

Serious storytelling

Designing an VR/AR experience for children to mitigate anxiety and pain of medical procedures



Many children experience anxiety and pain before or during medical procedures. One such procedure that induces high levels of anxiety in children is venipuncture. Children with chronic conditions have to undergo frequent venipunctures, for instance to collect blood samples. Venipuncture is reported as one of the most distressing parts of medical treatment. Some children even develop needle phobia, which can lead to them avoiding necessary medical procedures. Moreover, higher levels of anxiety lead to a higher levels of perceived pain. Therefore, it is crucial that we develop evidence-based tools to effectively manage mitigate anxiety and pain associated with venipuncture.

In the Sophia Children's Hospital we are dedicated to manage anxiety and pain during medical procedures as much as possible. For instance we developed two Virtual Reality (VR) applications to prepare children for surgery and MRI. Using our apps children experience these medical procedures in VR, so that they know what to expect in the hospital and consequently experience lower levels of anxiety prior and during the actual procedure. In one study, we found that only 50% of children in the group that received VR preparation needed medication (morphine) to address pain, whereas in the group who did not receive VR preparation, all children needed morphine.



Within this graduation assignment you will develop a prototype to distract patients during venipuncture by means of an augmented/virtual reality tool. You will collaborate with researchers from the Erasmus MC-Sophia. An important aspect of the development of the prototype is storytelling. You will design, prototype and evaluate the AR/VR tool. For the design and prototyping, you will be able to observe venipuncture procedures and to consult the Sophia patient organization. For the evaluation, you will be able to conduct a small pilot study into the effect of the AR/VR tool.

- Are you an IPD student?
- Do you have experience with or keen interest in VR or AR development?
- Do you want to make an impact on children's well-being in a hospital?
- Would you like to cooperate with game design students, patient groups and medical/ psychological professionals?

For more information about the assignment please contact:

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