The holistic development process of Virtual Reality for Forensic Mental Healthcare

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Virtual Reality is an extremely promising technology for mental healthcare. However, its implementation and use in practice are lagging behind, especially in forensic settings. In order to improve this, a rigorous development process is essential. This poster presents a project that uses a multi-method, holistic approach to develop VR applications for forensic psychiatry, based on the CeHRes Roadmap. Patients, therapists and other relevant stakeholders are continuously involved via, amongst other things, interviews, focus groups and usability testing of prototypes. This holistic development process ensures a good fit between the VR technology, the forensic patients, therapists, and their context.

Background In the Netherlands, more and more attention is paid to e-health technologies that are able to improve forensic mental healthcare in an innovative way. Virtual Reality (VR) is one especially promising technology [1], but despite its potential, its use in practice is lagging behind. One of the reasons for this is that a rigorous development process is lacking. A lot of attention should be paid to the fit of the VR technology with the patient, therapist and the forensic context to ensure that it works and will be used. In order to achieve this, important stakeholders should be involved in a participatory development process. The CeHRes Roadmap supports this by providing concrete tools to develop, implement and evaluate e-health technologies in specific settings together with important stakeholders [2]. However, up till now, the CehRes Roadmap has not been used in the development of VR in a forensic setting. Recently, a project to develop a VR application for forensic treatment via the Roadmap has started. This poster provides insight into the methods of the systematic development process of this VR application.

Methods The Roadmap consists of five interrelated phases - Contextual Inquiry, Value Specification, Design, Operationalization and Summative Evaluation [2]. In this project, the first three phases are emphasized.

Contextual inquiry In order to provide an overview of the current situation and its issues, the following methods are used in this VR project: a literature review on the use of VR in forensic psychiatry; desk research to find out about current within the relevant forensic setting; and focus groups and interviews with therapists and patients to discover issues and points of improvement of their current treatments.

Value specification The needs and wishes of patients and therapists concerning the VR application were uncovered by means of the following methods: separate focus groups with forensic psychiatric patients and therapists to collect their ideas about possible applications of VR; semi-structured interviews with patients and therapists to discuss VR scenarios; and a focus group with both patients, therapists and researchers to define requirements for the VR application.

Design In this VR project, multiple prototypes of the VR application are developed, based on the requirements. These prototypes are evaluated with patients, therapists and other relevant stakeholders to find out about their opinions on the design, and to make sure that the design fits their needs. This process is iterative, meaning that multiple prototypes are developed and continuously evaluated.
Operationalization & Evaluation

The entire implementation of VR in a forensic setting is beyond the scope of this project, however, the VR application will be pilot tested in several treatments. This will be evaluated by means of observations and interviews.

1. Turner, WA. Casey, LM. Outcomes associated with virtual reality in psychological interventions: where are we now? Clinical psychology review, 2014, 34.8: 634-644