

Transforming epidemiology into service needs: results of the 6th German Oral Health Study (DMS • 6). Online Appendix

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ABSTRACT

Objectives: Understanding population-level dental service needs is essential for planning and optimizing dental care. Building on a previously validated model, this study aimed to quantify current dental service needs in the statutory health insurance system in Germany using updated epidemiologic data from the German Oral Health Study (DMS).

Method and Materials: Secondary analyses of data from DMS III, IV, V, and DMS • 6 were performed. The analyses focused on operative, prosthetic, and periodontal services and their subcomponents stratified according to age groups: younger adults (35- to 44-year-olds) and younger seniors (65- to 74-year-olds). Service needs were derived from morbidity indicators such as decayed, filled, and missing teeth; root caries and root fillings; and periodontally compromised teeth. These indicators were linked to population data and adjusted for utilization patterns and statutory health insurance coverage, resulting in expected number of service units and workload hours.

Results: Between DMS III and DMS • 6, the total annual dental service needs remained stable (approximately 44 million service units) but shifted markedly between age groups. In younger adults, the number of service units declined by 40%, as did the expected clinical workload needed to fulfill the service requirements. In contrast, in younger seniors, the number of dental service units needed doubled (from 12.3 to 24.8 million), and the expected workload in hours increased significantly. Reductions in restorative and prosthetic services were observed in younger adults, whereas younger seniors showed an increase in the use of fixed dental prostheses and periodontal services. The root-carries-related treatment time increased substantially. The need for full dental prostheses declined sharply.

Conclusion: DMS • 6 confirms the redistribution of dental service needs in Germany from adults to older dentate populations. This shift has implications for service delivery, workforce training, and financing.

KEYWORDS: cross-sectional studies, dental care, dental health services, dental health surveys, dentists, DMS 6, epidemiology, Germany, oral health, predictions and projections, secondary data analysis

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Appendix 1

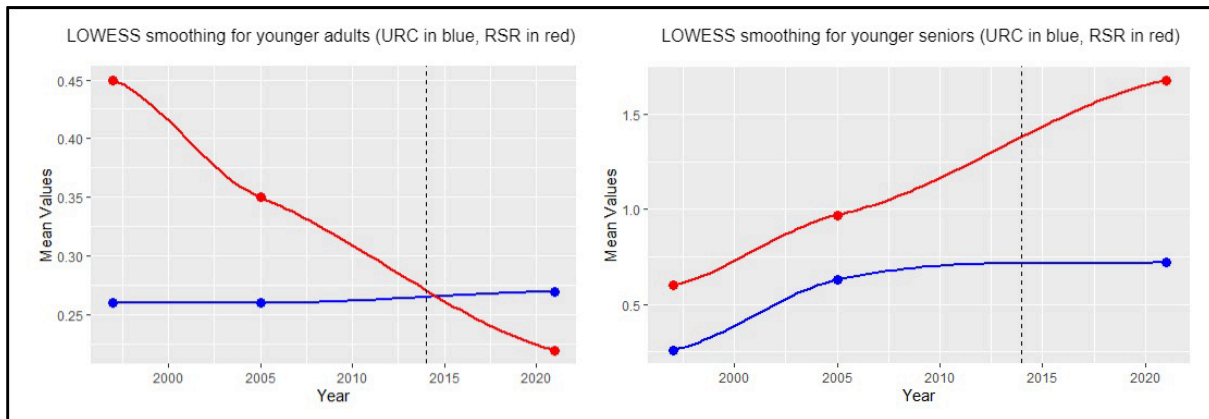


Figure A1: LOWESS-smoothed trends in root caries experience among younger adults (35- to 44-year-olds) and younger seniors (65- to 74-year-olds)

Abbreviations: LOWESS, locally weighted scatterplot smoothing; RSR, root surface restorations, URC, untreated root caries

Appendix 2

Table A2: Estimated usage (in million service units) and time requirements (in million hours) by age group and DMS waves for various dental treatments

Component	Type	DMS III		DMS IV		DMS V		DMS•6	
		35- to 44-year-olds	65- to 74-year-olds	35- to 44-year-olds	65- to 74-year-olds	35- to 44-year-olds	65- to 74-year-olds	35- to 44-year-olds	65- to 74-year-olds
Fillings	Usage	5.512	1.918	6.004	2.370	4.300	3.648	5.269	3.577
	Hours	2.205	0.767	2.401	0.948	1.720	1.459	2.108	1.431
Fillings: Replacement	Usage	10.319	2.966	11.239	4.867	5.917	3.561	5.284	5.874
	Hours	4.128	1.186	4.495	1.947	2.367	1.424	2.114	2.349
Crowns	Usage	2.580	0.742	2.810	1.217	1.479	0.890	1.321	1.468
	Hours	3.741	1.075	4.074	1.764	2.145	1.291	1.916	2.129
Crowns: Replacement	Usage	0.215	0.062	0.234	0.101	0.123	0.074	0.110	0.122
	Hours	0.312	0.090	0.339	0.147	0.179	0.108	0.160	0.177
Root fillings	Usage	1.852	1.036	1.657	3.034	0.774	2.320	0.527	1.789
	Hours	0.741	0.414	0.663	1.214	0.310	0.928	0.211	0.715
Root fillings: Replacement	Usage	1.268	0.863	1.051	1.837	0.559	2.335	0.488	3.215
	Hours	0.507	0.345	0.420	0.735	0.224	0.934	0.195	1.286
Fixed prosthesis	Usage	0.345	0.411	0.225	0.446	0.083	0.435	0.065	0.456
	Hours	0.748	0.891	0.486	0.965	0.181	0.942	0.142	0.987
Fixed prosthesis: Renew	Usage	0.216	0.206	0.140	0.223	0.052	0.217	0.041	0.228
	Hours	0.467	0.445	0.304	0.483	0.113	0.471	0.089	0.494
Removable prosthesis	Usage	0.345	0.411	0.225	0.446	0.083	0.435	0.065	0.456
	Hours	0.495	0.589	0.322	0.639	0.120	0.623	0.094	0.653
Removable prosthesis: Renew	Usage	0.431	0.411	0.281	0.446	0.104	0.435	0.082	0.456
	Hours	0.618	0.589	0.402	0.639	0.149	0.623	0.117	0.653
Complete prosthesis	Usage	0.012	0.171	0.012	0.183	0.003	0.082	0.001	0.041

Component	Type	DMS III		DMS IV		DMS V		DMS•6	
		35- to 44-year-olds	65- to 74-year-olds	35- to 44-year-olds	65- to 74-year-olds	35- to 44-year-olds	65- to 74-year-olds	35- to 44-year-olds	65- to 74-year-olds
	Hours	0.018	0.251	0.018	0.268	0.005	0.120	0.001	0.060
Complete prosthesis: Renew	Usage	0.015	0.171	0.015	0.183	0.004	0.082	0.001	0.041
	Hours	0.022	0.251	0.022	0.268	0.006	0.120	0.002	0.060
Periodontal treatments	Usage	8.114	2.902	7.612	4.709	4.094	5.487	5.464	7.086
	Hours	1.690	0.605	1.586	0.981	0.853	1.143	1.138	1.476

Data are presented as mean based on weighted data.

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