

SPECIAL REPORT

Prevalence of dermatological disorders in Japan: A nationwide, cross-sectional, seasonal, multicenter, hospital-based study

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ABSTRACT

To clarify the prevalence of skin disorders among dermatology patients in Japan, a nationwide, cross-sectional, seasonal, multicenter study was conducted in 69 university hospitals, 45 district-based pivotal hospitals, and 56 private clinics (170 clinics in total). In each clinic, information was collected on the diagnosis, age, and gender of all outpatients and inpatients who visited the clinic on any one day of the second week in each of May, August, and November 2007 and February 2008. Among 67 448 cases, the top twenty skin disorders were, in descending order of incidence, miscellaneous eczema, atopic dermatitis, tinea pedis, urticaria/angioedema, tinea unguium, viral warts, psoriasis, contact dermatitis, acne, seborrheic dermatitis, hand eczema, miscellaneous benign skin tumors, alopecia areata, herpes zoster/postherpetic neuralgia, skin ulcers (nondiabetic), prurigo, epidermal cysts, vitiligo vulgaris, seborrheic keratosis, and drug eruption/toxicoderma. Atopic dermatitis, impetigo, molluscum, warts, acne, and miscellaneous eczema shared their top-ranking position in the pediatric population, whereas the most common disorders among the geriatric population were tinea pedis, tinea unguium, psoriasis, seborrheic dermatitis, and miscellaneous eczema. For some disorders, such as atopic dermatitis, contact dermatitis, urticaria/angioedema, prurigo, insect bites, and tinea pedis, the number of patients correlated with the average high and low monthly temperatures. Males showed a greater susceptibility to some diseases (psoriasis, erythroderma, diabetic dermatoses, *inter alia*), whereas females were more susceptible to others (erythema nodosum, collagen diseases, livedo reticularis/racemosa, hand eczema, *inter alia*). In conclusion, this hospital-based study highlights the present situation regarding dermatological patients in the early 21st century in Japan.

Key words: age, Japan, prevalence, sex, skin diseases.

INTRODUCTION

Skin forms the outermost part of the human body and it acts as a vital barrier to external and internal damage. Various external and internal stimuli, which can be either short- or long-term, can affect the homeostasis of the skin, leading to a variety of

disorders. The development and perpetuation of skin disorders are multifactorial in nature, and can result from genetic, environmental, mechanical, meteorological and even cultural effects. Skin disorders therefore include a vast range of diseases.

Although it is difficult to know the exact prevalence or incidence of skin diseases, several hospital-based

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studies have shown that skin diseases are very common. Of a total of 11 191 patients seen by a general practitioner in the UK, 2386 (21%) presented dermatological complaints. Among these there was a preponderance of females (1604, 67%), and the most common skin diseases seen were viral warts, eczema and benign tumors.¹ In the Netherlands, 235–460/1000 person-years of children aged 0–17 years contacted general practitioners in 1987 and 2001,² and these contacts frequently involved bacterial, viral, fungal, eczematous or traumatic skin diseases.² Tamer *et al.* reported on 6300 pediatric cases aged 0–16 years who visited dermatological clinics in

Turkey; this group showed a preponderance of bacterial, viral and eczematous skin diseases.³ In the case of Japan, there is no authentic report in the published work on any investigation of the prevalence of skin diseases; therefore, the Japanese Dermatological Association conducted a nationwide, cross-sectional, seasonal, multicenter, hospital-based study.

METHODS

A total of 190 dermatology clinics at 76 university hospitals, 55 district-based pivotal hospitals and 59 private clinics participated in this study. At each clinic,

Table 1. Numbers of patients recruited in each season

	Number of patients				
	May 2007	August 2007	November 2007	February 2008	Total
University Hospitals <i>n</i> = 69	8558	7944	7782	7778	32 062 (47.54%)
District-based Hospitals <i>n</i> = 45	3505	3450	2890	2864	12 709 (18.84%)
Private clinics <i>n</i> = 56	5779	6709	5364	4825	22 677 (33.62%)
Total	17 842	18 103	16 036	15 467	67 448 (100%)

Table 2. Age distribution and sex difference of patients

Age distribution (years old)	Number of patients	Sex		Sex undescribed
		Male patients	Female patients	
0–5	4192 (6.22%)	2200 (7.12%)	1983 (5.49%)	9
6–10	2099 (3.11%)	1047 (3.39%)	1047 (2.9%)	5
11–15	1711 (2.54%)	815 (2.64%)	893 (2.47%)	3
16–20	2270 (3.37%)	995 (3.22%)	1266 (3.5%)	9
21–25	3219 (4.77%)	1245 (4.03%)	1960 (5.43%)	14
26–30	3516 (5.21%)	1378 (4.46%)	2126 (5.89%)	12
31–35	4050 (6%)	1546 (5%)	2483 (6.87%)	21
36–40	3807 (5.64%)	1604 (5.19%)	2180 (6.03%)	23
41–45	3298 (4.89%)	1387 (4.49%)	1879 (5.2%)	32
46–50	3201 (4.75%)	1326 (4.29%)	1848 (5.12%)	27
51–55	4062 (6.02%)	1763 (5.71%)	2279 (6.31%)	20
56–60	5543 (8.22%)	2503 (8.1%)	3012 (8.34%)	28
61–65	5413 (8.03%)	2533 (8.2%)	2846 (7.88%)	34
66–70	5629 (8.35%)	2775 (8.98%)	2824 (7.82%)	30
71–75	6157 (9.13%)	3195 (10.34%)	2923 (8.09%)	39
76–80	4777 (7.08%)	2487 (8.05%)	2259 (6.25%)	31
81–85	2636 (3.91%)	1297 (4.2%)	1318 (3.65%)	21
86–90	1098 (1.63%)	508 (1.64%)	583 (1.61%)	7
91–100	427 (0.63%)	166 (0.54%)	259 (0.72%)	2
≥101	16 (0.02%)	3 (0.01%)	2 (0.01%)	11
Age undescribed	327 (0.48%)	126 (0.41%)	155 (0.43%)	46
Total	67 448 (100%)	30 899 (100%)	36 125 (100%)	424

information on diagnosis, age and sex was collected from all outpatients and inpatients who visited the clinics or who were hospitalized on any single day of the second week in each of May, August and November 2007 and February 2008. Reports on the monthly average values of the high and low temperatures and humidities were collected from the Meteorological Agency. The information on 67 448 cases from 170

clinics (69 university hospitals, 45 district-based pivotal hospitals and 56 private clinics) that participated in all of the four seasonal examinations was analyzed. Statistical analyses were performed by using Spearman's rank correlation coefficient. A *P*-value of <0.05 was considered to be statistically significant. This study was approved by the internal ethical review boards of the Japanese Dermatological Association.

Table 3. Prevalence of skin diseases in 67 448 patients

Burn	899 (1.33%)	Syphilis	24 (0.04%)
Trauma	409 (0.61%)	Miscellaneous sexually transmitted diseases	41 (0.06%)
Skin ulcer (nondiabetic)	1334 (1.98%)	Bullous pemphigoid	510 (0.76%)
Pressure ulcer	608 (0.9%)	Pemphigus	424 (0.63%)
Miscellaneous physico-chemical skin damage	681 (1.01%)	Miscellaneous bullous diseases	141 (0.21%)
Diabetic dermatoses	436 (0.65%)	Systemic sclerosis	619 (0.92%)
Atopic dermatitis	6733 (9.98%)	Systemic lupus erythematosus	525 (0.78%)
Hand eczema	2024 (3%)	Dermatomyositis	304 (0.45%)
Contact dermatitis	2643 (3.92%)	Miscellaneous collagen diseases	915 (1.36%)
Seborrheic dermatitis	2213 (3.28%)	Anaphylactoid purpura	171 (0.25%)
Miscellaneous eczema	12590 (18.67%)	Reticular/racemous livedo	81 (0.12%)
Urticaria/angioedema	3369 (4.99%)	Miscellaneous vasculitis/purpura/circulatory disturbance	632 (0.94%)
Prurigo	1229 (1.82%)	Mycosis fungoides	427 (0.63%)
Drug eruption/toxicoderma	1018 (1.51%)	Miscellaneous lymphomas	285 (0.42%)
Psoriasis	2985 (4.43%)	Pigmented nevus	709 (1.05%)
Palmoplantar pustulosis	832 (1.23%)	Seborrheic keratosis	1095 (1.62%)
Miscellaneous pustulosis	172 (0.26%)	Soft fibroma/acrochordon	231 (0.34%)
Lichen planus	200 (0.3%)	Epidermal cyst	1194 (1.77%)
Miscellaneous inflammatory keratotic disorders	241 (0.36%)	Lipoma	173 (0.26%)
Tylosis/clavus	917 (1.36%)	Dermatofibroma	111 (0.16%)
Ichthyosis	61 (0.09%)	Miscellaneous benign skin tumors	1666 (2.47%)
Miscellaneous keratinization disorders	502 (0.74%)	Actinic keratosis	261 (0.39%)
Ingrown nail	597 (0.89%)	Basal cell carcinoma	324 (0.48%)
Miscellaneous nail disorder	397 (0.59%)	Squamous cell carcinoma/Bowen's disease	455 (0.67%)
Alopecia areata	1653 (2.45%)	Paget's disease	224 (0.33%)
Androgenic alopecia	210 (0.31%)	Malignant melanoma	808 (1.2%)
Miscellaneous skin appendage disorders	266 (0.39%)	Miscellaneous malignant skin tumors	534 (0.79%)
Scabies	98 (0.15%)	Vitiligo vulgaris	1134 (1.68%)
Insect bite	762 (1.13%)	Chloasma/senile freckle	336 (0.5%)
Tinea pedis	4379 (6.49%)	Miscellaneous pigmented disorders	154 (0.23%)
Tinea unguium	3231 (4.79%)	Erythema multiforme	197 (0.29%)
Miscellaneous tinea	610 (0.9%)	Erythema nodosum	111 (0.16%)
Candidiasis	408 (0.6%)	Miscellaneous disorders with erythematous plaques	130 (0.19%)
Miscellaneous mycosis	211 (0.31%)	Nevus/phacomatosis (other than pigmented nevus)	267 (0.4%)
Acne	2430 (3.6%)	Rosacea/rosacea-like dermatitis	150 (0.22%)
Impetigo contagiosum	507 (0.75%)	Granulomatous diseases	192 (0.28%)
Folliculitis	755 (1.12%)	Keloid/hypertrophic scar	186 (0.28%)
Erysipelas	81 (0.12%)	Cheilitis/angular cheilitis/mucous membrane diseases	95 (0.14%)
Cellulitis	594 (0.88%)	Erythroderma	63 (0.09%)
Miscellaneous bacterial infection	914 (1.36%)	Other diseases	666 (0.99%)
Molluscum contagiosum	604 (0.9%)	Total	67 448 (100%)
Herpes simplex	691 (1.02%)		
Herpes zoster/zoster-associated pain	1609 (2.39%)		
Viral wart	3028 (4.49%)		
Miscellaneous viral disorders	353 (0.52%)		

RESULTS

Demographic data for the 67 448 patients

Among the 67 448 patients, 32 062 (47.54%) cases were recruited from university hospitals, 12 709 (18.84%) from district-based hospital and 22 677 (33.62%) from private clinics (Table 1). More patients were enrolled in August 2007 (18 103) than in February 2008 (15 467) (Table 1). With regards to the age distribution, the group aged 71–75 years (6157; 9.13%) was the biggest, followed by groups aged 66–70 (5629; 8.35%), 56–60 (5543; 8.22%) and 61–65 (5413; 8.03%) (Table 2). For patients aged under 20 years, the group aged 0–5 years formed the biggest population (4192; 6.22%). Among the 67 448 patients, there were 30 899 (46.1%) males and 36 125 (53.9%) females; the sex of 424 patients was

not described. Female patients aged between 16 and 60 years tended to visit dermatology clinics more frequently than their male counterparts (Table 2).

Prevalence of skin disorders

We classified skin diseases into 85 categories, as listed in Table 3, and determined the prevalence of each. The 20 most common diseases were miscellaneous eczema (12 590; 18.67%) followed, in order, by atopic dermatitis (6733; 9.98%), tinea pedis (4379; 6.49%), urticaria/angioedema (3369; 4.99%), tinea unguium (3231; 4.79%), viral warts (3028; 4.49%), psoriasis (2985; 4.43%), contact dermatitis (2643; 3.92%), acne (2430; 3.6%), seborrheic dermatitis (2213; 3.28%), hand eczema (2024; 3%), miscellaneous benign skin tumors (1666; 2.47%), alopecia areata (1653; 2.45%), herpes zoster/zoster-associated

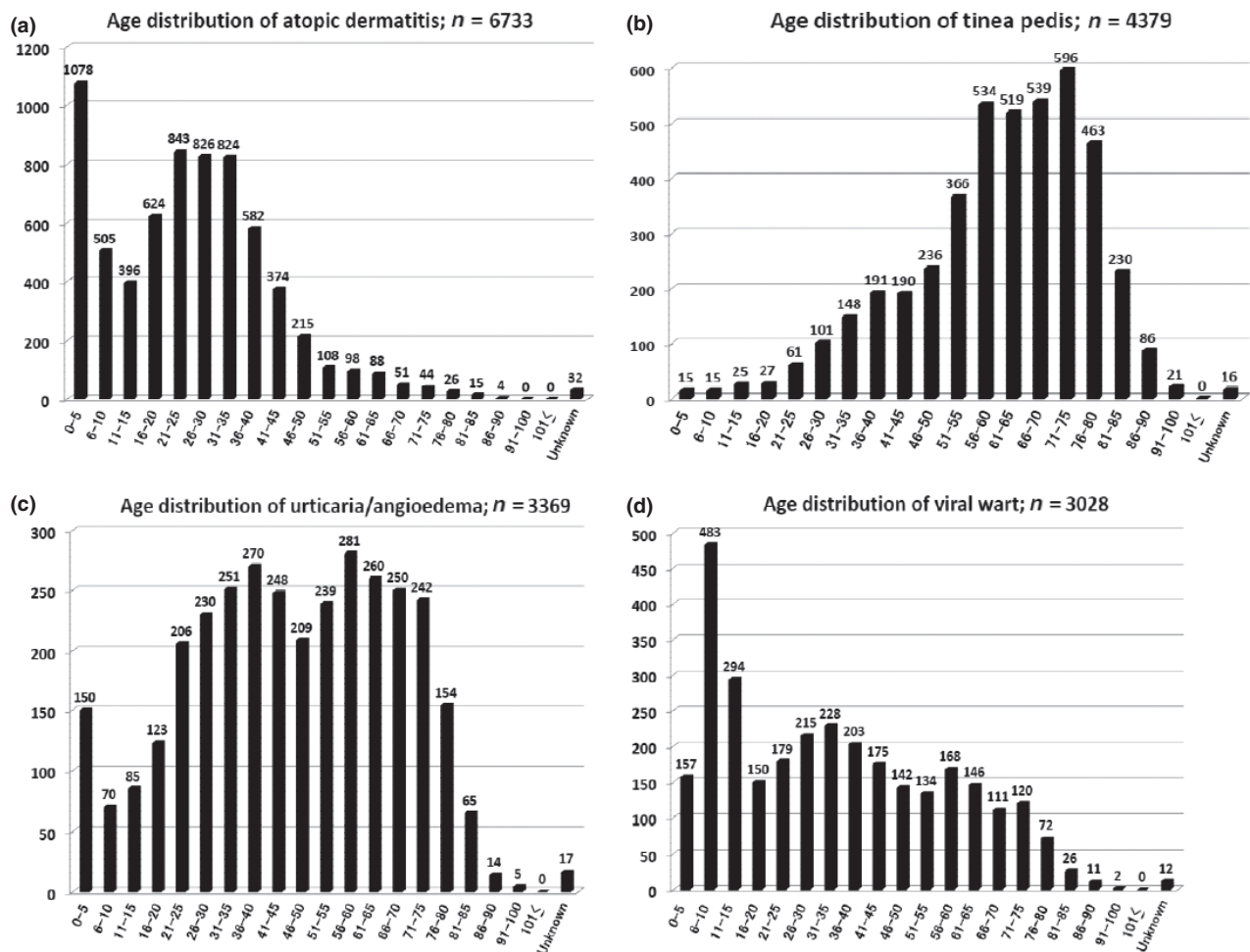


Figure 1. Age distribution of atopic dermatitis, tinea pedis, urticaria/angioedema and viral wart.

pain (1609; 2.39%), skin ulcers (non-diabetic) (1334; 1.98%), prurigo (1229; 1.82%), epidermal cysts (1194; 1.77%), vitiligo vulgaris (1134; 1.68%), seborrheic keratosis (1095; 1.62%) and drug eruption/toxicoderma (1018; 1.51%). These top 20 categories covered 57 577 (85.34%) of the 67 448 patients (Table 3).

Age distributions of common diseases

The age distribution of atopic dermatitis was biphasic, peaking at 0–5 and 21–35 years of age (Fig. 1a). Tinea pedis peaked at 56–75 years of age (Fig. 1b). Tinea unguium showed a similar pattern (data not shown). Urticaria/angioedema showed a triphasic distribution pattern (Fig. 1c), whereas viral warts peaked at 6–15 years of age (Fig. 1d). Psoriasis peaked at 56–65 years of age (Fig. 2a). The age distribution for contact dermatitis was somewhat evenly dispersed

(Fig. 2b). The peak age for acne was 16–25 years (Fig. 2c), whereas that for seborrheic dermatitis was 71–75 (Fig. 2d). Hand eczema was distributed evenly in adults (Fig. 3a). The peak age for alopecia areata was 31–35 years (Fig. 3b). Herpes zoster/zoster-associated pain and prurigo were prominent in elderly patients (Fig. 3c,d). Epidermal cysts occurred in adults of all ages (Fig. 4a). Vitiligo vulgaris and drug eruption/toxicoderma were preponderant in elderly people (Fig. 4b,c). Notably, the age distribution for burns peaked in the group aged 0–5 years (Fig. 4d).

In Tables 4 and 5, we list the top five skin disorders for each age group. Miscellaneous eczema appeared in every age group, whereas atopic dermatitis was among the top five diseases for age groups under 50 years. The disease encountered most frequently in groups aged 6–40 years was atopic dermatitis.

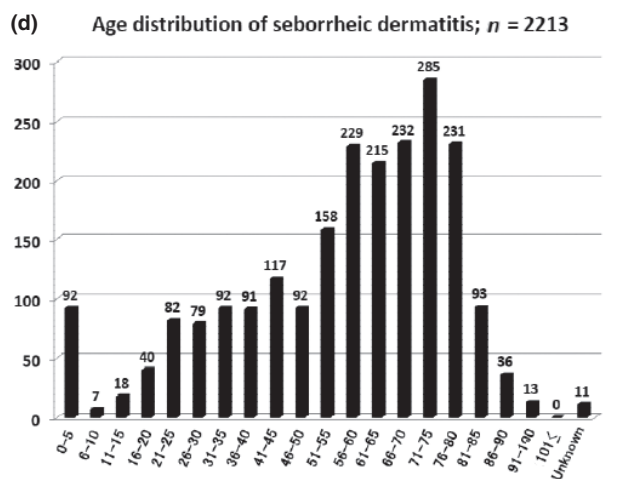
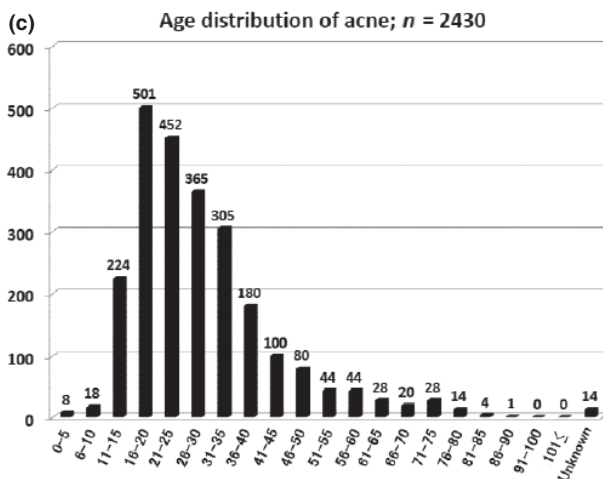
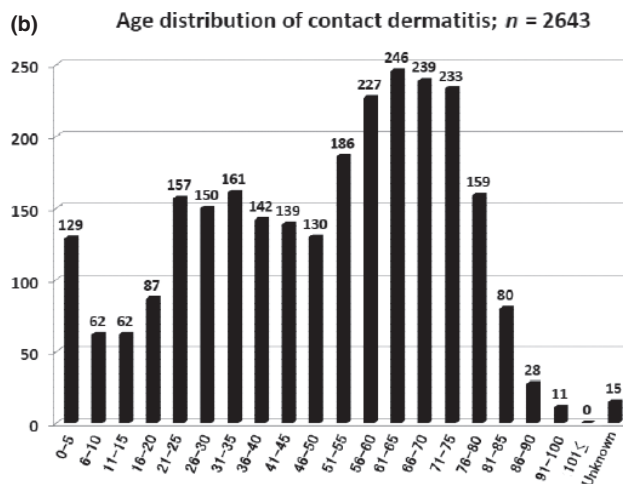
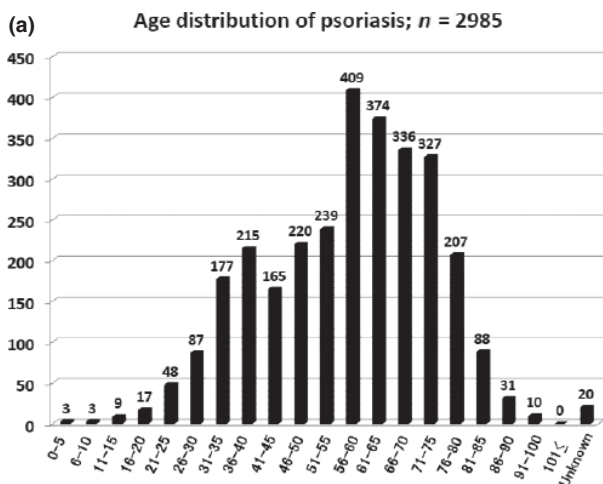


Figure 2. Age distribution of psoriasis, contact dermatitis, acne and seborrheic dermatitis.

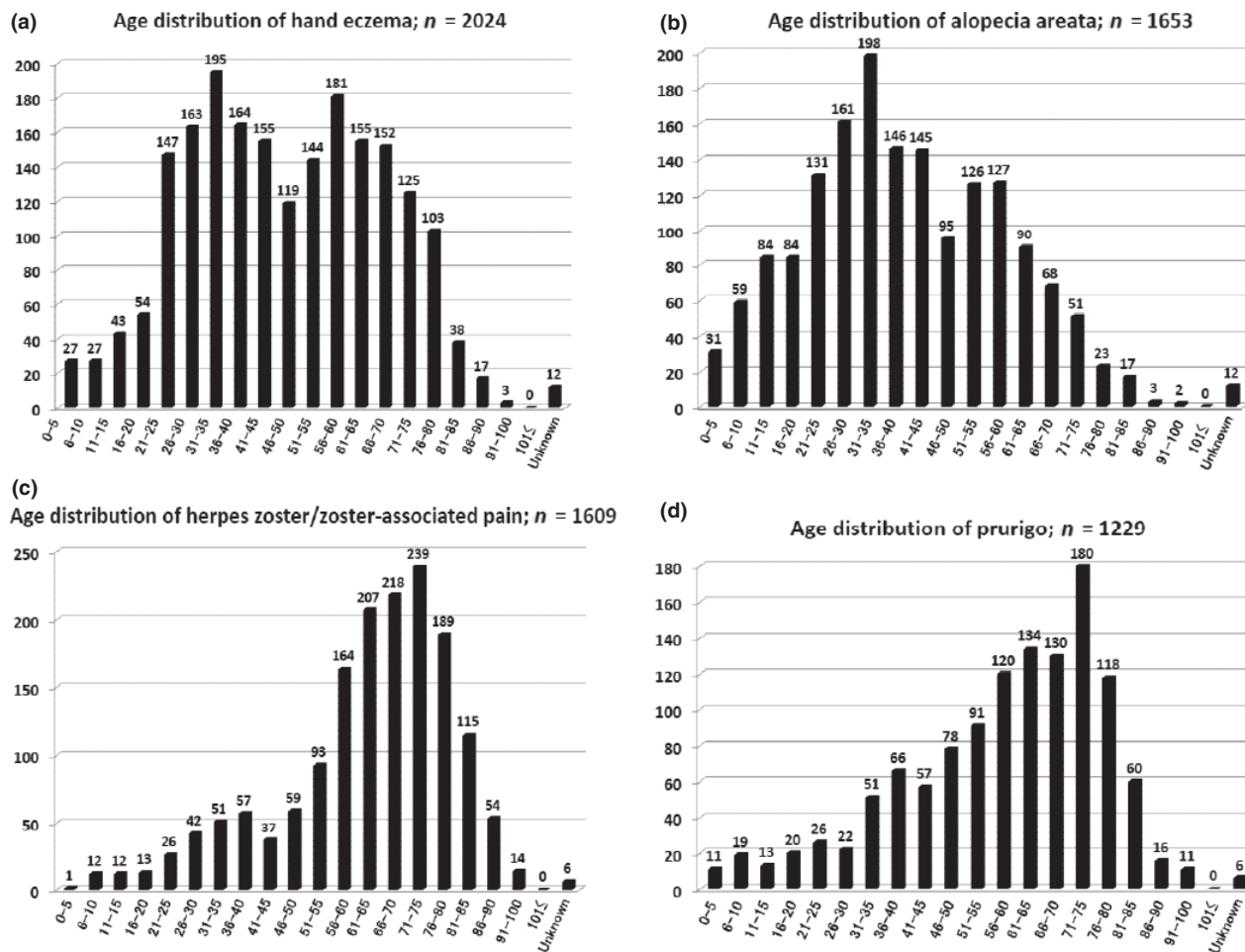


Figure 3. Age distribution of hand eczema, alopecia areata, herpes zoster/zoster-associated pain and prurigo.

Molluscum and impetigo were common in patients aged 0–10 years. Viral warts were among the top five diseases for groups aged 6–45 years. Acne was common in groups aged 11–35 years. Urticaria/angioedema was among the top five diseases for a wide range of age groups from 11–70 years old. Tinea pedis was common in groups aged above 41 years old. Psoriasis appeared in the top five diseases in middle-aged and older people with ages ranging 46–80 years old.

Sex differences

Difference in the incidence of skin disorders between the sexes are shown in Table 6. The prevalence of diabetic dermatoses, psoriasis, androgenic alopecia, syphilis and erythroderma in males was more than twice that in females, whereas the prevalence of hand eczema, systemic sclerosis, systemic lupus

erythematosus, dermatomyositis, reticular/racemous livedo, pigmented nevus, chloasma/senile freckle, erythema nodosum and rosacea/rosacea-like dermatitis was more than twice as high in females than males (Table 6).

Correlation between patient numbers and the average low temperature, average high temperature and average humidity in the months of clinic visits

Because this study was a nationwide survey for Japan, a wide variation of climates had to be considered. We therefore searched for correlations between patient numbers and average low temperature, average high temperature and average humidity of the month in which patients visited clinics. The numbers of visiting patients diagnosed with urticaria/angioedema (Fig. 5), insect bites (Fig. 5), tinea pedis (Fig. 6)

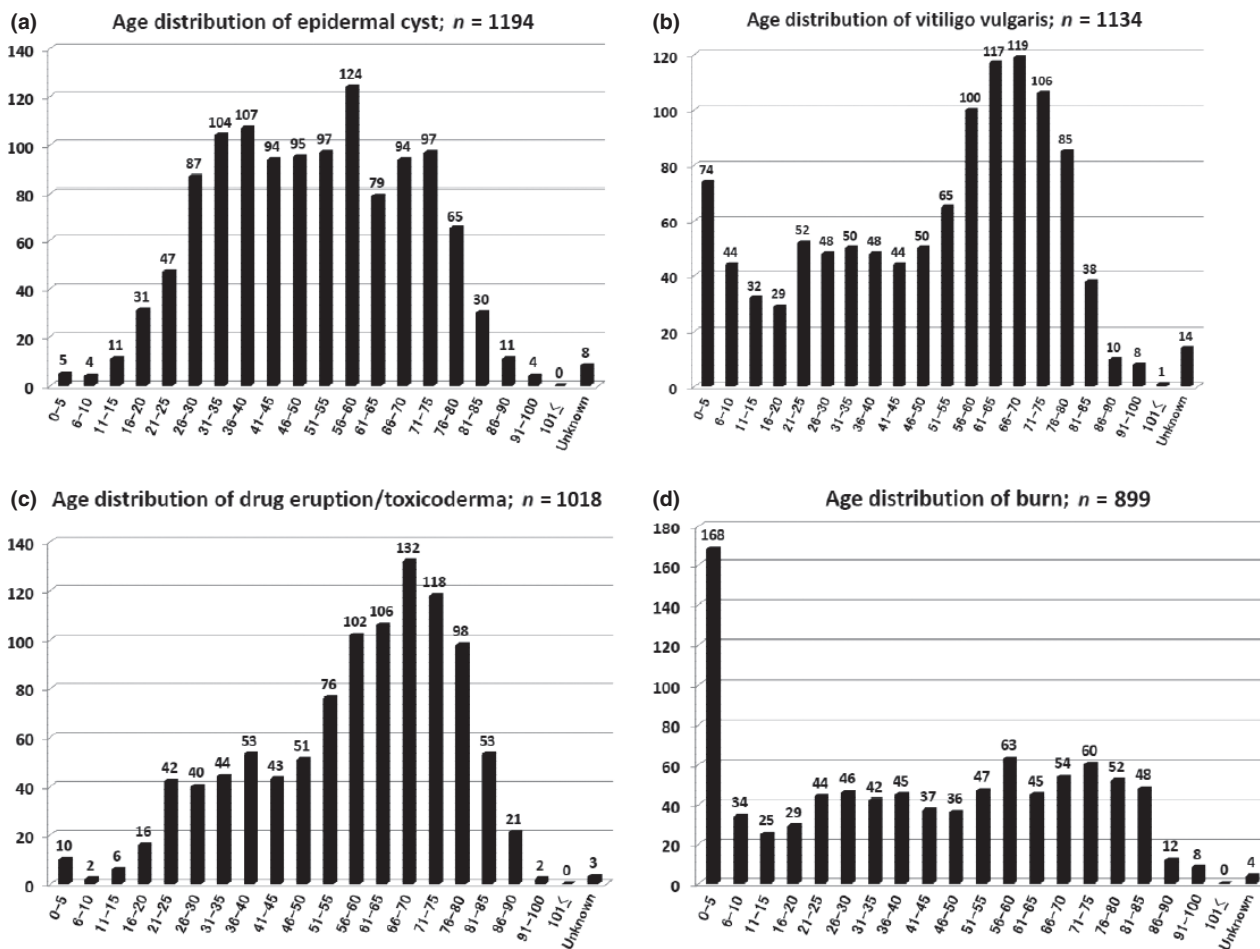


Figure 4. Age distribution of epidermal cyst, vitiligo vulgaris, drug eruption/toxicoderma and burn.

or impetigo (Fig. 6) showed a significant correlation with the average low temperature and with the average high temperature (data not shown). The numbers of visiting patients diagnosed with atopic dermatitis, contact dermatitis or molluscum contagiosum were also positively correlated with the average low temperature and average high temperature (data not shown). The numbers of patients diagnosed with seborrheic dermatitis showed a negative correlation with the average humidity (Fig. 7). The average humidity was also significantly and negatively correlated with atopic dermatitis, hand eczema and prurigo (data not shown).

DISCUSSION

There are a number of limitations and biases in hospital-based prevalence studies, including institutional

specificity (university hospital, pivotal local hospital or private clinic), differences in localization, climatic and seasonal differences, and differences in skills in diagnosis.^{1,4-6} This study, conducted in fiscal year 2007 by the Japanese Dermatological Association, recruited 76 university hospitals, 55 district-based pivotal hospitals and 59 private clinics (190 clinics in total). We analyzed data for 67 448 patients that were collected seasonally from 170 clinics. This nationwide study is first of its kind in Japan, and its nature appears to eliminate, at least in part, some of the above-mentioned biases of hospital-based prevalence study.

In fiscal year 2007, eczematous and fungal diseases were commonly reported in dermatological clinics in Japan. The 20 most common categories of skin disorder were diagnosed in more than 85% of patients presenting dermatological complaints. A

Table 4. Top five skin disorders in each age group

0–5 years old (<i>n</i> = 4192)		26–30 years old (<i>n</i> = 3516)	
Miscellaneous eczema	1229; 29.32%	Atopic dermatitis	826; 23.49%
Atopic dermatitis	1078; 25.72%	Miscellaneous eczema	451; 12.83%
Molluscum contagiosum	425; 10.14%	Acne	365; 10.38%
Impetigo contagiosum	291; 6.94%	Urticaria/angioedema	230; 6.54%
Miscellaneous benign skin tumors	226; 5.39%	Viral wart	215; 6.11%
6–10 years old (<i>n</i> = 2099)		31–35 years old (<i>n</i> = 4050)	
Atopic dermatitis	505; 24.06%	Atopic dermatitis	824; 20.35%
Viral wart	483; 23.01%	Miscellaneous eczema	551; 13.6%
Miscellaneous eczema	355; 16.91%	Acne	305; 7.53%
Molluscum contagiosum	144; 6.86%	Urticaria/angioedema	251; 6.2%
Impetigo contagiosum	110; 5.24%	Viral wart	228; 5.63%
11–15 years old (<i>n</i> = 1711)		36–40 years old (<i>n</i> = 3807)	
Atopic dermatitis	396; 23.14%	Atopic dermatitis	582; 15.29%
Viral wart	294; 17.18%	Miscellaneous eczema	503; 13.21%
Acne	224; 13.09%	Urticaria/angioedema	270; 7.09%
Miscellaneous eczema	214; 12.51%	Psoriasis	215; 5.65%
Urticaria/angioedema	85; 4.97%	Viral wart	203; 5.33%
16–20 years old (<i>n</i> = 2270)		41–45 years old (<i>n</i> = 3298)	
Atopic dermatitis	624; 27.49%	Miscellaneous eczema	454; 13.77%
Acne	501; 22.07%	Atopic dermatitis	374; 11.34%
Miscellaneous eczema	269; 11.85%	Urticaria/angioedema	248; 7.52%
Viral wart	150; 6.61%	Tinea pedis	190; 5.76%
Urticaria/angioedema	123; 5.42%	Viral wart	175; 5.31%
21–25 years old (<i>n</i> = 3219)		46–50 years old (<i>n</i> = 3201)	
Atopic dermatitis	843; 26.19%	Miscellaneous eczema	453; 14.15%
Acne	452; 14.04%	Tinea pedis	236; 7.37%
Miscellaneous eczema	407; 12.64%	Psoriasis	220; 6.87%
Urticaria/angioedema	206; 6.4%	Atopic dermatitis	215; 6.72%
Viral wart	179; 5.56%	Urticaria/angioedema	209; 6.53%

Table 5. Top five skin disorders in each age group

51–55 years old (<i>n</i> = 4062)		76–80 years old (<i>n</i> = 4778)	
Miscellaneous eczema	676; 16.64%	Miscellaneous eczema	1304; 27.29%
Tinea pedis	366; 9.01%	Tinea pedis	463; 9.69%
Psoriasis	239; 5.88%	Tinea unguium	401; 8.39%
Urticaria/angioedema	239; 5.88%	Seborrheic dermatitis	231; 4.83%
Tinea unguium	226; 5.56%	Psoriasis	207; 4.33%
56–60 years old (<i>n</i> = 5540)		81–85 years old (<i>n</i> = 2636)	
Miscellaneous eczema	910; 16.43%	Miscellaneous eczema	725; 27.5%
Tinea pedis	534; 9.64%	Tinea unguium	233; 8.84%
Psoriasis	409; 7.38%	Tinea pedis	230; 8.73%
Tinea unguium	331; 5.97%	Herpes zoster/zoster-associated pain	115; 4.36%
Urticaria/angioedema	281; 5.07%	Seborrheic dermatitis	93; 3.53%
61–65 years old (<i>n</i> = 5415)		86–90 years old (<i>n</i> = 1099)	
Miscellaneous eczema	1016; 18.76%	Miscellaneous eczema	307; 27.93%
Tinea pedis	519; 9.58%	Tinea unguium	86; 7.83%
Tinea unguium	393; 7.26%	Tinea pedis	79; 7.19%
Psoriasis	374; 6.91%	Pressure ulcer	65; 5.91%
Urticaria/angioedema	260; 4.8%	Skin ulcer (nondiabetic)	63; 5.73%
66–70 years old (<i>n</i> = 5628)		91–100 years old (<i>n</i> = 427)	
Miscellaneous eczema	1141; 20.27%	Miscellaneous eczema	110; 25.76%
Tinea pedis	539; 9.58%	Pressure ulcer	43; 10.07%
Tinea unguium	463; 8.23%	Squamous cell carcinoma/Bowen's disease	35; 8.2%
Psoriasis	336; 5.97%	Skin ulcer (non-diabetic)	28; 6.56%
Urticaria/angioedema	250; 4.44%	Bullous pemphigoid	22; 5.15%
71–75 years old (<i>n</i> = 6157)			
Miscellaneous eczema	1457; 23.66%		
Tinea pedis	596; 9.68%		
Tinea unguium	566; 9.19%		
Psoriasis	327; 5.31%		
Seborrheic dermatitis	285; 4.63%		

Table 6. Sex differences in skin diseases

	Total; Male; Female	Total; Male; Female	
Burn	892, 1.33%; 414, 1.34%; 478, 1.32%	Miscellaneous viral disorders	349, 0.52%; 171, 0.55%; 178, 0.49%
Trauma	406, 0.61%; 196, 0.63%; 210, 0.58%	Syphilis	24, 0.04%; 16, 0.05%; 8, 0.02%
Skin ulcer (nondiabetic)	1318, 1.97%; 605, 1.96%; 713, 1.97%	Miscellaneous sexually transmitted diseases	40, 0.06%; 26, 0.08%; 14, 0.04%
Pressure ulcer	606, 0.9%; 313, 1.01%; 293, 0.81%	Bullous pemphigoid	509, 0.76%; 208, 0.67%; 301, 0.83%
Miscellaneous physico-chemical skin damage	675, 1.01%; 303, 0.98%; 372, 1.03%	Pemphigus	416, 0.62%; 180, 0.58%; 236, 0.65%
Diabetic dermatoses	432, 0.64%; 300, 0.97%; 132, 0.37%	Miscellaneous bullous diseases	139, 0.21%; 67, 0.22%; 72, 0.2%
Atopic dermatitis	6707, 10.01%; 3486, 11.28%; 3221, 8.92%	Systemic sclerosis	609, 0.91%; 94, 0.3%; 515, 1.43%
Hand eczema	2009, 3%; 532, 1.72%; 1477, 4.09%	Systemic lupus erythematosus	520, 0.78%; 72, 0.23%; 448, 1.24%
Contact dermatitis	2629, 3.92%; 902, 2.92%; 1727, 4.78%	Dermatomyositis	300, 0.45%; 76, 0.25%; 224, 0.62%
Seborrheic dermatitis	2201, 3.28%; 1295, 4.19%; 906, 2.51%	Miscellaneous collagen diseases	911, 1.36%; 209, 0.68%; 702, 1.94%
Miscellaneous eczema	12523, 18.68%; 6289, 20.35%; 6234, 17.26%	Anaphylactoid purpura	169, 0.25%; 72, 0.23%; 97, 0.27%
Urticaria/angioedema	3355, 5.01%; 1251, 4.05%; 2104, 5.82%	Reticular/racemous livedo	80, 0.12%; 21, 0.07%; 59, 0.16%
Prurigo	1216, 1.81%; 755, 2.44%; 461, 1.28%	Miscellaneous vasculitis/purpura/circulatory disturbance	625, 0.93%; 239, 0.77%; 386, 1.07%
Drug eruption/toxicoderma	1012, 1.51%; 436, 1.41%; 576, 1.59%	Mycosis fungoides	418, 0.62%; 244, 0.79%; 174, 0.48%
Psoriasis	2967, 4.43%; 2138, 6.92%; 829, 2.29%	Miscellaneous lymphomas	283, 0.42%; 149, 0.48%; 134, 0.37%
Palmoplantar pustulosis	828, 1.24%; 284, 0.92%; 544, 1.51%	Pigmented nevus	703, 1.05%; 206, 0.67%; 497, 1.38%
Miscellaneous pustulosis	170, 0.255%; 67, 0.22%; 103, 0.29%	Seborrheic keratosis	1090, 1.63%; 537, 1.74%; 553, 1.53%
Lichen planus	200, 0.3%; 80, 0.26%; 120, 0.33%	Soft fibroma/achrochordon	228, 0.34%; 78, 0.25%; 150, 0.42%
Miscellaneous inflammatory keratotic disorders	241, 0.36%; 95, 0.31%; 146, 0.4%	Epidermal cyst	1183, 1.77%; 713, 2.31%; 470, 1.3%
Tylosis/clavus	911, 1.36%; 292, 0.95%; 619, 1.71%	Lipoma	171, 0.26%; 92, 0.3%; 79, 0.22%
Ichthyosis	61, 0.09%; 31, 0.1%; 30, 0.08%	Dermatofibroma	110, 0.16%; 44, 0.14%; 66, 0.18%
Miscellaneous keratinization disorders	502, 0.75%; 192, 0.62%; 310, 0.86%	Miscellaneous benign skin tumors	1651, 2.46%; 673, 2.18%; 978, 2.71%
Ingrown nail	594, 0.89%; 197, 0.64%; 397, 1.1%	Actinic keratosis	256, 0.38%; 129, 0.42%; 127, 0.35%
Miscellaneous nail disorder	396, 0.59%; 123, 0.4%; 273, 0.76%	Basal cell carcinoma	324, 0.48%; 166, 0.54%; 158, 0.44%
Alopecia areata	1644, 2.45%; 557, 1.8%; 1087, 3.01%	Squamous cell carcinoma/Bowen's disease	447, 0.67%; 272, 0.88%; 175, 0.48%
Androgenic alopecia	208, 0.31%; 198, 0.64%; 10, 0.03%	Paget's disease	221, 0.33%; 136, 0.44%; 85, 0.24%
Miscellaneous skin appendage disorders	266, 0.4%; 77, 0.25%; 189, 0.52%	Malignant melanoma	802, 1.2%; 395, 1.28%; 407, 1.13%
Scabies	96, 0.14%; 50, 0.16%; 46, 0.13%	Miscellaneous malignant skin tumors	531, 0.79%; 291, 0.94%; 240, 0.66%
Insect bite	762, 1.14%; 285, 0.92%; 477, 1.32%	Vitiligo vulgaris	1123, 1.68%; 473, 1.53%; 650, 1.8%
Tinea pedis	4363, 6.51%; 2225, 7.2%; 2138, 5.92%	Chloasma/senile freckle	334, 0.5%; 18, 0.06%; 316, 0.87%
Tinea unguium	3216, 4.8%; 1581, 5.12%; 1635, 4.53%	Miscellaneous pigmented disorders	154, 0.23%; 30, 0.1%; 124, 0.34%
Miscellaneous tinea	607, 0.91%; 404, 1.31%; 203, 0.56%	Erythema multiforme	194, 0.29%; 89, 0.29%; 105, 0.29%
Candidiasis	406, 0.61%; 176, 0.57%; 230, 0.64%	Erythema nodosum	111, 0.17%; 12, 0.04%; 99, 0.27%
Miscellaneous mycosis	209, 0.31%; 117, 0.38%; 92, 0.25%	Miscellaneous disorders with erythematous plaques	130, 0.19%; 40, 0.13%; 90, 0.25%
Acne	2423, 3.62%; 757, 2.45%; 1666, 4.61%	Nevus/phacomatosis (other than pigmented nevus)	266, 0.4%; 89, 0.29%; 177, 0.49%
Impetigo contagiosum	505, 0.75%; 283, 0.92%; 222, 0.61%	Rosacea/rosacea-like dermatitis	148, 0.22%; 36, 0.12%; 112, 0.31%
Folliculitis	749, 1.12%; 432, 1.4%; 317, 0.88%	Granulomatous diseases	192, 0.29%; 65, 0.21%; 127, 0.35%
Erysipelas	81, 0.12%; 35, 0.11%; 46, 0.13%	Keloid/hypertrophic scar	184, 0.27%; 73, 0.24%; 111, 0.31%
Cellulitis	589, 0.88%; 304, 0.98%; 285, 0.79%	Cheilitis/angular cheilitis/mucous membrane diseases	94, 0.14%; 38, 0.12%; 56, 0.16%
Miscellaneous bacterial infection	909, 1.36%; 497, 1.61%; 412, 1.14%	Erythroderma	62, 0.09%; 44, 0.14%; 18, 0.05%
Molluscum contagiosum	602, 0.9%; 327, 1.06%; 275, 0.76%	Other diseases	662, 0.99%; 315, 1.02%; 347, 0.96%
Herpes simplex	688, 1.03%; 266, 0.86%; 422, 1.17%	Total	67 024, 100%; 30 899, 100%;
Herpes zoster/zoster-associated pain	1599, 2.39%; 694, 2.25%; 905, 2.51%		36 125, 100%
Viral wart	3016, 4.5%; 1388, 4.49%; 1628, 4.51%		

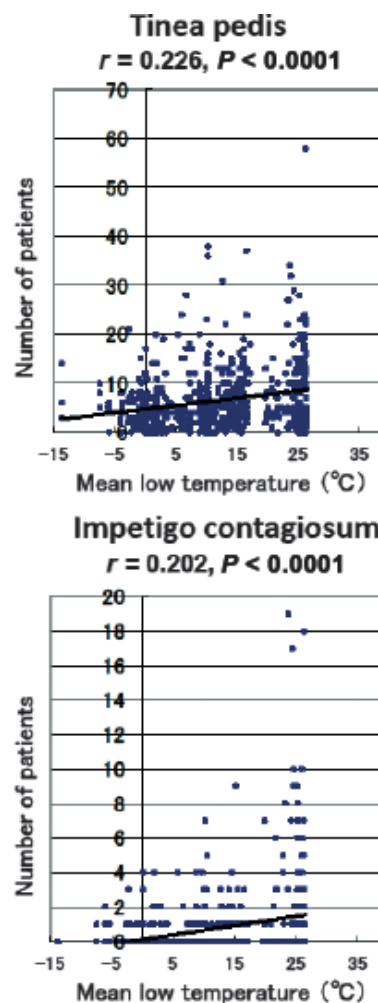
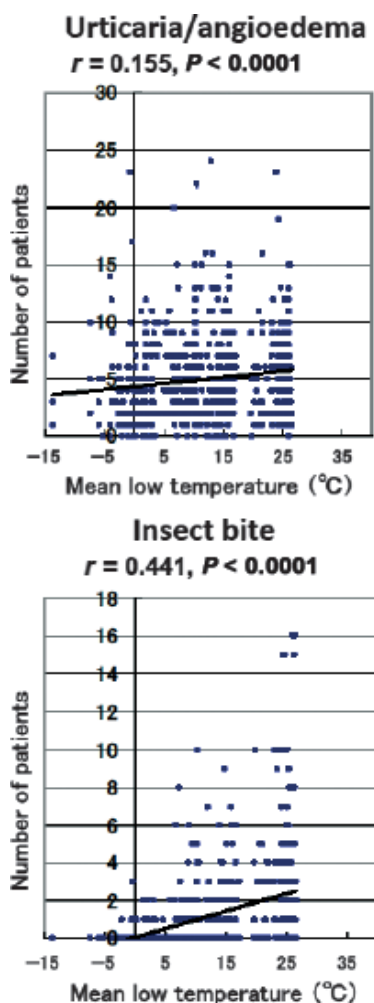


Figure 5. Correlation between patient numbers and mean low temperature in urticaria/angioedema and insect bite.

Figure 6. Correlation between patient numbers and mean low temperature in tinea pedis and impetigo contagiosum.

previous hospital-based study in Turkey³ reported that the five most common disorders were atopic dermatitis, diaper dermatitis, impetigo, seborrheic dermatitis and miliaria in children aged 0–2 years; atopic dermatitis, impetigo, warts, contact dermatitis and insect bites in children aged 3–5 years; contact dermatitis, warts, atopic dermatitis, pruritus and impetigo in children aged 6–11 years; and acne, contact dermatitis, warts, seborrheic dermatitis and pruritus in children aged 12–16 years. For Dutch children aged 0–17 years old in 2001, the incidence rates per person-year of skin disorders were, in descending order, warts 34.3, dermatophytosis 25.4, contact dermatitis/other eczema 22.9, impetigo 20.5, laceration/cuts 20.3, atopic

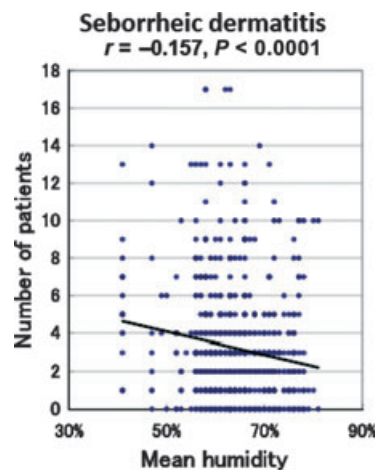


Figure 7. Negative correlation between patient numbers and mean humidity in seborrheic dermatitis.

dermatitis 16.5, moniliasis/candidiasis 9.8 and molluscum contagiosum 9.5.² Although the order of each disease differed from country to country, atopic dermatitis, miscellaneous eczematous diseases, impetigo and warts appear to share their top rankings in pediatric dermatology, and this was also the case in Japan. Similar observations were also made in 1105 pediatric outpatients aged 0–15 years who visited the hospital of Aarau in Switzerland between 1998 and 2001.⁷

In Turkey, Yalçın *et al.*⁸ examined records for 4099 geriatric patients over 65 years old who were admitted to the Ankara Numune Educational and Research Hospital from 1999 through 2003. The five most frequently diagnosed diseases were as follows: in the group aged 65–74 years, eczematous dermatitis, fungal infections, pruritus and bacterial and viral infections; in the group aged 75–84 years, eczematous dermatitis, pruritus, and fungal, viral and bacterial infections; and in the group aged over 85 years, pruritus, eczematous dermatitis, precancerous lesions and skin carcinomas, and viral and fungal infections.⁸ In the present study, the Japanese geriatric population was also found to suffer very frequently from miscellaneous eczema and tinea pedis/unguim. In addition, there was a high incidence of psoriasis in elderly Japanese patients. As expected, we found conspicuous differences in the incidence of collagen diseases between the two sexes. A preponderance of collagen diseases in females was also evident in Yalçın's study.⁸

It should be emphasized again that this study was simply a measure of skin disorders in patients attending ordinary dermatology clinics in Japan. The study holds various limitations and biases, but it appears to highlight the current situation regard-

ing patients presenting dermatological problems in Japan.

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