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Title

A pilot study of a virtual reality (VR)-based dietary education program in individuals at risk of or with type 2 diabetes

Priority 1 (Research Category)

Education and training

Presenters

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Abstract

Introduction

The use of virtual reality (VR) in diabetes self-management education is an emerging research field. Traditional in-person dietary education is limited by its directive pedagogy and healthcare provider resources. The immersive learning capabilities of VR may heighten educational experience, and support health behaviour change. A VR hawker center-based educational program was designed with a prototype hawker food stall, reflecting the food culture in Singapore. The program allowed participants to explore the nutritional content of various food items, with a gamified display of the nutritional value of the user's choices. This pilot study aimed to evaluate the feasibility, user experience and educational impact of the VR program in people with pre-diabetes or type 2 diabetes.

Methodology

A mixed-methods pilot evaluation was conducted. Participants between the ages of 21 to 70, with either pre-diabetes or type 2 diabetes, were eligible. Participants assessed user experience using the Virtual Reality Neuroscience Questionnaire and qualitative in-depth interviews assessed user experiences and its educational impact after the VR experience. Thematic analysis was conducted.

Results

A total of twelve participants between the age of 34 to 52 years were recruited. The average user experience score was 5.1 (SD 0.7) and VR-induced symptoms and effects score was 6.2 (SD 0.8)

(adequate quality ≥ 5.0). Participants experienced challenges with mechanics, especially those new to VR, and average game mechanics score was 4.5 (SD 0.8). The educational experience was positive and participants valued user-directed learning, experienced more vivid memorisation of educational content and felt that the VR experience bought consciousness into unconscious decisions.

Conclusion

Our study found that food-place based VR educational programs may have additional benefits over traditional educational approaches, and further development is required to evaluate its effectiveness in supporting behaviour change.