

Prevalence of skin lesions and need for treatment in a cohort of 90 880 workers

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Summary

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Background Healthcare planning requires robust data on the prevalence and need for care of dermatological diseases. To date, no systematic data in population-based samples are available for Germany.

Objectives Determination of the prevalence of skin lesions and of the need for care based on dermatological examinations in working adults in Germany.

Methods From 2004 to 2009, workers aged between 16 and 70 years from different branches of industry throughout Germany underwent a single dermatological whole-body examination on the occasion of company screening for skin cancer. The data were recorded electronically and evaluated descriptively. In addition to the clinical findings, case history data on previous skin diseases were documented and the need for further clarification or treatment was determined on the basis of the dermatologist's assessment.

Results Data from $n = 90\,880$ persons from a total of 312 companies were evaluated. Of the pigmented skin lesions, dermal naevi were found in 25.1% of the cohort, and 16.7% displayed more than 40 each. The most frequent inflammatory skin diseases were acne vulgaris (3.9%), psoriasis (2.0%), rosacea (2.3%) and atopic eczema (1.3%). Examination of the case histories showed that the most frequent condition was allergic sensitizations (41.1%); of these, pollen accounted for the biggest group (21.4%), followed by contact allergens (8.0%). In total, 26.8% of the cohort exhibited a dermatological finding in need of treatment or further clarification.

Conclusions Dermatological lesions and diseases requiring clarification are frequent and indicate a high demand for treatment in the adult population.

Lesions of the skin and adjacent mucous membranes requiring treatment are a frequent cause of visits to the doctor. The proportion of patients with dermatological problems visiting general practitioners is reckoned to be 20–30%.¹ The roughly 3500 dermatological practices and 100 acute clinics throughout Germany treat approximately 20 million cases each year.² The commonest diagnoses in dermatology practices of the German health insurance system are mycoses of the skin, eczema, psoriasis, acne and skin tumours.³

No conclusions about the population-based prevalence of skin diseases can be drawn from the care provision data of the panel doctors in Germany because, by definition, they do not include individuals who treat themselves or dispense with therapeutic measures. Moreover, these data are based on clinically unproven documentation. Thus, these data do not allow any estimate of the need for care in the population.

Internationally, too, data are sparse on the prevalence of skin diseases and the need for treatment in the general population.

Population-based prevalence data have, however, been collected on individual diagnoses such as psoriasis: in the U.K., for example, registers show that the prevalence of psoriasis is 1.5%, while it is 2.2% in the U.S.A. Of importance here is whether the data are based on diagnoses by specialists or on self-reporting by patients, as the latter can lead to unsafe data.^{4,5}

The prevalence of other diagnoses such as atopic eczema and allergies has also been studied, albeit mainly in small cohorts or in certain population groups such as school children.^{6,7}

An epidemiological study in Lambeth, U.K. addressed the prevalence of skin diseases and the need for care in a random sample of 2180 adults in the community using a postal questionnaire.^{8,9} In total, 22.5% of persons showed skin conditions requiring health care.

No prevalence data for a population-based cohort covering a great range of dermatological diagnoses in a large geographical area are available to date. It was against this background that a company screening programme for skin cancer was used to

perform a systematic analysis of the prevalence of dermatological lesions and – where clinically possible – dermatological diagnoses based on whole-body examinations in a broad population group. Answers were sought to the following questions. (i) How prevalent are dermatological lesions and diagnoses requiring treatment in the general working population? (ii) How large is the total need for dermatological care?

Materials and methods

Study design and recruitment

The present epidemiological cross-sectional study is based on the systematic documentation of dermatological whole-body findings in adult workers in Germany. In the period from 2002 to 2008, dermatologists carried out screening examinations for skin cancer on a voluntary basis in companies from different branches of industry in Germany. The participating companies varied in size (150–65 000 employees) and were mainly in the following fields: car industry, insurance companies, banking, energy companies, chemical industry and printing houses. Companies with fewer than 200 employees consisted mainly of branches of banks or postal services. The screening was performed on behalf of the companies or the company health insurers by heigel.com, a company which has been engaged in the field of secondary prevention of dermatological, phlebological and cardiovascular diseases throughout Germany since 1989. All companies approaching heigel.com were included in the survey. Within most companies, all employees were asked to participate regardless of age, sex or social status.

Screening methodology

The whole-body examinations and interviews of the workers were conducted by appointment on the companies' premises during working hours and were done in a standardized manner by dermatologists in special rooms provided for the purpose of the screening. These were consultants or residents in their last year being specifically trained for the examination based on a written manual. In addition to detailed documentation of epithelial and melanocytic tumours, all other dermatological findings were also recorded in a standardized PC-based case report form.

Case history data on the risks of skin cancer and on previous dermatological diseases and medication were likewise recorded. In the case of abnormal findings, the subjects received individual explanatory letters with the advice to seek further dermatological clarification. The methodology and validity of these procedures have been tested previously.^{10,11}

Data analyses

A descriptive analysis of the primary data generated was performed. The evaluation was done with the statistical program SPSS version 15.0 (SPSS, Chicago, IL, U.S.A.).

The present analysis included all screening participants who were aged between 16 and 70 years at the time of the examination. The point prevalences were calculated for all dermatological findings raised and coded in an identical way over the entire period 2002–2008. Descriptive statistics are presented for the frequency of individual diagnoses for the entire cohort and age-specific prevalence rates for selected diagnosis groups.

Definition of the need for care

From 2006 it was also recorded whether a finding required treatment or follow-up, regardless of whether the employee was already undergoing dermatological therapy. The need for care was determined by the dermatologist after taking history and the clinical examination using the criterion 'at least one finding requiring treatment or follow-up'. This dermatological assessment was recorded in the digital database.

Results

Study cohort

Data on 90 880 employees from 312 companies nationwide were available for the evaluation. Of the employees, 46.7% were female. The mean $\pm$ SD age of the total cohort was 43.5 ± 11.2 years (Table 1). The biggest age group was that of the 41–50-year olds (Table 2).

As part of the screening, the need for dermatological care was also determined using a standardized procedure from 2006 to 2008. This was done for $n = 42\,215$ persons, the age and sex structure of whom (mean age 43.7 years; 46.0% female) did not differ significantly from that of the total cohort.

Table 1 Demographic data of the persons examined ($n = 90\,880$)

Sex	n (%)	Age (years), mean $\pm$ SD (median)
Female	42 409 (46.7)	42.5 $\pm$ 11.7 (42.0)
Male	48 471 (53.3)	44.3 $\pm$ 10.8 (44.0)
Total	90 880 (100)	43.5 $\pm$ 11.2 (43.0)

Table 2 Distribution of the persons examined by age group ($n = 90\,880$)

Age group (years)	Total		Men		Women	
	n	%	n	%	n	%
16–20	1115	1.2	575	1.2	540	1.3
21–30	10 494	11.5	4212	8.7	6282	14.8
31–40	25 078	27.6	12 861	26.5	12 217	28.8
41–50	28 664	31.5	16 441	33.9	12 223	28.8
51–60	18 669	20.5	10 844	22.4	7825	18.5
61–70	6860	7.5	3538	7.3	3322	7.8
Total	90 880	100	48 471	100	42 409	100

Skin tumours and other noninflammatory skin lesions

A quarter of those examined exhibited dermal naevocellular naevi (Table 3), and 21.7% papillomatous naevi. Overall, 'more than 40 naevi' were found in 16.7% of the study participants. The highest prevalence rates for naevi were found in the 31–40-year age group. Of the 61–70-year olds, only 7.2% had more than 40 naevi.

A positive correlation was found between age and solar lentigines, seborrhoeic keratoses, histiocytomas and dermatofibromas. Solar lentigines were the most frequently found noninflammatory skin disease with an overall prevalence of 45.9%, although this increased to 71.6% in the 61–70-year olds. The prevalence of seborrhoeic keratoses was 25% overall, but increased in the upper age group of 61–70-year olds to more than two-thirds (66.7%). Histiocytomas and dermatofibromas were diagnosed in 4.1% of the youngest but in 22.5% and 20.4%, respectively, of the two oldest age groups.

The clinical examination raised the suspicion of actinic keratosis in 2% of the total cohort, with men being affected more often than women: 2.9% vs. 0.9% (Fig. 1).

In contrast, café-au-lait patches were diagnosed much more frequently in young study participants; the prevalence fell from 11.4% in the lowest age group to 4.1% in the highest.

Less frequent diagnoses in the clinical examinations were vitiligo with a prevalence of 0.5% and lipomas with a prevalence of 1.4%. The prevalence of both diseases showed a continuous increase with age.

While no differences between the sexes were found for solar lentigines, women were affected to a greater extent than men by papillomatous naevi, histiocytomas and café-au-lait patches. Male participants, on the other hand, were affected more often by 'more than 40 naevi', vitiligo and lipomas.

Inflammatory skin diseases

Of the primarily noninfectious, inflammatory skin diseases, acne was the most frequent with a prevalence of 3.9% (Table 4). This is attributable above all to the high rates in the age groups of 16–20 years (25.6%) and 21–30 years (10.4%) (Fig. 2a). Rosacea (overall prevalence 2.3%) was slightly more frequent in men (2.4%) than in women (2.1%) and showed a positive correlation with the age of the participants. The highest prevalence was found for employees over the age of 60 years (Fig. 2b).

The overall prevalence of psoriasis was 2%: 2.2% in men and 1.8% in women (Table 4). The disease was diagnosed most frequently in the group of 51–60-year olds (2.8%). Atopic eczema was seen in 1.3% of the participants: it was most frequent (2.4%) in the youngest age group (16–20 years) and fell continuously with increasing age to 1% in the over 50s. The prevalence of all types of eczema, however, was distributed almost evenly over the different age groups (Fig. 3).

Table 3 Prevalence of benign, noninflammatory skin diseases (n = 90 880 persons)

Age group (years)	More than 40 naevi		Dermal naevi		Papillomatous naevi		Seborrhoeic keratosis		Café-au-lait patches		Histiocytoma/dermatofibroma		Solar (senile) lentigines		Vitiligo		Lipoma		Other cysts	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
16–20	118	10.58	194	17.40	233	20.90	16	1.43	127	11.39	46	4.13	135	12.11	4	0.36	2	0.18	1	0.09
21–30	1753	16.70	2355	22.44	2521	24.02	339	3.23	1115	10.63	976	9.30	2679	25.53	44	0.42	46	0.44	11	0.10
31–40	5378	21.45	6525	26.02	6101	24.33	2646	10.55	2210	8.81	4001	15.95	9189	36.64	113	0.45	216	0.86	46	0.18
41–50	5170	18.04	7405	25.83	6210	21.66	6949	24.24	2081	7.26	5946	20.74	13 643	47.60	148	0.52	433	1.51	77	0.27
51–60	2292	12.28	4611	24.70	3585	19.20	8197	43.91	1041	5.58	4201	22.50	11 133	59.63	123	0.66	382	2.05	66	0.35
61–70	497	7.24	1745	25.44	1082	15.77	4577	66.72	281	4.10	1398	20.38	4912	71.60	45	0.66	195	2.84	32	0.47
Women	5999	14.15	10 717	25.27	9775	23.05	10 798	25.46	3737	8.81	8302	19.58	19 255	45.40	198	0.47	320	0.75	105	0.25
Men	9209	19.00	12 118	25.00	9957	20.54	11 926	24.60	3118	6.43	8266	17.05	22 436	46.29	279	0.58	954	1.97	128	0.26
Total	15 208	16.73	22 835	25.13	19 732	21.71	22 724	25.00	6855	7.54	16 568	18.23	41 691	45.87	477	0.52	1274	1.40	233	0.26
95% CI ^a (%)	16.49–16.98		24.84–25.41		21.44–21.98		24.72–25.29		7.37–7.71		17.98–18.48		45.55–46.20		0.48–0.57		1.33–1.48		0.22–0.29	

^a95% confidence interval for total prevalence (%).

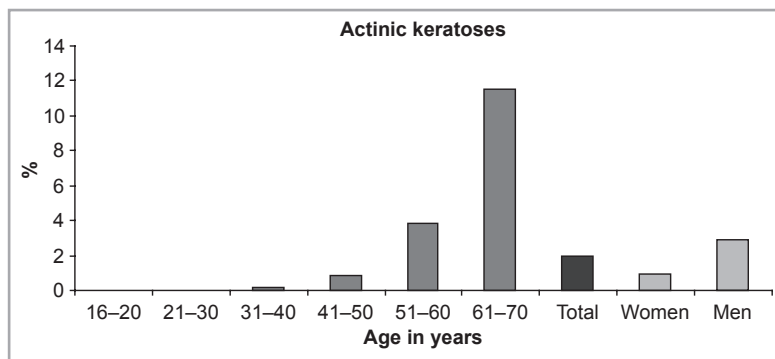


Fig 1. Prevalence of actinic keratoses by age (n = 1800/90 880).

Table 4 Prevalence of inflammatory skin diseases (n = 90 880 persons examined)

	Atopic eczema		Xerotic eczema		Hand eczema, (cumulative toxic, allergic)		Acne		Intertrigo		Contact dermatitis		Lichen planus		Psoriasis		Rosacea		Other inflammatory diseases	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Age group (years)																				
16-20	27	2.42	7	0.63	6	0.54	285	25.56	1	0.09	2	0.18	0	0.00	6	0.54	0	0.00	9	0.81
21-30	206	1.96	46	0.44	53	0.51	1093	10.42	19	0.18	31	0.30	2	0.02	111	1.06	20	0.19	105	1.00
31-40	370	1.48	165	0.66	235	0.94	1375	5.48	61	0.24	65	0.26	15	0.06	408	1.63	223	0.89	339	1.35
41-50	360	1.26	270	0.94	314	1.10	657	2.29	71	0.25	75	0.26	20	0.07	641	2.24	641	2.24	527	1.84
51-60	191	1.02	246	1.32	209	1.12	147	0.79	91	0.49	57	0.31	21	0.11	529	2.83	762	4.08	391	2.09
61-70	70	1.02	131	1.91	53	0.77	15	0.22	38	0.55	21	0.31	9	0.13	150	2.19	428	6.24	126	1.84
Women	596	1.41	325	0.77	278	0.66	1626	3.83	143	0.34	122	0.29	23	0.05	757	1.78	895	2.11	616	1.45
Men	628	1.30	540	1.11	592	1.22	1946	4.01	138	0.28	129	0.27	44	0.09	1088	2.24	1179	2.43	881	1.82
Total	1224	1.35	865	0.95	870	0.96	3572	3.93	281	0.31	251	0.28	67	0.07	1845	2.03	2074	2.28	1497	1.65
95% CI ^a (%)	1.27-1.42		0.89-1.01		0.89-1.02		3.80-4.06		0.27-0.35		0.24-0.31		0.06-0.09		1.94-2.12		2.19-2.38		1.56-1.73	

^a95% confidence interval for total prevalence (%).

Pathogen-related diseases

At least one clinical diagnosis from the group of dermatomycoses was made in 11.2% of the participants. Men were affected more frequently than women: 15.4% vs. 6.5% (Fig. 4a). Most prevalent were onychomycoses (6.6%) and tinea pedis (5.1%); pityriasis versicolor, tinea corporis and other mycoses were all found in < 1% of participants (Table 5). The prevalence increased continuously with age from 3.7% in the lowest to 23.5% (a greater than sixfold increase) in the highest age group (Fig. 4a). In particular, the prevalence of the common mycoses onychomycosis and tinea pedis increased sharply in the over 50s.

Bacterial diseases of the skin were diagnosed in 8.3% of the cohort (Table 6), the most frequent being bacterial folliculitis in 7.8%. Men were represented more than twice as often as women – 10.7% vs. 4.5% – and the younger age groups up to 40 years more often than the older (Fig. 4b).

At least one virus disease of the skin was diagnosed in 3.2% of the screened participants during the clinical examinations (Table 7): most frequent were verrucae of the feet with 78%

of these cases. There were no relevant differences in the prevalence of the virus diseases with regard to sex and age in the older age groups. Only the youngest age group showed a higher prevalence (4.7%) compared with the older groups (3–3.4%).

Allergic diseases

Of the 90 880 participants in the study, 41.1% reported a history of at least one allergic sensitization or other intolerance (Table 8). The percentage was higher in women (48.4%) than in men (34.8%). Overall, a quarter of those examined reported a type 1 sensitization (Fig. 5a): somewhat more than 30% in the group of 21–40-year olds, after which the prevalence fell continuously with increasing age to 15.5% in the highest age group. The rate of sensitization to pollen was the same in both sexes: 21.5% (women) and 21.3% (men).

The biggest differences in the sex distribution concerned contact allergies (13.4% in women vs. 3.3% in men, Fig. 5b). Only intolerance of medicines was reported more frequently by men (7.3%) than by women (3.2%).

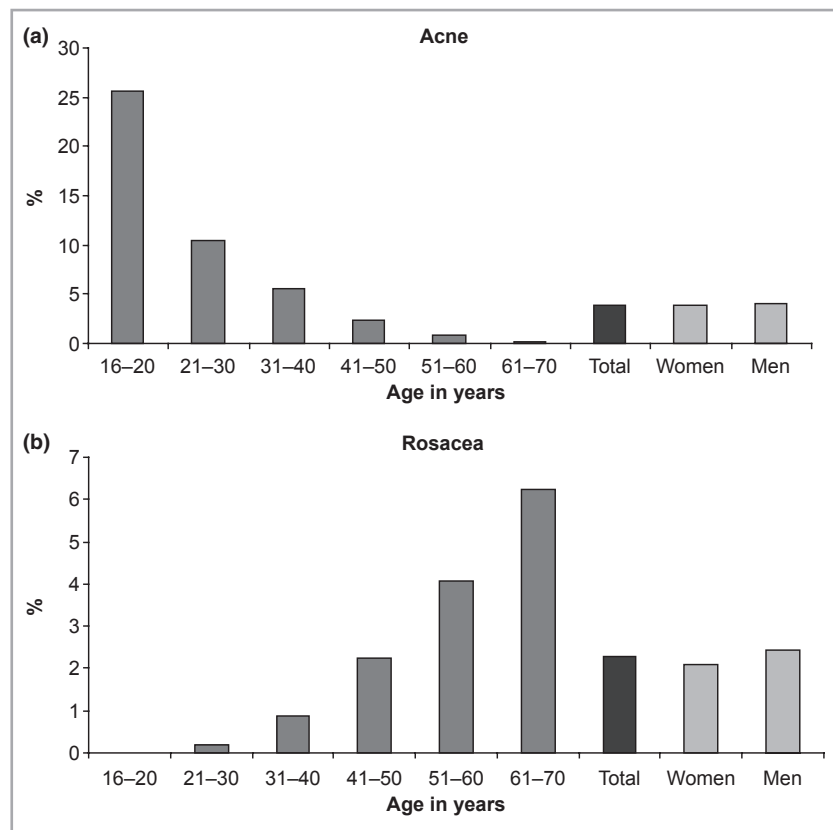


Fig 2. Prevalence of acne ($n = 3572/90\ 880$) (a) and rosacea ($n = 2074/90\ 880$) (b) by age.

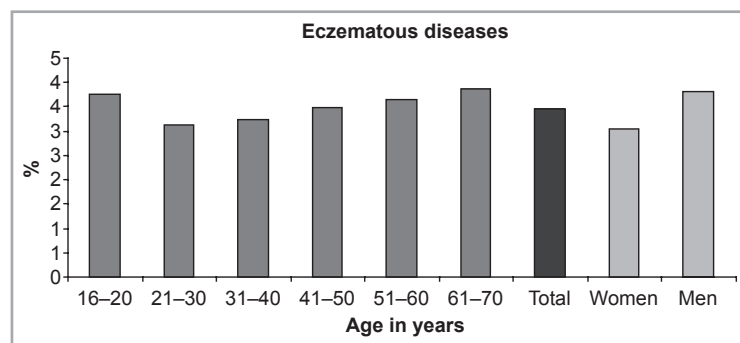


Fig 3. Prevalence of all types of eczema by age ($n = 3131/90\ 880$).

Need for care

More than a quarter (26.8%; $n = 11\ 291$) of the cohort examined in this respect exhibited at least one condition which required treatment or follow-up (Table 9). This prevalence was much higher in men with 30.7% ($n = 6999$) than in women (22.2%, $n = 4292$). Men over 60 years of age displayed the greatest need for dermatological care (44.8%). In both sexes, the proportion of participants diagnosed with at least one condition requiring treatment increased with age.

Discussion

The aim of the present analysis was to determine the prevalence of dermatological findings and diagnoses in a national,

population-based sample. This is the first time that such a comprehensive, standardized study of primary dermatological findings has been published for Germany.

The data were generated in the course of whole-body examinations carried out within the framework of a screening programme for skin cancer in employees of more than 300 companies of varying size and in various branches of industry. Participants included all social groups of workers and employees. However, for reasons of data protection, no specific documentation of the socioeconomic status was performed. Because the findings were raised and documented by dermatologists, it can be assumed that the quality of the data generation is adequate. A certain imprecision may be present only as regards the case history data, as experience shows that uncertainties exist in the general population about medical terminology. For instance, concepts such as 'allergic sensitization'

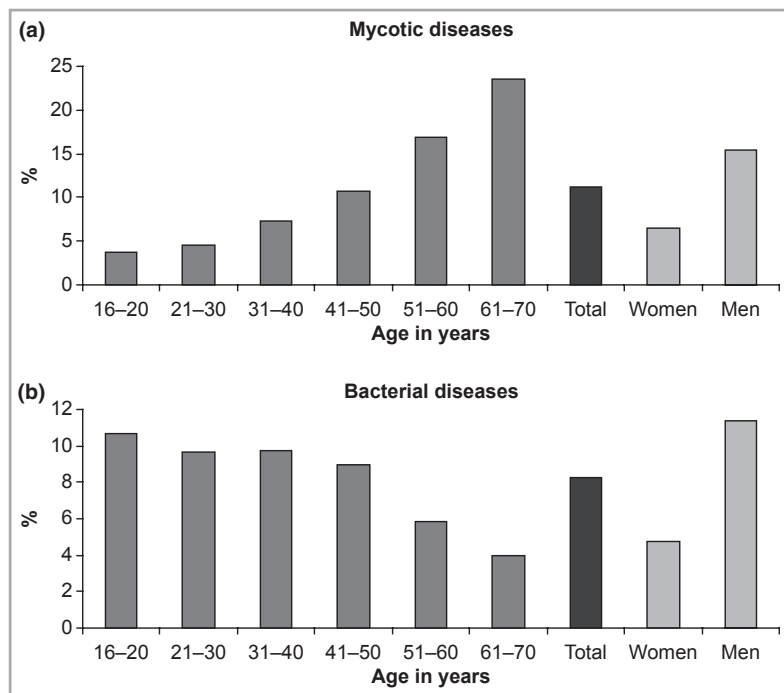


Fig 4. Prevalence of clinically diagnosed dermatomycoses ($n = 10\,210$ cases in $n = 90\,880$ persons) (a) and of bacterial diseases ($n = 7511$ positive findings in $n = 90\,880$ persons) (b) by age.

Table 5 Prevalence of clinically diagnosed dermatomycoses (positive findings in $n = 90\,880$ persons)

	Onychomycosis		Pityriasis versicolor		Tinea pedis		Tinea corporis		Other mycotic diseases		At least one condition	
	n	%	n	%	n	%	n	%	n	%	n	%
Age group (years)												
16-20	11	1.0	7	0.6	24	2.2	2	0.2	2	0.2	41	3.7
21-30	157	1.5	107	1.0	207	2.0	33	0.3	8	0.1	480	4.6
31-40	841	3.4	215	0.9	920	3.7	91	0.4	41	0.2	1844	7.4
41-50	1711	6.0	279	1.0	1412	4.9	128	0.5	48	0.2	3080	10.8
51-60	2086	11.2	150	0.8	1376	7.4	131	0.7	51	0.3	3152	16.9
61-70	1207	17.6	53	0.8	650	9.5	43	0.6	25	0.4	1613	23.5
Women	1621	3.8	299	0.7	1017	2.4	107	0.3	63	0.2	2768	6.5
Men	4392	9.1	512	1.1	3572	7.4	321	0.7	112	0.2	7442	15.4
Total	6013	6.6	811	0.9	4589	5.1	428	0.5	175	0.2	10 210	11.2
95% CI ^a (%)	6.45-6.78		0.83-0.95		4.91-5.19		0.43-0.52		0.16-0.22		11.03-11.44	

^a95% confidence interval for total prevalence (%).

or 'intolerance' are sometimes confused or not understood. Moreover, all findings were obtained solely through the process of clinical examination: in individual cases this might have led to false diagnoses or failure to make a diagnosis. Furthermore, the identity of skin tumours could not be confirmed by biopsies. All findings needing histological work-up were considered as 'suspicious'. A further potential source of error is the fact that the present study included exclusively workers who had volunteered to undergo screening for skin cancer. Because of this selection, no statement can be made about those who were unwilling to be screened for skin cancer, who were not employed or who were under 16 or over 70 years of age.

The present data nevertheless reflect a large population group of around 45 million workers aged 16-70 years in Germany. Correspondence with epidemiological characteristics has been shown for this group on the basis of data from the Federal Office for Statistics.¹⁰

Thus, the present data provide information about the prevalence of important dermatological findings in a large population group. For Germany and internationally, diagnosis data have previously been published for only a few of the diagnoses reported here, e.g. for psoriasis from secondary data analyses of the GKV (Association of German Health Insurers) or from data registers from the U.K.^{5,12} The prevalences found in the company screening programmes are in virtual agreement

Table 6 Prevalence of clinically diagnosed bacterial diseases of the skin (in *n* = 90 880 persons)

	Bacterial folliculitis		Pyoderma		Other bacterial diseases	
	n	%	n	%	n	%
Age group (years)						
16–20	104	9.33	21	1.88	7	0.63
21–30	967	9.21	93	0.89	18	0.17
31–40	2335	9.31	190	0.76	36	0.14
41–50	2447	8.54	235	0.82	46	0.16
51–60	1017	5.45	135	0.72	36	0.19
61–70	247	3.60	64	0.93	10	0.15
Women	1910	4.50	211	0.50	45	0.11
Men	5207	10.74	527	1.09	108	0.22
Total	7117	7.83	738	0.81	153	0.17
95% CI ^a (%)	7.66–8.01		0.75–0.87		0.14–0.20	

^a95% confidence interval for total prevalence (%).

Table 7 Prevalence of clinically diagnosed viral diseases of the skin (*n* = 2309 positive findings in *n* = 90 880 persons)

	Warts of the feet		Warts of the hands		Other viral diseases	
	n	%	n	%	n	%
Age group (years)						
16–20	44	3.95	8	0.72	1	0.09
21–30	272	2.59	29	0.28	13	0.12
31–40	662	2.64	93	0.37	32	0.13
41–50	764	2.67	171	0.60	66	0.23
51–60	407	2.18	117	0.63	72	0.39
61–70	160	2.33	30	0.44	54	0.79
Women	1113	2.62	150	0.35	120	0.28
Men	1196	2.47	298	0.61	118	0.24
Total	2309	2.54	448	0.49	238	0.26
95% CI ^a (%)	2.44–2.64		0.45–0.54		0.23–0.30	

^a95% confidence interval for total prevalence (%).

Table 8 Prevalence of sensitizations and intolerances (case history data) by age (*n* = 90 880 persons)

	Pollen		Animal hair		Dust mites		Food intolerance		Contact allergy		Drugs		Ultraviolet radiation		Other intolerances		At least one condition	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Age group (years)																		
16–20	200	17.9	71	6.4	104	9.3	50	4.5	44	4.0	26	2.3	23	2.1	40	3.6	383	34.4
21–30	2588	24.7	853	8.1	1098	10.5	640	6.1	736	7.0	509	4.9	438	4.2	520	5.0	4751	45.3
31–40	6456	25.7	1864	7.4	2242	8.9	1548	6.2	2212	8.8	1271	5.1	983	3.9	1149	4.6	11 583	46.2
41–50	6145	21.4	1558	5.4	1847	6.4	1677	5.9	2485	8.7	1461	5.1	990	3.5	1313	4.6	11 854	41.4
51–60	3137	16.8	622	3.3	835	4.5	1033	5.5	1343	7.2	972	5.2	523	2.8	923	4.9	6560	35.1
61–70	904	13.2	199	2.9	286	4.2	369	5.4	470	6.9	432	6.3	183	2.7	432	6.3	2236	32.6
Women	9028	21.5	2876	6.8	3308	7.8	3288	7.8	5695	13.4	1559	3.2	2394	5.7	2636	6.2	20 521	48.4
Men	10 402	21.3	2291	4.7	3104	6.4	2029	4.2	1595	3.3	3112	7.3	746	1.5	1741	3.6	16 846	34.8
Total	19 430	21.4	5167	5.7	6412	7.1	5317	5.9	7290	8.0	4671	5.1	3140	3.5	4377	4.8	37 367	41.1
95% CI ^a (%)	21.11–21.65		5.53–5.84		6.89–7.22		5.70–6.00		7.84–8.20		5.00–5.28		3.34–3.57		4.68–4.96		40.80–41.44	

^a95% confidence interval for total prevalence (%).

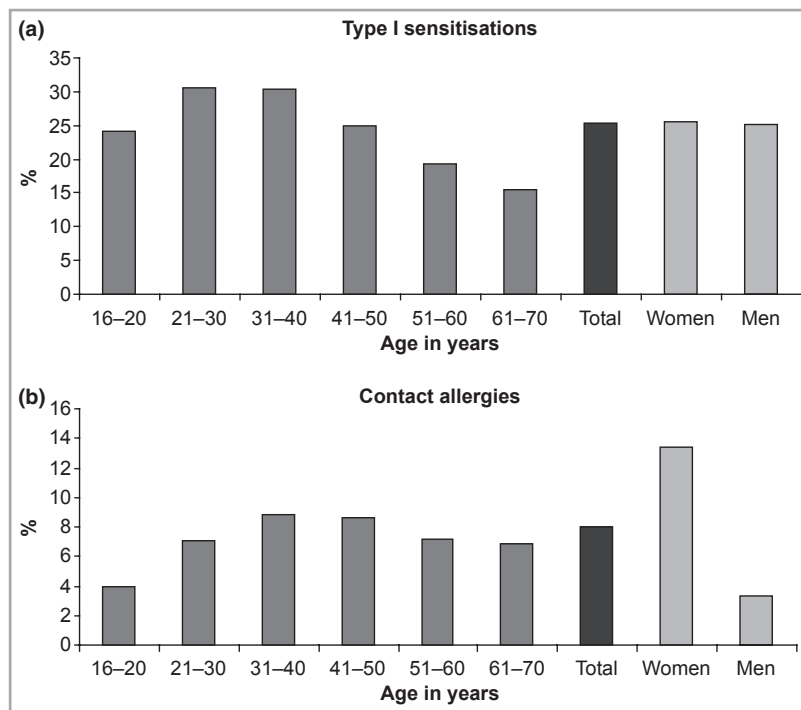


Fig 5. Prevalence of all type 1 sensitizations (pollen, animal hair, dust mites) ($n = 22\,953$ cases in 90 880 persons) (a) and contact allergies ($n = 7290$ cases in 90 880 persons) (b) based on case histories, by age.

Table 9 Percentage of each cohort with at least one skin condition requiring treatment or follow-up (% of $n = 42\,215$)

Age group (years)	Total	Men	Women
16-30	18.8	23.3	15.6
31-40	22.9	25.3	20.4
41-50	26.2	29.1	22.0
51-60	32.9	37.3	26.6
61-70	38.2	44.8	31.2
Total	26.8	30.7	22.2

with previously published data.¹⁰ To date, however, no population-based prevalence data on a national level have been published for the majority of the dermatological diagnoses reported here. The present data provide first indications and emphasize the importance of dermatological findings for health care.

A further important aim of the present study was to determine the need for dermatological care in the general population. The need prevalence of around 26.8% of the general population found on the basis of this definition is surprisingly high, but corresponds with the overall high frequency of dermatological problems in general and specialist practices.³ It also fits with the results of a community-based study in Lambeth, U.K. which showed a need for health care because of dermatological problems in 22.5% of the population (2180 adults).^{8,9} Regarding the prevalence of single diseases, however, this U.K. study from 1976 differed from the data in the present German study on 90 880 adults, e.g. regarding acne (8.6% vs. 3.9%) and psoriasis (1.6% vs. 2.0%). Besides of different population characteristics, these differences may

result from the time gap of 35 years and other diagnostic patterns.

There is no established definition in Germany for implementation of the demand for the treatment and care of skin diseases. In the present study, it was assumed that, following a dermatological whole-body examination, there was a need for further care if findings required further clarification or if an established diagnosis necessitated therapeutic intervention. The latter was assumed if the dermatological finding was more than minor and more than only cosmetically disturbing. To avoid overlap with the patient's wishes for aesthetic treatment, the assessment of the need for dermatological treatment was formulated exclusively by the attending doctor. It cannot be ruled out that the 'objective' need to act on the part of the dermatologist would not accord with the subjective need of the patient. The present proportion of around 27% of dermatological findings requiring treatment in the adult working, general population is nevertheless an indication that skin diseases are an entity of such a size as to be of great relevance to health care, despite not usually being life threatening. This finding of the high health care relevance of dermatological diseases is supported by previously published need analyses of common diseases such as atopic eczema,¹³ psoriasis,⁵ pruritus¹¹ and other chronic inflammatory dermatoses.¹⁰ In the meantime, prevalence data from Germany have been published which also point to a relevant need for care in psoriatic arthritis^{14,15} and juvenile psoriasis.¹⁶

Further studies are required to determine the importance of the present findings for the long term and the extent to which the demand for dermatological care can be reduced by preventive measures.

What's already known about this topic?

- Internationally, data are sparse on the prevalence of skin diseases and the attendant need for treatment in the general population.
- Population-based prevalence data have been collected on individual diagnoses such as psoriasis or atopic eczema.

What does this study add?

- For the first time the prevalence of skin lesions and the need for care are characterized in a large, population-based sample.
- About 27% of the population showed skin lesions in need of treatment.

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