Oral health in the elderly: results of the 6th German Oral Health Study (DMS • 6)

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Objectives: Oral health plays a central role in overall well-being, including in the elderly. The demographic transition and its effects are resulting in a higher proportion of older people, both with and without care requirements. This paper provides an overview of the dental situation of the elderly from the 6th German Oral Health Study (DMS • 6). **Method and materials:** DMS • 6 is a population-representative oral epidemiologic study that surveys oral health in Germany. Data from 797 younger seniors aged 65 to 74 were collected by calibrated examiners. The methodology remains largely consistent with that of the previous studies. **Results:** Among the younger seniors (65- to 74-year-olds), edentulism has more than halved to 5.0% compared to the Fifth German Oral Health Study (DMS V) (12.4% in 2014). The mean number of missing teeth (8.6) decreased further, compared to DMS IV (14.1) and DMS V (11.1). At 18.8 teeth, the FST Index (number of filled or sound teeth) has shown improvement compared to the previous studies (DMS IV, 13.6; DMS V, 16.4). The root caries (59.1%) increased compared to DMS IV (28.0%). Caries experience (decayed, missing, filled teeth [DMFT]: 17.6), in contrast, hardly changed from DMS V (17.7). Half of 65- to 74-year-olds were diagnosed with moderate periodontitis (49.4%) and almost a third (30.4%) with severe periodontitis. In younger seniors with care requirements, therapeutic capability was greatly reduced for almost half (47.4%) and oral hygiene ability for one fifth (18.5%). **Conclusion:** The prevalence of tooth loss and edentulism among younger seniors in Germany continues to decline. Due to further morbidity compression, the challenges of dental treatment lie in the continuous treatment of younger seniors to prepare them for older stages of life. *(Quintessence Int 2025;56 (Suppl):S112–S119; doi: 10.3290/j.qi.b5982021)*

Keywords: care needs, dental care, dental care for persons with disabilities, dental caries, dentists, DMS 6, epidemiology, geriatric dentistry, oral health

The prevalence of edentulism and of tooth loss has been decreasing, resulting in more teeth being retained into old age.[1-3] The proportion of edentulous 65- to 74-year-old study participants in DMS V (2014, 12.4%) was halved compared to 1997 (DMS III, 24.8%).[1,4] Oral health plays a central role in overall well-being, especially in the elderly. Age-related diseases and the risk of severe systemic diseases such as diabetes mellitus or cardiovascular diseases can be exacerbated by periodontitis and peri-implantitis, which occur frequently in advanced age.

As a result of the demographic transition, the proportion of over-65-year-olds in the general population is increasing in the Global North. An aging population leads to a higher proportion of people with care needs. In 2021, 84% of the 5 million people with care requirements in Germany received care at home by relatives and mobile care services. Projections of demographic trends indicate an increase in care needs to 5.6 million people by 2035 and to 6.8 million people by 2055.[5] Among those in need of care, 79% were aged 65 and older, and one-third (33%) were at least 85 years old. The majority of these individuals were female (62%). The probability of needing care increases with older age. While only around 9% of 70- to 74-year-olds required care, the highest care rate was found for those aged 90 and older (82%).[1,6] The group of younger seniors also includes people with disabilities whose consequences must be addressed in their daily life. These disabilities vary widely and may have physical, mental, or psychological effects.

The present study aims to present the oral health of 65- to 74-year-old seniors in Germany, including those with care requirements and severe disabilities.

Method and materials

The general methodology of the study is presented in separate articles.[7,8] The 6th German Oral Health Study (DMS • 6) has been approved by the Institutional Review Board of the Witten/Herdecke University, Witten, Germany (registration number S-249/2021). This study is registered at the German Clinical Trials Register (registration number DRKS00028701).

Sample

For the data analysis, all study participants in the group of younger seniors (65- to-74-year-olds) were selected from those who met the inclusion criteria of the DMS • 6 analysis set. A total of 797 younger seniors were included in the analysis.

Measurement methods and variables

In DMS • 6, oral functional capacity[9] was investigated in seniors aged 65 to 74 according to three subject fields: therapeutic capability, oral hygiene ability, and self-responsibility. Therapeutic capability was assessed by the dental examiner. This included determining whether dental treatment of the study participants could be the same as for generally healthy and normally functional study participants or whether restrictions were necessary due to reduced functionality (eg, number and duration of treatment appointments, selection of the simpler treatment concept and of a simpler prosthesis). The financial situation of the study participants and their dental status had no effect on therapeutic capability. To assess oral hygiene ability, the ability to partake in an individual prophylactic dental treatment session was evaluated along with cognitive and motor skills required to implement and understand oral and prosthesis hygiene. Therapeutic capability and oral hygiene ability were classified into normal, slightly reduced, and greatly reduced. Self-responsibility was classified into normal, reduced, and none. This criterion describes whether study participants were capable of deciding to seek a dental practitioner for check-up or treatment and of organizing the appointment themselves.[9]

The care requirements were determined by asking about regular services provided by long-term care insurance or another benefits provider due to individual care requirements.

Persons with a degree of disability of less than 50% are defined as disabled (degree of disability < 50%). Study participants with a degree of disability of at least 50% (degree of disability ≥ 50%) are deemed severely disabled.

Table 1 Baseline characteristics of study participants for younger seniors (65- to 74-year-olds)

Variable		65- to 74-year-olds
No. of participants (n)		797
Age, years		69.8 ± 2.8
Gender	Female	422 (52.9%)
	Male	375 (47.1%)
Education group	Low	158 (20.9%)
	Medium	367 (48.6%)
	High	230 (30.5%)
Migration history	Yes	105 (13.9%)
	No	648 (86.1%)
Smoking status	Never smoked	380 (48.0%)
	Former smoker	299 (37.8%)
	Current smoker	113 (14.3%)
Body mass index, kg/m^2		27.4 ± 5.0
	< 25	242 (32.4%)
	25 – < 30	311 (41.7%)
	≥ 30	193 (25.9%)
Diabetes mellitus	Type 2 diabetes	124 (15.7%)
	Type 1 diabetes	1 (0.1%)
	No or gestational diabetes	664 (84.2%)
Officially recognized disability	Degree of disability < 50%	50 (6.8%)
	Severe disability (degree of disability ≥ 50%)	111 (15.1%)
	No	572 (78.0%)
Receipt of nursing care	Yes	26 (3.7%)
	No	677 (96.3%)
Level of care	Level of care 1	5 (0.7%)
	Level of care 2	14 (2.0%)
	Level of care 3	3 (0.4%)
	Level of care 4	3 (0.4%)
	Level of care 5	0 (0.0%)
Tooth brushing (frequency)	≥ 2 times daily	619 (83.4%)
	< 2 times daily	123 (16.6%)
Interdental cleaning (frequency)	≥ once daily	283 (38.1%)
	< once daily	459 (61.9%)
Dental visits (frequency)	≥ once a year	689 (87.7%)
	< once a year	97 (12.3%)
Dental service utilization	Complaint-oriented	103 (13.0%)
	Control-oriented	688 (87.0%)

Data are presented as numbers (percentages) or mean ± standard deviation based on unweighted data.

For the analysis of the research question, variables from the clinical examination were selected; for caries-related endpoints, further details are available in Jordan et al[10]; for periodontal endpoints in Eickholz et al[11] and Kocher et al[12]; and for prothesis endpoints in Wöstmann et al.[13]

Table 2 Oral functional capacity of younger seniors (65- to 74-year-olds)

Variable		Total	Gender		Severe disability		Care requirement	
			Male	Female	Yes	No	Yes	No
No. of participants (n)*		794	372	422	111	620	26	675
Resilience capacity level (%)	Normal	79.7 (76.8; 82.4)	79.8 (75.7; 83.7)	79.6 (75.6; 83.4)	76.5 (67.4; 83.6)	82.1 (78.9; 84.9)	27.0 (14.5; 46.8)	81.2 (78.1; 84.1)
	Slightly reduced	11.8 (9.7; 14.2)	9.8 (7.2; 13.2)	13.8 (10.6; 17.3)	11.2 (6.4; 18.5)	11.5 (9.2; 14.2)	20.4 (9.5; 38.9)	12.1 (9.8; 14.8)
	Greatly reduced	7.9 (6.2; 10.0)	9.3 (6.8; 12.6)	6.6 (4.5; 9.3)	10.9 (5.7; 17.4)	6.2 (4.5; 8.3)	48.2 (32.2; 67.8)	6.2 (4.6; 8.2)
	No resilience	0.6 (0.2; 1.2)	1.1 (0.4; 2.5)	0.0 (NA)	1.3 (0.1; 4.4)	0.2 (0.0; 0.8)	4.5 (0.4; 15.5)	0.5 (0.1; 1.2)
Therapeutic capability (%)	Normal	87.9 (85.5; 90.0)	89.0 (85.6; 91.9)	86.8 (83.3; 89.8)	82.4 (73.7; 88.4)	90.5 (87.9; 92.6)	30.0 (14.5; 46.8)	89.6 (87.2; 91.9)
	Slightly reduced	9.3 (7.3; 11.4)	7.1 (4.8; 9.9)	11.3 (8.5; 14.6)	10.5 (5.7; 17.4)	8.6 (6.6; 11.0)	22.6 (9.5; 38.9)	9.4 (7.3; 11.8)
	Greatly reduced	2.9 (1.9; 4.2)	3.9 (2.3; 6.2)	1.9 (0.9; 3.7)	7.1 (3.0; 12.6)	0.9 (0.4; 2.0)	47.4 (29.1; 64.5)	1.0 (0.5; 2.1)
	None	0.0 (NA)	0.0 (NA)	0.0 (NA)	0.0 (NA)	0.0 (NA)	0.0 (NA)	0.0 (NA)
Oral hygiene ability (%)	Normal	88.0 (85.6; 90.1)	85.8 (82.2; 89.1)	90.1 (86.8; 92.6)	85.8 (78.1; 91.4)	89.7 (87.1; 91.9)	37.8 (23.0; 57.7)	89.8 (87.4; 92.0)
	Slightly reduced	9.7 (7.8; 11.9)	11.3 (8.3; 14.6)	8.3 (5.9; 11.3)	9.3 (5.0; 16.2)	9.0 (7.0; 11.5)	43.8 (26.0; 61.1)	8.7 (6.7; 10.9)
	Greatly reduced	1.9 (1.1; 3.0)	2.1 (1.0; 3.9)	1.6 (0.8; 3.3)	3.5 (1.3; 8.8)	1.3 (0.6; 2.4)	18.5 (7.2; 34.8)	1.1 (0.5; 2.1)
	None	0.4 (0.1; 1.0)	0.8 (0.2; 2.1)	0.0 (NA)	1.3 (0.1; 4.4)	0.0 (NA)	0.0 (NA)	0.5 (0.1; 1.2)
Self-responsibility (%)	Normal	92.9 (91.0; 94.6)	91.1 (88.0; 93.7)	94.7 (92.1; 96.5)	92.5 (86.1; 96.3)	94.4 (92.3; 96.0)	62.6 (45.8; 79.9)	94.3 (92.3; 95.8)
	Reduced	6.9 (5.3; 8.9)	8.6 (6.1; 11.7)	5.3 (3.5; 7.9)	7.5 (3.7; 13.9)	5.4 (3.9; 7.5)	32.9 (17.2; 50.5)	5.7 (4.2; 7.7)
	None	0.2 (0.0; 0.6)	0.3 (0.0; 1.2)	0.0 (NA)	0.0 (NA)	0.2 (0.0; 0.8)	4.5 (0.4; 15.5)	0.0 (NA)

*Study participants with valid information on oral functional capacity.
Data are presented as unweighted numbers (n) and weighted percentages (with 95% confidence intervals). NA, not applicable.

Statistical analysis

For the epidemiologic description of oral diseases, prevalences and means with associated 95% confidence intervals (CIs) were calculated. A weighted dataset was used for this purpose. The aim was to balance differing probabilities through the use of the weights when selecting the study participants and differences regarding gender, age, and region compared to the basic population in Germany. Results were presented for the whole seniors group as well as stratified by gender (male/female); the characteristic oral functional capacity was further stratified by severe disability (yes/no) and by care requirement (yes/no).

Descriptive analyses of social-scientific characteristics to profile the study participants were unweighted, and numbers (n) are provided without weighting. Detailed information on data handling and statistical methods is described previously.[14]

Results

In DMS • 6, 797 participants aged between 65 and 74, of whom 422 (52.9%) were women and 375 (47.1%) were men, were examined. Of these, 13.9% had a migration history. In total, 111 (15.1%) seniors were severely disabled, 50 (6.8%) were disabled, and 26 (3.7%) received nursing care. Furthermore, 87.0% of participants visited the dental practitioner for check-ups, while 13.0% did so for symptom treatment (Table 1).

Oral functional capacity

With regard to therapeutic capability, 87.9% of the participating younger seniors were able to be treated normally from a dental perspective, ie as generally medically healthy individuals without functional restrictions. Among the younger seniors with severe disabilities, this figure was 82.4%, while among participants with care needs, it was 30.0%. A large reduction in therapeutic capability was observed in participants aged 65 to 74 with care needs, at 47.4%. The vast majority of the younger seniors could maintain oral hygiene completely independently (88.0%) or with slightly reduced ability (9.7%) (Table 2). In contrast, 18.5% of participants requiring care were classified as having a greatly reduced oral hygiene ability. Further, 92.9% of the younger seniors demonstrated self-responsibility, ie they

could independently handle decisions on and the organization of dental appointments. However, of the younger seniors with a care requirement, 32.9% had greatly reduced self-responsibility, while 4.5% lacked self-responsibility.

Of 794 younger seniors with valid information on oral functional capacity, 79.7% had a normal resilience capacity level from a dental perspective, ie in principle all dental treatments were possible due to the overall good condition of the study participants (Table 2). Approximately 11.8% of participating younger seniors had slightly reduced resilience capacity, ie under adequate conditions, the same treatment options would be possible as for patients with a normal resilience capacity level. A smaller proportion (7.9%) of participants had greatly reduced resilience capacity and 0.6% had no resilience (Table 2).

Prevalences of oral disease and treatment

Five percent of younger seniors were edentulous. The mean number of missing teeth (excluding third molars) was 8.6 teeth. A FST Index (number of filled or sound teeth) of 18.8 teeth was recorded for the younger seniors. The degree of restoration for coronal caries was 92.9%, while that of root caries was 62.8%. Dentitions requiring treatment were observed in 20% of participants (Table 3). A total of 20.4% of exposed cervical tooth surfaces showed caries or fillings. The prevalence of root caries was measured at 59.1% (Table 3). The degree of restoration of root caries among younger seniors without severe disabilities or care requirements was 79.8%, and 65.2% among younger seniors with restrictions.

Stage III periodontal disease was observed in 26.3%, while 26.4% had stage IV periodontal disease, with men (III, 30.5%; IV, 31.8%) being more affected than women (III, 22.4%; IV, 21.6%) (Table 3).

Approximately 63.8% of missing teeth were replaced by dental prostheses. Dentitions with missing teeth but no dentures were observed in 4.4% of participants. The most common prosthetic tooth replacement was fixed dental prostheses (47.8%), followed by crown restorations (16.9%), removable partial dentures (19.1%), and complete dentures (10.8%). Additionally, 23.2% of study participants had dental implants, with 2.9% having removable restorations and 20.3% having fixed restorations.

Changes in prevalences of oral diseases

The oral diseases in seniors for DMS IV (2005), DMS V (2014), and DMS • 6 (2023) are shown in Table 4. Edentulism among younger seniors in DMS • 6 (5.0%) was more than halved compared to DMS V and continues the declining trend observed in the previous studies (DMS IV from 2005: 22.6%; DMS V from 2014: 12.4%). The mean number of missing teeth (8.6) among younger seniors further decreased compared to DMS IV (14.1) and DMS V (11.1). At 18.8 teeth, the FST showed an increase among younger seniors compared to the previous studies (DMS IV, 13.6; DMS V, 16.4).

The prevalence of root caries (59.1%) doubled compared to DMS V (28.0%). To assess the occurrence of root caries in teeth at risk, the Root Caries Index (RCI) was 20.4% (DMS IV, 17.0%; DMS V, 13.6%). By contrast, caries experience (decayed, missing, filled teeth [DMFT]: 17.6) remained relatively stable compared to DMS V (17.7). Half of 65- to 74-year-old participants were diagnosed with moderate periodontitis (49.4%) and almost one third (30.4%) had severe periodontitis, according to the Community Periodontal Index (CPI). By comparison, in DMS V, almost half had moderate periodontitis (44.4%), and one fifth (21.7%) had severe periodontitis.

Discussion

The results show that the prevalence of tooth loss and edentulism among younger seniors in Germany continues to decline, reflecting the trend identified in the DMS V.[1,4]

Teeth retained into older age are more susceptible to periodontitis and root caries[15] following gingival recession and the resultant root exposure. In the present study, the prevalence of root caries and severe periodontitis is increasing in younger seniors. The RCI indicating the occurrence of root caries in teeth at risk was slightly increased by 3.4% points. The prevalence of root caries in younger seniors in Germany is no longer decreasing.[16] The global prevalence of root caries is 41%, compared to 34.5% in Germany.[17]

However, not all seniors benefit from the positive developments in dentistry; in particular, people with a degree of disability and those requiring care face a higher burden of oral disease.[18] In the present study, almost half of younger seniors with care requirements exhibited reduced therapeutic capability, and one fifth had greatly reduced oral hygiene ability. Good oral hygiene can contribute to better addressing the challenges of frailty and care dependence. Restricted access to dental treatment and dental care, combined with limited cooperation and suboptimal oral care in this population group, increases the risk of caries, periodontitis, tooth loss, and edentulism compared to the general population.[19]

At the time of observation, only a small proportion of younger seniors required care. Nevertheless, 15% of participating younger seniors had a disability degree of at least 50%.

Table 3 Prevalence of oral diseases and treatments in younger seniors (65- to 74-year-olds)

Variable			Total	Gender	
				Male	Female
Caries experience and care	No. of participants (n)*		797	375	422
	Edentulism (prevalence)		5.0% (3.7; 6.7)	6.4% (4.3; 9.2)	3.8% (2.2; 5.8)
	Caries experience (prevalence, DMFT > 0)		100.0% (NA)	100.0% (NA)	100.0% (NA)
	DMFT		17.6 (17.2; 18.0)	17.4 (16.8; 18.0)	17.9 (17.3; 18.4)
	DT		0.4 (0.3; 0.5)	0.5 (0.3; 0.7)	0.3 (0.3; 0.4)
	MT		8.6 (8.0; 9.2)	8.7 (7.8; 9.5)	8.5 (7.7; 9.3)
	FT		8.6 (8.2; 9.0)	8.2 (7.7; 8.8)	9.0 (8.5; 9.6)
	FST		18.8 (18.2; 19.4)	18.7 (17.8; 19.5)	19.0 (18.2; 19.7)
	ST		10.2 (9.8; 10.6)	10.4 (9.9; 11.0)	9.9 (9.4; 10.4)
	Root caries (prevalence)		59.1% (55.7; 62.5)	61.2% (56.2; 65.8)	57.1% (52.1; 61.7)
	Number of teeth with active root or secondary lesions		0.4 (0.3; 0.4)	0.5 (0.3; 0.6)	0.3 (0.2; 0.3)
	Root Caries Index (%)		20.4 (18.4; 22.3)	20.8 (18.0; 23.6)	20.0 (17.3; 22.6)
	Degree of restoration of coronal caries (%)		92.9 (91.4; 94.3)	91.3 (89.0; 93.7)	94.3 (92.6; 96.0)
	Participants in need of treatment (prevalence, DT > 0)		20.0% (17.4; 23.0)	22.1% (18.2; 26.5)	18.1% (14.6; 22.0)
	Degree of restoration of root caries (%)		76.9 (73.3; 80.6)	73.3 (67.9; 78.7)	80.8 (75.9; 85.7)
Periodontal findings	No. of participants (n)†		718	327	391
	BOP (% sites)		20.4 (18.9; 22.0)	20.8 (18.7; 22.9)	20.0 (17.8; 22.3)
	Mean PD, mm		2.6 (2.6; 2.7)	2.8 (2.7; 2.9)	2.5 (2.4; 2.5)
	Number of teeth with PD ≥ 4 mm		8.3 (7.8; 8.8)	9.8 (9.1; 10.5)	7.0 (6.4; 7.6)
	Number of teeth with PD ≥ 6 mm		1.7 (1.5; 1.9)	2.4 (2.0; 2.8)	1.0 (0.8; 1.3)
	Mean CAL, mm		2.4 (2.3; 2.5)	2.7 (2.5; 2.9)	2.1 (2.0; 2.3)
	Number of teeth with CAL ≥ 3 mm		9.7 (9.2; 10.2)	11.1 (10.3; 11.9)	8.4 (7.8; 9.1)
	Number of teeth with CAL ≥ 5 mm		3.6 (3.2; 3.9)	4.8 (4.2; 5.4)	2.4 (2.0; 2.8)
EFP-AAP periodontitis classification	No. of participants (n)‡		755	348	407
	Periodontal health		0.0% (NA)	0.0% (NA)	0.0% (NA)
	Gingivitis		0.0% (NA)	0.0% (NA)	0.0% (NA)
	Periodontitis cases	All stages	85.2% (74.4; 97.0)	85.3% (70.3; 102.0)	85.1% (70.2; 101.6)
		Stage I	8.3% (6.5; 10.5)	5.7% (3.5; 8.3)	10.7% (7.9; 14.0)
		Stage II	24.2% (21.3; 27.4)	17.4% (13.6; 21.4)	30.5% (26.0; 35.0)
		Stage III	26.3% (23.2; 29.4)	30.5% (26.0; 35.6)	22.4% (18.6; 26.8)
		Stage IV	26.4% (23.4; 29.7)	31.8% (27.1; 36.7)	21.6% (17.7; 25.8)
	Edentulous		5.3% (3.9; 7.1)	6.9% (4.7; 9.9)	3.9% (2.2; 6.0)
	Non-classified§		9.5% (7.5; 11.6)	7.8% (5.4; 10.9)	11.0% (8.1; 14.2)

Data are presented as unweighted numbers (n) and weighted percentages or weighted means (with 95% confidence intervals).
BOP, bleeding on probing; CAL, clinical attachment level; DMFT, decayed, missing, filled teeth; DT, decayed teeth; EFP-AAP, European Federation of Periodontology-American Academy of Periodontology; FST, filled or sound teeth; FT, filled teeth; MT, missing teeth; NA, not available; PD, probing depth; ST, sound teeth.
*Edentate and dentate participants.
†Dentate participants with complete periodontal findings.
‡Edentate and dentate participants with complete periodontal findings.
§Periodontitis case definition not applicable.

Since the population is aging, a higher proportion of people with care requirements can be expected, especially in advanced age. One-third of those requiring care in Germany are very old. Four out of five people requiring care in Germany receive care at home,[6] by relatives, mobile care services, or a combination of both. There are still gaps in knowledge about the oral health of

Table 4 Trends in prevalence of oral diseases in younger seniors (65- to 74-year-olds) from DMS IV, DMS V, and DMS • 6

Variable		DMS IV (2005)	DMS V (2014)	DMS • 6 (2023)
No. of participants (n)*		1,040	1,042	797
Full dentition (base 28, prevalence)		1.1%	0.9%	6.7%
Edentulism (prevalence)		22.6%	12.4%	5.0%
Caries experience and care	DMFT	22.1	17.7	17.6
	DT	0.3	0.5	0.4
	MT	14.1	11.1	8.6
	FT	7.7	6.1	8.6
	FST	13.6	16.4	18.8
	ST	5.9	10.3	10.2
	Root caries (prevalence)	45.0%	28.0%	59.1%
	Root Caries Index (%)	13.6	17.0	20.4
	Degree of restoration of coronal caries (%)	94.8	90.6	92.9
Periodontal findings	No. of participants (n)†	773	902	703
	Mean PD, mm	2.8	2.8	2.8
	No. of teeth with PD ≤ 3 mm	3.1	4.1	4.6
	No. of teeth with PD 4–5 mm	2.7	2.6	2.7
	No. of teeth with PD ≥ 6 mm	0.8	0.5	0.7
Community Periodontal Index (CPI, %)	No. of participants (n)‡	1,013	1,019	740
	CPI 0–2	10.2	21.2	14.8
	CPI 3	37.5	44.4	49.4
	CPI 4	29.1	21.7	30.4

Data are presented as unweighted numbers (n) and weighted percentages or weighted means.
DMFT, decayed, missing, filled teeth; DT, decayed teeth; FST, filled or sound teeth; FT, filled teeth; MT, missing teeth; PD, probing depth; ST, sound teeth.
*Edentate and dentate participants.
†Dentate participants with complete periodontal findings (Partial Mouth Protocol: Index teeth with 3 measurement points).
‡Edentate and dentate participants with complete periodontal findings (Partial Mouth Protocol: Index teeth with 3 measurement points).

these groups; consequently, the implementation of the expert standard "promotion of oral health in care"[20] should be promoted and demanded by dental practitioners across the board.

As more teeth are retained into old age, the challenges for dental care intensify. They include managing periodontal disease, root caries, and prosthodontic restoration, which may still need to be removed by patients and their caregivers in old age.

In the future, equal-opportunity, accessible access to dental care must be provided for the heterogenous group of seniors, particularly in undersupplied and rural areas. The health care system, especially at the interface of medical outpatient and inpatient care, must offer not only dental treatment but also oral care to achieve optimal oral health for people in challenging life circumstances.[19] This represents a major challenge for the health care system in the coming years.

Conclusion

The prevalence of edentulism and tooth loss has continued to decline due to preventive measures, resulting in more teeth being retained into old age. With ongoing morbidity compression, the challenges of preventive dental medicine will lie in preparing younger seniors for advanced age to ensure long-term oral health through proper care abilities.

Disclosure

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Author contributions

All authors listed in the paper have contributed sufficiently to fulfill the criteria for authorship according to Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals (ICMJE Recommendations). All authors read and approved the final manuscript. StS is a member of the scientific advisory board of the DMS • 6, was involved in creating the SOP and training the study dentists, and is author of the manuscript. BW is a member of the scientific advisory board of the DMS • 6 and author of the manuscript. KK is the deputy principal investigator of the DMS • 6, responsible for the data analysis, and a co-author of the manuscript. ARJ is the principal investigator of the DMS • 6, is responsible for developing the clinical examinations, and a co-author of the manuscript. HS is a member of the scientific advisory board of the DMS • 6 and a co-author of the manuscript. IN is a member of the scientific advisory board of the DMS V and DMS • 6, was involved in creating the SOP, was co-responsible for developing the clinical examinations for dental prosthetics and senior dentistry, and is a co-author of the manuscript.

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