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Readiness and Capacity of Dental Hospitals for Implementing Green Dentistry and Sustainable Supply Chain Practices: A Qualitative Study in Makassar, Indonesia

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Abstract

Background: Climate change and the increasing volume of healthcare waste underscore the need for sustainable practices in dentistry. While green dentistry promotes efficiency,

waste reduction, and eco-friendly technologies, its adoption in Indonesian dental hospitals remains limited.

Objective: This study aimed to assess the readiness of dental hospitals in Indonesia to adopt green dentistry practices and identify the factors that enable or inhibit their implementation.

Methods: A qualitative approach was employed through semi-structured interviews with dental healthcare professionals from selected hospitals. The interviews explored current sustainability practices, perceived challenges, institutional readiness, and stakeholder expectations regarding the implementation of green dentistry.

Results: While some initiatives, such as partial digitalisation and general awareness of waste management, exist, significant barriers hinder broader adoption. These include dependence on single-use materials, lack of structured recycling programmes, absence of formal policy support, limited training and awareness among staff, and financial constraints. Respondents expressed a strong willingness to transition toward greener practices if given appropriate institutional and policy support.

Conclusion: Indonesian dental hospitals show early signs of readiness but face structural and systemic challenges in implementing green dentistry. A coordinated approach involving institutional reform, government regulation, and stakeholder collaboration is necessary to facilitate a sustainable transition.

Unique Contribution: This study presents one of the first qualitative examinations of green dentistry readiness in Indonesia, illuminating systemic gaps and opportunities for environmental integration within dental healthcare. It bridges the knowledge gap between sustainability theory and practice in resource-constrained settings.

Key Recommendation: Stakeholders should prioritise the development of national guidelines for green dentistry, invest in staff training, promote cross-sector partnerships with suppliers of eco-friendly technologies, and implement financial incentives to support sustainability initiatives within dental healthcare facilities.