

INPLASY

Comparative Effectiveness of Implant-Retained Overdentures versus Conventional Complete Dentures in Elderly Edentulous Patients: A Systematic Review and Meta-Analysis

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ADMINISTRATIVE INFORMATION

Support - King Khalid University.

Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 19 February 2025 and was last updated on 19 February 2025.

INTRODUCTION

Review question / Objective Are implant-retained overdentures (IODs) more effective than conventional complete dentures (CCDs) in improving oral health-related quality of life (OHRQoL), denture satisfaction, and masticatory performance in elderly edentulous patients?"

Rationale This systematic review and meta-analysis aims to compare implant-retained overdentures (IODs) with conventional complete dentures (CCDs) in elderly edentulous patients to determine their effectiveness in improving oral health-related quality of life (OHRQoL), denture satisfaction, and masticatory performance. Given the limitations of CCDs, this study provides evidence-based insights to guide clinical decision-making and enhance geriatric prosthodontic care.

Condition being studied This systematic review and meta-analysis evaluates the effectiveness of implant-retained overdentures (IODs) versus conventional complete dentures (CCDs) in elderly edentulous patients. It examines their impact on oral health-related quality of life (OHRQoL), denture satisfaction, masticatory performance, and overall functional outcomes, providing evidence-based insights for better prosthetic treatment choices.

METHODS

Search strategy A comprehensive literature search was conducted across PubMed, Scopus, Web of Science, and Cochrane databases up to May 2024 using MeSH terms and free-text keywords related to "implant-retained overdentures," "conventional complete dentures," "edentulism," and "elderly patients."

Participant or population Edentulous patients.

Intervention Teeth-supported overdentures.

Comparator Conventional complete dentures.

Study designs to be included We took into account both descriptive (case control and cohort) and interventional (trials) based research that was written in English for this review.

Eligibility criteria Randomised controlled trials (RCTs).

Information sources PubMed, Cochrane, Dimensions.ai, and Google Scholar.

Main outcome(s) Implant-retained overdentures (IODs) significantly improve oral health-related quality of life (OHRQoL), denture satisfaction, and masticatory performance compared to conventional complete dentures (CCDs) in elderly edentulous patients.

Data management Microsoft Excel (Excel 365; Microsoft Corp., Redmond, WA, USA). For export and data manipulation, Google Sheets (Alphabet Inc., Mountain View, CA, USA) were also used.

Quality assessment / Risk of bias analysis Two researchers independently assessed the risk of bias of the included articles using —JBI critical appraisal tools. The potential risk of bias was categorized as low if a study provided detailed information pertaining to 70% or more of the applicable parameters.

Strategy of data synthesis Two review authors (RS and JH) used the studies to help select studies and document their decisions. This was done in two stages, with the first stage consisting of a title and abstract screening of all studies against the inclusion criteria, and the second stage being a full text assessment of papers that were deemed potentially relevant based on the initial screening. RS and AK, the review's authors, discussed and settled their differences by consensus after consulting the procedure.

Subgroup analysis The data was compiled from a variety of articles:

- Author(s), year of publication, country, study design.
- Total number of patients/datasets.
- Training/validation datasets.
- Test datasets.
- Aim of the study.

Sensitivity analysis None.

Language restriction Articles only in English were Selected.

Country(ies) involved Saudi Arabia.

Other relevant information None

Keywords Edentulism, Complete Dentures, Overdentures.

Dissemination plans Data will be shared after the publication.

Contributions of each author

Author 1 - Ravinder Saini - Conceptualization, original Drafting, Data Analysis.

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Author 2 - Sunil Vaddamanu - Statistical Expertise, Reviewing, Editing.

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