

ODONTOLOGÍA

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**Association between socioeconomic inequality and edentulism burden among adults
aged ≥ 60 years in Ecuador, 2003–2023: an ecological time-series study**

Original article

Association between socioeconomic inequality and edentulism burden among adults aged ≥ 60 years in Ecuador, 2003–2023: an ecological time-series study

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Abstract

Background/Objectives: Edentulism is one of the most severe outcomes of chronic oral diseases and represents an important public health concern among older adults. Its distribution is influenced by social determinants of health, including socioeconomic conditions, income distribution, educational attainment, and access to healthcare services. Although previous studies have identified socioeconomic disparities in oral health, evidence regarding the relationship between socioeconomic inequality and the burden of edentulism in Ecuador remains limited. Therefore, the aim of this study was to analyze the association between the burden of edentulism among adults aged ≥ 60 years and socioeconomic inequality, measured by the Gini index, in Ecuador from 2003 to 2023. **Methods:** An ecological time-series study was conducted using secondary aggregated national data from Ecuador between 2003 and 2023. The burden of edentulism among adults aged ≥ 60 years was assessed using three indicators: total number of individuals with edentulism, edentulism rate per 100,000 inhabitants, and percentage of edentulism. Socioeconomic indicators included the Gini index and gross domestic product (GDP) per capita. Descriptive statistics, graphical analyses, and Spearman's rank correlation coefficients were used to evaluate associations between variables. **Results:** During the study period, the burden of edentulism increased, whereas income inequality decreased and GDP per capita increased. Significant inverse associations were observed between the Gini index and all edentulism indicators, while GDP per capita showed significant positive associations with the number, rate, and percentage of individuals with edentulism. These findings suggest that temporal changes in edentulism were associated with broader socioeconomic and demographic transitions occurring in Ecuador. **Conclusions:** The burden of edentulism among adults aged ≥ 60 years in Ecuador appears to be influenced by a complex interaction of socioeconomic inequality, economic development, demographic aging, and social determinants of health. These findings highlight the importance of life-course oral health policies focused on prevention, equitable access to dental care, and healthy aging to reduce the future burden of edentulism in Ecuador.

Keywords: Edentulism; Oral Health; Ecological Study.

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