

Effectiveness of E-health Interventions for Chemotherapy-induced Nausea and Vomiting: A Systematic Review and Meta-analysis

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Abstract

Chemotherapy-induced nausea and vomiting (CINV) is the most commonly side effect, which affects up to 70-80% of cancer patients during treatment. Frequent nausea and vomiting can result in anorexia, electrolyte imbalances, and compromised gastrointestinal function. Therefore, it is crucial to accurately identify and manage patients who are susceptible to CINV. e-Health interventions empower chemotherapy patients to gain crucial illness knowledge and self-management skills, unconstrained by location or time, proving both effective for patient outcomes and cost-efficient compared to traditional care. There has been no systematic review of e-Health in managing CINV. The goal of this systematic review was to examine the effectiveness of e-health interventions for CINV, aiming to offer clinicians more tailored and innovative guidance for practical applications. A literature search was conducted across the databases of PubMed, Web of Science, Embase, CINAHL and Cochrane Library from database establishment to 3 March 2024. We included randomized controlled trials in English where the intervention group was via e-health. Two reviewers independently carried out the screening, data extraction, and quality appraisal of the studies. Using Stata 17.0, meta-analyses were conducted to synthesize the effects of outcomes of interest. A total of 6663 studies were retrieved, with only 8 RCTs meeting criteria, involving 620 patients. Meta-analysis revealed that e-health interventions significantly reduce CINV severity (MD= -7.687; 95% CI: -11.903, -3.326; $p < 0.001$). However, results regarding CINV incidence reduction and quality of life improvement are inconclusive due to variations in intervention content, modality and frequency among studies. e-Health services can be highly valuable for managing chemotherapy-induced nausea and vomiting, as well as enhancing quality of life, serving as a versatile medium or conduit for various interventional approaches. Nevertheless, the results should be interpreted cautiously. Higher quality studies are needed in the future to further validate the effectiveness of e-health interventions for CINV.

Keywords

e-Health, Chemotherapy, Nausea, Vomiting, Systematic Review