

PEER REVIEW HISTORY

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ARTICLE DETAILS

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| TITLE (PROVISIONAL) | Temporal trends and the association between self-rated oral health and falls in community-dwelling older adults in South Korea: A secondary analysis of survey data |
| AUTHORS | Seo, Hyun-Ju; Choi, Min-Jung; Ahn, Soon-Ki |

VERSION 1 – REVIEW

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| REVIEWER | Bhat, Meghashyam The University of Adelaide |
| REVIEW RETURNED | 01-Dec-2023 |

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| GENERAL COMMENTS | Dear authors, Thanks for sending in the manuscript. I note there are revisions that are needed in the methodology of the study. Further the discussion is not adequate. Self reported health and a secondary analysis has several limitations that would not be of interest to international readability. |
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| REVIEWER | Carlos, Venegas-Sanabria Luis Universidad Del Rosario Escuela de Medicina y Ciencias de la Salud |
| REVIEW RETURNED | 07-Dec-2023 |

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| GENERAL COMMENTS | <p>The authors propose an interesting approach to assesses the association between two prevalence conditions in older adults. Is also interesting the change over time in the trends reported in the study. I have a few observations and considerations:</p> <ul style="list-style-type: none"> • Introduction: It would be relevant to mention the changes over time in health politics, conditions, access to health services, and education in oral health or fall risk that support the hypothesis of change in the trends of falls and SROH. • Methods: <ul style="list-style-type: none"> o Includes the number of the Institutional Review Board approbation. o The CHS includes other variables of oral health assessment as the use of dental prosthesis or edentulism partial or total? If the survey, consider other forms to assess the oral health would be interesting explore the association in the analysis. • Discussion: I suggest going deeper into possible explanations of the association between oral health status and the presence of falls. One possible explanation that I suggest exploring is the association between oral microbiota and the presence of low muscle mass. |
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VERSION 1 – AUTHOR RESPONSE

Reviewer: 1

| Comments | Responses |
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| I note there are revisions that are needed in the methodology of the study. Self reported health and a secondary analysis has several limitations that would not be of interest to international readability. | <p>Thank you for reviewing my manuscript.</p> <p>We tried to elucidate the population's health in terms of epidemiology, identifying an association between oral health and fall experience in the older adult population, which has been increasing public health problems.</p> <p>In addition, we put in the effort to explore this research question from the perspective of the local context as well as global perspectives.</p> |

Reviewer: 2

| Comments | Responses |
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| Introduction: It would be relevant to mention the changes over time in health politics, conditions, access to health services, and education in oral health or fall risk that support the hypothesis of change in the trends of falls and SROH. | <p>Thank you for your comments. We added the reason why this study examined the change over time of fall experience in the introduction as follows.</p> <p>Moreover, no study has been conducted to analyze the temporal trend of the fall experience rate according to the self-rated oral health (SROH) status of community-dwelling older adults. In other words, although data was gathered biennially from community-dwelling older adults nationwide, there was limited knowledge about the change over time in fall prevalence and the association between self-rated oral health and fall experience in the Korean context.</p> |
| <ul style="list-style-type: none"> • Methods: - Includes the number of the Institutional Review Board approbation. - The CHS includes other variables of oral health assessment as the use of dental prosthesis or edentulism partial or total? If the survey, consider other forms to assess the oral health would be interesting explore the association in the analysis. | <p>We added the ethics approval ID in Method.</p> <p>This study was approved by the Institutional Review Board of Chungnam National University (202204-SB-046-01).</p> <p>Thank you for your advice. The Korean CHS questionnaire asked participants about their oral health status, including subjective oral health status and subjective chewing discomfort. However, this study focused on overall oral health as an independent variable because chewing discomfort can be regarded as a kind of symptom composed of overall subjective oral health.</p> |

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| | <p>Thus, we have mentioned the limitation of subjective oral health measures in the Discussion.</p> <p>This study had several limitations. SROH may reflect subjective oral health rather than objective oral health, as measured by a clinical dental examination and medical record, including dental prostheses and the number of teeth.³⁷ Nevertheless, SROH research has been widely conducted in epidemiological studies,³⁸ and SROH used in the CHS was considered acceptable oral health outcome measures.</p> |
| <p>Discussion: I suggest going deeper into possible explanations of the association between oral health status and the presence of falls. One possible explanation that I suggest exploring is the association between oral microbiota and the presence of low muscle mass.</p> | <p>Thank you for your comments. We added the possible explanation of the study findings: association between poor oral health status and fall experience in the Discussion as below.</p> <p>Our study findings supported the prior explanations that poor oral function was associated with increased malnutrition because of having difficulty eating³¹ and a decline in muscle strength and physical function, resulting in an increased risk of falls in both cross-sectional and prospective cohort studies.^{32,33} The time trend is critical because it provides dynamic information about fall prevalence to enable better preventive projects, help design care policies for older adults, and allocate health resources for fall prevention. Nonetheless, few studies have examined the time trend of fall experiences by SROH. In this study, those who reported poor SROH had a lower slope of decline than the good group despite all groups showing a significantly decreasing trend in both men and women. The declining trend in fall experience among all groups could be explained by the effort to develop and implement evidence-based guidelines for fall prevention¹², provide fall prevention interventions³⁴, and conduct National Injury Surveillance and Prevention to minimize damage and social losses resulting from injury and falls by Health authorities in Korea.³⁵</p> |

The authors truly appreciated the reviewers' kind and accurate comments. Revision based on these comments has improved the manuscript's accuracy and quality. We appreciate your efforts.