Introduction

The global prevalence of periodontal disease (PD) is 20% to 50% of the overall population. Several studies have focused on the association between tooth loss, body mass index (BMI), and mortality worldwide. To date, the effect of tooth loss on all-cause mortality among elderly patients with a different weight group has not been assessed.

Objective

To evaluate the effects of tooth loss on all-cause mortality among elderly participants with a varying BMI.

Methods

This retrospective cohort study evaluated the data obtained from a government-sponsored, annual physical examination program for elderly citizens residing in Taipei City during 2005 to 2007, and follow-up to December 31, 2010. The final analytical sample comprised 55651 participants, with 29572 men, and 26079 women. The number of missing teeth was used as a representative of oral health status. We calculated the relative risk for all-cause mortality by using Cox proportional hazards models. The examination date was considered the time of entry into the study, and the end of follow-up (as of December 31, 2010), or the date of death (whichever was earlier) was considered the time of exit.

Results

The number of teeth lost is associated with an increased risk of all-cause mortality. Tooth loss could lead directly to influence dietary choices or poor digestion, thus resulting in becoming underweight. This might explain the association between the increased risk of all-cause mortality and tooth loss, particularly in underweight people.

Conclusions

The number of teeth lost is associated with an increased risk of all-cause mortality. All-cause mortality includes causes such as cardiovascular disease, stroke, and dementia, and these diseases are strongly associated with tooth loss and being underweight. Tooth loss could lead directly to influence dietary choices or poor digestion, thus resulting in becoming underweight. This might explain the association between the increased risk of all-cause mortality and tooth loss, particularly in underweight people. Our results indicated a bidirectional relationship between all-cause mortality and tooth loss, and further research must be conducted to explore the mechanisms underlying the empirical associations observed in our study.