

Dementia Eyes: Perceiving Dementia with Augmented Reality

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Figure 1: Dementia Eyes being tested by participants in our physical setup as they perform various tasks while (a) walking and (b) seated. We validated the system based on feedback from medical doctors experiencing the symptoms (c) as well as nurses being guided through the experience (d)

ABSTRACT

Dementia is a global health crisis, of which there is a need to understand the patients' perception towards improving their quality of life. We propose Dementia Eyes, a mobile AR experience that simulates common visual symptoms of senile dementia based on the known pathology and caregivers' actual experience with patients. Leveraging an iPhone and a Head-Mounted Display (HMD), we developed a real-time application which allows users to see the world from the perspective of an Alzheimer's type of dementia (AD) patient. The experience was validated by professional medical workers in Japan, and the result advocates for the efficacy of the empathy we intended to bring to them.

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KEYWORDS

Augmented Reality, senile dementia, empathy training

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1 INTRODUCTION

Dementia is a worldwide public health priority which affects 50 million people¹. The question of how to make the last stage of dementia patient's life quality has come to the spotlight. In 2014, Rebeca I. García-Betances et al. [García-Betances et al. 2014] conducted a study on using virtual reality (VR) for cognitive rehabilitation and concluded that "VR-based cognitive rehabilitation systems are capable of achieving the expected training goals for people affected by age-related cognitive impairments". While the prevalence of VR technology in the medical field has been ongoing, AR is still

¹<https://www.who.int/news-room/fact-sheets/detail/dementia>

