Summary of Master Thesis

Assessing the Effects of Virtual Reality and Multiple Selves on (Mental) Health Behavior: A Systematic Mixed-Method Review

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Background: We are currently facing a global health crisis, with both mental and physical illnesses being on a steady rise, driven largely by the prevalence of unhealthy lifestyle behaviors. As health behaviors, related to eating, sleeping, or drug consumption, are important indicators for the development and maintenance of disorders, developing novel and innovative treatment approaches positively influencing health behaviors are of urgent need. One psychological mechanism influencing health behaviors is multiple selves. Embedded in the concept of self, multiple selves have successfully been used in interventions Benefiting from the advantages of both multiple selves and virtual reality (VR), multiple selves VR interventions provide a promising foundation to tackle the worldwide health crisis.

Objective: This review aims to investigate the effects of multiple selves VR interventions on mental and physical health behavior. More so, the effects of intervention outcomes and process outcomes, like embodiment and presence, are explored.

Method: This systematic mixed-method literature review was based on the PRISMA guidelines. The literature search was conducted in mid-February 2024, using the databases SCOPUS, Web of Science, PubMed, PsycINFO, and IEEE Xplore. Articles meeting the inclusion criteria needed to be in English, German, or Dutch, have an adult sample, only include immersive VR (with a head-mounted display), and include multiple selves as intervention. During the screening process, machine learning was implemented based on the SAFE procedure.

Results: 14 studies met the criteria. Notably, out of the included studies, only four reported on health behaviors. Nevertheless, these studies observed promising effects. Additionally, positive effects on clinical symptom reduction were found for mental health. However, limited effects on physical outcomes were reported, with only perceived improvement in physical self-efficacy noted. Further, process outcomes were moderate to good, though the impact of different types of multiple selves was not explored.

Conclusion: This review highlights the potential of multiple selves VR interventions in improving mental health behaviors and clinical outcomes. Given this review's limitations, future research should focus on the underexplored area of physical health outcomes, as well as research mental and physical health behavior more thoughtfully. Including more controlled designs as well as being more concise in developing literature search and screening process could increase the insight into the effectiveness of this intervention as well as the most fitting area of application in health care.