



Self-Conversation in Virtual Reality Embodiment to Enhance Healthier Lifestyles among People with Obesity

Newsletter #6

VHIR Team

August, 2023

This Newsletter is uploaded on the website on the last day of the SOCRATES project. Here, we aim to provide a concise overview of the work done by the four partners of the consortium, Virtual BodyWorks (VBW), Maastricht University (MU), VHIR, and IDC Herzliya, since the beginning of the project.

Together, we have devoted our research since 2020 to helping people living with obesity to address the underlying causes of their condition. To test this, we have used a Virtual Reality platform, **ConVRself**. This platform allows users to have motivational conversations with themselves by embodying two different virtual avatars. To do it, ConVRself uses embodiment and body-swapping techniques to allow patients to interact with themselves in a virtual environment. These self-conversations, based on the Motivational Interviewing paradigm, have attempted to help participants raise awareness of their actual condition, overcome self-stigmatization, and increase self-determination.

By working with close collaboration, the objectives of the SOCRATES project have been threefold: (1) to adapt the conVRself technology for treating obesity in a clinical setting, (2) to validate the efficacy of embodiment technology in treating obesity, and (3) disseminate the results to promote the use of embodiment technology as an effective healthcare solution for treating behavioral conditions.

Results and dissemination

One of the most relevant motivations of the project was to see whether ConVRself could be successfully implemented in the clinical context with patients with obesity. So, to test the platform's efficacy in the clinical context, VHIR, with the help of VBW, conducted an RCT study. This study was developed between April 2021, and October 2023, and it comprised 68 participants from the Obesity Unit of the Vall d'Hebron Hospital Universitari. Results indicated that the platform has been successfully adapted to People living with obesity.

Also, ConVRself substantially enhanced the participants' psychological well-being. More precisely, it helped increase their readiness to exercise more, and also had higher self-efficacy and confidence to lose weight. Also, ConVRself helped participants reduce anxiety and uncontrolled and emotional eating behaviors.

The evaluation of the Clinical efficacy of ConVRself has been published in three scientific articles in three different journals: BMJ Open, Frontiers in Psychiatry, and JMIR publications (manuscript still under review).

- Anastasiadou, D., Slater, M., Spanlang, B., Cano Porras, D., Comas, M., Ciudin, A., Puig, G. P., Vázquez-De Sebastián, J., Ramos-Quiroga, J. A., and Lusilla-Palacios, P. (2022). Clinical efficacy of a virtual reality tool for the treatment of obesity: study protocol of a randomized controlled trial. *BMJ open*, 12(6), e060822.
- Anastasiadou, D., Herrero, P., Vázquez-De Sebastián, J., Spanlang, B., Alvarez De la Campa, E., Slater, M., Ramos-Quiroga, A., & Lusilla-Palacios, P. (2022). Virtual Self-Conversation Using Motivational Interviewing Techniques to Promote Healthy Eating And Physical Activity: A Usability Study. *Frontiers in Psychiatry*.
- Anastasiadou D, Herrero P, Garcia-Royo P, Vázquez-De Sebastián J, Slater M, Spanlang B, Álvarez de la Campa E, Ciudin A, Comas M, Ramos-Quiroga JA, Lusilla-Palacios P, Clinical Efficacy of a Virtual Reality Tool for the Treatment of Obesity: Randomized Controlled Trial: still under review

Content dissemination

The findings of SOCRATES have also been widely disseminated in multiple contexts. All partners have participated in more than 30 scientific congresses around Europe, have also been consistently presenting the project in different universities from Europe and the US, and have been contacting multiple stakeholders from the clinical and technological sectors.

Remarkably, VBW also organized a group of talks in collaboration with Frontiers. Six researchers and Principal Investigators of the consortium gave different online conferences with the objective of disseminating the research outcomes of the project. Overall, SOCRATES has potentially reached more than 20,000 people from the scientific community.

This journey we have embarked on is already finished, and we couldn't be happier to see the successful results ConVRself has provided to the clinical community.