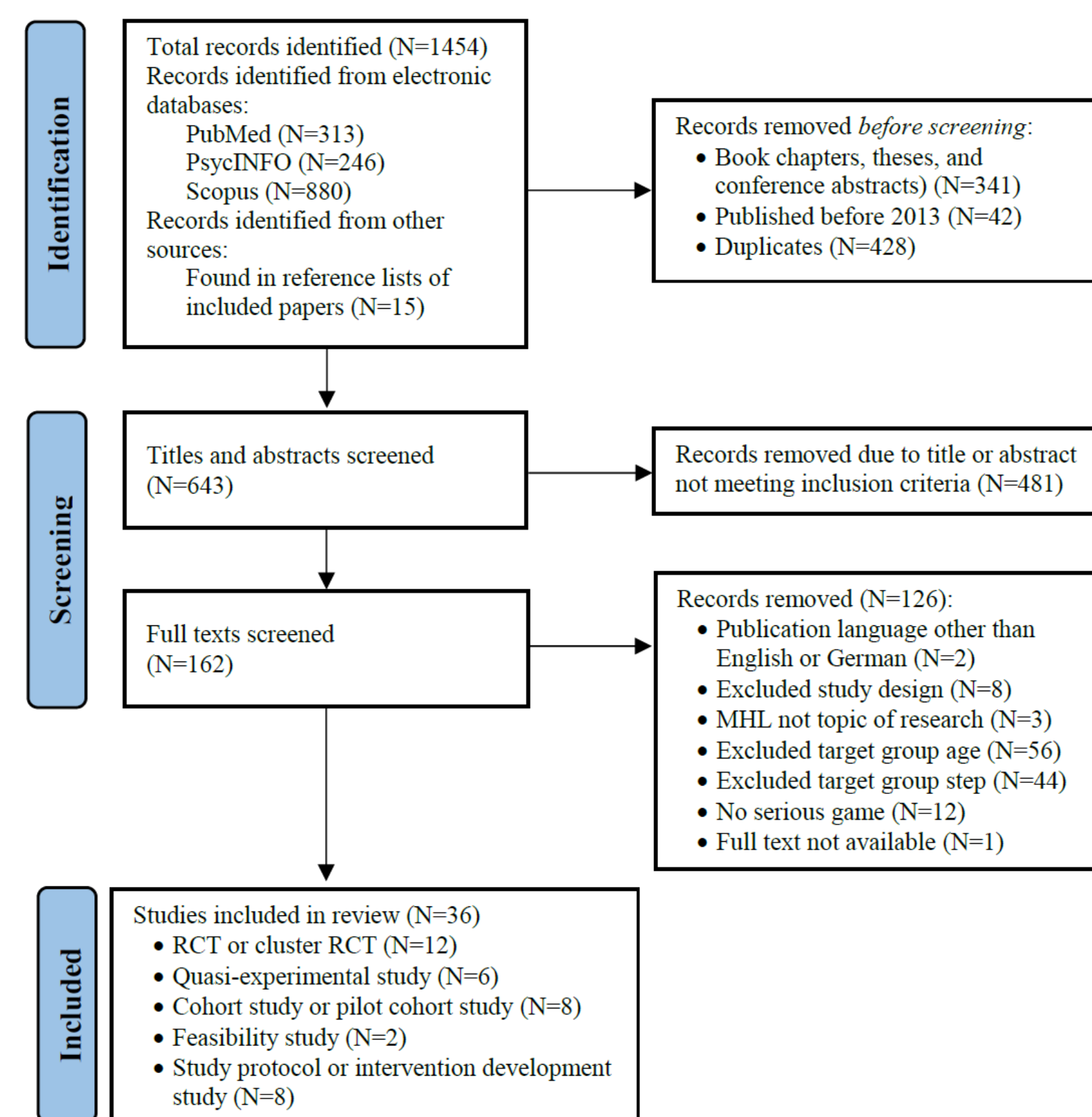


Figure 1. PRISMA flow diagram

Results

We identified 36 individual studies on 17 serious games addressing mental health literacy (for details, see Fig. 1) [5]

Targets of identified serious games:

... are summarized in Fig 2.

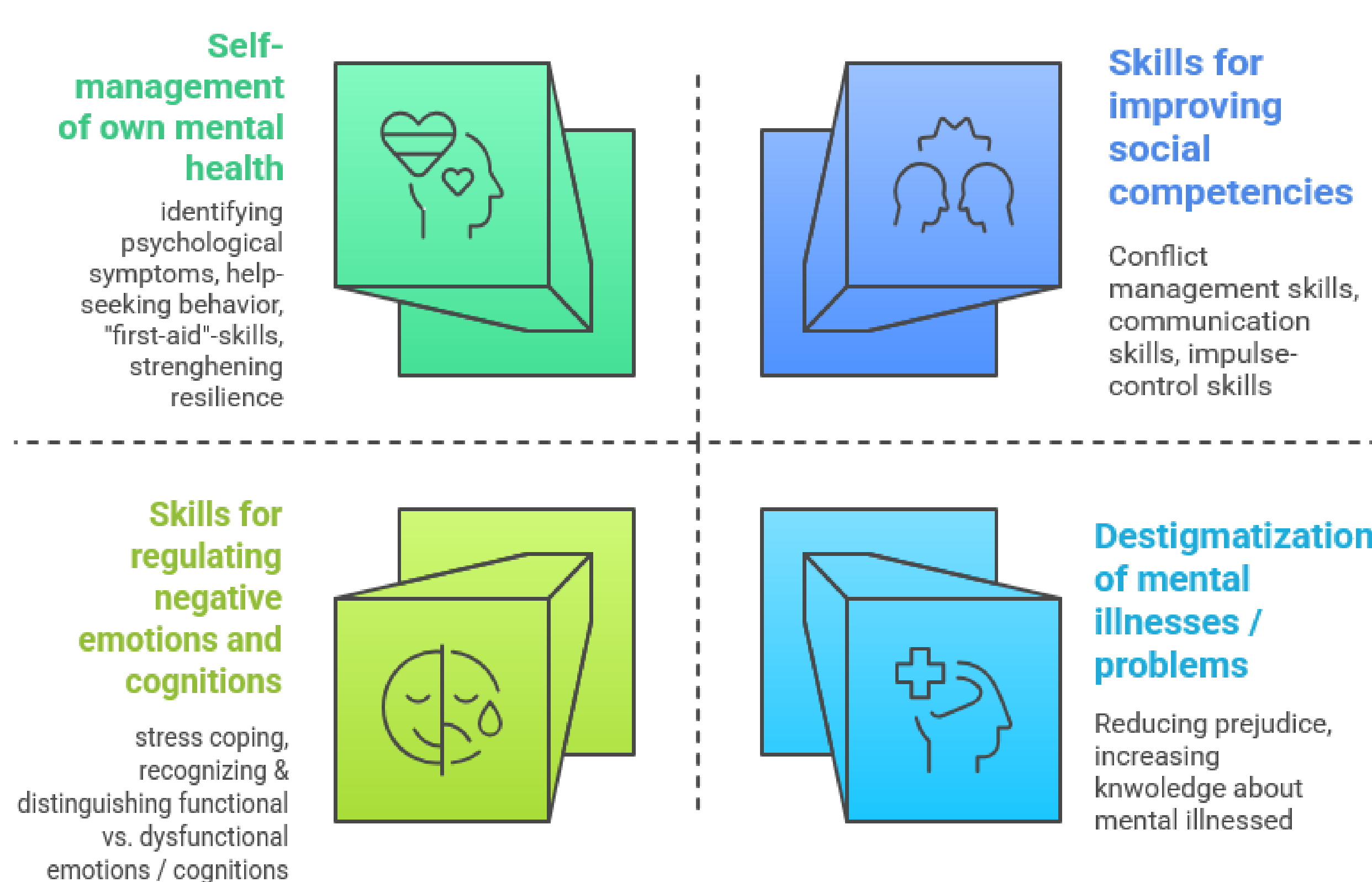


Figure 2. Targets of the identified serious games

References

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- [2] Kutcher, S., Wei, Y., & Coniglio, C. (2016). Mental Health Literacy: Past, Present, and Future. *Canadian Journal of Psychiatry*. *Revue Canadienne De Psychiatrie*, 61(3), 154–158.
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- [5] Zeiler, M., Vögl, S., Prinz, U., Werner, N., Wagner, G., Karwautz, A., Zeller, N., Ackermann, L., & Waldherr, K. (2025). Game Design, Effectiveness, and Implementation of Serious Games Promoting Aspects of Mental Health Literacy Among Children and Adolescents: Systematic Review. *JMIR Mental Health*, 12, e67418. <https://doi.org/10.2196/67418>

Selected results on design aspects:

Selected results on identified design aspects according to the learning design, mechanics and game design are shown in Fig. 3.

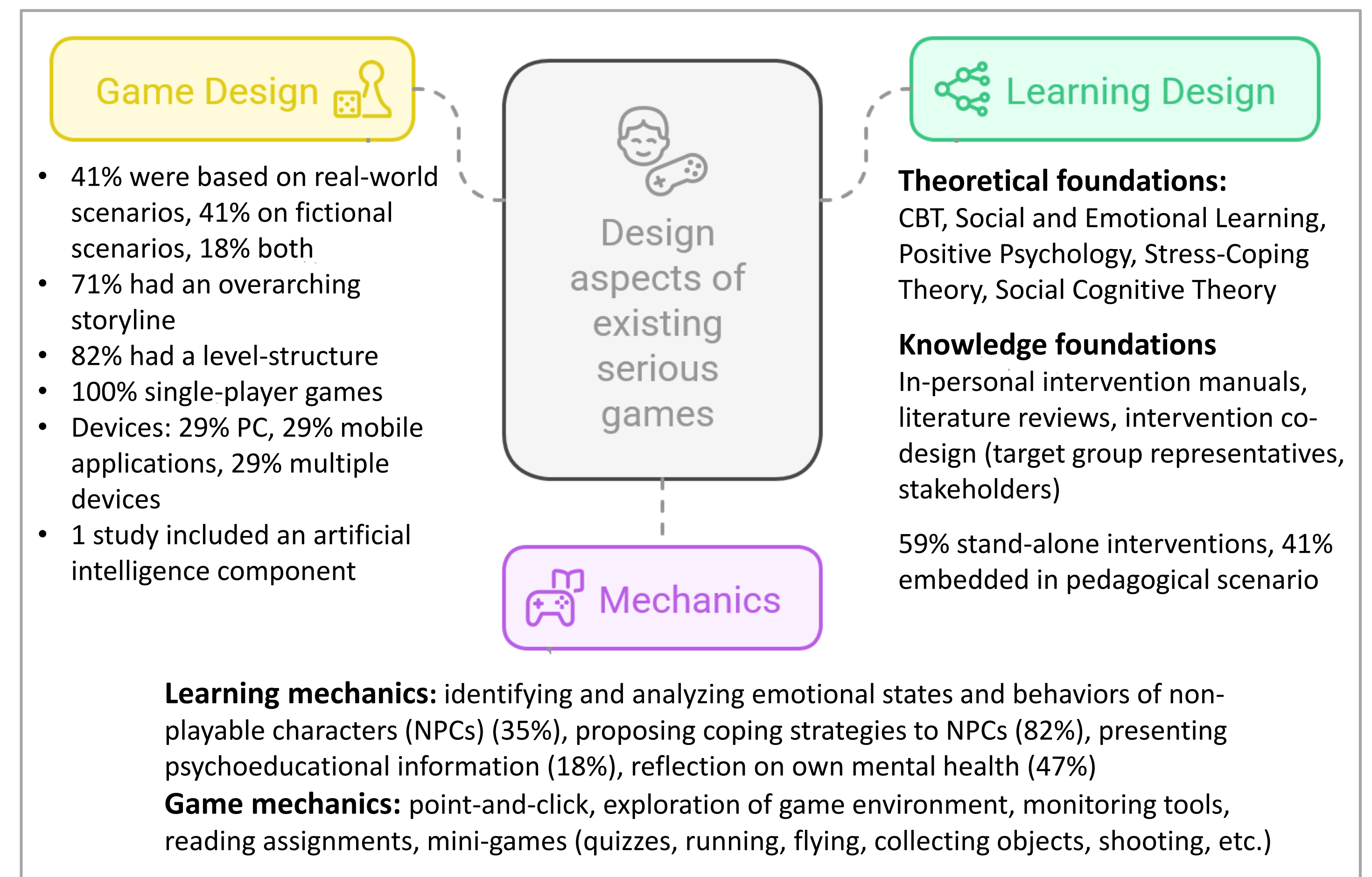


Figure 3. Design elements of existing serious games

Efficacy/Effectiveness and adherence:

- Most studies showed significant short-term effects in at least one outcome variable. Almost no long-term effects evaluated.
- Most evaluations relied on self-report assessments. Only 4 studies included in-game performance measures.
- Only 37% of studies included any adherence outcome. Adherence outcomes were diverse.
- Critical quality appraisal of included studies revealed rather low quality of most of the included studies.

Conclusions & Outline

This review found that serious games (SGs) are a promising tool for improving mental health literacy in adolescents, though current evidence remains preliminary. Future research should include rigorously designed studies with long-term follow-ups and real-world trials to better assess their effectiveness. Key success factors may include a focus on positive mental health and self-management skills, strong stakeholder involvement and intervention co-design, and game design features that support customization and player engagement.

Currently, a new serious game is being developed in Austria including expertise from psychology, child and adolescent psychiatry, game design, software development, artificial intelligence, storytelling and legal aspects in e-mental health and involving “young co-researchers”. The key ideas and narrative of the serious game are summarized in the box below.

Game outline (Work in progress)

In the game, children take on the role of a wizard who discovers a village plagued by a mysterious darkness—a metaphor for psychological distress. The mayor describes the distressing situation and asks for support. As they explore the village and help its residents, players learn to identify mental health challenges and build supportive networks. The game includes mini-games that teach emotional recognition and cognitive restructuring, as well as tower-defense games where coping strategies are represented by defense towers used against stress-related enemies. The game mechanics offer key benefits: children playfully learn to handle negative emotions and challenges, actively discovering and applying coping strategies within the game.



Part of the virtual village; the house on the right is „infected“



Tower defense game: Player fights against a symbolic stressor