

Abstract

Virtual Reality (VR) as a Nursing-Led Intervention in Oncology: An Observational Study on Feasibility, Acceptability, and Patient-Reported Experience (PRE) during Chemotherapy

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Introduction. Chemotherapy treatment may be associated with increased emotional stress and procedural anxiety, potentially affecting patients' psychological well-being and overall care experience. In this context, Virtual Reality (VR) represents an innovative non-pharmacological strategy based on sensory immersion and cognitive engagement, aimed at promoting comfort, relaxation, and well-being during treatment. Although interest in immersive technologies is steadily growing, the integration of VR into nursing-led oncology care models is still in the early stages of consolidation within European clinical practice. To evaluate the operational feasibility, clinical acceptability, and perceived benefit of VR use during chemotherapy infusion, with particular focus on psychological well-being and patient care experience.

Methods. A monocentric descriptive observational study was conducted involving 25 oncology patients undergoing infusion treatment. The intervention consisted of immersive VR sessions

featuring naturalistic environments and interactive mindfulness content during chemotherapy administration. Data were collected through Likert-scale questionnaires (1–5) assessing perceived immersion, engagement capacity, technological usability, satisfaction, and willingness to reuse the intervention. Data were analyzed using descriptive statistics.

Results. Most participants were VR-naïve (72%). Improved perceived relaxation (score ≥ 4) was reported by 64% of patients, while 76% described VR as highly effective in enhancing experiential engagement during treatment. A subjective reduction in treatment-related stress was reported by 68% of the sample. The intervention demonstrated high technological usability (88%) and overall satisfaction (84%). Furthermore, 92% of participants would recommend integrating VR into the oncology care pathway. No cybersickness-related adverse events were observed.

Discussion. VR appears to be a safe, well-tolerated, and highly acceptable nursing intervention in the infusion oncology setting. The integration of immersive non-pharmacological technologies may contribute to enhancing the care experience and supporting the humanization of care, while strengthening the nursing role in promoting patient well-being. Randomized controlled trials (RCTs) and multicenter studies will be necessary to further investigate the impact of VR on structured clinical outcomes and larger patient populations.

Keywords: Virtual Reality, Cancer, Chemotherapy-Induced, Oncology Nursing, Patient-Reported Experience

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