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# Developing an Ordered Logistics Regression Model for Denture Hygiene among Elderly in Residential Care Homes

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**Source** [JOURNAL OF DENTISTRY INDONESIA](#)

Volume: 31 Issue: 2

DOI: 10.14693/jdi.v31i2.1634

**Published** AUG 2024

**Indexed** 2024-09-16

**Document Type** Article

**Abstract** With a global aging population, the oral hygiene of elderly individuals in institutional settings requires unique management. Maintaining adequate denture hygiene is a critical aspect of their

overall well-being, while neglecting denture hygiene can lead to various oral health issues, malnutrition, and further impacting their overall health. Objective: : This paper aims to provide a preliminary overview of denture hygiene care among the elderly using an ordered logistics model. Methods: : Data was obtained from 174 participants in two government institutional homes in Malaysia. The Principle Components Analysis (PCA) was used to identify significant variables and an ordered logistic model showed the relationships between these variables and denture hygiene. Results: : PCA identified three significant variables: calf circumference, age, and appetite. The ordered logistic model shows that lower calf circumference, lower age groups and severe loss of appetite, all were associated with significantly poorer denture hygiene. The model's fitting and goodness-of-fit was also assessed and found to be satisfactory. Conclusion: : Poor denture hygiene is prevalent among institutionalized elderly. Addressing these issues is crucial for caregivers and healthcare providers to enhance the well-being of the aging population. This research provides a foundation for future interventions to improve denture hygiene and, by extension, overall health and quality of life for institutionalized elderly individuals.

### Keywords

**Author Keywords:** denture hygiene; elderly; oral hygiene; ordered logistics model; principal components plot; the goodness of fit

**Keywords Plus:** PRINCIPAL COMPONENT ANALYSIS; ORAL-HEALTH; NUTRITIONAL-STATUS; MALNUTRITION; ASSOCIATION

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Research Areas: Dentistry, Oral Surgery & Medicine

Citation 1 Clinical & Life Sciences 1.49 Dentistry & Oral Medicine 1.49.468 Oral Health

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