UNIVERSITAS GADJAH MADA
**The Effect of Smartphone-Based Virtual Reality Relaxation (S-VR) On the Comfort and Self-Efficacy of
Symptom Management Cancer Patients Undergoing Chemotherapy: A Randomized Controlled Trial**
Made Satya Nugraha Gautama, Haryani, S.Kp.,M.Kes.,PhD
Universitas Gadjah Mada, 2023 | Diunduh dari http://etd.repository.ugm.ac.id/

ABSTRACT

Background: Virtual reality (VR) technology has been identified as a cutting-edge and effective approach in the healthcare industry that facilitates work efficiency and alleviates issues resulting from treatment side effects or patient reactions to illness and traumatic procedures. The use of VR has now reached services for cancer patients undergoing chemotherapy. Consideration is given to the presence of this non-pharmacological intervention due to the numerous urgencies encountered by cancer patients during the treatment process.
Objective: This study aims to evaluate the effectiveness of smartphone-based virtual reality relaxation (S-VR) interventions on comfort, self-efficacy, anxiety, pain, blood pressure, and pulse rate in patients with cancer undergoing chemotherapy.
Methods: This is a parallel study - randomized controlled trial involving 99 patients with cancer undergoing chemotherapy who were randomized into the S-VR group (n = 50) and control group (n = 49) at an integrated cancer center in Indonesia from March to April 2023. Simple randomization and envelope concealment were used. Blinding was applied to the outcome assessors. The primary outcomes were comfort measured by using the Short-General Comfort Questionnaire (SGCQ) and self-efficacy measured by using the Chemotherapy-related Self-Efficacy of Symptom Management Questionnaire (CSESMQ). Secondary outcomes evaluated anxiety (VAS-A), pain (NRS), systolic blood pressure, diastolic blood pressure, and pulse rate. Independent t-test and linear regression statistical tests were used.
Results: The findings showed that the SVR group (M=136.9, SD=9.7) had significantly higher comfort levels than the control group (M =132.4, SD=12.6) after the intervention with a mean difference of 5.52 (95% CI=1.61, 9.44; p=.006), and specific improvement on physical and environmental comfort. After controlling for confounding (β=4.580, 95% CI=0.46, 8.70, p=.03). There was no significant difference between the two groups on self-efficacy (mean difference = 0.35, 95% CI = -0.35, 1.05, p = .321). In the secondary outcomes, there was a significant group by time interaction on anxiety (p = .004), but not on pain, systolic blood pressure, diastolic blood pressure, and pulse rate. However, pairwise comparison from baseline to the end of chemotherapy session showed a significant decrease in pain and pulse rate (p < .001). VRSQ evaluation indicated the majority of participants did not report cybersickness symptom.
Conclusion: S-VR intervention is a promising and non-pharmaceutical technology-based method for providing patients undergoing chemotherapy with comfort and anxiety reduction. However, it appears ineffective for self-efficacy, pain, blood pressure, and pulse rate. Future studies can consider to implement this intervention into clinical practice.
Keywords: Smartphone-based, virtual reality-relaxation, comfort, cancer, chemotherapy