



STRUCTURE OF DENTAL MORBIDITY AND RISK FACTORS IN ELDERLY AND SENILE PATIENTS

Mavlyanova Nargiza Talatovna

Tashkent State Medical University

Department of Advanced Training in Therapeutic Dentistry,

Course in Prosthetic Dentistry, a ssistant

<https://doi.org/10.5281/zenodo.22005466>

ARTICLE INFO

Received: 14th August 2026

Accepted: 16th August 2026

Online: 18th August 2026

KEYWORDS

To summarize estimates of the prevalence and intensity of dental diseases in individuals aged 60 years and older, and to identify risk factors suitable as input predictors for a prognostic model.

ABSTRACT

According to the Global Burden of Disease study, the prevalence of dental diseases in individuals aged 70 years and older increased from 133.26 million cases in 1990 to 313.37 million in 2021; this increase is almost entirely attributable to the growth of this population group, and a further rise in the disease burden is expected by 2040 [7].

Relevance. According to the Global Burden of Disease study, the prevalence of dental diseases in individuals aged 70 years and older increased from 133.26 million cases in 1990 to 313.37 million in 2021; this increase is almost entirely attributable to the growth of this population group, and a further rise in the disease burden is expected by 2040 [7].

Aim. To summarize estimates of the prevalence and intensity of dental diseases in individuals aged 60 years and older, and to identify risk factors suitable as input predictors for a prognostic model.

Methods. A targeted literature analysis of PubMed/MEDLINE for 2014–2026 was conducted, encompassing 8 sources, primarily systematic reviews and meta-analyses. The following parameters were compared: DMFT, root caries indices, OHI-S, PD, CAL, and risk factors.

Results. In community-dwelling individuals aged 45 years and older, the pooled prevalence of active caries was 45 %, and that of complete edentulism was 22 % [2]. In cohorts aged 60 years and older, caries prevalence ranged from 25 % to 99 %, root caries from 8 % to 74 %, and the mean DMFT index in institutionalized patients ranged from 6.9 to 29.7 [3]. The global prevalence of root caries in middle-aged and elderly individuals is 41 %, with a mean affected tooth count of 2.87 [6]. In the United States, 62.3 % of individuals aged 65 years and older have at least one site with attachment loss ≥ 5 mm, and approximately half have a pocket ≥ 4 mm [5]. Among 639 patients aged 65 years and older, candidiasis and angular cheilitis predominated in 329 nursing home residents [1].

Medication burden is an independent risk factor. According to interventional studies, xerogenic medications increase the risk of dry mouth – urological agents OR 5.91, antidepressants OR 4.74, psycholeptics OR 2.59 [8]. In 5,645 patients aged 65 years and older,

polypharmacy (≥ 10 medications) and each additional systemic disease were associated with higher baseline CAL (0.29 mm and 0.09 mm, respectively), and in a subgroup of 2,130 patients, with accelerated annual attachment loss (0.08 mm and 0.03 mm) [4].

Comparability of indices is limited. In the identified reviews, pooled OHI-S estimates for the elderly are not reported, and the global meta-analysis on root caries uses the RDMFT index rather than RCI [6]. Central Asian countries are absent from the included studies [3].

Conclusions. The disease burden is cumulative in nature – root caries and attachment loss accumulate with age. In the model based on 5,645 patients, the most significant predictors were baseline CAL, bleeding on probing, age, smoking, diabetes mellitus, and the number of medications taken; the association between xerostomia and medication burden was confirmed by meta-analysis [4, 8]. In the same model, these predictors yielded an AUC of 0.81 with a specificity of 94 % but a sensitivity of only 61 %, which sets a limit on applicability. Standardization of OHI-S and RCI recording is mandatory when constructing the training dataset [4].

References:

1. Akbiyik Az ZA, Majidov S, Saruhanoglu A, et al. Oral mucosal lesions and oral health-related quality of life (GOHAI) in nursing home residents and community-dwelling older adults in Türkiye. *BMC Geriatr*. 2026;26(1):730.
2. Borg-Bartolo R, Rocuzzo A, Molinero-Mourelle P, et al. Global prevalence of edentulism and dental caries in middle-aged and elderly persons: a systematic review and meta-analysis. *J Dent*. 2022;127:104335.
3. Chan AKY, Tamrakar M, Jiang CM, et al. A systematic review on caries status of older adults. *Int J Environ Res Public Health*. 2021;18(20):10662.
4. Chatzopoulos GS, Wolff LF. The independent and combined associations of multimorbidity and polypharmacy on periodontal disease severity and progression in older adults. *J Clin Exp Dent*. 2026;18(8):e982–e989.
5. Eke PI, Wei L, Borgnakke WS, et al. Periodontitis prevalence in adults ≥ 65 years of age, in the USA. *Periodontol 2000*. 2016;72(1):76–95.
6. Maklennan A, Borg-Bartolo R, Rocuzzo A, et al. Meta-analysis of global distribution of root-caries prevalence in middle-aged and elderly. *Caries Res*. 2025;59(4):298–314.
7. Shan W, Feng Q, Yao L, et al. Burden of oral diseases in adults aged 70 years and older: time-trend analysis of Global Burden of Disease Study 2021. *Oral Dis*. 2026. doi:10.1111/odi.70300.
8. Tan ECK, Lexomboon D, Sandborgh-Englund G, et al. Medications that cause dry mouth as an adverse effect in older people: a systematic review and metaanalysis. *J Am Geriatr Soc*. 2018;66(1):76–84.