

## POSTER PRESENTATION 4: INFORMATION AND COMMUNICATION

### Effect of VR/MR based education program for managing behavioral and psychological symptoms of dementia

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**Purpose** Since dementia behavioral psychological symptoms (BPSD) appear in 80-90% of dementia patients and are unpredictable and difficult to respond (Huang et al., 2012), it is reported that it puts a great burden on the family and affects family depression (Ornstein & Gaugler, 2012). Therefore, education is needed to strengthen the ability to cope with BPSD for families with dementia. Recently, cases of using VR/MR technology in education for families of dementia patients in the UK and the Netherlands have been reported (Alzheimer's Research UK, 2016; Wijma et al., 2018), but all aimed at understanding dementia patients through their experiences, and BPSD-focused content has not yet been developed. The purpose of this study was to develop and verify VR/MR based education program for managing BPSD (VR-EduBPSD) to enhance the ability of families with dementia to cope with BPSD. **Method** This study was conducted in three stages. In the first stage, contents of the VR-EduBPSD were developed based on literature review, in-depth interviews with dementia families, and need surveys. In the second stage, VR/MR program was designed and produced using the developed contents. In the final stage, the VR-EduBPSD (a total of 9 contents) was applied to dementia families (n=63, 33 in experimental group, 30 in control) using a randomized controlled trial design and its effectiveness was evaluated. **Results and Discussion** Repeated measurement variance analysis was performed on five outcome variables (i.e., BPSD coping competence, inter-relationship, self-efficacy, dementia attitude, and behavioral management skill) by treating care time, which significantly differed between the experimental and control group, as a covariate. In the experimental group, the BPSD coping competence at the one-month follow-up test significantly increased as compared with the pre-test ( $p=0.002$ ) and the post-test ( $p=0.049$ ). The inter-relationship at the one-month follow-up test also increased significantly in the experimental group when compared with the pre-test ( $p=0.001$ ), while there was no significant effect in the other variables. Based on VR/MR technology, the result of this study is composed of immersive content that includes a training course that enables interaction between dementia patients and their families while enhancing a vivid experience by reflecting live-action characters and multimodality (using the five senses) format. The VR-EduBPSD is expected to maximize its effect if it is used alone and/or with other programs for education of families of dementia patients.

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