

研 究 者 : Hazem Abbas

(所属 : Tohoku University, Graduate School of Dentistry, International and Community Oral Health Department)

研究題目 : Oral health and social isolation: Mediation of oral functions.

目 的 :

Social isolation among older population is a major public health problem in aging societies. Oral health was associated with social isolation among older population. A recent study showed that fewer number of remaining teeth was associated with social isolation after 6-years of follow-up, and absence of dental prosthesis use was a potential risk factor for social isolation. However, the mediating pathways and the mechanism of this association is unknown.

Tooth loss compromises chewing abilities, influence food intake, and quality of nutrients leading to malnutrition which was associated with underweight and frailty among the older population, and consequently lead to social isolation. Additionally, tooth loss has adverse effect on conversational ability, self-esteem, and facial attractiveness, and subsequently, it might contribute to withdrawal from the surrounding society and eventually lead to social isolation.

The aim of this study was to investigate the potential mediating pathways between oral health represented by the number of teeth at baseline and social isolation at follow-up in an older Japanese population. The hypothesized mediators are three oral functions from the Oral Impacts on Daily Performance (OIDP) scale as follow; speaking, chewing ability, and smiling.

対象および方法 :

The 2010-2016 panel data from the Japan Gerontological Evaluation Study (JAGES) was used (n=11,608). The JAGES participants were functionally independent older population aged 65 years or older. In this cohort study, number of remaining teeth was self-reported and represented oral health. Social isolation was assessed through a comprehensive multidimensional variable calculated using a 5-point index derived from the binary responses to the following domains of questions about marital status, cohabitating with a partner, social participation and receiving emotional support from others. The covariates were age, sex, educational attainment, income, activities of daily living, living area and having depressive symptoms that was assessed using the geriatric depression scale (GDS-15). Causal mediation analysis was used to calculate the natural direct effect (NDE), the natural indirect effect (NIE), and the total effect (TE) of two oral functions (speaking and chewing) and one oro-facial appearance measure (smiling) on the association between number of remaining teeth and social isolation. Multiple imputation method with chained equations was used to address missing data in the panel dataset.

結果および考察：

Preliminary analyses showed that having chewing difficulties mediated 11.9% of the association between tooth loss at baseline and social isolation at follow-up. While having difficulty in speaking and having problems in smiling did not mediate the association. These preliminary results suggest that diminished chewing abilities and the consequent poorer nutritional intake could be one explanatory mechanism for the association between tooth loss and social isolation among older Japanese population. However, further confirmatory, sensitivity and supplementary analyses are needed to support the preliminary findings of this study.

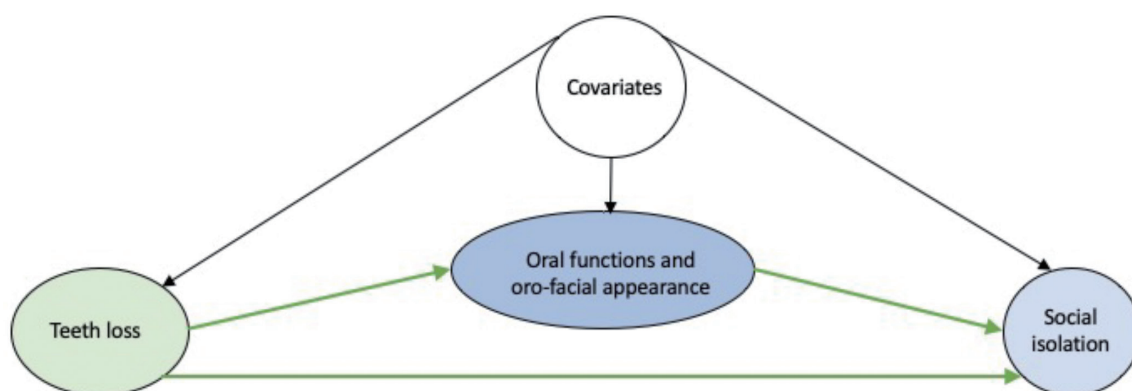


Figure. The directed acyclic graph of the variables considered in this study.

Covariates were age, sex, education, equivalised income level, independent ability of daily living, depressive symptoms, and area of residence. Three oral functions and oro-facial appearance's variables were modelled in this study. They were speaking, chewing, and smiling.

成果発表：（予定を含めて口頭発表、学術雑誌など）

Oral Presentation

IADR General Annual meeting 2024, USA

Publication:

The manuscript of this study is being prepared to be submitted to the Journal of Dental research *JDR*.