

Determinants and Strategies for Implementing Environmentally Sustainable Practices in Clinical Nursing Settings: A Scoping Review

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Abstract

Aim To systematically map the determinants of implementation, reported implementation strategies, and potential priority settings for environmentally sustainable practices in clinical nursing settings, in order to inform nursing management and low-carbon transitions in hospitals. **Methods** This review followed the JBI methodology for scoping reviews and was reported in accordance with the PRISMA-ScR statement. The review question was defined using the PCC framework: the population comprised clinical nurses, nurse managers, or multidisciplinary clinical teams directly involved in nursing workflows; the concept included barriers, facilitators, implementation strategies, and implementation outcomes related to environmentally sustainable, low-carbon, or net-zero practices; and the context included hospitals, outpatient care, community care, intensive care, operating rooms, and other clinical nursing settings. PubMed, Web of Science, Embase, CINAHL, and Scopus were searched from database inception to 28 March 2026. Included evidence was classified a priori into Type A direct implementation studies and Type B environmental hotspot/measurement studies. Implementation determinants in Type A studies were mapped to the Consolidated Framework for Implementation Research (CFIR), implementation strategies were coded using the Expert Recommendations for Implementing Change (ERIC) taxonomy, implementation outcomes were remapped using Proctor's framework, and applicable studies were methodologically described using the Mixed Methods Appraisal Tool (MMAT, 2018 version). **Results** Twenty-six articles were included in the formal synthesis, comprising 20 Type A studies and 6 Type B studies. CFIR analysis showed that major barriers were poor workflow compatibility, limited time and resources, underdeveloped procurement and recycling/reprocessing chains, unclear knowledge and role boundaries, and lack of continuous feedback and institutional support. Major facilitators included visible environmental and financial co-benefits, contextualised training, supportive leadership, unit-level champions, cross-departmental collaboration, audit and feedback, and embedding environmental goals into existing workflows and quality improvement mechanisms. Based on the ERIC taxonomy, the most commonly reported strategies were conducting educational meetings, identifying and preparing champions, auditing and providing feedback, changing physical structure and equipment, creating new clinical teams, tailoring strategies to context, and using reminders and implementation tools. Synthesising Type A and Type B evidence with the background literature suggested that perioperative/operating room settings, intensive care units, dialysis services, telehealth, and high-consumable or low-value