

# DEVELOPMENT OF A VR-BASED PROTOTYPE FOR DISTRESS MANAGEMENT IN CANCER PATIENTS THROUGH SELF-COMPASSION: DIDIM CARE

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## Introduction

Psychological distress is common and critical challenge for cancer patients, highlighting the need for effective coping strategies.[1,2] Virtual Reality (VR) can align with the management goal by providing immersive training unrestricted by spatial and temporal constraints. However, many existing VR interventions were limited to distraction approaches targeting emotional relief.[3] This study aimed to develop a VR-based distress management to help cognitive and behavior change based on human-centered and multidisciplinary approaches.

## Method

Following the Double Diamond model[4], a VR-based distress management was developed by seven experts specializing in VR, social welfare, oncology nursing, psycho-oncology, digital health literacy or user experience from June 2024 to January 2025. In the Discover phase, A literature review was conducted to examine the relationship between intrapersonal behaviors and distress. In the Define phase, we identified a core VR-addressable problem and developed behavioral change strategies through expert consensus. Throughout the Develop and Deliver phase, we created a high-fidelity prototype with using Unity, a leading VR development platform. To design user-friendly interface and interactions, we iteratively refined the contents with experts, considering patient’s VR-related health literacy.

## Result

We determined to address self-compassion[5] as a predisposing factor in distress management. Considering its key elements (self-kindness, mindfulness, and common humanity), ‘Kite flying’ was chosen as the core visual metaphor and interaction element. We wanted to improve patients’ perspectives and attitudes toward themselves and their distress while creating, flying, and controlling a kite in VR. A 20-minute prototype was developed using Unity by an external technical partner. The prototype is compatible with the Quest 3, the latest VR headset.

**Table 1.** Designed tasks with “Kite Flying” aligned with the 3 components of Self-Compassion

Task	Aim	Theoretical component
Kite making	Users reflect their emotions or aspirations onto the kite	Self-kindness
Kite flying	Users experience serenity and connection onto the kite	Mindfulness
Kite manipulation	Users guide their emotional flow through controlling the kite	Self-kindness, Mindfulness, Common Humanity
Kite Releasing	Users experience emotional liberation and envision their aspirations reaching higher realms	Self-kindness, Common humanity

## Conclusion

We successfully developed a VR-based distress management program for cancer patients. The significance of this study lies in designing strategies to maximize VR technology's inherent strengths. Further research is needed to evaluate its feasibility and clinical efficacy among cancer patients.

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